The Impact of Marzano's Instructional Strategies on Grade 10 Students' Achievement in Reading Comprehension in the United Arab Emirates

أثر استخدام استراتيجيات مرزانو التدريسية على أداء طلبة الصف العاشر في مهارة القراءة في الامارات العربية المتحدة

by

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Abstract

This study, an investigation of the impact of using Marzano's instructional strategies to teach reading comprehension in a second language (L2), focuses on secondary students in the United Arab Emirates (UAE). Learning English as the official L2 has developed to be a necessity for students in the UAE, where many are alarmingly classified as underperforming. Based on the unsatisfying academic performance in literacy skills in international exams, it is anticipated that critical achievement gaps between reform endeavors and students' performance continue to exist and it appears challenging to close these gaps without practical and meaningful implications of the pillars of effective pedagogy.

To lead the transformation and improve its trajectory, the Ministry of Education (MoE) in the UAE has devoted considerable attention to enhance students' achievement, support teachers to use Marzano's instructional strategies and adopt these strategies for formal observations in the teachers' performance appraisal system. Thus, the purpose of this study was to investigate the impact of Marzano's instructional strategies on grade 10 students' achievement in reading comprehension. It also aimed at exploring the perceptions of those students towards using Marzano's strategies in their learning of reading comprehension strategies. Research questions for this study employed an explanatory sequential mixed methods design, involving a quasi-experimental non-equivalent pre-test–post-test control group design (*n= 480 students*) and focus group interviews (*n=12 students*). To ensure that the participants who undertook the tests were statistically representative, a sampling protocol that reflected two perspectives, namely

professional development training for teachers on Marzano's strategies and a classroom observational tool for these teachers, was followed.

The findings of the study, which indicated significant differences in tests scores ($F = 15.125$; $P = 0.0$) and students' positive perceptions towards using the strategies, demonstrate the importance of Marzano's instructional strategies on enhancing students' achievement in reading comprehension. Results also showed that female students significantly outperformed male students in posttests.

It is hoped that this study will fill the actual knowledge gap in the UAE research literature, facilitate enhanced performance for the educational field partners; students, teachers, policy makers and curriculum developers and prompt further explorations in the field of using Marzano's instructional strategies in literacy skills instruction.

Key words: Marzano's instructional strategies, reading comprehension, students' achievement, United Arab Emirates.

ملخص الدراسة

هدفت هذه الدراسة إلى قياس درجة فعالية استراتيجيات (مارزانو) في تطوير مهارات الطلبة في القراءة في مادة اللغة الانجليزية كلغة ثانية لدى طلبة الصف العاشر في دولة الإمارات العربية المتحدة والتي حرصت على تطوير مهارات طلبتها في اللغة الإنجليزية. بالإضافة الى استكشاف آراء هؤلاء الطلاب تجاه استخدام استراتيجيات مارزانو في تعلمهم لاستراتيجيات القراءة والاستيعاب.

لقد أولت الأجندة الوطنية اهتماما كبيرا في قطاع التعليم حيث تضمنت أهدافاً تمهد الطريق أمام دولة الإمارات لتكون في صدارة الدول التي تقدم خدمات تعليمية بجودة عالية. وكان من أهم هذه الأهداف تطوير المهارات اللغوية لدى الطلبة لتمكينهم من تحقيق مستويات متقدمة في الاختبارات الدولية. ومن ضمن الاجراءات التي تم اعتمادها لتحقيق هذا الهدف تنمية مهارات معلمي اللغة الانجليزية، وتأهيلهم للقيام بمهامهم على الوجه الأكمل وفي هذا السياق فقد تم اعتماد استراتيجيات (مرزانو) لتقييم أدائهم.

وبالرغم من جميع الجهود المبذولة لتطوير مهارات القراءة والكتابة في اللغة الإنجليزية فإن نتائج اختبارات الكفاءة اللغوية الدولية للطلبة في دولة الإمارات العربية المتحدة أشارت إلى ضعف مهارة القراءة بصورة ملفتة لدى الطلبة في المراحل الدراسية.

ونظرا لأهمية تطوير مهارات القراءة في دعم عملية التعلم الفعال للطلبة فقد تم استخدام الأسلوب المختلط في معالجة مشكلة هذا البحث بطريقة كمية ونوعية، وذلك من خلال تصنيف عينة الدراسة إلى مجموعة تجريبية تم تطبيق استراتيجيات (مرزانو) عليها ومجموعة ضابطة قورنت نتائج طلبتها بنتائج المجموعة التجريبية. كما تم اجراء مقابلات مع أفراد من المجموعة التجريبية ورصد ملاحظاتهم عن التجربة التي مروا بها. وقد كان اختيار العينة تبعاً لتدريب معلمي العينة التجريبية مهنياً على الاستراتيجيات واجراء ملاحظات صفية على أدائهم.

من المؤمل أن تسهم نتائج هذه الدراسة في تزويد صناع القرار التربوي في دولة الإمارات العربية المتحدة بالمعلومات اللازمة للاستمرار والتوسع في تدريب المعلمين على استخدام استراتيجيات (مرزانو) في تدريس القراءة باللغة الانجليزية، كما أنها يمكن أن تفتح الباب لإجراء المزيد من الدراسات على هذه الاستراتيجيات في تدريس المهارات المختلفة للغة الانجليزية، فضلا عن تسليط الضوء على أهم التحديات التي يواجهها الطلبة في تعلم اللغة الانجليزية.

Dedication

To my parents for their incessant prayers …

To my husband for his patience and warm-hearted encouragement…

To my brothers and my sisters for their support and motivation...

To my angels; Omar, Ali and Khalid for their pure love…

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I would also like to express my gratitude to the committee members for their beneficial criticism and valuable suggestions. Sincere thanks are also due to those who helped in collecting the data of this study. I wish to acknowledge all the teachers and students who have participated and given me insightful information in this study. Without their help and cooperation, the data collection process would not have been so successful.

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Glossary

ADEC	Abu Dhabi Education Council
ADEK	Department of Education and Knowledge
AMTs	Arabic middle teachers
EMI	English as a medium of instruction
EMTs	English middle teachers
ESL	English as a second language
L1	First Language
L2	Second language
LOs	Learning Outcomes
MoE	Ministry of Education
NRP	National Reading Panel
SPSS	Statistical Program for Social Sciences
SLA	Second Language Acquisition
UAEMOHESR	United Arab Emirates Ministry of Higher Education and Scientific Research

CHAPTER ONE: Introduction

1.1 Background Rationale, and Contribution

In the age of rapid globalization, education experiences persistent and foreseeing changes that lead to make learning a second language (L2), in its archetypal signification, an inevitable necessity in the educational institutions across the world, including the ones in the Middle East (Ebrahim & Awan 2015). The influence of globalization yields major developments in the skills and competences of learners (Stronge, Ward & Grant 2011), for instance English language learners (Elyasi 2013). Beyond question, catching insights on improving these capabilities produces quality education which is reinforced by incorporating quality teachers, employing quality learning methods and instructional strategies and establishing supportive, safe quality learning environments (Marzano, Marzano & Pickering 2003). These pillars serve as the foundation of generating sustainable development and thus should be the fundamental focus of policy makers, who aim to achieve the progressively ambitious educational targets in any country (Pike 2017).

 To achieve these visionary educational targets, educators should be equipped with coherent guidance on the knowledge, skills and capabilities that will prepare them to meet the challenges and respond successfully to changing milieus and societal requirements (Stronge et al. 2011). In this regard, Dukmak and Ishtaiwa (2015) maintain that as the primary aim of education is to induce fundamental, desirable changes in the learners' competencies, facilitating the process of knowledge transmission should be aligned to incorporating knowledge of the learning standards and instructional strategies that enhance students' attainment. This view is supported by Hill and Miller (2013) who pointed out that regular inadequate academic achievement is fundamentally

associated with many factors, which the application of ineffective instructional strategies is among.

To accommodate with this rapidly-developing world, providing English language learners with ample opportunities to enhance the acquisition of English as a Second Language (ESL) becomes critically significant in most non-English-speaking countries (Fareh 2010). Despite the fact that proficiency in English language; as the first global target language required in educational institutions in different contexts around the world has been vitally important (Crystal 2012), critical challenges are encountered by those involved in the teaching process. As cited by Fareh (2010), these challenges include the inadequately trained teachers, insufficient use of instructional strategies and lack of emphasis on developing skills of critical thinking and problem-solving.

Being a bilingual ESL teacher in Emirati quality-driven environments that value quality educational preparation, acknowledge superior performance and support the achievement of professional goals for more than sixteen years has underpinned different beliefs and reflections. Throughout these years, the naïve ideation of what makes a "good" teacher and the "natural-born teacher" fallacy seem to vanish. Being immersed in several researchers' ideas, theories, and most importantly reliable, authentic frameworks has broadened my horizons on understanding how teaching should be a flexible, dynamic, supportive, interactive and mutually respectful process that goes far beyond passing knowledge to learners.

In my pursuit to find the scattered criteria of what "good" teaching is, numerous and critical issues were incredibly uncovered. Among them is how it is a complex task to find ways to linguistically support non-native speakers of English. Contextually speaking, this ideation is extremely overwhelming for teachers whose pedagogical practices and instructional strategies

are evaluated pertaining to students' performance in reading literacy assessments. These personal and professional concerns about the role of instructional strategies were translated into reality when selected high-yield instructional strategies were used for teachers' formal evaluation in the official performance appraisal system in the public schools in the UAE.

From a teacher's perspectives, integrating high-yield instructional strategies in instruction aims at refining their role and making the traditional strategies depart. Hence, the cited tremendous efforts of the supervising bodies of education in the UAE to enhance students' achievement along with the inquiries of the impact of these instructional strategies in L2 classrooms generate the rationale for conducting this study.

The present educational environments are undeniably driven by a prevailing concern with the link between classroom instruction and students' achievement (Hill & Cohen 2016). As such, a wealth of researches stated that improving students' achievement is congruent with the employment of adequate instructional strategies and pedagogical practices (Bernel 2012; Dean, Hubbell, Pitler & Stone 2012; Dubas & Toledo 2016). To understand the nature of these instructional strategies along with the main objectives they achieve, describing the context in which they play a foundational stance in the teachers' evaluation seems instrumental.

1.2 The UAE Educational Context

Quality education that produces substantial student learning fundamentally contributes to major development in most sectors in any country (O'Sullivian 2014). Recognizing the collective benefits returns from quality education, His Highness Sheikh Mohammed bin Zayed Al Nahyan, the Crown Prince of Abu Dhabi and Deputy Supreme Commander of the UAE's Armed Forces stated that *"[t]he true wealth of a nation lies in its youth... one that is equipped with education*

and knowledge and which provides the means for building the nation and strengthening its principles to achieve progress on all levels" (MoE 2019, School Development Plan p.1).

Similarly, Sheikh Mohammed bin Rashid Al Maktoum, Vice-President and Prime Minister of the UAE and Ruler of Dubai stated that this rapidly changing world requires countries to acclimate to more diverse and multifaceted workplaces, and that their education systems should nurture and prepare successful and ambitious learners who can contribute to preserve and progress the economies of the twenty-first century (Pennington 2016).

Notwithstanding the UAE's relatively recent formation and educational growth, the discovery of oil achieved quality improvements in the educational system (Abu-Samaha & Shishakly 2008). One of the significant educational advancements that is linked to this study is enhancing learning of languages, other than the first language (L1) in the educational institutions in the country. Hence, learning English language, as the first target language in the UAE, becomes one of the critical priorities that is believed to advance the national education and open countless doors of knowledge. Also, the Ministry of Education (MoE), as the supervising body of education in the UAE, is heavily involved in the educational reform intended to improve the standards of education and pursue educational excellence. In this respect, attempts have been excreted to refrain the traditional models of curriculum implementation and progress the instructional strategies teachers use in their instruction (MoE 2019). Hence, the implemented, ambitious initiatives aim at enhancing the learning processes to help translate their purposes into noticeable students' academic achievements, including English literacy.

1.3 The UAE English Standards

In the UAE, the MoE upholds the value of education that produces noticeable student learning in all subjects, in this case English language (MoE 2019). The constant changes that education

systems experienced have considerably impacted the UAE policy makers' decisions on how to achieve the ambitious educational targets. Correspondingly, the vision of the UAE National Charter 2021 states that "[A]ll Emiratis will have equal opportunity and access to first-rate education that allows them to develop into well-rounded individuals, enhance their educational attainment, and achieve their true potential, contributing positively to society" (UAE Vision 2021, 2018, p.18).

Recognizing this, English language experts have been required to develop a number of standards as the primary, foundational step in meeting the goals of the national education systems. According to the MOE (2019), the revised set of KG1– 12 English learning and teaching standards should and will be accompanied by curriculum materials, aligned assessments, professional development and application of research-based instructional strategies to ensure that the vision captured in them becomes a reality in every classroom in the UAE and guide schools towards a more relevant, rigorous, and coherent curriculum for the next generation.

Having recognized that high-quality teaching and learning standards establish a kind of coherence between domains and strands, the students' learning outcomes and success criteria have been developed by a team of English language experts. The current standards drew from the UAE existing standards and the K-12 Common European Framework of Reference (CEFR). The English specifications for the PISA international assessment and the United States National Assessment of Educational Progress in Reading and Writing were also consulted in the development of these standards (MoE 2019). These standards are anticipated to qualify teachers to evaluate students' learning progression and as such will create a better understanding on how to adopt quality-instructional methods and strategies to efficiently implement the teaching standards and student learning outcomes (MoE 2019).

It is important to mention that the cognitive processing level of each student learning outcome is demonstrated in the UAE English framework. The cognitive levels range from the easy, simple ones that involve simple recall or reproduction to more challenging levels of deep understanding, reasoning and strategic, extended thinking. The importance of these differentiated levels is to consolidate teachers' practices and the instructional strategies they employ to ensure that students acquire the targeted skill. As an intermediary between standards and to provide the keys to unlocking their meanings, teachers are provided with a teacher's guide that includes instructions, examples and prepared plans for better implementation (MoE 2019).

To best incorporate standards into class activities and teachers' practices, teachers are encouraged to use high-yield instructional strategies that facilitate students' learning (Hill & Miller 2013). As expanding teachers' repertoires of instructional strategies that are supported by research has been a fundamental aim in second language learning contexts (Goodwin &Webb 2014; Haystead & Marzano 2009; Thomas & Green 2015) and particularly in reading (Al-Husban & Al-Khawaldeh 2017; Black 2012; Guthrie & Klauda 2014), a key strand in this study has been the impact of research-based instructional strategies, on students' achievement in reading comprehension in the context of secondary public schools in the UAE.

1.4 Instructional Strategies

Since the inception of the recognized, classroom-based instruction, an essential feature of instruction has been the strategies that teachers use in the classroom to facilitate students' learning (Hill & Miller 2013). Instructional strategies are deemed to help teachers shape constructive learning environments in tandem with assessing and controlling learning which can make students independent and strategic (Buehl 2017).

According to Arends (2001), a glance at the history of instructional strategies shows that the current, most-recognized strategies commenced in antiquity when Socrates facilitated students' independent discovery of truths using the questioning strategy. The historical sequence of the instructional strategies demonstrates that the strategies used in the nineteenth century were mainly teacher-centered planned to transmit key information. The beginning of the twentieth century, however, witnessed a shift in the focus aiming to make strategies more learner-centered. That shift assisted in helping learners acquire higher-level thinking and problem-solving skills and as such would lead to more active learning environments.

The primary proposed instructional strategies provoked the emergence of new theories about learning particularly during the educational reform movements in the 1960s. For instance, Cognitive Psychology and Constructivist standpoints contributed in developing a number of widely known instructional strategies such as discovery learning, the cooperative learning and problem-based strategies. Additionally, that era witnessed the development of various strategies and models that were classified based on theoretical background and learners' outcomes, like advance organizers strategy and using analytical and inferential questions (Arends 2001).

In the early twenty-first century, many instructional strategies arose along with tactics and practices to reinforce applying strategies by teachers (Arends 2010). In reference to Richardson (2001 cited in Akdeniz 2016), these strategies, which have been at the center of curriculum reforms, were grown in the perspectives of a number of influential theorists such as Lev Vygotsky, Jean Piaget, Jerome Bruner and Albert Bandura. In this respect, Akdeniz (2016) demonstrated that to achieve the target learning outcomes, instructional strategies should be typically used to apply learning theories in a consistent and useful way. Also, contemporary perspectives on instructional strategies claim that effective teachers should adopt a number of

research-based instructional strategies to cognitively and behaviorally provide students with successful learning experiences (Marzano 2003).

Instructional strategies can be defined as the methods used by teachers to support students in accessing content and skills and consequently achieving the learning objectives (Thomas & Green 2015). According to Akdeniz (2016), instructional strategies delineate the daily communications that occur between teachers and learners which contributes to the attainment of learning outcomes. Therefore, these transactions should embrace numerous materials, practices, techniques, and activities that are reinforced by "modeling, intensive coaching, supervised practice, and monitoring" (Akdeniz 2016, p.61). Thomas and Green (2015) confirmed that teachers can use different strategies to make modifications on the content, process, product and learning environments. Examples of effective instructional strategies as suggested by several researchers in Thomas and Greens' research include cooperative learning, compare and contrast and non-linguistic representation strategies that if employed successfully in classrooms would help meet learners' different readiness levels, learning profiles and interests.

In the field of language learning, Hill and Miller (2013) demonstrated that the most effective instructional strategies are the ones that incorporate meaningful and purposeful series of steps supported by theory and research and as such provide students with various opportunities to practice language skills actively. Research of Goodwin and Webb (2014) endorses that teacher incorporation of literacy-related instructional strategies, that involve the integration of reading, writing, speaking and listening skills, facilitates student learning, acquiring and retaining content knowledge across language learning classrooms.

Expanding teachers' repertoires of instructional strategies that are supported by research has been a fundamental aim in second language learning contexts (Erickson 2008). In this respect,

Thomas and Green (2015) and Bernel (2012) stated that it is significant for teachers not only to be familiar with the subject matter, but also to be knowledgeable of the appropriate strategies and practices that will support achieving learning goals and producing better performance outcomes for all students. Consistently, Haystead and Marzano (2009) stated that the main aim of incorporating strategies in teaching reading, for instance is to influence the learner's linguistic or sociolinguistic competence in a way that assists the learner to select, acquire, organize, or interact with new knowledge.

1.5 Marzano's Instructional Strategies

In response to the needs of incorporating instructional strategies that are supported by research and theory, the work of Marzano, Pickering and Pollock (2001) evolved an aggregation of effective, high-yield instructional strategies that have been recognized as mechanisms of high-quality instruction. The identified nine areas of instructional strategies, which are believed to enhance learning and reinforce students' attainment in all subjects, are based on determining the percentile gain in students' achievement. According to Marzano (2007), effective schools can make a marked advancement in the achievement of students and that one of the most significant factors of increased students' achievement is the classroom instructional strategies. Hereof, the type of instructional strategies a teacher incorporates in the classroom is critically crucial in enhancing students' achievement. On this point, Dean et al. (2012) opined that teachers need to use research-based strategies that can serve as scaffolding tools for understanding, developing and extending knowledge, reflecting on, creating constructive learning environment to help students assess their own learning.

Hill and Miller (2013) planned an outline that serves as a framework of pillars of the larger goals of this aggregation. At its core, this framework is connected to creating an appropriate learning

environment, developing students' understanding and helping students apply and extend knowledge. According to the author's framework, setting objectives and providing feedback, cooperative learning and reinforcing effort and providing recognition are strategies connected to a larger goal of creating a suitable learning environment that supports achieving learning goals and producing better performance outcomes for all students. These strategies are grown in the Motivational and Humanistic theories which suggest that self-motivation and self-determination guide students' behaviors and the choices they make which in turn lead them for mastery of learning (Deci and Ryan 1985; Keller 1987). The second category involves instructional strategies that aim at using questions, cues and graphic organizers, using non-linguistic representations, summarizing and note taking and homework and practice to help students develop understanding. To help students extend knowledge, the framework suggests that the strategies of identifying similarities and differences and generating and testing hypothesis should be employed in instruction. These strategies go genuinely to the heart of Cognitivism and Constructivism which view learning as an active process in which learners become autonomous in forming innovative ideas based on their past and current knowledge (Bruner 1966, Piaget 1936; Vygotsky 1978). The conceptual and theoretical standpoints that Marzano's instructional strategies will be elucidated in the following chapter [2.11].

1.6 Reading Comprehension and Instructional Strategies

Language learning has always been associated with the progress of the four language skills, namely listening, speaking, reading and writing (Rivers 2018). Reading can be defined as a highly strategic process which requires readers to continuously construct meanings that are derived from learners' previous knowledge and the strategies and processes they use (Cook 2016). In a consistent view, Houston et al. (2014) consider reading an extremely complex

process following a consistent pattern of activation of specific parts of the brain and a precise route that cannot be bypassed. In broad terms, the level of understanding learners have of written texts is identified as comprehension and so it is defined as the readers' aptitude to be engaged in diverse mental processes and use different strategies such as activating background knowledge, monitoring and clarifying, making predictions, drawing inferences, asking questions and summarizing, to get the meaning from the text (Mikulecky 2008). At its constructive core, reading comprehension denotes a process of eliciting and constructing meaning through connection of prior knowledge to interact with the written language (Grabe 2009).

In reading comprehension instruction, Willis (2008), in his prominent monograph "*Teaching the brain to read*", argued that when strategies for monitoring students' comprehension, increasing the application of knowledge, and creating purposes for their reading in an appropriate learning environment are utilized, their comprehension augments successfully. That is, to comprehend texts, explicit instructional strategies that build on the learners' linguistic and conceptual understanding should be applied. Nation (2008) also stated that as reading comprehension demands the reader to generate connections with the written text and his previous knowledge, it becomes a complex task that requires a wide range of strategies and techniques on linguistic understanding along with cognitive skills. In this regard, Hebert, Bohaty, Nelson and Brown (2016) illustrated that comprehension skills should be taught and practiced in order to develop students' abilities to understand and interpret information in texts. Thus, strategies that develop these abilities should be aligned to the pedagogical approaches that entail literacy-related and research-based instructional strategies (Marzano & Pickering 2003).

Grabe (2009) and Harvey (2011) opined that the main pedagogical implication in employing research-based instructional strategies towards improvement of reading comprehension is to

teach learners how to construct meanings and motivate them to create their own logical skills and interlinking of thoughts after reading the entire text, which will help students to refine their logical thinking ability. Accordingly, teachers' inclusion of strategies in their instructional practices is anticipated to develop students' reading skills (Wang 2016).

Guthrie and Klauda (2014) stated that the plans employed by the teacher to teach students to make sense of what they are reading are known as instructional strategies which involve explicit explanation, modelling and scaffolding. Haystead and Marzano (2009) maintained that teaching strategies employed in reading build student's background knowledge, which will be of a crucial significance to enhance better comprehension of texts and employ significant strategies such as making predictions and developing inferences (Cook 2016). Cook (2016) further stressed on the importance of using instructional strategies that develop processing of the information in the texts and build readers' capacities to process text, comprehend its meaning and to integrate it with their previous knowledge.

1.7 Concerns on the Reading Skill

Even with the considerable amount of literature highlighting literacy-related and research-based instructional strategies, a noteworthy number of students, in todays' middle and high schools, struggle with the academic literacy tasks (Ness 2016). The students' deficiency of the robust literacy tasks contributes in making them incapable to attain the baseline level of proficiency, particularly in reading (Organization for Economic Co-operation and Development (OECD) 2014).

Among the increasing demands placed on achieving educational targets, reading literacy is essential. In reference to OECD (2015), the worldwide results of students in reading literacy in the Program of International Student Assessment (PISA) show unequivocally that development

in reading literacy performance relies on many factors and it seems biased to refer to one as the sole contributing factor of the improvement. Improving students' cognitive skills, developing students' engagement rates in reading and the instructional strategies used are among these factors (OECD 2015).

Prosaically speaking and irrespective of the contributing reasons of the below-average reading performance of students across the world, instructors maintain that reading is a vital skill that should be reinforced from the early years in any second language-learning academic contexts and thus second language learners need to strive for (Anderson 2005). This notion was evident in many scholars' arguments which demonstrate that nearly all classes involve a reading section of some kind (Grabe 1991) and that having a secure reading aptitude is essential for students' academic success (Harvey 2011). As a key for education and knowledge in general, reading becomes a significant skill in ESL classrooms due to the increasing importance of English as the language of science, technology and advanced research (Grabe & Stoler 2002). Thus, to close the huge gap in the wall of knowledge, reading comprehension instruction becomes a necessity (Al-Jamal, Al- Hawamleh, & Al-Jamal 2013). In the same vein, to help students master this skill optimally, teachers are encouraged to use instructional strategies that have been found to solidify students' comprehension and thereby improve their achievement (Al Husban & Al Khawaldeh 2017; Black 2012; Ganyaupfu 2013; Thomas & Green 2015). To facilitate our understanding of these concerns within the study's context, an overview of background information on the research problem will be described in the following section.

1.8 Background to the Problem

Enhancing quality education and promoting reading proficiency were signified in the development of the MoE Strategic Plan 2017-2021 that encompasses a series of ambitious

proposals designed to improve the quality of education, particularly in teachers' instruction and student learning (MoE 2019). The government initiated the National Policy for reading as an inspiring initiative that aims at cultivating an understanding of the importance of reading within educational contexts. Based on a number of scholars' arguments, Pennington (2016) stated that it becomes critical that students advance high-developed reading skills to enable them to cope with the requirements of academic texts. The author also referred to reports that demonstrate how the insufficient reading aptitude leads to the low levels of critical thinking and other crucial skills needed to accomplish the anticipated academic success of students at both schools and universities. In a report issued by the Arab Thought Institute in 2012, the fifth Arab Report for Cultural Development documented that students in the Arab world typically devote insufficient time for reading while European students read 200 hours a year (Arab Reading Index 2016; Pike 2017).

In light of this lamentable reality, the director general of the Emirates Centre for Strategic Studies and Research report, Dr. Jamal Al Suwaidi indicated that it is disappointing that Arab countries, including the UAE, have become knowledge consumers and that universities in the Arab world are not present in the list of the 100 top universities in the world (Pike 2017).

Based on these reports and in quests to create a generation of lifetime-readers and reinforce the country's position as a universal capital for knowledge, the government declared 2016 the Year of Reading and instructed the authoritative entities to establish a national framework that promotes the reading skill among students in the UAE (Gulf News Report 2015). The framework highlights that the establishment of a knowledge-based economy should be based on science and innovation which necessitates educational stakeholders to nurture a generation of readers in tandem with latest researches and theories. Also, the reading crisis in the Arab region, described

as severe, was cited in many reports which call for an immediate response from all stakeholders and policy makers (Arab Reading Index 2016).

As a part of the Year of Reading initiative and in an attempt to broaden students' intellect and knowledge, the Arab Reading Challenge (ARC) as a literacy initiative was launched in a bid to inspire students to make reading a part of their daily routine (Gulf News Report 2018).

The demands and interests to improve students' academic achievement and thus cultivate learning environments of well-educated students have also augmented the attention of educators in the UAE (Pennington 2017). As a result, the educational systems in the Emirati context have experienced several educational reform movements that have been undertaken over the past few years with the aim of enhancing students' achievement in literacy skills in the English language (ADEK 2018). With the diversity of the population in the UAE, the English language is used as the language of wide-ranging communication. According to Randall and Samimi (2010), English is adopted as the common language among the various nationalities that reside in the UAE, and the English language proficiency is perceived to be essential in educational institutions. Because of such fertile English environment, learners of English have abundant opportunities to practice, experience and cultivate their English language skills.

Despite the tremendous efforts exerted to improve this skill, English language teachers share the common universal experience that the majority of students fail to read adequately, and that improving reading comprehension has been one of their major concerns (O'Sullivan 2014; Pagal Mirafuentes & Ypanto 2017). In addition, numerous concerns about an apparent decline in students' reading competencies have been documented (OECD 2015). Instructors in the UAE also cited that reading is perceived as the skill that has the lowest achievement ranking in many proficiency tests (Traish 2015) and so improving students' reading performance should not only

be a critical aim for instructors (Lane & Hayes 2015), but also a concern for learners including the ones in the public schools in the UAE whose reading performance is below the average and lack many critical reading skills (OECD 2015).

Quite understandably, these results inspired the directors at the MoE to conclude that empowering and supporting teachers to teach effectively is one of the pivotal keys to lead the transformation (Pennington 2016). They demonstrated that if the UAE aims at improving its trajectory, a persistent emphasis on pedagogical strategies will be the blueprint. On this point, Huber and Skedsmo (2016) and Morewood, Ankrum and Bean (2010) stated that as the principal incentive for educational institutions is raising the quality of instruction, which will be realized in marked academic achievement of learners, a growing knowledge base says that not equipping the teachers with the sufficient knowledge, pedagogical methods or instructional strategies would make these essential needs marginalized.

Recently, there has been a noteworthy increase of interest in the use of instructional strategies that affect students' academic achievement in reading comprehension (Thomas & Green 2015). According to Thomas and Green (2015), the recent upsurge of interest in fostering the link between instructional strategies and students' achievement in reading comprehension has been constantly reflected in the visionary aims of many worldwide educational reform movements across the world. As the UAE supervising bodies of education recognize the importance of using instructional strategies to teach literacy skills, they advocate using a number of high-yield instructional strategies as the teachers' formal evaluation in the official performance appraisal system (ADEK 2018).

1.9 Statement of the Problem

Notwithstanding the number of the executed plans and the education reform initiatives to develop students' language skills in the UAE, a large number of students are alarmingly classified as underperforming (OECD 2015). O'Sullivan (2017) further documented that students' performance did not improve as was initially anticipated and that was borne out by the scores of the international assessments. In reference to OECD (2015), students' results in PISA in the UAE demonstrate that students' reading performance is below the average and that they lack many critical reading comprehension skills, such as identifying main ideas and inferring meaning of unknown words. The reading literacy that this assessment measures is how students "apply theory and thinking in answering questions", which are skills Emirati students dramatically lack in comparison to other students' performance in other countries (Sahlberg 2016). Conjointly, a very recent report in a local newspaper conveyed that Grade twelve students' English poor performance in their examinations, reflected in the not promising grades, is an urgent alert for the need of providing guidance and assistance through encouraging teachers to use instructional strategies (Pennington 2017). Likewise, quality improvements in instructional methods that lead to patent students' achievement is considerably vital to help parents change the perspectives they cite on the quality of instruction, in general and the strategies in particular in the UAE public schools (WhichSchoolAdvisor 2013).

Based on these alarming results, it is anticipated that achievement gaps between reform endeavors and students' performance continue to exist and it appears challenging to close these gaps without practical and meaningful implications of the pillars of effective pedagogy (Marzano et al. 2001). Although several instructional strategies are used for identification of teachers' areas in need of instructional improvement in the UAE context, endorsing their impact on students'

achievement in reading comprehension is still sidelined. Significant research has shown that using instructional strategies to aid reading comprehension in L2 has positive effects on students' performance in reading comprehension (Allen, Snow & McNamara 2015; Denton, Wolters, York, Swanson, Kulesz & Francis 2015; Cuticelli, Collier-Meek & Coyne 2016; Harvey 2011; Joseph, Alber-Morgan Cullen & Rouse 2016), however the effect of these instructional research-based strategies on students' achievement in reading comprehension in Arab countries has received little attention (Al Husban & Al Khawaldeh 2017).

The available numerous instructional strategies have been echoed by a framework suggested by Robert Marzano, which has been advocated by several researchers (Hill & Miller 2013). The framework encompasses a selection of nine literacy-related and research-based instructional strategies that efficiently assist students' second language acquisition (SLA) and are confidently associated with students' academic achievement in literacy skills (Al Husban & Al Khawaldeh 2017; Goodwin & Webb 2014; Haystead & Marzano 2009; Thomas & Green 2015). In light of recognition that building learners' capacities is linked to the effectiveness of instructional strategies (Buehl 2017); namely Marzano's instructional strategies, this study was conducted.

1.10 Purpose and Objectives of the Study

Creating a promising foundation to attain idealistic, quality education in ESL, which is a significant pillar of Abu Dhabi Economic Vision 2030 (Abu Dhabi Government 2030), requires promoting students' competencies and abilities in the different literacy skills. This entails establishing learning environments that appreciate employing pedagogical methods that involve research-based instructional strategies. As enhancing students' achievement in literacy skills is one of the topmost items of the UAE educational agenda (ADEK 2018), employing an

aggregation of quality-proven, high-yield instructional strategies and so investigating its impact on students' achievement in reading comprehension was the fundamental aim of this study.

Thus, the purpose of this study is to investigate the impact of Marzano's instructional strategies on grade 10 students' achievement in reading comprehension. It also aims at exploring the perceptions of grade 10 students towards using these strategies in their learning of reading comprehension strategies. Finally, it examines the emerging change, if any that students' gender may have on students' achievement in reading comprehension based on Marzano's instructional strategies.

The purpose of this study has helped shape several research objectives as follows;

1. To analyze the impact of instructional strategies and teachers' practices in reference to the sampling protocol, particularly the proposed professional development training on students' achievement in reading.

2. To analyze the impact of Marzano's instructional strategies on students' achievement in the Emirati context by benchmarking its impacts with international ones.

3. To describe the participants' self-perceptions of the impact of Marzano's instructional strategies on their achievement in the reading tests.

4. To develop an understanding of the relationship between participants' self-perceptions of the impact of Marzano's instructional strategies on their achievement in the reading tests.

5. To explore the impact of participants' gender on their achievement in reading comprehension based on Marzano's instructional strategies.

1.11 Research Hypotheses

As a "tentative" elucidation of the research problem or an "educated guess" about the research results (Gay, Mills and Airsian 2009, p.63), the hypotheses that were tested are;

(H0a): There is no statistically significant differences in students' achievement test scores between tenth-grade students trained using Marzano's instructional strategies and students not trained using Marzano's instructional strategies.

(H0b): There is no statistically significant influence of gender on students' achievement in reading comprehension in response to Marzano's instructional strategies.

1.12 Research questions

To yield deeper insights and comprehensive understanding of impact of Marzano's instructional strategies on grade 10 students' achievement in reading comprehension, the study aims to address the following research questions.

1. What is the impact of Marzano's instructional strategies on grade 10 students' achievement in reading comprehension?

2. Are there any gender-based significant differences in reading comprehension performance in response to Marzano's instructional strategies?

3. What are the students' perceptions towards Marzano's instructional strategies after being instructed and assessed authentically?

1.13 Significance of the Study

As a matter of fact, studies conducted with the aim of facilitating of learning English language skills in general and reading comprehension proficiency in particular are valuable. That is because such studies would consolidate this field by providing insightful information, suggestions and practices that would enhance reading proficiency which is inevitably required for learning the other language skills and to enhance students' academic achievement (Harvey 2011).

More precisely to the UAE educational context, the supervising bodies of education consider proficiency in literacy skills one of the chief items of the UAE educational agenda. However, the unsatisfying academic performance in international exams due to many reasons, in which poor reading comprehension proficiency is among, may create critical achievement gaps (O'Sullivan 2014). Addressing such gaps between the UAE educational reform initiatives and students' performance in reading comprehension becomes essential in a bid to realize the objectives of 2021 vision of the UAE government that aims at creating a world-class education by providing advanced standards of education and enhancing students' literacy. Therefore, obtaining data that may help address the reading comprehension dilemma in the UAE context will be significant to the literature and practice. To the researcher's best knowledge, this study is the first study to investigate in-depth the impact of Marzano's instructional strategies on students' achievement in reading comprehension in the UAE and that a limited number of relevant studies were published in the Arab World. Thus, the novelty of the topic in the UAE context is anticipated to fill the actual knowledge gap in the UAE research literature that fails to investigate the importance of research-based instructional strategies on students' achievement in reading comprehension.

Also, as the intent of this study is to investigate the impact of instructional strategies in the area of reading for students in secondary schools, it will offer some practical insights to the education field, particularly in teaching English as a second language. Hence, the significance stems from its anticipated contribution to the practice in the UAE educational context, which entails using instructional strategies to be tested and operationalized to develop students' achievement in reading comprehension. The findings of this study will be of a great significance to several educational field partners. These include the students in public schools whose reading academic performance in international exams should be supported. English language teachers would also

assist from the proposed practices of these instructional strategies in their reading comprehension instruction and in their evaluation. Moreover, findings may attract the attention of policy makers and curriculum developers by providing them with insights in their pedagogical plans that aim at achieving quality educational system across the emirate of Abu Dhabi (MoE 2019). On a side note, a common consensus among ESL instructors shows that reading and writing skills affect, reinforce and strengthen each other and as such enhancing reading comprehension proficiency will provide learners with ideas and enhance students' writing performance (Graham & Hebert 2010).

Last but not least and theoretically speaking, the findings of the study will help add more validation to the theoretical framework that the variables of the study underlie.

1.14 Definition of Terms

- *Marzano's Instructional strategies* are nine literacy-related and research-based instructional strategies that aim at establishing an appropriate environment for learning, encouraging students to develop understanding and assisting students extend and apply knowledge (Hill & Miller 2013). In the UAE, these strategies have been used as the main rubric of teachers' formal observations in the teachers' performance appraisal system in public schools in Abu Dhabi.

- *Reading comprehension* is a highly complex, dynamic process that consolidates knowledge of language as it involves interaction among words, prior knowledge, and other mental processes (Harvey 2011). In this study, it is defined as using fundamental skills, such as drawing inferences, identifying author's purpose and main idea and knowing meaning of words from their discourse contexts to comprehend the meanings and implications of texts and answer different types of questions on the text.

- *Students' achievement* is defined as the measurement of students' performance in different academic fields using achievement tests (Elyasi 2013). In this study, students' achievement in reading comprehension was measured using a national test that has been developed and administered based on MoE curriculum standards for English language learning in Abu Dhabi in the UAE.

1.15 Structure of the Dissertation

As indicated in the research questions, the study primarily investigates the impact of Marzano's instructional strategies on grade 10 students' achievement in reading comprehension. It also explores the perceptions of grade 10 students towards using these strategies in their learning of reading comprehension. Finally, the study examines the changes that students' gender may have on students' achievement in reading comprehension based on Marzano's instructional strategies, if any.

Chapter one provides an overview of the importance of instructional strategies in general and the research-based ones in particular showcasing concerns over the critical effects of not adopting them in instruction. The chapter also introduces the general world-wide concerns on students' reading achievement. A detailed overview of the study context in reference to English standard that contributes to a better understanding of the phenomenon under investigation is scrutinized.

Chapter two builds on the introduction, in reference to literature in the field, by providing an extensive background on the importance of language learning and the role English language plays in the context of the study. The theoretical and conceptual frameworks for the study are then explored by examining the inter-related aspects of the field of second language acquisition and illustrating the theoretical standpoints of Marzano's instructional strategies and pedagogical and cognitive aspects of the reading skill. Previous empirical studies investigating the impact of

instructional strategies on reading comprehension are then reviewed with an emphasis on Marzano's instructional strategies, highlighting an existing gap in the knowledge base, which prompts the need for this study.

Chapter three provides a description of the methodology and data analysis used in the study. This comprises a detailed description of the context along with an explanation for the chosen research paradigm. An elucidation of the research tools and participants, ethical considerations and quality criteria of the research are presented. The data analysis procedures are outlined in depth. Chapter four presents the findings drawn from the quantitative and qualitative data and retrieved from the field work. Chapter five discusses the findings in relation to relevant literature and delineates the limitations of the study as well as the conclusion and recommendations for future policy and practice.

CHAPTER TWO: Theoretical Framework and Literature Review

2.1 Outline of the Chapter

To comprehensively investigate the impact of Marzano's instructional strategies on students' achievement in reading comprehension, contextualizing the aspects of SLA field becomes indispensable. The first section of this chapter discusses the theoretical perspectives in SLA, particularly in reading comprehension along with the theoretical and conceptual underpinnings of Marzano's instructional strategies. The second part is devoted to critically and thoroughly shed light on the related previous studies that dealt with the study variables in an attempt to fill the research gap in this field.

2.2 Importance of Language Learning

Language has always been a means of communication and unity among people of homogenous nature, despite the differences of color, race, religion or the place of birth (Crystal 2012). Richard and Schmidt (2010) defined language as the system of communication and the expressions of thoughts, either spoken or written, that entails using words in a structured and conventional way. Consistently, Eaton (2010) considered language one of the key factors that distinguishes humans from other creatures by pointing to the undeniable role that language plays on human's developmental process.

As a matter of fact, the significance of language on developing human lives is incomparable. To illustrate its significance, Cook (2016) believed that language is not only a vehicle for carrying out thoughts, perceptions and values but also a representation of a fundamental expression of social identity. She indicated that language aids in developing and grooming one's personality. In the same vein, Green and Evans (2006) alluded that language reflects patterns of thoughts as it

provides a means of encoding and transmitting complex and indirect ideas. They added that language serves both symbolic function and interactive function. The symbolic function is basically to symbolize and represent concepts while the interactive function is using language to facilitate and enrich communication using the language skills. Recently, Rivers (2018) maintained that language is a major human ability or mental faculty used for innovative expression, face-to-face communication, scientific inquiry, and many other purposes. She further added that languages are instruments needed in any social culture as they always seem to associate to the worldly side of human existence and that the aptitude to acquire any language inevitably and effortlessly exists since birth if equipped with the right input by the environment.

Notwithstanding the view that languages are essential elements for human development, it is not true for every language; it is absolutely true for power languages like English, the global language of international communication. Yano (2001) mentioned that English is conventionally considered the international language for one primary reason; the influence of its people, specifically their economic, political and military power. Considering the close link that the English language has in accessing technological information, Bruthiaux (2002) outlined that the array of economic, military, political, and technological aspects led to the worldwide supremacy of English as a language of wider communication. In a consistent view, McKay (2002) indicated that it is not the number of native speakers of English, but the huge number of non-native speakers of English who make it the communicative language both internationally and globally. In addition, it is documented that the English language is one among the dominant languages, or in some instances even the sole required international and global language of communication, science, information technology, business and the first target language required in educational institutions in different contexts around the world (Crystal 2012). In this regard, the role English

language plays internationally makes it deemed to be suitable for teaching and learning and a priority as L2 in educational institutions in many countries around the world (Crystal 2012), including the Arab world (Godwin 2006) like in the educational institutions in the UAE (O'Sullivan 2017).

2.2.1 Language Skills

As illustrated above, the role languages play in humans' lives is immense and so the importance of language learning, as a stepping-stone, cannot be ignored (Rivers 2018). This significant role is identified in the four necessities or four language skills, namely listening, speaking, reading, and writing. According to Nunan (1999), developing learner's language proficiency requires concurrent development in these four language skills. This view was also supported by Rivers (2018) who demonstrated that the integration of language skills in teaching enhances the development of both linguistic and communicative competence. Traditionally, listening and reading are classified as receptive skills while speaking and writing are categorized as productive ones (Rivers 2018). For this study, the focus skill was reading that seemed to be exhausting processes of cognitive operations and interactions between the reader and the texts for most L2 learners in the UAE (Pennington 2017). A delineation of these mental processes and the different components of reading skill will be highlighted in the following sections [2.5].

2.3 Second Language Acquisition Theories

Having recognized the significance of learning languages in establishing, developing and grooming individuals' personalities, thoughts and perceptions, a growing interest in the acquisition of more than L1 has flourished across the world (Crystal 2012; Nation 2000). How people learn their L2 in conjunction with defining the skills it underlines has been a matter of consideration in SLA research (Cook 2010).

Since language learning has a sense of urgency and to understand the implications of teaching English as L2, the theoretical standpoints of SLA should be contextualized through the relevant literature review. As a key focus in this study, the general investigation of the wide-ranging field of SLA aims at revealing how learners' skills, particularly in reading, may be impacted by language learning.

In Ortega's (2009) definition of SLA as an academic field of inquiry that explores the capability of humans to acquire languages additional to the first, it is prevailing that this field supports the theory that life circumstances facilitates SLA learners to learn the additional language abundantly and become linguistically self-reliant in the different situations. By means of having SLA grown from being an interdisciplinary field of linguistics and psychology to an independent discipline, various theories persist to develop (Gass 2013). These theories were developed by scholars of different disciplinary frameworks (Hall & Cook 2012) and are of varying epistemological backgrounds (Larsen-Freeman & Long 2014). The anticipation is that the general analysis of the theoretical perspectives of SLA will uncover how language learning may impact learners' language skills, particularly reading; the key focus of the current investigation.

Due to the complexity of the nature of language and language acquisition and by comparing the most significant linguistic and cognitive approaches to SLA, "a plethora of diverse and seemingly contradictory perspectives continue to generate" and that makes depending on a single SLA theory in researches relatively ineffective (Myles 2013, p.46). Aside from where all the conflicting approaches originate from, the various SLA theories have played diverse revolutionary roles in shaping SLA didactic approaches and enhancing its rationales (Long 2017).

Under the scope of SLA, the theoretical perspectives of some philosophers contributed in the development of other theories and ideas. It can be seen that, for instance, Chomsky (1959) helped to promote a novel way of thinking about SLA by contributing his review of Skinner's (1957) views on the behaviorist perspective of language (cited in Larsen-Freeman & Long 2014). Also, Chomsky impacted Bandura's Social Learning theory in the way that both determine that language is a process developed through interaction and the application of definite cognitive skills (Bandura 1977). With the emergence of the Comprehensible Input Hypothesis that claims that language acquisition occurs when language learners are exposed to adequate input as suggested by Krashen (1981), a novel perspective on SLA is endorsed. Although Krashen's (1981) proposition had a pioneering and predominant influence in SLA field, considering the input to be the main source of acquisition was entirely unsatisfactory and so the Comprehensible Output Hypothesis emerged and contributed in consolidating that both input and output are pillars of learner's comprehension system (Swain 1985, cited in Long 2017). For this study, the measurable difference of students' achievement in the administered reading tests was used as one form of the output.

 Other theories and learning taxonomies apply to the distinct educational levels of SLA. For instance, Bandura's Social Learning Theory (1977) posits that portions of a person's knowledge and comprehension are directly connected to observing and imitating others within the scenario of social interactions. Thus, it explains human behavior in regard to the continual reciprocal interaction between cognitive, behavioral, and environmental effects by bringing forth the effects of attention, memory and motivation on learning. Additionally, how learners understand and perceive reading texts and thus become qualified enough to classify thinking pursuant to cognitive levels of complexity are interpretations of Bloom's Taxonomy (Bloom 1956).

According to the cognitive domain of this taxonomy, the recognition of facts, procedural patterns and concepts assist in enhancing knowledge and the progress in intellectual abilities. These levels of recognition have been revisited, reviewed and changed in some aspects of the cognitive domain by a number of Bloom's students in an attempt to combine all cognitive processes along with the metacognitive level into a matrix of knowledge and cognitive dimensions (Anderson et al. 2001). The influential roles of these theories and models will be further discussed through the lens of Marzano's instructional strategies in the following sections.

These theories have fundamental reflections on teachers' practices in teaching literacy skills, as most, if not all, are integral part of the literary prominent works in the SLA field. As reading has been proven to be one of the most challenging skills in the UAE [1.5], finding factors that affect reading comprehension performance in tests and learners' English Language proficiency levels become significant. In simple words and in Spiro, Bruce and Brewers' (2017) definition of reading comprehension as the most multifaceted skill encompassing semantic, syntactic and phonological processing, versatile and wide-ranging research that shapes SLA evolved (Wagner, Schatschneider & Phythian-Sence 2009). Under the scope of reading, contemporary reading theories are in accordance with the philosophies of psycholinguistic, sociolinguistic, and cognitive theories (Spiro et al. 2009).

Considerable amount of studies postulated that several factors are pertinent to affect students' achievement in reading comprehension and this will be discussed later in the study [2.6; 2.7]. By far, literature review revealed different perspectives on the role of such factors on students' achievement and as such several inherent, challenges and disputable views complicate the SLA field.

One important aspect of SLA that touches upon this investigation is the use of effective instructional strategies that scaffold literacy skills and promote language acquisition and content comprehension. As Goodwin and Webb (2014) pointed out, a teacher's lack of knowledge on research-based strategies deprives students from paths of active learning needed to scaffold their reading comprehension acquisition. This perception is pertained by different theorists in which their views will be discussed in the following sections. As a side note, the implications of the theoretical works described above establish a secure foundation for new possibilities for SLA. Positively, they denote and call for enriching this field and ensuring a successful learning experience, by new experiments based on their theories (Larsen-Freeman & Long 2014).

 According to Hernandez-Laboy (2009), teaching reading in the last decade was based on using the conventional methods with no considerable attention paid to comprehension. Elgort, Brysbaert, Stevens and Van Assche (2017) further explained the considerable transformation on views of reading comprehension during the past decades because of the cognitive theories that have influenced how students are taught to construct meaning and interact with texts while reading. Understanding the relative, internal linguistic and cognitive processes while reading facilitates SLA and endorses a better standpoint of the reading elements of language and perspectives of the role of instructional strategies on reading comprehension (Spiro et al. 2017). Hickock (2014) illustrated that the cognitive processes along with the mental structures associated with the acquisition, comprehension, production and use of language is the study of the psycholinguistics, and so understanding how reading comprehension was developed from the psycholinguistics field along with the cognitive processes of language learning seems instrumental for this study.

2.4 Psycholinguistics in Second Language Acquisition

Beginning in the late 1950s as an interdisciplinary field that was most vividly supported by the ground-breaking work of Chomsky in linguistics (Larsen-Freeman & Long 2014) and has been investigated by researchers from different schools of scholars, psycholinguistics "inevitably intersects with psychology, linguistics, philosophy, education and other disciplines" (Steinberg, Nagata & Aline 2013, p. 17). This field emphasizes the psychological and neurobiological aspects that primarily assert processes of language acquisition, language comprehension and language production (Perfetti, Dyke & Hart 2001).

According to Goodman (1988, p.11), reading is defined as "a receptive, psycholinguistic language process" that begins with encoding a linguistic representation and ends with constructing meanings. Simply put, reading from a psycholinguistic standpoint signifies an application of learner's cognitive and linguistic aptitude (Goodman 1988). Ideally, to enable readers to decode the thoughts that the writer encoded into a language source and comprehend those thoughts efficiently, learners should practice reading strategies like making inferences and drawing conclusion. Therefore, it is anticipated that if learners do not activate such strategies while reading, learners' decoding of thoughts may be negatively affected leading to problems in comprehension (Grabe 1991). The effect of these problems is anticipated to be increased for SLA readers, who may find decoding challenging due to their limited proficiency in vocabulary (Nation 2001), for instance.

Using the conception that describes reading as a psycholinguistic guessing game, Goodman (2014) demonstrated that reading is a process that comprises partial use of linguistic cues that readers select from their perceptual input. As reading progresses, readers process these cues to confirm, reject or refine their expectations in a pursuit to attain comprehensible input and textual

explanation (Long 1996). Goodman (1988) stated that as reading encompasses an interplay between thought and language, efficient reading results from anticipation and selection of the most significant cues that produce the expected comprehension. He added that as learners need to play this psycholinguistic game to develop their reading abilities, effective methods and productive instructional strategies should be applied to help learners succeed in this process.

Similarly, Steinberg et al. (2013) claimed that language and thought are two individual components of cognitive processes and interaction between these components supports readers in accessing the comprehensible input leading to comprehensible output, and that is the pillar of students' achievement in the administered reading tests in this study. Undeniably, the association between thought and language seems instrumental in this study since it is a vital feature of language acquisition as it scrutinizes the brains' cognitive processes while generating and comprehending both written and spoken discourse (Hicock 2014).

In this study, it can be reasonably assumed that using Marzano's instructional strategies in teaching reading may stimulate the interaction between thought and language, which in turn activate internal cognitive processes and information processing mechanisms, that can affect the key components of the actual behaviour of language users (Haystead & Marzano 2009).

2.4.1 Language Learning Information Processing System

One of the most significant concerns for most ESL teachers is the rate at which students learn L2 (Myles 2011). Additionally, understanding how learners learn may contribute to assist them to learn more efficiently and quickly. These ideations are relevant to this particular investigation as improving students' reading performance in tests is not only a critical aim for instructors but also a concern for learners whose performance in reading in the international assessments reported that they do not attain the baseline level of proficiency (OECD 2015).

From a cognitive perspective, the brain's capability to associate new input with previously stored information may impact language learning (Harely 2008). Developmental psychologists, who advocate the information-processing standpoint, elucidate the mental development of learners' minds (Allen et al. 2015). They describe human minds as computers or information processors, which process information in segments and chunks, that make more effective usage of short-term memory information. This process will eventually lead to storing strings of information in the long-term memory, mitigating the cognitive load on the brain, and reinforcing comprehension. This corresponds with the "*Information Processing Theory*' which has developed its models over the years and focused on aspects of memory encoding and retrieval.

Investigations of the information processing system show that the strain on the working-memory competency leaves a confined space for knowledge acquisition (Lutz & Huitt 2003). To illustrate this, some readers have the ability to recognize specific words in classroom contexts only rather than understanding their meanings outside the setting of the word's classroom use. This touches on the implications of using instructional strategies that foster deep approaches to learning needed to positively affect learners' output. Also, the information processing system that links background knowledge and comprehension strategies plays a vital role in scaffolding L2 learning (Gass 2013). Therefore, to help construct the intended meaning of the text, a coordination of numerous associated sources of information and an application of a number of strategies that involve the dynamic comparing of information to their prior knowledge and experiences becomes a precondition in the reading process. Also seen from the lens of the interactive model of reading, this concern is congruent with the scope of the study since students' reading performance in the Emirati context is below the average and the "not promising performance" is an alert for language instructors to incorporate instructional strategies that lead to patent students'

achievement (Pennington 2017). This can be also associated with the aspects of Schema theory in terms of reading (Rumelhart 1980). Since this theory addresses the association between the learner's prior knowledge and the way they understand the text, it should be addressed in this study.

2.4.2 Schema Theory

Numerous influential ways have been proposed to define schema. It can be rightly claimed that most of these cognitive definitions considerably originate from the landmark book of Bartlett (1932) who presented this theory as the foundation for cognition and information processing in reading. As such, this theory has been addressed by linguists, cognitive psychologists and psycholinguists to highlight the interaction of major factors unlocking the comprehension process.

Bartlett (1932, p.201) defined schema as "active organizations of past reactions, or of past experiences which should be operating in any well-adapted organic response". In simple terms, these systematic responses and actions occur because they are associated with prior knowledge and experiences that have been successively and sensibly organized to comprehend the big picture. The concept of Schema theory was opined by Rumelhart (1980) who proposed that all knowledge is structured into units or schemata that store information and thus the theory is essentially a mental representation and usage of knowledge in the mind. In the same vein, Widdowson (1983 cited in Al Issa 2006) conveyed that this theory represents the cognitive paradigms that consider the structure of information in a long-term memory. In a nutshell, all these definitions lead to conclude that schema is an abstract organization of information that encompasses the previous knowledge obtained through experiences stored in learner's mind.

According to Carrell (1984), schema can be categorized into three forms; namely Linguistic schema, Content schema and Formal schema. Linguistic schema denotes readers' previous linguistic proficiency, comprising the knowledge on phonetics, syntax and idioms. On this point, he pointed that accumulated linguistic knowledge for L2 readers is indispensable in text decoding and comprehension. For most students, the inadequate vocabulary and syntactic proficiency hinder their ability to decode the grammatical structures and the lexical items while reading and this affects their scope of their knowledge of the language (Eskey 1988). Adopting this theory in classes can be advantageous for the students in the UAE, whose reading results in PISA were below the average (OECD 2015). As such, reading strategies cannot function efficiently if students do not have basic language knowledge, and, therefore if readers have more language schemata in their mind, they may acquire more information from the text, and thus develop to be more effective readers.

In the words of Carrel and Eisterhold (1983, p.80), Content schema is the "background knowledge of the content area of the text". It encompasses conceptual knowledge, cultural knowledge and prior experience that are relative to the text's content domain. Content schema fundamentally determines the reader's understanding of the text since generating comprehension occurs as a product of the text's interpretation in its cultural context (Carrel & Eisterhold 1983). To some extent, this type may assist learners in the context of this study; including the ones with low language proficiency, in comprehension of the text by fostering reading skills like making predictions and draw conclusions (Mahdavi & Tensfeldt 2013).

Formal schema encompasses background knowledge as it is associated with the formal, rhetorical and organizational frameworks of texts (Carrell, Devine & Eskey 1988). The authors alluded that as formal schema comprises of encoded and coherent patterns of meta-linguistic and

textual structures, it is considered a guidance for the reader to meaningfully understand pieces of language and thus acquire knowledge of the various text genres and their corresponding structural organization.

The way the schema categories interact to yield textual comprehension and how relatively significant each one is in the process of comprehension has been investigated in many studies (Clark 1990; Reves 1993 cited in Zhao & Zhu 2012). These studies reveal that the significance of the Schema theory to reading comprehension is grounded in the way readers utilize schemata and that some mechanism triggers schemata most associated to the reader's task. The investigators concluded that although some types are more pivotal for the ultimate comprehension of the text than others, readers who effectively activate all three schemata in the course of reading are the more proficient readers (several studies cited in Al Issa 2006 and Zhao & Zhul 2012). Rumelhart (1980) highlighted the importance of the Schema theory to reading comprehension from different perspectives. From a cognitive standpoint that is relevant to the variables of this study, schemata are identified as abstract knowledge frameworks that may be used in solving problems. This considers that such knowledge frameworks are stored in learners' memory and their implications help readers automatically access that knowledge. In reading, comprehension of the message of a given text is based on obtaining information from the reconciliation of the external graphic representation; such as word recognition and the internal schemata into generating a new schema. Therefore, the interactive process when readers efficiently link the information printed on page to the compatible, stored background knowledge is termed as comprehension (Rumelhart 1980). It is significant to mention that the role this theory plays in reading presents a very effective way to develop and advance UAE students' reading competencies and skills required in mastering literacy skills needed to enhance their

educational attainment in English. To efficiently address its role in ESL classrooms, teachers should be informed how to deal with some potential problems that may face students. According to Marzano et al. (2001), schemata are the packets that store and organize knowledge. Therefore, students' inability to access the suitable schema for comprehending ideas in the text or that they do not possess adequate schema to approach the text may result in attainment and performance problems. The authors maintained that the "one shot" instruction will not help develop students' schema, however repeated exposure and application of diverse instructional strategies and activities that cater for students' linguistic competencies will reduce the strain on the working-memory capacity and also develop domain-specific schemata and abilities to comprehend ideas in the text. However, Marhaeni (2016) claimed that the meaning of a text is not confined exclusively in the text, but it is the interaction between the reader and the literary text that yields meaning and that is the core of the Transactional Theory.

2.4.3 Transactional Theory

In her arguments that a kind of "reciprocal, mutually defining interaction" exists between the reader and the text, the strategy of instruction signifies the 'Transactional theory' (Rosenblatt 1988, cited in Marhaeni 2016, p.207). Rosenblatt (1988) indicated that reading is described as a transaction that generates comprehension between the text and the reader. As such, formation of meaningful understanding of the text occurs through that continuous transaction of "employing the meaning potential of the text and the reader's experiential reservoir" (Mateos, Solé, Martín, Castells, Cuevas & Gonzalez Lamas 2016, p.234). That interplay was described by Rosenblatt (1988) as cited in Mateos et al. (2016) as an interactive process in which the reader becomes active in selecting and incorporating the possible meaning in his reservoir. Then, the text contributes to the construction of the reader's selection and thus he formulates premises that

create comprehension. Rosenblatt (1988, cited in Marhaeni 2016) further illustrated that this kind of interplay fundamentally emphasizes the role of the reader as an active individual who is required to reflect upon, acknowledge and investigate the ideas the text evokes. The role commences with relating what he reads to prior experience. This experience, upon which comprehension of the text is created, involves the reader's background, the emotions, reflections, and any other associations elicited by reading. This is consistent with the arguments of Marzano et al. (2001) that illustrate how students import diverse schemata inferred from their individual experiences and cultural background to the learning task. Having accessed these schemata and by employing skills like inferring and predicting, students will then become able to generate numerous ideas on the meaning of the ideas in the text and these ideas will eventually develop into a framework for supplementary comprehension (Rosenblatt 1988 cited in Marhaeni 2016).

2.5 Theoretical Standpoints of Reading

The notion that reading is a foundational skill for ESL was evident in many scholars' arguments, which demonstrate that nearly all classes involve a reading section of some kind (Grabe 1991) and that having a secure reading aptitude is vital for students' academic success (Harvey 2011). For this particular study, this fundamental ability is significant since improving students' performance in reading is not only a critical aim for instructors (Lane & Hayes 2015), but also a concern for learners in the UAE public schools whose reading performance is below the average and lack many critical reading skills (OECD 2015).

It has been well demonstrated that reading in L2 is an exhausting task for most second language learners (studies cited in AlKialbi 2015). Since no two readers approach or comprehend a written text in precisely the exact way, reading comprehension is typically considered to be of an extremely individual nature. Nonetheless, there are wide-ranging aspects that have an influence

on reading comprehension, such as the instructional strategies and prior knowledge (Grabe & Stoller 2002).

Psychologists have discerned two types of processing that are associated with the reading process and numerous other cognitive tasks (Houston et al. 2014). Carrell et al. (1988, p.2) considered the reading process a method of "reconstructing the author's intended meaning via recognition of the printed letters and words, and building up a meaning' using the phoneme, syllables into words". As such, reading is viewed as a linear process that ultimately develops into comprehension of words, sentences, paragraphs and eventually longer discourse using models of reading (Long & Adamson 2012).

2.5.1 Models of Reading

Traditionally, reading is regarded as a bottom-up decoding process in which the meaning is embodied, and the reader can extract and comprehend it from the smallest elements at the bottom; i.e. letters and words (Goodman 1988). As an important goal to achieve in this model of reading, the meaning of the text is retrieved by the reader's prior knowledge of semantic, syntactic and discourse elements. That is, the comprehension process is actively controlled by the reader and starts in the reader's mind with meaning-driven procedures, or predictions about the meanings and interpretations of the text. Goodman (1988) additionally pointed out that when the reader recognizes these written letters and words and builds up meanings to the bigger elements at the top; i.e. phrases and clauses, reading becomes a decoding process.

Supporters of the bottom-up standpoint claimed that using this approach facilitates leaners' understanding of the linguistic elements of the text and that will enable them to understand the textual and pragmatic aspects. In addition, advocates consider this approach intriguing and valuable in the way it enhances the endorsement of comprehension at diverse, identifiable

intervals rather than relying on comprehension of general, abstract concepts that may impede the process of comprehension (Guidi 2012). Although this model helps students construct the author's intended meaning and memorize new words and phrases, it does not identify the apparatuses the reader used to produce interpretations or how the mental composition of comprehension operated, as such learning such details becomes confined.

In a different vein, a more constructive top-down model that addresses the learner's background knowledge is believed to play a more consolidating role in reading comprehension (Anderson 1999). Anderson (1999) alluded that as this model activates learner's prior knowledge and requires them to make connections; it scaffolds critical reading comprehension skills such as making predictions. Using the bottom-up method facilitates the decoding process that learners need to examine the incomprehensible input. This will enhance their capacities in using ways, such as using definitions for the new words to decode the input and make it understandable. However, there are numerous difficulties learners may encounter when reading in L2. Advocates of the bottom-up theoretical view of SLA demonstrate that learners, if not guided to use ways of decoding the input, will depend on their previous background knowledge that will lead to considerable misperception and extensive incomprehensible input (Long & Adamson 2012). Thus, it is anticipated that without substantial comprehensible input, the comprehensible output may noticeably decline resulting in using incorrect language and consequently low performance in reading exams. To a great extent, this is closely related to the problem ESL teachers face with students in the context of this study whose reading results in PISA were below the average (OECD 2015). Proponents of the top-down approach argue in support of the perspective that reading is a more holistic skill and thus oppose the notion that defining all unfamiliar words is not essential (Anderson 1999). Claiming that the bottom-up approach may preclude learners'

development in SLA, the top-down approach, as being prevalent while teaching reading, aims at indulging learners in constructing meaning using authentic reading tasks.

From a psycholinguistic view, reading is perceived as complicated procedures of information processing; using the content and formal schemata, rather than only procedures of decoding unfamiliar words (Anderson 2005). To illustrate this, a foundational work in reading psychology undertaken by Raynor and Pollatsek (1989) indicated that neither the top-down nor the bottom-up approaches in isolation can elucidate the reading process. Consequently, synthesizing aspects of both top-down and bottom-up models portrays the progressive and simultaneous processes that contribute to generating a comprehensive and interactive model for construction of meaning of the texts (Rumelhart 1977). Rumelhart (1977) explained that this model is based on the fact that meaning of the text is an association between the text and the reader's interpretation. Accordingly, reading requires an interaction between the text and the reader's mind that allows for extracting meaning and making inferences of the intended meaning of the text. As a reforming model of top-down and bottom-up models of reading, Cain and Oakhill (2006) maintained that comprehending the written text starts in the short-term memory that processes and stores the information of the text. Then, by activating reader's world knowledge, the knowledge will be stored in the long-term memory where the meaning will be extracted. In this ideation, different theories that involve coordination between language and thought are brought forth which were discussed in previous sections [2.3.1-2.3.2]. Hence, this model is considered the most applicable in reading instruction in view of reading skill as an active process that should enhance the psycholinguistic and sociolinguistic approaches of reading (Eskey 1988). In this regard, Mikulecky (2008) demonstrated that the process that readers compare what they encounter in a text to match the information they know is known as comprehension. He

explained that comprehension triggers the reacquired knowledge and stimulates many predictions about the content of the text until a certain satisfying probability matches the data and a schema.

2.6 Cognitive and Pedagogical Concerns

To describe how the information processing system as echoed in the Schema theory and Transactional theory affects learning, understanding the relative cognitive process seems vital. Understanding the relationship between the cognitive process and the different significant aspects of SLA, including decoding and scaffolding with instructional strategies, can assist in introducing students to this field more effectively (Polse & Reilly 2015). The importance of employing instructional strategies as cognitive tools to facilitate L2 learning has been the focus of many researchers. For instance, Al Husban and Al Khawaldeh (2017); Black (2012); Carrell et al. (1988); Ganyaupfu (2013); Green and Thomas (2015) and Shihab (2011) described reading as a set of processes that involve complex mental operations and several components along with knowledge of the linguistic and rhetorical structures. The following section delineates these mental operations within the detailed process of reading.

2.6.1 Cognitive Processes in Reading

At its core, reading is an extremely complex process following a consistent pattern of activation of specific parts of the brain and a precise route that cannot be bypassed (Houston et al. 2014). The level of understanding of written texts that learners have is identified as comprehension (Mikulecky 2008). Although processing information in the brain is very structured, research has revealed that when attempting to read and comprehend, some readers may have a number of neurological disorganizations and that neocortex engages in processing meanings of the text being read (Harley 2008). Previous research has proposed numerous models of reading which all

demonstrated that skilled reading entails the mastery and integration of various levels of cognitive processing (Polse & Reilly 2015).

As reading has been mentally visualized as a bi-directional interactive process that involves both the reader and the text, numerous types of cognitive processes occur which relate to reading development of English and prove their efficiency as mechanisms of general reading instruction (Roman, Kirby, Parrila, Wade-Woolley & Deacon 2009). In other words, understanding a text is a complex task that encompasses a number of diverse, yet interrelated processes that lead along with the features of the text to comprehension. According to Roman et al. (2009), research has proposed a number of variables that are involved in reading comprehension. The semantic processing and metacognitive awareness are the main, relevant variables to the scope of this study.

2.6.1.1 Semantic Processing

Semantic processing is a cognitive ability that is associated with vocabulary knowledge, comprehending the meaning of a word, and knowledge on how to use words and meanings in context (Smith 2004). This type of processing is considered a type of deep-leveled processing that entails an elaboration rehearsal to present more meaningful, elaborate analysis of information that contributes in better retention, encoding and recall. Thus, vocabulary knowledge is a vital determinant in reading comprehension proficiency. According to Cain and Oakhill (2011), a kind of reciprocal relation between comprehension and vocabulary has been found. That is, reading impacts vocabulary development and that lack of breadth of vocabulary and limited vocabulary knowledge negatively affect reading comprehension and academic performance.

Perfetti et al. (2001) explained that elaborative encoding plays a significant role in enriching the memory demonstrations by activating numerous aspects of an item and matching it with pre-existing network of semantic links. This is closely related to the point raised by Marzano et al. (2007) that the effective use of instructional strategies amplifies learners' recall and retention skills and fosters their ability to understand connotations outside the educational environment. Similarly, Polse and Reilly (2015) claimed that as reading encompasses extracting meaning from printed texts, semantic processing becomes a vital and automatic element of skilled word reading that significantly triggers deep processing. This again brings up implications of using instructional strategies that foster deep approaches to learning which may be determining factors of students' performance in the tests in this study.

2.6.1.2 Metacognitive Reading Strategy Awareness

According to Carrell (1998 cited in Wilson & Conyers 2016), reading is a cognitive and metacognitive process. The cognitive approach denotes the thoughtful strategies that readers employ to understand the reading passages while the metacognitive approach emphasizes monitoring and regulative mechanisms and strategies that readers consciously employ to improve comprehension. To help readers become more proficient and autonomous, developing their metacognitive awareness is considered extremely crucial (Wilson & Conyers 2016). The authors maintained that this awareness involves all planned, purposeful and future-oriented mental processes and behaviors that aim at helping readers regulate and accomplish different cognitive tasks. As a result, the knowledge of cognition should be considered in ESL classrooms because it involves higher-order performance methods that denote "planning, monitoring and evaluating the success of a learning activity" and facilitate more learning and developed performance (Pressley & Afflerbach 1995 cited in Memiş & Bozkurt 2013, p. 24). According to Memiş and Bozkurt (2013), the positive association between metacognitive knowledge and

reading achievement has been demonstrated in several studies. The authors claimed that using metacognitive strategies enhances students' abilities to organize ideas and develops their problem-solving skills; and as a result, their reading performance in tests will be positively affected.

From the above discussion, it can be concluded that the above factors affecting reading comprehension along with activating prior knowledge and using comprehension strategies are interrelated and are believed to be strong contributors in students' reading ability and that any deficiency in these variables may impede reading comprehension. A number of comprehension strategies will be outlined in the next section.

2.7 Reading Comprehension Strategies

The following section illustrates several comprehension strategies that research has shown to be efficient in developing students' comprehension of texts. These strategies were identified by the National Reading Panel (NRP) report (2000) and outlined in the Scope and Sequence of Learning Outcomes Framework of English language in the UAE (MoE 2019) as beneficial to teach to developing readers. In reference to Duke and Pearson (2008), these strategies should be explained and modelled and then emphasized in shared, guided and independent reading. The authors noted that the usefulness of these strategies is not restricted to a specific age group.

2.7.1 Prediction

As this strategy entails a number of structured tasks and activities, such as activating and capitalizing on student's prior knowledge and previewing and aims at facilitating students' comprehension of ideas in the text, it is conceived as a family of strategies (Duke & Pearson 2008). According to Anderson (1999), these activities are reflections of the Schema theory, which serves as the bridge between the known and the new knowledge. Duke and Pearson (2008)

claimed that although employing prediction strategy is clearly directed towards narrative texts, making expectations on both narrative and expository texts can be linked to Marzano's instructional strategy of testing hypothesis. In reference to Hansen's work (1981) and McGinley and Denner's (1987) prominent experimental study (cited in Duke and Pearson 2008), encouraging students to generate expectations based on their own experiences in similar situations triggers deeper comprehension.

Allen et al. (2015) demonstrated that explicit efforts to advance students' abilities and engage them in prediction activities are effective in enhancing students' interest and working memory attention and that will help them adapt tasks like retrieval, comprehension and knowledge utilization (LaRusso, Kim, Selman, Uccelli, Dawson, Jones, Donovan & Snow 2016). LaRusso et al. (2016) concluded that the prediction activities enhanced the overall understanding especially if the predictions are explicitly compared to text ideas using compare and contrast graphic organizers. That is consistent with identifying similarities and differences instructional strategy which is considered a central groundwork of instruction and the fundamental procedure to students' intellectual development (Marzano et al. 2001).

2.7.2 Visual representations of text

When it comes to comprehension, using a visual display helps readers comprehend, organize, and elicit ideas of the verbal, abstract texts (Duke and Pearson 2008). The authors suggested many devices that teachers can use to aid in comprehension and recall and enhance knowledge of text structure and vocabulary acquisition. These include semantic webs and maps, graphic summaries, spider webs, concept maps, drawings, charts, thinking maps, storyboards, foldables and act out content. In this respect, Marzano's instructional strategies call for encouraging students to store knowledge in both; the linguistic and nonlinguistic forms (Dean at al. 2012). As

such, to reinforce students' abilities to think about, recall and elaborate on the knowledge along with the kind of instruction and consistent guidance using compelling feedback, using this strategy to type of re-presenting knowledge assists students in their learning (Duke and Pearson 2008). Providing feedback that this strategy involves is one of the effective instructional strategies that provides evidence of student learning and impacts students' performance (Marzano et al. 2001).

2.7.3 Summarization

Teaching learners to summarize the texts they are reading is a significant technique to improve the overall comprehension of what they are reading (Duke & Pearson 2008). The authors cited many researches that describe this strategy as a synthetic activity that requires students to possess skills to examine and analyze large units of text in order to discern the significant from insignificant ideas and so synthesize the important ideas and create a new a coherent text. Enhancing this reading strategy in reference to Marzano's instructional strategies is considered an essential approach that facilitates deeper understanding of academic content (Denton et al. 2015).

Research shows that this strategy can be a difficult task for many students. Thus, it is important that teachers effectively model this strategy and provide students with sufficient practice before they require them to produce oral and written summaries of the texts (Dean & Pearson 2008). The authors added that the importance of instruction in summarization is twofold. First, it improves students' ability to summarize and can be also considered a technique to advance their capacity to recall and comprehend reading passages.

2.7.4 Questioning

No comprehension activity has an effective impact on reinforcing higher levels of critical thinking skills than asking students before, during, and after reading questions about the text (Durkin 1978 cited in Dean & Pearson 2008). In reference to many studies that Dean and Pearson (2008) consulted, asking different types of questions improves students' comprehension and recall of text. As a side note, Shaunessy-Dedrick Evans, Ferron and Lindo (2015) stressed on the importance of encouraging students to generate their own questions about the text. They explained that increasing students' responsibility for the question generation promotes a sense of efficacy and confidence in their abilities in the learning process. This is in correspondence with Marzano's instructional strategy that emphasized the importance of using analytical and inferential questions to activate and relate students' prior knowledge to new knowledge. The next section illustrates the different levels of comprehension questions that students should be exposed to and how teachers need to employ the appropriate questioning technique to enable students to become active participants in the learning process.

2.8 Levels of Reading Comprehension

In constructing the meaning of a text, readers may engage in several forms or levels of thinking. Known as the Barrett Taxonomy of Reading Comprehension (1968 cited in Richards & Schmidt 2010), these levels guide teachers to develop and use different questions and questioning techniques that aim at helping teachers evaluate students' levels of comprehension while reading. Literature has identified five levels of questions that are categorized according to their degree of complexity; namely literal comprehension, reorganization, inferential comprehension, evaluation, and appreciation. For the purposes of this study, two levels; literal comprehension level and inferential and interpretive comprehension level will be described.

2.8.1 Literal Comprehension Level

According to Barrett, the questions in this level represent the lowest level of the taxonomy. It has been reported that most students can answer these questions since they determine the students' knowledge and understanding of the factual information presented directly in the text. Additionally, they are considered important to stimulate students' interest in reading texts and different levels of thinking (Smith 2001). Richards and Schmidt (2010) stated that the types of questions in this level include recognition or recall of details, recognition or recall of the main idea of the text, recognition or recall skills. Recognition is about "requiring students to locate or identify information directly stated in the reading passages while recall requires students to produce from memory ideas directly stated in the text" (Richards & Schmidt 2010, p.652). Therefore, the focus on recognition or recall of sequences, recognition or recall of cause-and-effect relationships and recognition or recall of character traits. This level typically includes who, what, when and where questions. Research shows that depending only on literal comprehension level questions in tests deprives students from opportunities to develop their creative and critical thinking (Hussin 2010; Nuryani, Tarjana & Hersulastuti 2018). Therefore, it is suggested that reading comprehension tests include different types of questions to ensure that students operate beyond this level of comprehension, which in turn will develop and improve their knowledge and cognitive abilities.

2.8.2 Inferential and Interpretive Comprehension Level

The questions of this level require a higher-level thinking and processing skills. At this level, students are required to make inferences that encourage them to go beyond the information directly stated in the text and compare and contrast between these ideas and the readers' background knowledge. Also, these questions are described as thought-provoking and as such

require broad knowledge and extensive vocabulary words that will help students to synthesize, deduce, reason and conclude (Richards & Schmidt 2010). According to Richards and Schmidt (2010, p.656), this level will require students to "find information, which is not explicitly stated in a passage, using readers' experiences and intuition". This level includes; "how", "why" and "what if" questions generated to stimulate conjectures and hypotheses. As such, questions will typically entail inferring about figurative language, predicting outcomes, inferring character traits, inferring cause-and-effect relationships, inferring main and supporting details, inferring comparisons and inferring sequences.

The other levels of comprehension focus on different levels of thinking. For instance, the questions of the reorganization level help students understand words and the organization and relationships between ideas. The evaluative and appreciation levels signify higher levels of thinking of the taxonomy that encourage readers to think more critically to solve problems and inspire discussion. According to the English Language Assessment framework in the UAE published by the MoE (2019), the last two levels are not typically included in the tests, but rather applied in project tasks. These levels, however were not in the scope of the intervention in this study.

2.9 Language Teaching Methods and Approaches

The components involved in each language skill that dominated the educational focus of the era resulted, in most cases, in the selection of language teaching method to be applied in language classroom (Rivers 2018). Rivers (2018) maintained that methods serve as the guiding framework of philosophies or approaches or pedagogical tools that instructors employ in the classrooms. Research in this field has documented using a number of influential pedagogical tools in ESL domain, namely the Grammar Translation Method (GTM), the Direct Method (DM), the Audio-

Lingual Method (ALM), and the Communicative Approach (CA). The practice of teaching reading in L2 contexts has been a priority in learning and one of the primary goals of the GTM. This method, which was internationally adopted before the 19th century, emphasized teaching learners how to read genres of literature in Greek and Latin languages. Traish (2016) reported that this method was used to teach vocabulary in the UAE context and that learners were required to memorize word lists to enhance their performance in assessment. However, with the diversity of population in the UAE, this method seems to be ineffective in inducing fundamental, desirable changes in the learners' linguistic competencies and performance in tests. Due to the problems it posed and as a reaction against the GTM, the DM evolved. According to Larsen-Freeman and Marti (2011), this method gives importance to the spoken language with reading and writing as its secondary aims. Although the skills of writing and reading are not neglected in the ALM, the style of teaching emphasizes the listening and speaking skills. On the other hand, the successful learning of languages in reference to the CA derives from communicating real meaning. As such, students will use their natural strategies for language acquisition when they are involved in real communication, which will eventually facilitate their learning to use the language in reading comprehension (Rivers 2018).

As methods used in teaching reading are considered plans for presenting the language material to be learned, instructional strategies that consider the purposes of teaching and learning, the kinds of activities to be completed and the roles of students and teachers should be adopted (Marzano et al. 2001). To better understand the nature and objectives of the instructional strategies in reading comprehension instruction, understanding the pedagogical practices in reading skill is essential.

2.10 Pedagogical Practices in Reading

Since learning to read is not an instinctive method, numerous changes have occurred in the pedagogical practices used in teaching reading (Roskos & Neuman 2014). In pursuit of effective pedagogy, scholars indicate that effective teaching is a combination of research-based instructional strategies along with deep knowledge of students' needs (Al Husban & Al Khawaldeh 2017; Black 2012; Carrell et al. 1988; Ganyaupfu 2013; Green & Thomas 2015; Stronge 2018).

The historical journey of the leading reading pedagogical practices characterizes how reading was defined throughout history along with the teaching models used to add comprehension to pedagogies. For example, Grabe (2009) illustrated that in the early 1900s, reading instruction was based on the Alphabetical approach, which required students to pronounce words without comprehension and teachers typically provided the suitable phonics drill and practice. Coinciding with the scientific guidance teachers received to promote reading instruction in the 1950s, Balanced Literacy approach became the framework for literacy instruction in the twenty-first century. This curricular approach encompasses the use of authentic texts and explicit skill instruction to make students involved in meaningful practices (Pressley 2006). The type of instruction in this approach combines phonics and whole language instruction with the use of numerous methods of assessing reading.

In order to promote levels of literacy in balanced classrooms, researchers have suggested a number of pedagogical strategies of instruction; mainly the read aloud, guided reading, shared reading and independent reading (Guthrie & Klauda 2014).

Reading aloud is one of the common practices in a balanced literacy environment. This strategy aims at building many vital foundational skills, introducing vocabulary, providing a model and

engaging learners in the literacy process, which all in turn enhance reading comprehension (Grabe 2009). In this strategy, as students follow the text that the teacher reads, they become competent in building on larger meaningful segments and developing satisfactory levels of fluency, accuracy, and intonation.

Guided reading is another important research-based strategy that is also characterized as an element in balanced literacy classrooms. Grabe (2009) described this practice as the best one that works very well with all readers; skilled or struggling to achieve many purposes. These include catering for students' diversity and meeting their diverse instructional needs, empowering and expanding their reading capacities, constructing meaning and enhancing students' abilities to read complex texts with understanding and fluency (Roskos & Neuman 2014; Duke & Pearson 2008). Through this instructional strategy, teachers develop students' fundamental skills by working with a relatively small group of learners, who demonstrate similar reading levels, and selecting appropriate materials that match their abilities and levels.

Shared reading is an interactive, instructional strategy that is purported to develop comprehension by assisting learners in making connections between prior knowledge and new knowledge and learning critical concepts (Grabe 2009). This strategy provides teachers with constructive opportunities of modeling the fundamental reading skills to familiarize students with different genres. Students' involvement in shared reading practices ranges from mental or vocal reading patterns from the book to reading along with the teacher.

Independent reading provides an excellent opportunity to achieve the Balanced Literacy approach through encouraging students to read books for their independent enjoyment or information. In this strategy, teachers are only required to support students by providing a variety of leveled books until students become acquainted and responsible for their own choices. The

importance of this strategy is enhancing students' abilities to practise the strategies they have learned and so motivating them to choose, apply strategies to achieve their time-bound, realistic goals (Lane & Hayes 2015). By time, it is assumed that this strategy will help expand students' vocabulary, build students' background knowledge, and contribute to make students proficient readers (Hernandez-Laboy 2009).

2.11 Marzano's Instructional Strategies: Conceptual and Theoretical Perspectives

Marzano's instructional strategies involve several strategies that impact students' achievement in different subjects (Haystead & Marzano 2009; Marzano et al. 2001). Investigating the impact of these strategies on reading comprehension achievement was the main aim of the present study. As illustrated in previous sections, Hill and Miller (2013) planned an outline that serves as a framework of pillars of the larger goals of this aggregation. At its core, this framework is connected to creating an appropriate learning environment, developing students' understanding and helping students apply and extend knowledge.

2.11.1 Marzano's Instructional Strategies and Learning Environment

The following strategies are connected to a larger goal of creating a suitable learning environment that supports achieving learning goals and producing better performance outcomes for all students.

2.11.1.1 Setting objectives and providing feedback

Dean and others (2012) defined objectives as explicit, precise and wide-ranging statements but not too narrowly confined or restrictive of what students will learn. They alluded that objectives should be easily malleable to learners' own learning and so should be thought as lessons-level goals hope to ensure that learning activities are relevant and purposeful.

In reference to Marzano (2007, 2012) and Marzano et al. (2000, 2001, 2003), setting instructional objectives helps foster students' responsibility for their own learning by providing them with a constructive direction. Marzano (2007, p.181) elaborated and stated that "not only students learn more effectively when they know what they're supposed to be learning and why that learning is important to them, but teachers teach more effectively when they have that same information".

Consistently, Glaser and Brunstein (2007 cited in Dean et al. 2012) claimed that when teachers communicate objectives for student learning, they help them establish a direction to guide learning. As such, students can perceive more efficiently the links between what is done in class and what they are supposed to learn. In the same vein, Cuticelli et al. (2016) maintained that this instructional strategy will be beneficial for both students and teaches. For students, it will help them gauge their starting point with regard to the learning objectives and figure out what areas they need to concentrate on. Consistently, teachers will be able to identify techniques to teach students how to self-select learning objectives, self-monitor their progress, and self-assess their development. The authors further elaborated that helping students set personal learning objectives build their intrinsic motivation to learn and decrease anxiety about their ability to succeed. This strategy can be also seen through the lens of self-regulated learning theories that aim to enhance students' motivation and turn students to be dependent in monitoring their performance (Zimmerman 1990 cited in Marzano 2007).

On the other hand, Marzano et al. (2001) cited providing feedback as one of the effective instructional strategies that provides evidence of student learning and impacts students' performance. The authors stressed on the importance of providing feedback that addresses what students have achieved and further what they should do next towards achieving the learning

goals. The authors claimed that in order to produce constructive results, teachers should manage the form of feedback to highlight students' progress rather than deficiency. Therefore, progressive feedback can enhance students' achievement when students are given multiple chances to ask questions, check-in tasks with their teachers, learn from their mistakes, address their strengths and weaknesses and modify their work. As a result, this will enable them to efficaciously self-monitor and develop ambitions for better achievement and higher performance. Hattie and Timperley (2007) explained that in order to attain the desired learning outcomes, feedback should be relevant to both the specific learning objectives and the students' achievement of precise knowledge. Being intimately related to goal setting, tracking students' progress on learning goals using effective feedback is embedded in metacognitive strategies that dissect the considerable achievement in reading performance (Marzano 2007).

Dean and the team (2012) suggested some practices that teachers can follow to ensure the effective implementation of these two strategies. These include encouraging learners to personalize lesson objectives, displaying objectives and following-up on the mastery of these objective, providing rubrics and criteria to assist students in measuring their progress and providing learning contracts. In their book, *Classroom Strategies that Work*, Marzano et al. (2001) found out that the average effect size of these two strategies was .61 and the associated percentile gain was 23.

2.11.1.2 Cooperative learning

The second Marzano's strategy is the cooperative learning which Ormrod (2009) described as any instructional method that fosters students' collaborative work in structured formats to accomplish common learning goals. Slavin (2011, p.127) defined cooperative learning as a "student-centered, instructor-facilitated instructional strategy" that facilitates students'

interaction to attain and practice the elements of a subject matter. This interaction according to Slavin (2011) can capitalize on students' learning and thus create a constructive framework that students need to increase their achievement.

Having found that this instructional strategy facilitates means of self-regulated learning, Desai and Kulkarni (2016) alluded that cooperative learning strategy is an exemplary route for ensuring development of learner autonomy. They contended that this instructional strategy presents a promising learning environment that boosts student talk and constructive discussion resulting in enhanced comprehensible input and motivation to learning. According to Marzano et al. (2001), organizing students into cooperative, systemic and consistent groups yields constructive results on the overall learning. Correspondingly, Tadesse and Gillies (2015) propounded that an effective, interactive cooperative classroom environment, which considers the development of students' accountability through interdependency, contributes in establishing effective L2 learning contexts. Through promoting maximization of every member's potential, Dean et al. (2012) credit this strategy with the development of conceptual understanding, cognitive abilities and higher order thinking skills. Also, it contributes in increasing students' sense of responsibility and self-efficacy and provides a supportive environment for learning.

The key theory that underpins this instructional strategy denotes to Social Constructivism proposed by Vygotsky (1978). Vygotsky pinpointed that culture and society, language, and interaction play an integral role in perceiving how humans acquire knowledge. In refence to the socio-cultural approach he followed in his studies, Vygotsky described the development of learners' knowledge, language, thoughts and reasoning processes as "cooperative" and "cultural". He added that the social interactions in the cooperative learning environment reinforce students' learning, growth and performance academically and socially. Slavin (2015)

suggested a few elements to be involved in lessons to foster a cooperative learning environment. These include "positive interdependence, individual responsibility and appropriate use of social, interpersonal, collaborative and small-group skills" (Slavin 2015, p.7).

Dean et al. (2012) described how the well-structured cooperative learning activities, which are reflections of Vygotsky's influential theory, support students' communication, decision making and conflict resolution skills and that will make students become more independent learners. Marzano et al. (2001) illustrated that the average effect size of this strategy was .73 and the associated percentile gain was 27.

2.11.1.3 Reinforcing Effort and Providing Recognition

The third instructional strategy is reinforcing and provision of recognition. This strategy relates to the key issue of students' motivation, which involves how much effort students are willing to expand or continue working when tasks get challenging (Dean et al. 2012). As the study of motivation has been approached from several angles, its theoretical perspectives are several. Eggen and Kauchak (2010) stated that as some researchers proposed that it relatively involves personality trait perspectives; whereas others suggested that it is associated with Behaviorism or the social cognitive perspectives.

Believing that reinforcing students' efforts speaks to the attitudes and beliefs of learners, Marzano (2007) indicated that if teachers reinforce students both verbally and nonverbally for the tasks accomplished individually or in groups, irrespective of the accuracy of the responses, students' participation will considerably increase resulting in enhanced engagement. Thus, teachers should possess different techniques at their disposals to recognize the effort learners make in their educational pursuits, which is believed to stimulate motivation and have a positive impact on their overall performance and achievement at next levels (Black 2012). Black (2012)

indicated that when students appreciate the power of effort, recognition of their hard work provides a constant motivator that positively alters students' attitudes towards learning. On this point, Marzano et al. (2001) claimed that although students sometimes do not recognize the value of hard work, reinforcing effort and using rewards speak to their beliefs and perceptions on learning and so can effectively enhance their work ethics especially if the rewards are linked to goals.

This strategy falls in the scope of the Attribution theory articulated by Weiner (1974 cited in Marzano 2003). The theory suggests that effort is one of the important factors affecting attributions for achievement and academic success. Weiner (1974 cited in Marzano 2003, p.146) stated that this factor will be "translated into willingness to engage in complex tasks and persistence over time". Thus, students' effort will be a strong determinant of motivation and persistence and a constant drive for better achievement. According to the findings of Marzano et al. (2001), the average effect size for these two strategies is .80 and the associated percentile gain is 29.

In addition to the theories discussed above, Marzano's instructional strategies that aim at creating a suitable learning environment are genuinely translation of the Motivational and Humanist Theories.

2.11.2 Motivational and Humanist Theories- ARCS Model of Motivational Design (Keller 1987) and Self-determination Theory (Deci & Ryan, 1985)

Creating a meaningful learning environment is emphasized in the Motivational and Humanist Theories; which include ARCS Model of Motivational Design that was developed by Keller (1987). Keller claimed that endorsing and nourishing motivation in learning development entails; Attention, Relevance, Confidence and Satisfaction (ARCS). Keller demonstrated that attention

refers to the learners' interest and that it is vital to get and grasp the learners' interests and attention. Relevance entails that the learning process should demonstrate the practicality of the content so that learners can bridge the gap between content and the real world. Confidence emphasizes the importance of developing success expectation among learners, which in turn will aid learners to control their learning processes. Satisfaction illustrates the direct relation between motivation and satisfaction since it is fundamental that learners are satisfied of what they achieved during the learning process.

In reference to Marzano's strategies (2003, 2007), sound activation of this model necessitates relating the subject, like reading in English, to students' interests and showing students the usefulness of the content, which according to Keller will create confidence in their abilities and meet success expectations.

Teachers' aims to enhance students' incentive towards learning languages may develop a sense of intrinsic motivation, which also represents a framework for Self-Determination Theory (SDT) (Ryan & Deci 2000). As a framework of motivation to observe individual's development, this theory is concerned with the level to which individuals' self- motivation and self-determination guide their behaviors and the choices they make. The founders of this theory distinguished between intrinsic and extrinsic motivation and suggested three innate psychological needs involved in self-determination, namely; competence, autonomy and relatedness (Ryan & Deci 2000).

According to the founders of the SDT, developing a sense of intrinsic motivation in individuals can be realized by nurturing their competence to achieve success and overcome challenges. The motivation can be further enhanced by supporting the individuals in their choices and decision-making, which will lead to amplified self-esteem. Endorsing individuals' sense of security and

the level they feel connected to their learning communities will increase their engagement and lead to better performance. As such, actualizing these needs is essential to retain individual's motivation for learning and so requires nurturing from the social milieu.

This theory was explored in the education field to investigate how schools can enhance students' performance and consolidate their growth (Wigfield, Gladstone & Turci 2016). These authors claimed that teachers need to foster and enrich these needs, mainly autonomy, to motivate students to accomplish and gain a sense of fulfillment needed to facilitate students' acquisition of the language.

2.11.3 Marzano's Strategies and Developing Understanding

The following strategies are connected to a larger goal of helping students acquire, integrate learning, and develop comprehension.

2.11.3.1 Cues, Questions, and Advance Organizers

Hill and Marzano (2013) stated that using cues, questioning and advance organizers helps reinforce prior knowledge and develop constructive discussion before, during and after the learning activity. These strategies, which fall under the umbrella of activating prior knowledge as a critical instructional approach to learning suggested by Marzano et al. (2000), are believed to help students retrieve what they know to construct new knowledge, accordingly. Fostering the student-teacher interaction, developing critical thinking, enhancing comprehension and aiding transfer are vital advantages of using these strategies in ESL classroom as reported by studies consulted by Marzano (2007).

According to Dean et al. (2012), cues are "hints" about what students are about to learn that aim to elicit what students already know about the topic and reinforce the prediction strategies. Using advance organizers as an instructional strategy provides a cognitive, instructional and

organizational framework that incorporates both the linguistic mode and the nonlinguistic mode of communication to deepen understanding (Marzano et al. 2000). This strategy will be further described from the lens of the instructional strategy of generating non-linguistic representations. Closely related to cues in stimulating students' thinking about the content they read are questions. Marzano et al. (2001) emphasized the importance of using analytical and inferential questions that reinforce higher levels of critical thinking skills, which go right with the cognitive domains of Bloom's Taxonomy (Dubas & Toledo 2016). In reference to Bloom's taxonomy of learning, Anderson et al (2001) proposed a classification of questions into knowledge dimensions ranging from concrete to abstract; factual, conceptual, procedural, and metacognitive.

Using the questioning techniques and integrating different levels of comprehension questions are fundamental to good teaching (Hussin 2010). As a matter of fact, Hussin (2010) claimed that questions can be categorized into four broad types; initiating questions, probing questions, higher order thinking questions, and divergent questions. The first type aims at eliciting initial responses from the students and stimulate the recall of prior knowledge. Probing questions help foster the activation of prior knowledge and support student learning by probing for understanding. Encouraging students to make comparisons, inferences and synthesizing describes the higher-order thinking questions while the divergent questions stimulate critical thinking and creativity. Anderson et al. (2001) claimed that formulating questions that can support achieving the desired teaching objectives and anticipated learning outcomes at the appropriate time is not innate art.

In the same vein, Dean et al. (2012) suggested several practice strategies to formulate different types of questions that provoke thinking, deepen understanding, require students to make inferences, and encourage them to analyze. As such, teachers, who can formulate questions at the

appropriate cognitive level of students and track students' understanding with follow up questions to deepen learning, are described as fundamentally effective. As a side note, Dean et al. (2012) alluded that when students are allowed ample wait time to answer, their answers will be more accurate and thorough, particularly if the type of question retrieves and capitalizes on students' prior knowledge.

According to the Cognitive theory, using questions that promote higher-thinking levels by fostering students' ability to link the new knowledge to prior experiences can improve learning (Chin & Hirumi 2009). This was further highlighted in the constructive and purposive reading instructional scaffolding of reading comprehension instruction in Vygotskian Constructivism (Vygotsky 1978). Marzano et al. (2001) illustrated that average effect size of this strategy is .59 and the associated percentile gain is 22.

2.11.3.2 Summarizing and Note-taking

The category of Marzano's instructional strategies that aim at developing understanding encourages the art of summarizing and note-taking. Both of these instructional strategies foster the capability of students to understand different ideas in their own way of thinking in order to distill and select what they consider essential information (Denton et al. 2015). The authors illustrated that summarizing strategy involves important skills, such as elimination of insignificant information, retainment of the important information and then paraphrasing the words for clarity and so promote greater comprehension.

Marzano et al. (2000) cited different strategies to help students construct a summary. One of them is the rule-based summarizing strategy, which requires students to delete insignificant information that is needless to comprehension, delete redundant ideas, substitute some information and finally create a topic sentence. Creating a variety of questions that highlight the crucial elements of specific types of information in the text is another way to help student

develop summaries. Another summarizing strategy is using reciprocal teaching, which is an instructional technique that involves the process of summarizing and engagement of students in cognitive processes such as questioning, clarifying and predicting (Dean et al. 2012). Dean et al. (2012) illustrated that practicing this instructional strategy should be continuous through using modeling techniques with steps and procedures and by devoting ample opportunities for practice and providing constructive feedback to ensure internalization.

Note-taking is another vital strategy that helps students process information and facilitates deeper comprehension of academic content. Marzano (2007) indicated that this strategy is closely linked to summarizing in that it entails translating the personalized account of information that the students build through summarizing into their own abbreviated form. The form can be encoded in a synthesis of linguistic and non-linguistic information.

Dean et al. (2012) proposed a variety of techniques to help students practise this instructional strategy more successfully. These include creating formats for taking notes, such as outlines and webbings and graphic representations that portray information in some visual way. kempThis instructional strategy as reported by Marzano (2007) is considered one of the most powerful techniques to help students review and better prepare themselves for tests.

Theoretically speaking, note-taking and summarizing encompass an array of fundamental mental processes that interact with other cognitive functions (Piolat, Olive & Kellogg 2005). Makany, Kemp and Dror (2009) correspondingly illustrated that these strategies enhance cognitive performance, as they require higher order thinking, in a way that bridges between the acquisition and filtration of the incoming resources, and organization and restructuring the existing knowledge in order to perceive, store and integrate the knowledge representation.

These two strategies, with 1.00 as an average effect size and 34 as the associated percentile gain are vital facets of a composite human behavior associated with information management (Marzano et al. 2001).

2.11.3.3 Homework and practice

Home and practice are two instructional strategies proposed by Marzano et al. (2001) to provide students with multiple opportunities to deepen their understanding and proficiency, extend their learning of the subject matter and encourage students to review and apply knowledge. In other words, homework is any "teacher-assigned task" planned for students to complete beyond the school day (Marzano et al. 2001, p.72).

According to Little, Hart, Schatschneider & Taylor (2016), performing homework improves memory and creates disciplined minds, fosters independence and responsibility and assist in developing study skills. They also stressed on the importance of helping students understand the rationale of homework, which according to Marzano and others (2001) should be clearly reviewed and practiced in class. Accordingly, teachers are required to provide students with constructive feedback on the completed homework.

As a matter of fact, the topic of homework has been controversial and several supporting and opposing arguments have been raised. Some arguments against homework have reported negative attitudes towards using it as an instructional strategy and claimed that homework is a useless practice that does not always relate to learning goals (Kohn 2006 cited in Marzano 2007; Wallis 2007 cited in Marzano & Pickering 2007). Marzano and Pickering (2007) consulted several studies that have investigated the topic of homework in education, spanning a broad range of methodologies and levels of specificity. Based on the results of those experimental studies and correlational studies, the authors concluded that teachers should not disregard the

importance of homework or abdicate using it as an instructional strategy. Instead, its instructional quality should be improved. They also illustrated that inappropriate homework may yield negligible or no benefit and, in some cases, assigning homework may decrease student achievement. Thus, homework is anticipated to produce positive results when some precautions and recommendations are taken into consideration. These, according to Marzano (2007) and Marzano and Pickering (2007) include structuring homework with well-articulated purpose to guarantee considerable completion rates, the time spent on homework should be carefully well-thought-out and that homework should be intentional and channeled towards a specific objective. Parental involvement that entails providing parents with guidelines is also advisable.

Practice, of which speed and accuracy are key indicators, facilitates learning at an individual level as it improves understanding (Little et al. 2016). Marzano (2007) indicated that guiding students to practice is crucial to their learning and helps them accomplish new skills and processes more quickly, successfully and correctly. Asking students to chart their improvement is a method used to track students' speed and accuracy. Focused practice that targets a specific aspect of a complex procedure will be also beneficial for them. Additionally, Marzano (2007) claimed that guided practice and independent practice sessions are fundamental in helping students to develop conceptual understanding of procedures or skills. Another point that is worth mentioning about practice and is found to have strong implication on this instructional strategy is engaging students in well-structured and well thought out phase of shaping. Shaping is encouraging students to adapt the way they use the skill in different situations and consider solutions for the potential problem areas. Hence, engaging students in rushed practice of many examples may not foster the positive progress towards achieving goals. Marzano et al. (2001) found that these strategies yield a 28 percentile gain with .77 average effect size.

2.11.3.4 Non-linguistic Representations

The instructional strategy of non-linguistic representations aims at helping students "generate mental pictures or physical models of information and create graphic representations for the information" (Marzano el al. p.71). Marzano (2007) suggested five approaches for generating non-linguistic representations: graphic organizers, pictures and pictographs, mental pictures, concrete representations, and kinesthetic activity.

Dean et al. (2012) described that teachers typically present new knowledge in linguistic form. However, a growing body of field research has shown that when teachers help students use non-linguistic representations to elaborate on knowledge like the approaches suggested by Marzano et al. (2001), their achievement increased considerably.

Presenting students with graphic organizers as an instructional strategy is considered a cognitive instructional and organizational framework that aims at using prior knowledge to promote students' learning and retention of new information. Being the most used method to help students create non-linguistic representations, Marzano (2007) credited Ausubel (1968) for considering this strategy a bridge to a new learning and a well-researched type of preview techniques needed to help students activate prior knowledge. He added that the importance of using advance organizers lies in emphasizing the important ideas that teachers plan to involve in the lesson at the different phases of the learning process using both linguistic and non-linguistic representations.

On this point, Black (2012) proposed that advanced organizers assist students in their learning especially if students understand how to categorize complex information in different ways. As graphic organizers combine the linguistic mode and the non-linguistic mode of communication (Chin & Hirumi 2009), scholars have posited a variety of patterns that are advantageous in promoting meaningful learning, reducing extraneous cognitive load and fostering organization

skills. These involve: "descriptive patterns, time/sequence patterns, process/cause-effect patterns, episode patterns, generalization/principle patterns, and concept patterns" (Marzano 2007, p.136). Other ways to help students generate non-linguistic representations in the mind focus on encouraging them to use symbols and draw pictures to represent ideas and events or to create mental pictures. Creating concrete representations or physical models of the knowledge that is being learned and kinetic activities help generate non-linguistic representations of the knowledge in the mind of students.

Theoretically speaking, this instructional strategy has its roots in the Dual Coding Theory hypothesized by Allan Paivio in 1971 (Paivio 1986). The theory is based on the premise that all mental representations of the information retain both verbal associations and visual imagery. Sadoski and Paivio (2004) postulated that visual and verbal information are processed and stored differently in the human mind, which in turn create multiple visual and verbal codes that can be used to recall information and aid comprehension. Although there has been a controversy to the limitations of this theory, it has implication for the literacy particularly in decoding, comprehension, and response in reading.

In addition to the theories discussed above, Marzano's instructional strategies that aim at helping students develop understanding go right in Cognitivism.

2.11.4 Cognitivism

The formalization of the Cognitivist principles stemmed from the perspectives that learning is a dynamic and continuous process of knowledge construction and that learners are active participants who process and store information in the procedures of knowledge acquisition and integration (Good & Brophy1999, cited in Yilmaz 2011). This growth of the cognitive theories is generally attributed to the contributions of numerous prominent theorists. Piaget's theory of

individual cognitive development and Bruner's cognitive constructivist learning theory seem instrumental and pertinent to the main aim of this study. Piaget examined the creation of cognitive structures and the process that triggers knowledge construction by focusing on mechanism of learning (Lutz & Huitt 2004). The mechanism of change in cognition and the internal processes that draw on the learner's prior knowledge to make the new knowledge understandable is associated with the Schema theory that serves as a fundamental guidance for teachers when teaching learners to build knowledge and reasoning (Gillani 2003, cited in Yilmaz 2011) and that was thoroughly explained in a previous section [2.2.3].

2.11.5 Marzano's Strategies and Applying knowledge

The following strategies are connected to a larger goal of helping students practice, review and apply learning.

2.11.5.1 Identifying Similarities and Differences

According to Marzano (2007), this strategy is considered the foundation of instruction and the central procedure to student's intellectual progression. Since this strategy includes complex mental operations, namely; "comparing, classifying, creating metaphors, and creating analogies", it is fundamental in helping students analyze information (Marzano et al 2001, p.141).

Dean et al. (2012) explained that when an idea or concept is broken into similar and distinct features, it enables students to understand and organize the complicated ideas into two or more groups, based on the recognized similarities and differences. Through analyzation of the abstract similarities and differences of the concept or idea, students can create metaphors and analogies.

To enhance their understanding of specific academic content, Marzano (2007) suggested several ways to help students learn to use these reasoning processes. Also, some strategies like; "teacher-directed tasks, student-directed tasks, and graphic organizers" are proposed to help enhance

students' learning of important content knowledge gradually (Marzano et al. 2001, p.144). Modeling this strategy involves using T-charts, analogies, Venn diagrams, comparison matrices and compare and contrast graphic organizers.

It is worth noting that identifying similarities and differences is seen from the Cognitivism lens. As creating metaphors and analogies encourages students to discover and comprehend ideas and information at deeper levels, these methods foster deep comprehension of ideas and enable students to make connections of existing knowledge (Marzano 2007). It was found that the average effect size of this strategy is 1.61 and the associated percentile gain is 45 (Marzano et al. 2001).

2.11.5.2 Generating and Testing Hypotheses

This category additionally encourages students to generate and test hypotheses, which would assist students in enhancing problem-solving skills, creativity, explanation strategies, experimental inquiry learning, and decision-making skills (Marzano 2007). Marzano emphasized the importance of this strategy across all disciplines when the purpose of the teacher is to improving students' understanding of concepts (LaRusso et al. 2016).

Research shows that encouraging students to apply their knowledge and use high level thinking skills to generate, test, thoroughly explain hypotheses and draw conclusions using both inductive and deductive techniques improves their learning (Marzano et al. 2001). The deductive approach is normally seen as the procedure of using a general rule to make a prediction about an upcoming action or event while the inductive approach is commonly assumed as the method of drawing new conclusions based on prior knowledge or the presented information. Hence, requiring students to first discover the principles from which hypotheses are created or presenting students with principles and knowledge as a basis to require them to generate and test hypotheses are anticipated to build students' abilities to apply knowledge effectively.

Problem solving tasks, explanation templates, investigations, questioning future predications and decision-making can be examples of structured tasks used to help students test a hypothesis (Dean et al. 2012). LaRusso et al. (2016) also illustrated that graphic organizers, such as the anticipation guides can be also used to help students create hypotheses.

Marzano et al. (2001) concluded that the average effect size of this instructional strategy is .61 and the associated percentile gain is 23. This strategy has its roots in the theoretical framework of Bruner's Constructivist theory (1966). This theory considers learners information-builders who actively construct or mentally generate their own subjective ideas of reality by linking the new information to prior learnt knowledge (Woolfolk, Davis & Anderman 2013).

In addition to the theories discussed above, Marzano's instructional strategies that aim at helping students apply and extend knowledge are reflections of the Constructivist Theories, which will be explained in the following section.

2.11.6 Constructivist Theory (Bruner 1966)

Bruner's theory (1966) on Constructivism depicts that learning is an active process in which learners become autonomous and competent in forming innovative ideas based on their past and current knowledge. Bruner believed that the main outcome of learning and intellectual development is thinking which does not only encompass concepts or problem-solving procedures, but also the capability to formulate them. Additionally, Bruner's theory proposes that teachers should provide learners with explicit guidance regarding organization, encourage them to practice, and support them to concentrate on their academic goals.

To help learners develop thinking and celebrate success, teachers are encouraged to praise their efforts and attempts to construct their own knowledge by using a coding system for organizing and categorizing information. In terms of language, this theory signifies the importance of

language in scaffolding learners to code and mediate between environmental stimuli and learners' responses, which in turn affects cognition and learning development. As such, Marzano's instructional strategies aim at acquiring, integrating and developing students' knowledge when they are required to retrieve and capitalize on their prior knowledge to develop their learning.

2.11.7 Social Constructivism Theory by Vygotsky (1978)

Views of Vygotsky as a Constructivist theorist endorse the individual's nature to explore, make personal discoveries, and formulate his own beliefs. As such, social constructivists believed that learning is delineated by the individuals' prejudices, experiences and both physical and mental maturity.

Development of Constructivism is anchored in the Vygotsky's prominent beliefs of making classrooms constructive environments. In Vygotsky's words of the concept of Zone of Proximal Development theory (ZPD): "[T]he distance between the actual developmental level as determined by independent problem solving and the level of potential development as determined through problem-solving under adult guidance, or in collaboration with more capable peers" (Vygotsky, 1978, p.86), aiding students in the learning process entails encouraging teachers to focus on a number of components, namely, social interactions, supporting activities and scaffolding.

Vygotsky's theory of Social Constructivism reveals that learning is a collaborative activity and that the context of socialization among learners makes them cognitively developed and competent to construct new knowledge. According to the Vygotskian approach and as an essential aspect of successful cognitive and intellectual growth, the social nature of learning should be considerably emphasized in learning contexts through the process of scaffolding.

Scaffolding encompasses supportive, structured and social interaction, and dialogues between a learner and a more knowledgeable, competent adult with the aim of assisting the learner to achieve a particular goal (Vygotsky 1978). Lutz and Huitt (2004) highlighted that providing the appropriate assistance contributes in the development of learners' cognitive and higher psychological functions by engaging them in exploration of knowledge and sharing experiences and skills. However, students must be intrinsically motivated and actively engaged in the learning process to reach their potential for new learning as illustrated in the ARCS model. Social interaction is reflected in cooperative learning strategy that aims at extending student's knowledge when they are they are actively engaged in collaborative communities, which facilitate peer interaction and promote learning and knowledge transfer as suggested by Marzano et al. (2001). This can be consistently discussed from the perspectives of Bandura's Social Learning Theory [2.2], which forms a bridge between Behaviorism and Cognitivism (Bandura 1977).

In reference to the above discussion, Table 2.1 lists the categories of strategies along with average effect size and percentile gains realized from the use of these strategies in classroom in several laboratory and field researches.

Table 2.1: Marzano's Instructional Strategies (Marzano et al. 2001).

Strategy	Average Effect Size	Percentile Gain
Identifying similarities and differences	1.61	45
Summarizing and note taking	1.00	34
Reinforcing effort and providing recognition	.80	29
Homework and practice	.77	28
Nonlinguistic representation	.75	27
Cooperative learning	.73	27
Setting objectives and providing feedback	.61	23
Generating and testing hypotheses	.61	23
Questions, cues, and advance organizers	.59	22

As this systematic empirical investigation of the observable phenomena is deductive in nature, it links together ideas from several prior theories rather than inductively testing a single theory. Therefore, multiple theories serve as the theoretical standpoint of the variables of the present study.

Marzano's instructional strategies are grown in numerous influential theories and go genuinely to the heart of the Cognitivist, Constructivist and Motivational and Humanist paradigms. As such, these theories were considered the set of beliefs that guide this research.

On the other hand, research has demonstrated that reading comprehension is grown in several theories. For the purpose of this study, Schema theory and Transactional theory along with theoretical frameworks of reading comprehension as the dependent variable were thoroughly discussed in the previous sections.

The following visual representation of the consequential connection of theories delineates the correlated theories of the larger objectives of Marzano's instructional strategies as designed by the researcher (Figure 2.1).

Figure 2.1: Theoretical Framework of Marzano's Instructional Strategies
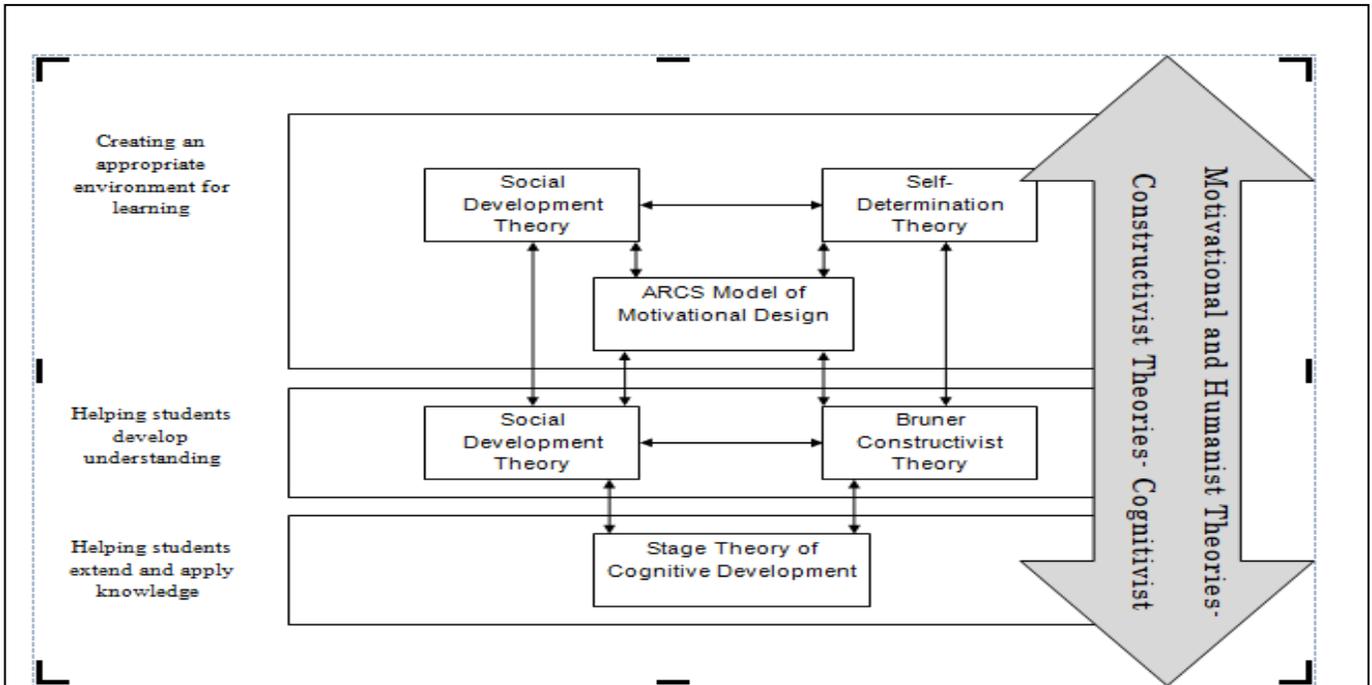
2.12 Summary of Relevant Theories

The table below summarizes the learning theories and paradigms that are anticipated to provide well-substantiated explanations of the phenomenon under investigation (Table 2.2).

Table 2.2 Summary of the relevant learning theories

Research Question	Learning Paradigm	Relevant theories
What is the impact of Marzano's instructional strategies on grade 10 students' achievement in reading comprehension?	Constructivism Cognitivism Humanism	-Vygotsky's Theory of Social Constructivism -Social Cognitive Theory -Discovery learning-Constructivism (Bruner) -Attribution Theory -Self-Determination Theory
Are there any gender-based significant differences in reading comprehension performance in response to Marzano's instructional strategies?	Cognitivism	-Schema Theory of Learning -The Transactional Theory
What are the students' perceptions towards Marzano's instructional strategies after being instructed and assessed authentically?	Humanism	-ARCS Model of Motivational Design

2.13 Conceptual Framework of the Study

As the concept of instructional strategies is addressed in different disciplines in the growing body of literature, this study seeks to contribute to the ESL field by giving prominence to Marzano's instructional strategies and keenly investigate its impact on students' achievement in reading comprehension. In order to explain the concepts that form the core of reading comprehension acquisition along with the instructional strategies of Marzano's categories, the researcher devised

the following conceptual framework (Figure 2.2), which is linked to SLA and other influential theories that were thoroughly discussed in this chapter.

The framework illustrates how effective pedagogy is augmented by different elements that affect students' achievement. The focus of this study was using instructional strategies that are anticipated to be reflected on the practices of successful teachers and the achievement of students in reading comprehension (Marzano at al. 2001). The kind of instruction employed contributes in generating better SLA and, therefore, successful teachers should have a firm grasp of different instructional methods and strategies that enhance literacy skills (Haley & Rentz 2002).

According to Mikulecky (2008), as conscious and unconscious thinking processes are inherent in reading, applying strategies to foster the capability to construct linguistic meaning from written texts is based on a number of cognitive competencies. Thus, these competencies; mainly language comprehension, decoding and metacognition along with the readers' mental schemata, develop the acquisition of reading comprehension (Lane & Hayes 2015).

In reference to the NRP report (2000), effective reading instruction involves comprehension processes, comprehension strategies and diverse instructional frameworks that increase students' comprehension. To attain the fundamental aims of instruction, instructional strategies create an appropriate learning environment, help students enhance understanding, extend students' prior knowledge and develop the acquisition of reading comprehension should be adopted (Hill & Miller 2013; Marzano et al. 2001).

Figure 2.2 Conceptual Framework of the Study

Marzano, Pickering and Pollock 2001

Effective Pedagogy

Management Techniques ⟷ Quality Instructional Strategies ⟷ Instruction

Successful English Learners ← *contribute to* → Quality Classroom Instruction → *reflected on practices of* → Professional English Teachers

Language comprehension
Metacognition
Decoding
Activating Background knowledge
Comprehension processes

Reading comprehensive Acquisition

Comprehension Instruction framework
Prediction
Visualization
Summarization
Questioning
Compare / Contrast

Reading comprehensive strategies

Marzano's Instructional Strategies

High-yield instructional strategies that aim at

Hill and Miller 2013

Creating an appropriate learning environment
- Setting objective & providing feedback
- Reinforcing effort & providing recognition
- Cooperative learning

Helping students develop understanding
- Questions, Cusses & advance organizes
- Non-linguistic representations
- Summarizing & note taking
- Homework & practice

Helping students extend knowledge
- Identifying similarities & differences
- Generating & testing hypothesis

Motivational & Humanist theories   Cognitivism   Constructivism

Student's Achievement

2.14 Review of the Relevant Literature

In order to answer the main research question: "What is the impact of Marzano's instructional strategies on grade 10 students' achievement in reading comprehension?", a number of important themes that are related to the variables of the study will be explored.

This section illustrates the studies associated with reading comprehension instruction, research-based instructional strategies, reading comprehension and students' attainment and using Marzano's instructional strategies in reading comprehension instruction.

2.14.1 Reading Comprehension Instruction

Research has provided educators with a wealth of knowledge on the best pedagogical practices that help students succeed to the fullest potential by becoming strategic, independent and metacognitive readers (Gooden 2012; Goodwin & Webb 2014; Manoli & Papadopoulou 2014; Ness 2016).

Recently, Ness (2016) conducted a study to identify the frequency of teachers' use of research-based instructional strategies to facilitate reading comprehension instruction. The researcher believed that comprehension instruction plays a significant role in enhancing students' capacities to use cognitive skills and strategic reasoning to overcome obstacles in comprehension when reading. The results showed that although teachers recognize that effective instructional strategies promote students' achievement in reading comprehension, using those strategies seems to be a rare event and teachers feel reluctant to provide reading comprehension instruction that is based on research-based instructional strategies.

Considering the principle that strategies signify a conscious response to students' failure to comprehend ideas while interacting with written texts, Manoli and Papadopoulou (2014) concluded that when teachers are not familiar with research-based comprehension strategies,

they will not be capable to instruct students in coordinating cognitive processes that facilitate comprehension achievement. The researchers added that teachers should be knowledgeable of researches that present methods to promote teachers' knowledge of the contemporary comprehension strategies.

Gooden (2012, p.17) explained that "instruction in comprehension strategies helps children become flexible thinkers who can approach a variety of texts with a repertoire of strategies and thus helping them to better comprehend those texts". In simpler words, readers become more likely capable to interact meaningfully with texts when teachers possess a number of important strategies to reflect on the content and pedagogy of reading instruction.

In her study to determine the reading strategies teachers use in their instruction, Gooden (2012) found that most participants use the strategies of identifying similarities and differences and non-linguistic representation. They also depend on activating students' prior knowledge before, during, and after reading. Essentially, her study revealed that teachers ignore numerous significant strategies, such as asking questions and drawing inferences and this lack of awareness may contribute to poor achievement in reading comprehension.

 The findings of Al Jamal et al. (2013) demonstrated that students lack many reading skills which make them face difficulties in comprehending written texts which will be reflected on their performance in reading comprehension tests. They further illustrated that the inadequate strategies used by teachers have limited the acquisition of language learning and have led students to be incompetent in constructing new knowledge.

In a different context but with approximately similar findings, Al-khawaldeh's (2011) research has demonstrated different common deficiencies in teaching reading comprehension. Al-Khawaldeh revealed that teachers are generally hesitant of which instructional strategies to

address with learners in order to ignite their thinking and interaction with the texts. Consequently, when considering instructional strategies, teachers should recognize the most effective, motivational and meaningful ones that will be beneficial in supporting students' reading proficiency.

Consistently, the results of the study of Dole (2002) revealed that ESL teachers are inexperienced with literacy-related instructional strategies that monitor students' comprehension of written texts, but rather teachers build their instruction and assess students' comprehension based on literal questions that do not help students apply and extend knowledge.

One obvious conclusion from the previous studies can be illustrated in Goodwin and Webb's (2014) study who demonstrated that the deficiency of teacher's knowledge of research-based instructional strategies, which significantly enhance students' comprehension of texts, may contribute to a major breakdown in developing students' critical skills and metacognitive processes.

Thus, since research concludes that there is an obvious requisite for the essential understanding of the role of research-based instructional strategies on students' achievement in general and on the reading comprehension in particular, it seems important to consult the empirical evidence to address that role.

2.14.2 Academic Achievement

Achievement has been defined in several ways. Some descriptions of achievement include the accomplished success in any performance or the ability of individuals to attain a set objective through effort or the result of a decent level of education that may demonstrate how well a student achieves academically (Ali 2013). Ali (2013) indicated that almost all current meta-analyses aiming to predict later performance of students in mathematics, science and reading

have depended either on assessments of cognitive abilities or on national test scores. Along the same line, Ganai and Muhammad (2013) illustrated that academic achievement is the knowledge-achieving capability or the levels of aptitude in school assignments that are expressed in a grade or unit that measures students' performance in examinations and standardized tests. This is consistent with the purpose of this study since the degree of competence in reading was measured by the results of the administered reading comprehension tests.

A host of researchers stated that students' academic achievement is influenced by a number of factors (Abubakar & Bada 2012; Ocho & Nwangwu 2005). Ocho and Nwangwu (2005) classified the factors into categories, namely; student factors, teacher factors, environmental factors and economic status factors. Among the influences of student factors are his/her personal characteristic represented in his/her intellectual abilities, conscientiousness, effort and motivation. Teacher factors include the competence and professionalism of the teacher and his/her awareness of academic goals along with adoption of instructional strategies. Family support, parents' education, social financial status and parental involvement can also have a considerable impact on students' success or failure (Abubakar & Bada 2012). Teachers' practices and methods together with the instructional strategies can be also determining factors in attaining high academic achievement (Thomas & Green 2015). An in-depth coverage of all these factors is, however, beyond the scope of the present study. As a side note, gender is a relative determinant to the other factors and is closely associated with research questions of this study and as such will be discussed in the following sections.

2.14.3 Research-Based Instructional Strategies, Reading Comprehension and Students' Attainment

To support ESL instruction, employing different strategies based on lessons' objectives becomes a requisite for creating a learning environment that develops understanding and extend knowledge (Miller 2014; Thomas & Green 2015). Research indicates that in order to improve students' reading comprehension, it is the sole responsibility of teachers to decide how to employ and select instructional strategies that will motivate their students to the required depth (Thomas & Green 2015). In addition, including cognitive strategies that promote higher order thinking skills in reading such as activating prior knowledge, making inferences, questioning, summarizing, and synthesizing is another factor to support reading comprehension instruction (Lane & Hayes 2015).

The reports published by Cuticelli et al. (2016) showed that in the grounds of reading achievement, the majority of students score much below the bar of standard reading proficiency. However, guiding students with high quality evidence-based instructional strategies can help them to overcome the reading difficulties and develop reading comprehension skills.

One of the recommended pedagogical strategies for enhancing reading comprehension is the suitable incorporation of cooperative learning. The reports published by Tadesse and Gillies (2015) showed that students who were exposed to cooperative learning were found to be more focused in their learning, had more productive interaction and enjoyment; and subsequently gained more knowledge on academic grounds in comparison to what they have achieved before joining the cooperative learning program. Capar and Tarim (2015) consistently proposed that when cooperative learning technique is implemented in a proper way, it helps to provide a standard way to cultivate supportive relationships between the students. This exchange of

knowledge in cooperative learning skills is further helpful for middle school students with learning disability as proposed by Swanson, Wanzek, Vaughn, Roberts & Fall (2015).

Desai and Kulkarni (2016) and Slavin (2015) considered cooperative learning a medium to develop critical thinking, logical reasoning skills and problem-solving attitudes among students, which in turn helps to refine reading comprehension and increase level of achievement.

Numerous researches have concluded that the strategies of taking notes and creating a summarized content promote spatial representations and thereby help students to improve their reading comprehension skills (Stevens Lu, Baker, Ray, Eckert & Gamson 2015). The ideas proposed by Denton et al. (2015) supported the view that using the strategy of summarization helps in refining the cognitive skills of the students and thus should be taught explicitly by providing a guided assistance along with corrective feedback and then finally progression towards independent practice.

The importance of using non-linguistic representations in teaching reading comprehension lies in the fact that it does not only enable students to learn, but also it attentively engages them in what they are learning. Branigan and Pickering (2017) proposed that when students are asked to clearly express their own thoughts in words, they either become self-conscious or lack confidence and this where the importance of priming for linguistic representation comes.

The strategy of testing hypothesis in reading comprehension falls under the category of predicting (LaRusso et al. 2016). According to these authors, the prediction that readers make while reading enhances the working memory attention, which helps students to adapt tasks like retrieval, comprehension and knowledge utilization. The same concept has been opined by Allen et al. (2015), who stated that the strategy of generating and testing hypothesis increases the

prediction power and develops numerous cognitive tasks, and thereby helps students to refine their reading comprehension skills.

The concept of differentiated questions signifies the manner in which a teacher takes into account students' readiness, learning styles and interests as illustrated in the study conducted by Shaunessy-Dedrick et al. (2015). Those authors tested the effect of different readings in the form of differentiated questions on students' ability and attitudes towards reading comprehension. Their study revealed significant improvements in the grounds of reading comprehension in comparison to the placebo.

The findings of a study conducted by Dukmak and Istaiwa (2015) in the UAE context highlighted the factors that influence the academic achievement of students in different subjects. Corresponding to students' beliefs about learning, teacher-student interaction and students' beliefs towards the instructional strategies employed by the teachers found to have significant association with the students' levels of achievement from the perspectives of students. However, the results did not highlight the actual impact of these strategies on students' achievement.

In the context of secondary schools in Jordan, Al-Khawaldeh (2015) found that a three-month long instruction on a set of research-based instructional strategies, namely advance organizers and different levels of comprehension questions, cooperative learning and generating and testing hypothesis yielded positive impacts on secondary students' achievement in reading comprehension and their reading strategy awareness. To optimize teachers' effectiveness in ESL classrooms, the researcher recommended that these strategies should be included in training programs and teachers' professional development.

In the same vein, the results of a qualitative study undertaken by Al Naqbi (2011) revealed that employing the strategy of mind-mapping as a planning tool to help grade 11 UAE students in

organizing their ideas before writing is considered an effective teaching strategy since students' performance in writing showed noticeable transformation. Basically put, research shows that reading and writing skills affect, reinforce and strengthen each other (Graham & Hebert 2010), so it is anticipated that using mind-mapping in teaching reading comprehension will show positive gains in students' achievement.

Underpinning the premise that engaging students in interaction about texts promotes students' reading comprehension abilities, Van Keer's study (2004) attempted to investigate the effectiveness of instructional strategies, such as drawing conclusion and summarization on students' reading comprehension achievement. Using the quasi-experimental design, the study corroborated the effectiveness of reading strategies in instruction on enhancing students' reading achievement. The researcher called for more studies to investigate whether using instructional strategies can have positive impact on students' mastery of reading abilities and performance in standardized reading comprehension tests.

The studies described above demonstrate how different instructional strategies employed exclusively in different contexts had a positive impact on students' achievement in reading comprehension. The following section will highlight the impact of employing Marzano's instructional strategies, as an aggregation suggested by Hill and Miller (2013), on student's reading comprehension achievement in different contexts which will help situate this study within other researches.

2.14.4 Using Marzano's Instructional Strategies in Reading Comprehension Instruction

As bringing fundamental changes in students' performance is the teacher's goal, appropriate efficient-proven strategies are its facilitator (Marzano 2012). Based on this premise, substantial research on the versatile strategies illustrates that the instructional research-based ones enhance

academic achievement and facilitate students' performance in literacy skills (Duke & Pearson 2008); whereas ESL students' poor academic performance is essentially associated with the implementation of inadequate teaching methods (Al-Husban & Al-Khawaldeh 2017).

Instructional strategies had sparked an interest among researchers investigating the significance of those strategies on students' achievement in reading comprehension. Very recently, Al-Husban and Al-Khawaldeh (2017) consulted many studies that demonstrated the significance of teachers' having a repertoire of Marzano's strategies. The researchers further added that teachers' utilization of strategies that do not monitor students' comprehension of texts would cause a major drawback in students' achievement.

Having acknowledged Marzano's realization of compiling fundamental findings from research into nine instructional strategies, Green and Thomas (2015) pointed to the many advantages of the aggregation of Marzano's instructional strategies in creating a dynamic ESL learning environment that fosters students' ability to construct knowledge and think intellectually. Likewise, using graphic organizers and encouraging students to predict, generate and test hypothesis create strategic readers (Black 2012) as highlighted by Manoli and Papadopoulou (2014). Consistently, Hill and Miller (2013) concluded that performance of teachers in teaching reading comprehension is congruent with their solid knowledge of these instructional strategies and that Marzano's strategies are translations of the Constructivist theory. Speaking of Marzano's strategies, Guthrie and Klauda (2014) identified their significance in developing learners' memory, expanding students' aptitudes to explain, engaging and fostering motivation and nourishing students' creativity. Goodwin and Webb (2014) concluded that teachers' lack of knowledge on research-based strategies deprives students from paths of active learning which is of a great significance in increasing knowledge, discovery and exploration. In the same vein,

Ganyaupfu (2013) investigated how three different instructional strategies, incorporated to develop students' comprehension of texts in social sciences, motivate goal-oriented attitudes among students and thus improve students' performance.

In line with Marzano's study (2012), Suing (2012) concluded that due to the correlation between comprehension and vocabulary, Marzano's strategies develop students' competencies in retrieving words effortlessly, which lead to expanding students' word knowledge and increasing the flow of understanding the author's purpose and the main idea. According to Sonbul and Schmity (2012), this knowledge will be translated into a noticeable improvement in ESL learning and enhanced achievement in reading comprehension. Cummins (2011) stated that although determining what constitutes functional reading instruction is challenging, teachers' utilization of varied instructional strategies presents the most influential and continuing impact on students' comprehension. In a consistent view, Haystead and Marzano (2009) synthesized a series of quasi-experimental studies and found out that Marzano's research-based instructional strategies increased students' percentile gains.

2.14.5 Gender and Reading Comprehension Performance

As researchers around the world attempt to determine the parameters that affect students' achievement, a growing body of laboratory and field researches indicate the presence of differences in academic performance based on gender. Numerous studies on gender discrepancies emphasized differences in students' performance in reference to science-related subjects (Abubakar & Bada 2012; Chang 2008; Kahle 2004; Obi, Ezenwafor & Eze 2015). As a matter of fact, quite a number of studies have been conducted in this line of research and have revealed different perspectives that made this area disputable. Several studies concluded that there are significant gender achievement gaps, in favor of boys in math and science (Kahle

2004). Literally, these studies showed that boys outperformed girls in science-related subjects while girls excelled in literacy skills, mainly in reading comprehension (O'Reilly & McNamara 2007). On the other hand, some researchers concluded that there is a kind of inconsistency in results in terms of the impact of gender differences on students' achievement. Several results revealed there was no difference in students' mathematics achievement and retention scores (Ajai & Imoko 2015) while other findings indicate that females have superior academic achievement in all subjects, including math and natural sciences (Voyer & Voyer 2014).

In the ESL field, numerous empirical investigations on L2 reading approach have been undertaken to investigate whether gender accounts for differences in reading comprehension performance at various levels of language acquisition. In a study conducted in the context of universities in Saudi Arabia, Al-Shumaimeri (2005) examined gender differences in reading comprehension performance in relation to content familiarity of gender-neutral texts and instructional strategies. The results of his study revealed gender differences in learners' L2 reading comprehension with male students considerably outperforming their female counterparts in both pretests and posttests. The author argued that instructional strategies that the teacher employs in the learning environment and text types can cause the discrepancy between boys and girls in their achievement in reading tests.

Using the Schema theory as his theoretical basis, the findings of Yazdanpanah's (2007) study revealed significant differences at handling top-down and bottom-up reading processes between females and males from different linguistic backgrounds in favor of females. Yazdanpanah (2007) added that effective reading comprehension occurs with the involvement of eyes and brain and concluded that reading comprehension instruction, which involves strategies that scientifically incorporate using these organs, is believed to enhance reading comprehension

proficiency. Thus, females tend to outperform males significantly in reading tests could be considerably attributable to the differences in the way brains are wired to picture and organize the scrambled data known as the male-female brain organization.

Consistently, Keshavarz and Ashtarian (2008) found that females showed better reading comprehension abilities and application of reading strategies, so they had significantly better performance than males. In a similar vein, Lynn and Mikk (2009) confirmed girls' superiority in reading. The researchers discussed the reasons behind the girls' higher achievement and explained that their deeper engagement in language-related activities can be among the many factors.

In the Taiwanese context, Lin (2010) investigated the impact of students' gender differences on reading comprehension, reading time and use of strategies and concluded that gender served as a crucial factor in reading comprehension abilities and application of strategies of girls. Within the research literature regarding the relative prevalence of reading difficulties in boys and girls, Wheldall and Limbrick (2010) concluded similar results confirming previously published researches that more boys than girls experience reading problems. Consistent results are found in the study of Payne and Lynn (2011) who investigated gender differences in L2 comprehension among university students with different linguistic backgrounds and at different levels of language learning and found that males and females differed considerably, with significantly better performance for females than males, particularly for those at the intermediate level of learning.

Limbrick, Madelaine and Wheldall (2011) proposed a number of explanations to elucidate the noticed preponderance of males with a reading disability. The most prominent justifications offered for gender differences in reading disability is associated with differences in "behavior,

neurology, inconsistency in cognitive ability and reading motivation" (Limbrich et al. 2001, p.12). Consistently, Ay and Şen Bartan (2012) studied the impact of readers' interest and gender on L2 reading comprehension and concluded that females attained higher scores in all text topics in the study.

Recently, Lahuerta Martínez (2014) aimed at exploring the relative effects of gender and content background knowledge on English reading comprehension among students at different linguistic levels. The findings revealed that gender and content background knowledge had a significant impact on the students' overall comprehension of the texts. In their meta-analysis, Voyer and Voyer (2014, p.117) demonstrated that "[a]lthough gender differences follow essentially stereotypical patterns on achievement tests, for whatever reasons, females generally have the advantage in school marks regardless of the material". The researchers revealed significant findings that the female advantage was greatest and most stable for literacy subjects represented in school marks.

In the ESL context of Oman, a very close context to the UAE, the gender gap in the overall English language achievement in literacy skills favoring girls was found in different age groups at different school cycles and university levels (Osman, Al-Barwani, Al-Mekhlafi, & Babikir 2011). The authors found that significant differences between the males and females are up to 10 points in the overall achievement score. Their results support Griffin's study (2000) who found consistent results and that female students surpassed their counterparts in reading tests.

Having emphasized the importance of instructional strategies and practices that the teacher uses, Logan and Johnson (2010) stated that gender differences are constantly found in the achievement of students in national and international assessments and such instructional strategies facilitate concentration, foster integration of phonological and visual information, and train students on

phonological reading strategies. The researchers also linked gender differences to students' attitudes and motivation towards reading, which they believed are determinants of students' achievement in reading.

When comparing the proportion of male students and female students who achieve at the lowest reading proficiency level, gender differences are most stark (OECD 2011). In the PISA reading results, it was revealed that all gender differences were significant and that girls outperform boys in every PISA country. In reference to the publication *PISA 2009 at a Glance*, lower reading proficiency among males is a major concern in several education systems and closing the gender gap that estimates the differences between the average in performance of boys and girls in reading will help enhance reading performance overall (OECD 2011).

It can be concluded that such conflicting results regarding the relationship between gender and students' achievement in reading comprehension point to the need of more comprehensive investigations to examine the impacts that students' gender and linguistic background may have on students' achievement in reading comprehension in reference to the instructional strategies used.

2.15 Summary of Relevant Studies

The following table provides a summary of the relevant studies that will assist in situating the current study based on literature findings, which will be the springboard that the researcher will use in the next sections. (Table 2.3).

Table 2.3: Summary of the relevant empirical studies

Author/s	Type of study	Study Context	Findings
Al Husban and Al Khawaldeh (2017)	Mixed Method	Jordan	Teacher's utilization of strategies that do not monitor students' comprehension of texts or that are not research-based can cause a major drawback in students' achievement.
Green and Thomas (2015)	Quantitative Method	United States of America	Using Marzano's instructional strategies is very advantageous in creating a dynamic ESL learning environment that fosters students' ability to construct knowledge and think intellectually in reading classrooms.
Guthrie and Klauda (2014)	Mixed Method	United States of America	The authors identified the significance of instructional strategies in developing learners' memory, expanding students' aptitudes to explain, engaging and fostering motivation and nourishing students' creativity.
Goodwin and Webb (2014)	Qualitative Method	United States of America	Teachers' lack of knowledge on research-based strategies deprives students from paths of active learning, which is of a great significance in increasing comprehension, knowledge discovery and exploration.
Manoli and Papadopoulou (2014)	Qualitative Method	Greece	The performance of teachers in teaching reading comprehension is congruent with their solid knowledge of the instructional strategies, which will be realized in the marked achievement of students in reading.

Ganyaupfu (2013)	Quantitative Method	South Africa	Research showed the effectiveness of three different instructional strategies, incorporated to develop students' comprehension of texts in social sciences, motivate goal-oriented attitudes among students and thus improve students' performance.
Suing (2012)	Mixed Method	United States of America	Due to the correlation between comprehension and vocabulary, Marzano's strategies develop students' competency in retrieving words effortlessly which leads to expanding students' word knowledge and increasing the flow of understanding the author's purpose and the main idea. This knowledge can be consequently translated in noticeable improvements in ESL learning.
Haystead and Marzano (2009)	A series of quasi-experimental studies	Different contexts	Research revealed that Marzano's instructional strategies increased students' percentile gains in reading comprehension tests.

CHAPTER THREE: Research Methodology

3.1 Overview of the Chapter

Since this chapter presents data by which a study's validity and reliability are ultimately judged, a detailed account of the data collection procedures will be provided. To make the researcher's choice fully transparent, an overview of the research design that involves the research paradigm, the theoretical and systematic analysis of the body of research approach and methods adopted will be outlined. This will be followed by a description of the participants, study site, sampling and the data collection tools. An outline of how the methodology was established, developed and refined over the period of the study will be further explained. This chapter will conclude with a description of the procedures used to collect and analyze the data and an account of ethical dimensions.

3.2 Restatement of the Purpose

The purpose of this study was to investigate the impact of Marzano's instructional strategies on grade 10 students' achievement in reading comprehension. It also aimed at exploring the perceptions of grade 10 students towards the impact of these strategies on their achievement in reading comprehension tests. Finally, it examined the emerging change, if any, that students' gender may have on students' achievement in reading comprehension based on Marzano's instructional strategies.

3.2.1 Variables of the study

To guide the researcher throughout the study, it was deemed essential to create the variables used in the study. In their book, Gay et al. (2009, p.98) defined a variable as "any entity that can take on different values". Researchers identify two types of variables; an independent variable and a

dependent variable. The first type tackles what the researcher manipulates, so it is called the "treatment or intervention" whereas the dependent variable addresses "the effect or outcome" produced by the intervention (Gay et al. 2009, p.101). For this study. Marzano's instructional strategies, as an aggregation, were used as the independent variable while students' achievement in reading comprehension was the outcome of the intervention. Students' gender was also considered a variable that could have an impact on the dependent variable.

3.2.2 Research Questions

To understand the diverse factors that might have an impact on the findings, seeking answers of the following research questions has guided the researcher in this investigation.

1. What is the impact of Marzano's instructional strategies on grade 10 students' achievement in reading comprehension?

2. Are there any gender-based significant differences in students' achievement in reading comprehension in response to Marzano's instructional strategies?

3. What are the students' perceptions towards Marzano's instructional strategies after being instructed and assessed authentically?

The wording of the research questions plays a significant role in guiding the researcher to choose the type of method and approach to be pursued. For instance, independent and dependent variables and the connection, relations or comparisons between them lead to a more of quantitative approach, while aiming to describe, explore, generate, discover or understand a phenomenon calls for more of a qualitative approach (Babbie 2013).

3.3 Research Paradigm

To yield deeper insights and comprehensive understanding of the research questions, finding a measurable difference, if any, in grade 10 students' achievement in reading comprehension has been the key concern of this study. Fraenkel and Wallen (2009) stated that the purpose itself determines the methodological design of any research study. Having considered the fundamental principle of combining research methods and embedded within the objectives of the research questions, a mixed methods design was employed.

In the words of Bryman and Bell (2015), selecting what constitutes a research design is grounded in the researcher's philosophical assumptions that form the foundation for comprehending and interpreting findings. These assumptions, which are labelled in Kuhn's prominent monograph; *The Structure of Scientific Revolutions* (Kuhn 1970) as paradigms, guide researchers' critical thinking and frame the leading beliefs to view the world.

According to several researchers, a paradigm can be defined as the consolidating conceptual and theoretical framework that encompasses a set of foundational, interrelated assumptions and methods (Cohen, Manion & Morrison 2007). Creswell (2014, p.6), defined a paradigm as "a general orientation about the world and the nature of research researchers hold", which orients the types of beliefs and experiences they embrace along with the type of knowledge they seek. In this respect, Guba and Lincoln (1994) pinpointed that a paradigm is characterized through unfolding a worldview that communicates knowledge through "Ontology" that is described as beliefs on the nature of reality, ways of knowing that is labeled as "Epistemology" and the procedures of systematic inquiry that is known as "Methodology". The significance of the relationships among these paradigm-characterizing terms lies in enhancing the creation of a holistic view of knowledge and the methodological procedures employed to explore it in one

hand and determining and informing the method approach to be embraced in research studies on the other (Johnson & Christensen 2008).

Many scholars have recognized four prevailing research paradigms; mainly post-positivism, constructivism, emancipatory and pragmatism. In a nutshell, post-positivism is associated with quantitative research whereas constructivism is linked to qualitative research. While emancipatory is identified with either quantitative or qualitative research, pragmatism is a consistent paradigm with mixed methods research. The post-positivism paradigm views reality as one while reality is perceived varied in constructivism. The beliefs of the constructivism are built on the meanings of individuals' life experiences while they are generated from the notion that cause justifies the outcome in post-positivism. The emphasis of post-positivism is testing the variables that impact the outcome and developing quantitative measures based on measuring the existed reality whereas constructivism focuses on uncovering and constructing knowledge from the interaction between participants and a specific setting (Creswell 2014).

The broadly conceived research methodologies that influence the mixed research design, known as epistemological and ontological assumptions, are congruent with the pragmatic research philosophy that aims attention to the research question as the ultimate determinant of the research philosophy (Fraenkel & Wallen 2008). To gain more insights on the research problem, research questions and the overall research context, the researcher adhered to the pragmatist philosophy in which a pluralistic approach that endorses both quantitative and qualitative methods and appreciates objective and subjective realities was thoughtfully employed (Johnson & Christensen 2008).

Being unbounded to one philosophy and reality, pragmatism expanded the researcher's horizons to multiple methods and different worldviews (Creswell 2104), because knowledge was

constructed, pragmatically justified; both explanatory and exploratory (Cohen et al. 2007). As such, considering the pragmatism paradigm for this study arose from its features described by Johnson and Christensen (2008). These include permitting the researcher to embrace appropriate data collection methods and analyze the results in a constructive manner. Hence, having the freedom to choose multiple approaches and methods that is paved through the pragmatist lens helped to investigate the phenomenon from different angles and as such answer the research questions more comprehensively.

Additionally, pragmatism extensively makes the research problem the most significant focus of the research and then utilizes different, even conflicting perspectives to evolve knowledge (Johnson & Christensen 2008). Notably, this embraces Fraenkel & Wallen's argument (2008) that research questions, being the most significant determinant of ontology, epistemology, and methodology, define the paradigm to be employed. This is considerably significant since this study encompasses numerous abstract concepts that interweave with Marzano's instructional strategies as the main topic; and so, depending on a sole philosophical stance would not suffice the needs and novelty of the study. Therefore, the researcher believes that using the pragmatism to address and provide practical implications of this problem would enrich "what works" tactic in action rather than philosophizing which will help investigate the problem more thoroughly.

Moreover, the pragmatic philosophy draws profoundly on the abductive reasoning, which relies primarily on the knowledge, experiences, and perceptions of the researchers through using twofold reasoning (Creamer 2017). As far as theorizing is concerned, the abductive approach encompasses the alternation between deductive and inductive analytical approaches, which encourage making logical inferences and constructing theories, and this is of great significance in extending the range and breadth of the study's inquiry (Creswell 2014). In a nutshell, the

researcher pragmatically justified and linked the selection of this paradigm directly to the nature of research questions and the purpose of the study. "What works well for whom" in particular contexts was also enhanced by employing an in-depth mixture of needs-based perspectives, procedures and techniques to answer the questions of the study. Additionally, obtaining more precise and comprehensive perspectives was enriched when subjective, objective and intersubjective realities and their interrelations were appreciated in the study and that is the essence of pragmatism. Therefore, the researcher capitalized on the strengths of this paradigm; particularly the freedom it provides in terms of methods, techniques and procedures of research to satisfy the needs and purposes of the study (Creamer 2017).

As shown in Figure 3.1, selecting the most applicable philosophical paradigm for this study is based on many factors; mainly the assumptions about the nature of knowledge, the theoretical framework, and most importantly the questions and purpose of the study. In other words, as the intersection between these factors generates the research design, advocating any specific research design should be consistent with its fitness for these factors as the guiding principle (Johnson & Christensen 2008; Cohen et al. 2007).
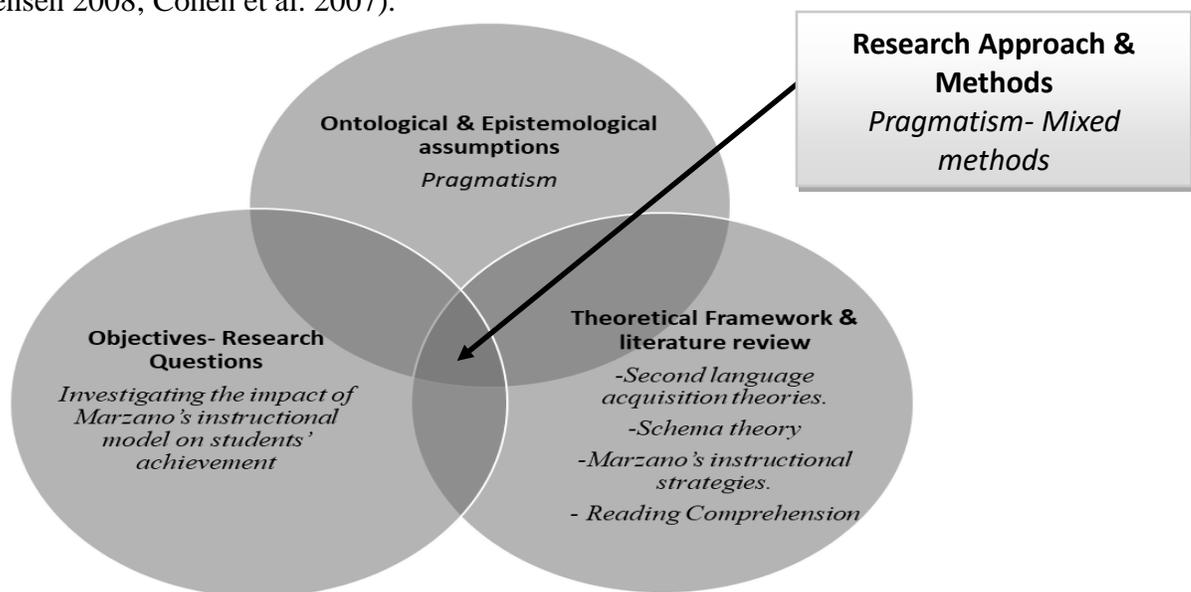
Figure 3.1 Factors influencing the choice of the study's paradigm

3.4 Research Approach and Design

In order to capture a full picture of the current investigation and as neither quantitative nor qualitative method is entirely free from weaknesses; a combination of both methods was employed. For the lens of reasoning for mixed method studies, both inductive and deductive approaches with subjective and objective dimensions and perspectives were endorsed in order to obtain a more comprehensive image of the collected data and interpret them accordingly (Creamer 2017). Researchers identified various advantages for combining quantitative and qualitative methods. These include expanding the scope of the study, corroborating results, providing more depth and breadth to the phenomenon, obtaining more precise and comprehensive standpoints and making more comprehensive inferences (Tashakkori & Teddlie 2009; Thomas 2003).

In the study, the rationale for using this approach was expansion in which the breadth was extended by employing multiple methods for distinct inquiry elements. In simple terms, the quantitative data provided wide-ranging representations of the research problem; and as such more investigations and analysis through collecting qualitative data were required to improve, extend or elucidate the overall picture (Johnson & Christensen 2014).

In addition to the problem and objectives of this study, the research questions lend themselves to this method design. Hence, this design helped offset the weaknesses inherent in using one method to address the research problem. In this regard, it would be significant to refer to Tashakkori and Teddlie's (2009) claim that mixed methods research provides more fruitful inferences, enriches our understanding of the phenomenon and minimizes bias that derives from single methods. In a nutshell, using the mixed-method approach that embraces qualitative and quantitative data collection for this study amplified our knowledge on the impact of Marzano's

instructional strategies and the perceptions of students towards using them. Based on this ground, selecting this design as a strategy of inquiry offered an in-depth understanding of the research problem and overcame the flaws that could have been produced by solely depending on data collected from either source. It is significant to mention that the quantitative and qualitative approaches contributed differently to this study, but both were required to produce subjective and objective data (Creswell 2014).

In the prominent monograph of Creswell (2014), four kinds of mixed methods have been identified; namely the triangulation (concurrent or parallel) mixed methods design, embedded mixed methods design, explanatory mixed methods design and exploratory mixed methods design. In brief, the triangulation type aims at collecting both quantitative and qualitative data simultaneously by giving equal priority to both methods. The embedded design aims at providing an additional source of information by collecting quantitative and qualitative data simultaneously but prioritizing the quantitative data collection method. Collecting both quantitative and qualitative data in a sequential manner commencing with the qualitative data collection followed by the quantitative is about the exploratory mixed methods design. And finally, the explanatory mixed methods design aims at collecting both quantitative and qualitative data in a sequential manner commencing with the quantitative data collection followed by the qualitative data to further interpret, explain or refine the general overview obtained in the quantitative phase.

Considering the objectives of the study and to produce an inclusive design with manifold and corresponding strengths (Fraenkel & Wallen 2008), an explanatory sequential mixed method, giving greater weight to the quantitative method was utilized. That is, the collection and analysis of quantitative data was undertaken first. To assist in expanding and interpreting the findings of

the quantitative part, the collection and analysis of qualitative data was followed. Figure 3.2 shows the research approach of the study.
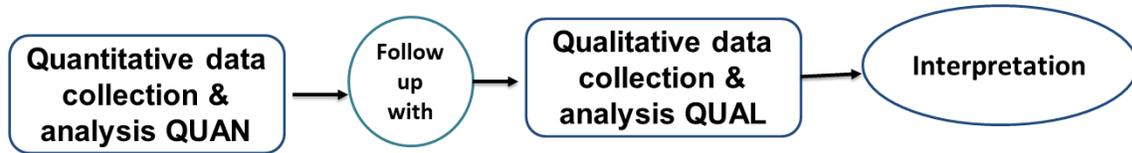
Figure 3.2 Research Approach of the study

Inspired by Saunders, Lewis and Thornhill's (2009) research onion, Figure 3.3 describes the stages conducted to formulate an effective methodology for this study.
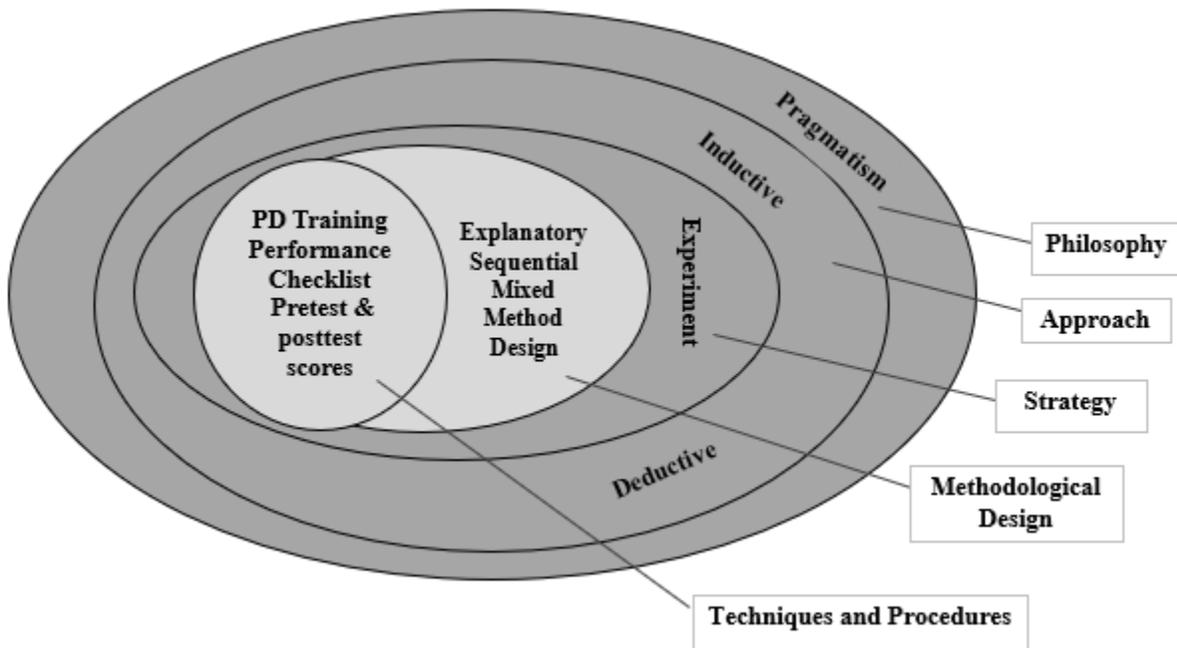
Figure 3.3 Research "Onion" Process

3.5 Context of the study

As a federation of seven emirates; namely Abu Dhabi, Ajman, Dubai, Fujairah, Ras Al Khaimah, Sharjah, and Umm Al Quwain, the UAE was established on the 2nd of December 1971. The oil discovery drove significant developments in almost all sectors in the country which have in turn influenced the demographic landscape of the nation. As reported by UAE National Bureau of Statistics (2019), the growth of population in the UAE is currently considered among the highest in the world, with census data recording a significant increase in population in the last twenty years. The fact that this growth is bolstered by an increasing demand for foreign labor. The pace of the growing expatriate community and the economic growth have been mirrored in the amount of languages used for communication and progress in the field of education.

In the UAE, Arabic is the official language while English is the main L2 and the language of instruction in most educational institutions (O'Sullivan 2017). Pennington (2015) declared that the UAE has the highest number of English medium international schools – institutions where the language of instruction is English – in the world. AlHebsi, Pettaway and Waller (2015) stated that education in the UAE has undergone several iterations of developmental stages. The researchers documented that the progress in education started effectively in 1962 with approximately 4000 students, mostly males in 20 schools. Upon independence, the country celebrated the birth of a new schooling system that aims at eradicating illiteracy by making education free and compulsory for all children.

Given the UAE's relatively recent establishment and educational development represented in the first public school established in 1953 (Abu-Samaha & Shishakly 2008), it can be concluded that its educational organization is reasonably young. With the growth that the country witnessed in relatively most sectors, the educational institutions have considerably evolved to achieve

prominent improvements in the education system (Emirates Center for Strategic Studies and Research 2018). To bring significant educational improvements in the emirate of Abu Dhabi in the UAE, Abu Dhabi Educational Council (ADEC) was established, in 2005, as the supervising body of education in the three school districts/zones/offices in the emirate. ADEC has been heavily involved in the educational reform that focuses on better preparation, greater accountability, high international standards and improved professionalism of the teaching staff (ADEK 2018). Since its establishment, ADEC implemented policies and procedures intended to improve the standards of education and strive for educational excellence. Also, noticeable efforts were excreted to consolidate the view that learning English language is one of the priorities that advances the national education and opens countless doors for knowledge, particularly in the areas of science and technology (ADEK 2018). As a part of continuous efforts to pursue development and improve government performance across the UAE entities, ADEC has been made a governmental department that merged with the MOE and named as the Department of Education and Knowledge (ADEK). The merger aims at streamlining the educational system in the emirate of Abu Dhabi with the federal system already in place in the rest of the UAE to pave the way for the standardization of curricula, evaluation and examinations in the public schools (Gokulan 2018).

The public schools in the UAE are completely subsidized by the government and they follow a single gender model in middle and high school, known as cycle 2 and 3 respectively (Gokulan 2018). The enrollment in public schools was exclusively for national students, however nowadays expats students can be enrolled as fee-paying students (Alhebsi et al. 2015). In the public sector, educational targets have been generated to create more student-driven learning experiences. Also, the MoE has placed more emphasis on the teachers' pedagogical practices and

the instructional strategies they use in their instruction (MOE 2019). The implemented, ambitious initiatives aim at enhancing the learning processes to help translate their purposes into noticeable students' academic achievements.

To infuse the UAE educational agenda and in the words of Sheikh Mohammed bin Rashid Al Maktoum; "priority is education, second priority is education, and third priority is education" (Arab Reading Index 2016, P.2), the government in the UAE has continued to launch multiple initiatives that aim at providing high-quality education (Pike 2017).

Sheikh Khalifa, the president of the UAE, believes that "[i]t is through reading that individuals avail modern knowledge and learn of the latest ideas, experiences and innovations" and "reading allows communities to acquire basic skills that enable them to cope with the cultural renaissance experienced by the world" (MoE Strategic Plan 2019, P.3).

In the UAE, enhancing quality education and promoting reading proficiency are being consummated in the MoE Strategic Plan 2017-2021 that involves considerable ambitious plans designed to nurture and prepare successful learners in both public and private schools (MoE 2019). Consequently, a persistent emphasis on the pedagogical practices that enhance students' achievement in literacy skills and help learners contribute in the progress of the UAE has been the blueprint.

3.6 Site Selection

Like participants, the study site played a crucial role in answering the research questions. In ADEK's words, being enrolled in a public school in Abu Dhabi is "a richly rewarding experience" that is anticipated to prepare students "fully for the future" (ADEK mission 2018). That was translated in departments' efforts to provide optimal learning environments to help students improve their performance. To achieve this in public schools, teachers have been

encouraged to implement innovative educational practices and adopt teaching pedagogies in alignment with the requirements of the twenty-first century skills (ADEK 2018). Looking into the quality of students' achievement, ADEK aims to elevate the overall quality of education in public schools across all subjects with a great emphasis on literacy skills. The unification of the educational systems in the emirate of Abu Dhabi with the federal system, represented in MoE and ADEK, has resulted in the harmonization of curricula and authorization of teaching English from the kindergarten to the twelfth grade using specialized textbooks and resources. The textbooks used in public schools signify partnerships with National Geographic and TED Talks which aim to equip and develop students' vital skills to be successful global citizens and help them enter the university without the foundation year (ADEK 2018; Stockwell 2015).

The site was eight different classrooms in four selected secondary, cycle three; public schools in Al-Ain in the emirate of Abu Dhabi. The rationale for selecting Al-Ain city was due to the nature of the study, which logically needed schools that are geographically close in distance. That is because the researcher was required to expose four teachers, who would teach the participants, to professional development (PD) training sessions to strengthen their knowledge on Marzano's instructional strategies. As conducted by Al Husban and Alkhawaldeh (2017) and Miller (2014), the training sessions served as a supplementary sampling protocol to shed light on the techniques proven by research to be most effective on students' achievement, and as such lead to teachers' growth in teaching reading comprehension.

The training, which will be described in the following sections, was followed by reading comprehension pretests and posttests administered in the students' regular classrooms and classroom observations as conducted in the studies of Al Husban and Al Khawaldeh (2017); Black (2012); Ganyaupfu (2013) and Green and Thomas (2015).

The classrooms were chosen to represent both boys and girls, who are taught by male and female Arabic speaking teachers called as Arabic middle teachers (AMTs) and native English teachers; known as English middle teachers (EMTs) (ADEK 2018). That was significant in helping the researcher address the research purpose and questions and investigate if participants' gender had an impact on their achievement in reading comprehension based on Marzano's instructional strategies. It is important to mention that students in cycle 3 schools are mostly taught by EMTS and/or AMTs with 7.0 as the minimum Academic score in the international English Language Testing System (MoE 2019). That was significant for the study since language of teachers would be a confounding variable if not controlled. Therefore, the researcher selected two teachers whose first language is English and two teachers whose first language is Arabic for the treatment group. Same procedures were implemented for the selection of teachers of the control group.

Selecting cycle 3 schools was linked to ADEK academic standards that are aligned with Abu Dhabi Economic vision 2030 and the strategic plans (ADEK 2018). According to ADEK, the recent strategic plans devote considerable efforts to this level of education to assist in bridging the gap between higher and formal education. Additionally, this cycle of education has recently witnessed significant changes in English language learning, represented in implementing English language programs and utilizing resources that encompass partnerships with international organization. Such initiatives aim at achieving a quantum leap, especially in the instructional strategies, pedagogical approaches and mechanisms in teaching literacy skills (MoE 2019, Stockwell 2015). Choosing grade 10 is justified in the considerable endeavors that ADEK has exerted for this grade level. These are cited in the international achievement tests that are administered twice a year and the recruitment of teachers with a high command in English language in the core subjects (Pennington 2016).

A significant point to consider at this point is the linguistic background of the participants since it has determined their sections. As the UAE government continues its initiatives to create a quality educational system that conforms to world-class standards, all students in public schools were streamed in English as a medium of instruction (EMI) subjects into potential streams, namely Accelerate, General and Advanced. To help gauge the English-language level of students for the purposes of streaming them, a diagnostic test, which involves reading, grammar and vocabulary sections, was administered by teachers of English under the supervision of Academic Quality Insurance Officers (AQIOs) of English language in the MoE. Thus, students' levels in these sections have been consistent with the textbook used and type of assessments administered throughout the school year (MoE 2019). This was important for this study because students' linguistic level and competence would influence their achievement in the pretests and posttests and as such affect the dependent variable. In reference to the MoE plan for English Literacy skills (2018-2019), the importance of English-levelling implementation in the contexts of schools in the UAE is multi-fold. First, it has helped teachers in creating appropriate teaching materials and consult suitable resources. This is of a noteworthy importance for both students and teachers as it has helped in determining the individual needs of all students and adapting the instructional strategies and methods to meet these needs. Additionally, aligning students' levels with the coursebook and assessments has helped in organizing appropriate groupings within the class, and as such assisted in ensuring that all students are challenged and interested. Grade 10 students in the General stream are instructed using "*Bridge to Success- General*" coursebook, which is used as a planned progression pathway to promote students' linguistic and academic growth into higher proficiency levels in literacy skills (MoE 2019).

3.7 Sampling Protocol

To ensure that the participants serve an "investigative purpose" to be "statistically representative", a sampling protocol was followed to provide the clear criteria of the sample selections (Gay et al. 2009, p.134). This involves the following;

3.7.1 The Proposed Professional Development Training

In line with the studies of Al Husban and Alkhawaldeh (2017), Hill and Cohen (2016) and Morewood et al. (2010) and to optimize teachers' effectiveness and performance in teaching reading comprehension using Marzano's instructional strategies, the researcher developed a PD training for the teachers of the treatment group. The studies of Dean et al. (2012); Dubas and Toledo (2016) Duke and Pearson (2008); Ganyaupfu (2013) and Thomas and Green (2015) were consulted to enrich the researchers' effective practices for developing the PD training sessions. It is worth it to mention that the researcher is an accredited trainer who has been training teachers during the PD official weeks for six years. Although the researcher is usually provided with the training materials in most of the training sessions, her experience has provided her with a secure background and foundation on the best practices and methods needed to manage training sessions more successfully. To assess the content validity of the training material, a panel of expert judges were asked to validate its content (Appendix M). The PD training also aimed at creating positive attitudes and reinforcing the teachers' knowledge on Marzano's instructional strategies which would be reflected on their performance in class. The selection of all teachers, who instructed the participants, was simply in reference to the Letter of Permission that the researcher presented to the principals of the selected schools (Appendix K). To facilitate the researcher's mission, the principals, in turn, authorized the researcher to meet with the sample by assigning the teachers and their students for participation. As such, the selection entailed four

grade 10 teachers of English with equivalent qualifications, performance level and approximately similar years of experience. The teachers were bachelor's degree holders from the faculty of Education; Curriculum and Instruction in English language from accredited universities. All teachers have had between 11 and 15 years of experience and were rated as very good achieving teachers in their final evaluation on ADA'E performance appraisal system. They were two males and two females; both AMTs and EMTs who consent the researcher to train them on Marzano's instructional strategies.

In line with Abu Dhabi Vision 2030, the Professional Development Department that is supervised by ADEK has devoted considerable efforts to develop a comprehensive action plan that offers training programs at different levels; namely large group, small group and school-level coaching. In reference to ADEK (2018), the school-level coaching provides trainees with an opportunity to determine their weaknesses and strengths by providing teachers with targeted trainings to address the needs identified through the school improvement planning processes, individual PD plans, and school leadership. In other words, schools are expected to organize their own program of events to support their school improvement journey and meet the individual needs of the teachers and students (ADEK 2018). Upon agreement with the principals to consider this study's training in the school's own training programs for English teachers, the researcher met with the selected teachers and introduced the purposes and aims of the intended training. The researcher explained the workplan and benefits of the program on teachers' effectiveness and inevitably learning gains. And thereby, teachers agreed to participate in the intervention. The teachers of the participants of the control did not receive any training.

Going towards achieving the targeted plans, the PD plans have been implemented for the last few years in the first week in the beginning of the academic school year (MoE 2019), and it is the

time in which the researcher conducted the proposed PD training on Marzano's instructional strategies. Thus, the training sessions were conducted by the researcher during the teachers' PD week (identified as *Tanmia Week*) that ADEK annually assigns during the first week teachers report to schools from August 26th to August 30th, 2018. In consonance with the study of Al Husban and Alkhawaldeh (2017) and Miller (2014), the training was implemented over five sessions in a total of 20 hours. Each session consisted of four hours during the allocated week for training. It is important to mention that those hours were counted in the employee' records and entered by the schools' academic vice principals in ADA'E performance appraisal system.

The regular school day during the teachers' PD week is from 8:00 a.m. to 1:30 p.m. including an hour for lunch break. Upon agreement with the trainees and the school leaders, the training took place in the boy's school from 8:30 a.m. to 12:30 p.m. The researcher chose the boy's school because the teachers of this school had their training in avenues other than the school's campus and the training room was not used. Thankfully, the school administration provided the researcher with a room specialized for training purposes. The training room was equipped with a Smart Board, papers and stationery and that helped in managing the training sessions more professionally.

The training sessions commenced with introducing the objectives of the training program and presenting the importance of Marzano's instructional strategies on enhancing students' academic achievement in literacy skills. The relevant pedagogical theories and the implications of the strategies were also highlighted. The first four sessions involved a detailed explanation of Marzano's instructional strategies along with the practical application of those strategies in teaching reading using different reading texts from grade 10 textbook. The last session was devoted for designing collaborative teaching plans that entail using at least three Marzano's

strategies per lesson. In light of their understanding of Marzano's strategies, teachers referred to lesson plans provided by the MoE and modified them. Teachers were given samples of lesson plans created by the researcher that involve practical applications of using the strategies in teaching reading to enable them to develop and apply the strategies in teaching the treatment group. During the sessions, trainees worked individually, in pairs and in groups to actively discuss and share ideas from their own experience. At times, there was a stage of reflection on the activities they have experienced along with discussions how they can use and/or adapt them for their own students. Appendix A describes the rationale and the workplan of the PD training sessions in detail.

3.7.2 Classroom Observations

To ensure that teachers' effectiveness in delivering the instruction based on Marzano's strategies is evident in classrooms, classroom observations were conducted. Classroom observations were vital because teachers' understanding of Marzano's strategies in teaching reading might not be fully reflected in their actual pedagogical practices in classrooms (Gay et al. 2009).

As mentioned in previous sections, the supervising bodies of education in the emirate of Abu Dhabi recognize the importance of using instructional strategies to teach literacy skills and as such they advocate using the high-yield Marzano's instructional strategies in the teacher's performance appraisal system in the public schools (ADEK 2018). Therefore, the rating scale of teachers' formal observations that is considered in the teacher's ADA'E performance appraisal system was used for evaluation (Appendix B). This type of observational technique has been used to evaluate teachers' practices for the last five years in the public school in Abu Dhabi and is based on a coding system and brief narrative descriptions of the strengths and weaknesses of instruction. This checklist is not only associated with Marzano's instructional strategies, but also

it has been designed to yield very objective and typically specific information on the teaching practices (ADEK 2018).

The teachers of the treatment group were observed for six sessions during the first trimester from September to December with two weeks interval between the visits. All the classroom observations were planned visits. Based on the Letter of Permission, the principals instructed the academic Vice Principals and the English advisors to perform the observations on a non-participant basis and conduct the evaluation using the official form (Appendix C). In the first session only, the researcher joined the team of observers for nearly fifteen minutes to check if teachers needed assistance in the implementation of the strategies based on the practical training sessions of the PD. However, the researchers did not participate in the evaluation process of that session. Playing an etic role during the classroom observations springs from the researcher's attempts to avoid any disturbance or interruption of the normal dynamic of the classroom in respect of Labov's (1972) observational paradox. This paradox denotes the observer's unwitting influence on the phenomenon under observation which may eventually undermine the data collection process (Labov 1972).

Filling in the formal observation form was conducted by the team of observers during the classroom visits. To ensure that the practical application is conducted as anticipated, the researcher asked the observers to send the evaluation form to the researcher after each observed session on a regular basis. That was significant to allow the researcher to assist in case teachers need anything for the lesson planning or any other related issue.

It is worth mentioning that all procedures were articulated clearly to the teachers and the team of observers. Teachers were also informed that the observations would not be a part in their official evaluation by any means. This is significant because such classroom observations might arouse

stress and dissatisfaction among teachers. On this point, Haep, Behnke and Steins (2016) stated that as classroom observations can be conducted for diagnosis, evaluation and counseling. However, using them for evaluation can be elucidated as a controlling measure that leads to stress and anxiety in the observed teachers. Therefore, the researcher ensured that this instrument was conducted to obtain feedback for research purposes.

3.8 Participants

The first step in sampling is to define the population to which the results will be generalized (Gay et al. 2009). In its broadest sense, this study is intended to target the population of all grade 10 secondary students in the General stream in Al-Ain public schools in the UAE. That is a total of 2043 students; 959 boys and 1084 girls in 39 schools as received from the Research Department in ADEK and shared by MoE reports and statistics on distribution of public education in the UAE (i.e. Public Education by Educational Zone reports in the MoE 2019).

As described in a previous section [3.6], the MoE has strived to effectively meet the needs of all by continuing its initiatives to create an educational system that conforms to world-class standards. To help gauge the English-language level of students, a diagnostic test that focuses on literacy skills and vocabulary was administered which served as the basis of streaming students in different sections. The power of this test lies in leveling students into streams that are consistent with the core curriculum and assessments to help meet the individual, linguistic needs of all students. The participants of this study were in the General stream and were instructed using "*Bridge to Success- General*" coursebook, which is used as a planned progression pathway to develop proficiency in English language. According to the National English Language Curriculum Framework published by the MoE (2019), students' English language levels have

been internationally aligned to ensure more reliable measures for students, which in turn will facilitate their linguistic progress and development.

According to the Common European Framework of Reference for Languages (CERF) and the English Language International Framework, grade 10 students in the General stream are described as English "Independent" users in B2 level, who can "understand the overall meaning of simple, extended and complex texts on familiar and unfamiliar concrete topics and can sometime understand some abstract topics" (MoE 2019, p.9). The English levelling implementation (2018-2019) has aligned grade 10 students' levels in CERF standards with other standardized assessments; particularly the International English Language Testing System (IELTS) and the Emirates Standardized Test (EmSAT). Hence, the participants of the study fall in B2 level with an overall band score ranging between 5.5 and 6 in IELTS and scores ranging between 1000 and 1250 in EmSAT. As such, the participants can be described as competent, independent users with generally effective command of the language despite some inaccuracies and misunderstandings.

In their monograph, Cohen et al. (2007) described the categories of selecting a specific group to represent the entire population. They explained that sampling can be conducted using probability or random sampling and non-probability or non-random sampling. The main difference between the two categories is that all members of the population in probability sampling have equal opportunities to be selected whereas the selection of individuals in non-probability sampling is based on following specific criteria.

As gathering data from the entire population that is geographically scattered is rarely feasible, the sample was 480 students (*n=480*) in grade 10 general stream. Given that randomization of the participants was not easily achievable due to practical constraints, particularly in classroom

experiments, convenience sampling was employed. Gay et al. (2009) described this sampling as a non-probability sampling technique that does not allow the researcher to specify the sampling probability that each member of the population has. As such, this nonrandom sampling is best used when researcher's knowledge and experiences along with clear criteria guide the process of selection (Fraenkel & Wallen 2008). The importance of this sampling in this study stems from the fact that to perform the intervention, the participants of the treatment group should have been instructed using Marzano's instructional strategies by their teachers who participated in the PD training sessions.

Since the number of students in classes at the secondary schools ranges between 30 and 33, this study needed eight classes for each group in the study (ADEK 2018). Therefore, the total number of classes was sixteen; eight for girls and eight for boys, for a final count of 480 participants. The participants were divided into two groups: Group one comprised eight classes; four for boys and four for girls in a total of 240 students who were assigned to the treatment group. Correspondingly, Group two consisted of eight classes; four for boys and for girls in a total of 240 students who were assigned for the comparison group. Thus, the sample was 240 boys; 120 from treatment group and 120 from control group and 240 girls; 120 from treatment group and 120 from control group in grade 10 General stream.

For the qualitative part, two sets of interviews were conducted with a few students from the experimental group; both boys and girls. Two separate groups of twelve female students *(n=12)* and twelve male students *(n=12)* engaged in a guided discussion on their perceptions towards Marzano's instructional strategies after being instructed and assessed authentically.

In reference to Ritche and Lewis (2003), the participants of a focus group should be carefully chosen based on their significance and connection to the topic under investigation. Gay et al.

(2009, p.119) explained that the participants in focus groups are not typically selected through "rigorous, probability sampling methods" and, therefore, they "do not statistically represent the population". Rather, participants are chosen through a word-of-mouth or snowball sampling or depending on the type characteristics of the participants that fit the researcher's needs. Onwuegbuzie, Dickinson, Leech and Zoran (2009) illustrated that to provide deeper insights into how people think of the phenomenon under investigation, the selection can be through snowballing or convenient sampling. They also highlighted that this form of qualitative research is most practically effective with an optimal size of seven to twelve participants and that this size is ideal in helping the researcher promote and facilitate the discussion. Therefore, to subjectively select participants with certain qualities, the researcher used the convenience sampling.

To achieve this, the researcher selected twelve participants from both groups whose scores in the pretests increased significantly. However, six male students and four female students did not want to participate in the interviews. Therefore, the researcher, with the guidance of teachers, asked the ones who volunteered to participate to identify and recruit additional participants until twelve participants agreed to participate. The scores of all the informants who participated in the focus group interviews showed marked increase between the two administered tests. For the participants to remain anonymous, their names were coded with the letters A-L.

The following figure (3.4) illustrates the selected participants.
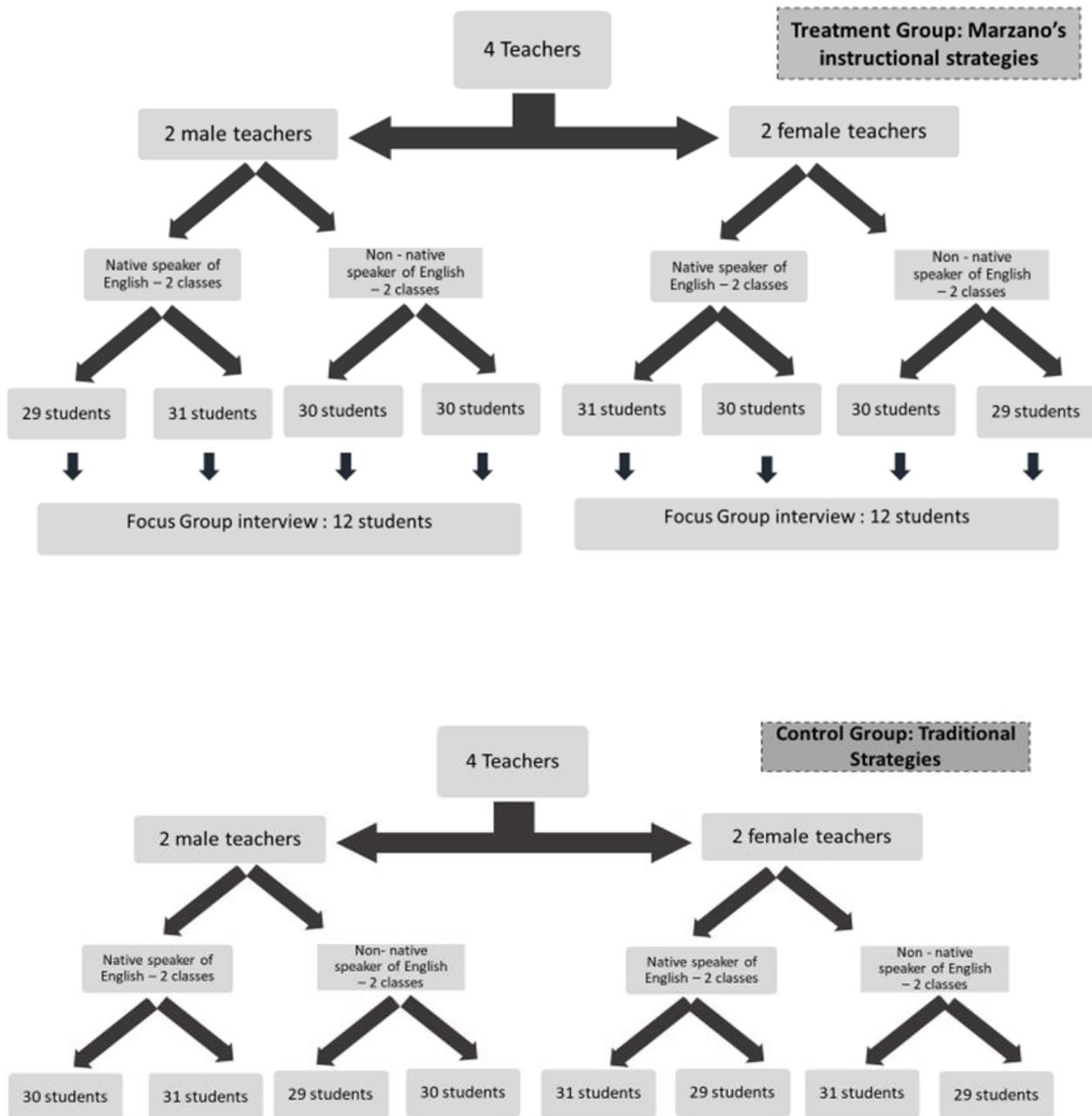
Figure 3.4 Sampling and participants

3.9 Research Instruments

Two instruments were employed in this study: pretests- post-tests and focus group interviews.

3.9.1 Quasi-Experimental-Pretest and Posttest

Howitt and Cramer (2007) explained that there is no research method better than experiments to investigate the effect of independent variables on the independent ones. Building on that ground and to evaluate the effectiveness of the treatment, the study adopted a quasi-experimental design with mixed methods to answer the research questions. Cook and Campbell (1979 cited in Gay et al. 2009) stated that this research resembles experimental research and encompasses the manipulation of an independent variable without the random assignment of participants to conditions. Since this research involves the manipulation of the independent variable, it eliminates the directionality problem and is generally higher in internal validity. However, since quasi-experimental research does not involve random assignment to conditions, it does not eliminate the problem of the confounding variables (Creswell 2014).

As this study is interested in assessing the impact of two types of instructional models in the same pedagogical package (i.e. reading comprehension), the researcher used the nonequivalent control group design. This design does not involve the random assignment of individuals to intervention, but rather the random assignment of intact groups (Gay et al. 2009). According to Babbie (2011, p.173), a non-equivalent quasi-experimental design involves "the use of an existing control group that is similar to the experimental group but is not created by random assignment of subjects to groups". The use of this design in this study was required by the hardship of randomly assigning subjects to the control and experimental groups, which is integral in school setting experiments (Gay et al. 2009). The power of this design lies in narrowing the possible effects of reactive arrangements that can be cause threats to external validity (Babbie

2011). This design has been consistently used in the synthesis of studies conducted by Haystead & Marzano (2009); Jeanmarie-Gardner (2013); Mahdavi & Tensfeldt (2013); Hebert et al. (2016) and Joseph et al. (2016).

Using the researchers' consent form, the teachers contacted the participants' parents on the objectives of the pretests and posttests that were administered during the students' regular English classes. Thankfully, the teachers sent the participants' parents an informative letter prior to the administration of both tests. SMS messages were also sent a day before each test to ensure students' presence for the tests (Appendix E). In line with the objectives of the PD training sessions that were shared and discussed by the researcher, the teachers of the treatment group were responsible for teaching the reading texts in the main student's coursebook based on pedagogical proven-research practices represented in Marzano's instructional strategies. Teachers followed lesson plans created by the MoE, but they considerably modified them to include at least three instructional strategies and sometimes four in each lesson (Appendix F). The modification was collaboratively conducted by the teachers during the PD training sessions. On the other hand, the students in the control group were taught using teachers' own instructional practices and following the MoE original lesson plans. It is important to mention that all the MoE original lesson plans uploaded on MoE SharePoint do not involve using Marzano's instructional strategies (Appendix G).

Over the same period, participants in the experimental group were instructed based on Marzano's instructional strategies while the comparison group composed of students that were instructed using traditional strategies. The pretests and posttests were administered to both the experiment and control groups. The pretests were administered on 11th and 12th of September 2018 while the

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posttests were administered on the 9th and 10th of December. Students' scores in the pretests-post-tests were then compared as shown in Table 3.1.

Table 3.1 Nonequivalent Pretest–Posttest Control Group Design

Group	Pretest	Treatment	Posttest
Experimental Group	O1	X	O2
Control Group	O3		O4

Note:

O1: Pretest results of experimental group
O2: Posttest results of experimental group
O3: Pretest results of control group
O4: Posttest results of control group
X: Instruction using Marzano's instructional strategies (Experimental treatment)

3.9.1.1 Reading Comprehension Performance Test

The administered pretests and posttests were the national tests that have been developed and administered based on MoE curriculum standards for English language learning in the UAE during the academic year 2017-2018 (Appendix D). The used tests for this study are adapted, simplified forms of national and international standardized tests (IELTS and EmSAT) that are created and aligned with students' coursebooks by a pool of English language experts in the MoE. Adopting such formats for the national school assessments is in parallel with the MoE's many initiatives to prepare students in secondary-level school for time-driven proficiency exams that test students' knowledge of English [1.7]. This is also significant since testing students in the secondary school using standardised tests can foster their familiarity with main proficiency exams, which the Ministry has considered one of the standards by which students' English proficiency is measured. Although discussing the correlation between such proficiency exams and the current educational policies that the UAE government places on learning English is

beyond the scope of the study, it is worth mentioning that such proficiency exams play the role of the gatekeeper for students pursuing their higher education in the UAE and, therefore, students should take it for entrance into English-medium accredited degree programme at universities (UAEMOHESR [United Arab Emirates Ministry of Higher Education]. Thus, receiving enough practice on this kind of exams from earlier stages would enhance student's performance on the actual examination needed at later stages of education.

According to *English Language Assessment Guide* issued by the MoE for the academic year (2018-2019), the assessment framework has been created to be in line with the new curriculum. Improving the standard of English leaning and students' achievement in literacy skills in public schools across all grades is the main objective of the assessment framework. As such, setting standards and anticipations for English achievement in conjunction with the international standards and motivating students to achieve the learning outcomes of the curriculum are among the means that are anticipated to make the objectives of the framework achievable. In addition, assessments should be compatible with the effective pedagogically-proven instructional strategies and as such to be utilized as a feedback tool, allowing for positive washback into lessons (MoE 2019).

The learning outcomes (LOs) that inform teaching and learning are reported on in each trimester and outlined in the *Scope and Sequence of Learning Outcomes Framework* (MoE 2019). These LOs should be covered and assessed throughout the trimester using formative, summative and diagnostic assessments. According to the framework, demonstrating how well a student has mastered the LOs is based on the summative assessment, which is used to quantify achievement as a given final mark. The main reading literacy tasks that are included in the summative assessment, which is the same administered test in this study, are Literal and Inferential (i.e.

Retrieval & Interpretative). As such, students should be reading in order "to understand, remember, or recall the information explicitly contained in a passage" and reading in order to "find information which is not explicitly stated in a passage, using readers' experiences and intuitions, and by inferring" (Richards & Schmidt 2010, p.656). In other words, students will retrieve information by reading on the lines and interpret information by reading between the lines as shown in LO 2.2 in Table 3.2.

Based on the assessment framework, students should perform different kinds of reading literacy tasks in the tests. To achieve mastery in these tasks, students should read and evaluate several texts with different types that are associated with the themes and the curriculum objectives. Achieving mastery requires students to make connections between a text and other points of view/ ideas, compare and contrast ideas, make connections between a text and other points of view/ ideas, extract ideas/ themes from a text and apply to a new situation, read or view a text closely and offer realistic interpretations of its meaning, make generalizations and draw conclusions.

Table 3.2 summarizes grade 10 reading learning outcomes along with the learners' characteristics that students should be demonstrating in reference to the English framework published by the MoE (2018-2019).

Table 3.2 Grade 10 Reading Learning Outcomes and Learner Characteristics

Learning Outcomes	Learner characteristics – What students are demonstrating
10 R 1.1 Select and apply a wide range of reading comprehension strategies	Use prior knowledge (knowledge of the topic, theme, familiar concepts or cultural knowledge, personal experiences) Use contextual clues effectively Make realistic predictions based on what is read Effectively skim for the gist/ main idea and scan for details. Identify correctly the purpose and audience of texts read or viewed.
10 R 1.3 Select and evaluate relevant information for specific purposes	Identify different points of view (e.g. first person, third person). Analyze key organizational patterns in a text. Analyze key visual and text features in a text. Distinguish cause from effect, fact from opinion.
10 R 1.4 Use reading strategies to paraphrase, summarize and synthesize	Paraphrase information or ideas effectively (using own words or synonyms/ antonyms). Summarize ideas effectively (from one/ multiple paragraphs or an extract). Synthesize information effectively using some organizational patterns (e.g. comparison-contrast, problem-solution).
10 R 2.2 Retrieve, interpret and reflect on information.	Make connections between a text and other points of view/ ideas. Extract ideas/ themes from a text and apply to a new situation (if relevant). Read a text carefully and offer realistic interpretations of its meaning. Make generalizations at a critical level. Evaluate information, recommendation or thoughts effectively (based on reasons, consequences and implications.
10 R 2.3 Explain how literary elements contribute to texts	Analyze plot structure where applicable. Analyze how the setting relates to the meaning, mood and tone of the text. Analyze the sequence of events and their influence on future actions. Analyze how characterization is achieved.

Since these assessments have been used to provide a benchmark to assess actual student's progress against the standards and the performance levels expected in English, the questions have been designed to measure students' achievement in reading by aligning the different questions and task requirements with target skills and strategies. In line with the standards and specifications shared by the English department in the MoE, the questions generally require students to identify main idea and details; identify explicit information in non-fiction text;

determine author's purpose; make predictions; identify cause and effect; compare and contrast; draw conclusions; summarize and to guess meanings of words.

These strategies are believed to be critical in the task focus in reading standardized tests (MoE 2019). Therefore, to assess the pervious key reading skills and to monitor comprehension, students are expected to use several strategies such as skimming for general ideas and topic sentences, scanning for details and specific information, classifying information, making connections, understanding inference and implied meaning, determining important information and recognizing paraphrasing.

The administered tests in the study consisted of 20 questions, designed to test several reading skills such as the previously mentioned ones. Each question is worth one mark. However, the total grade was converted to 100 for statistical purposes only. The tests included three texts, which range from the descriptive and factual to the narrative text style. A variety of question types were used, namely; multiple choice, matching information, matching headings and identifying information (Appendix D). The reading texts did not contain any non-verbal materials such as diagrams, graphs or illustrations. As the texts did not contain any technical terms, no glossary was provided. However, the texts, which are gender-neutral, were in consistent with the topics studied throughout the trimester. The tests lasted for 60 minutes, and the students were required to transfer their answers to an answer sheet during the time allocated for the test.

One important point that links between the independent variable of this study and the data collection tool; Marzano's instructional strategies and the pretests and posttests is the concept of Backwash/ Washback as highlighted in the English Assessment Guide by MoE (2019). Richards and Schmidt (2010, p.586) defined this concept as "the positive or negative impact of a test on

classroom teaching or learning". They added that this concept addresses the impact that an assessment should have on the teaching practices and instructional strategies in the classroom both preceding and following administering it. In other words, using this assessment should be to push students for better achievement and motivate them to take on challenges with confidence to achieve the purposes of learning literacy skills.

The following table (3.3) displays the target strategies aligned with the task types of the administered tests.

Table 3.3 Task Types Aligned with Target Reading Skills in administered tests

		Task Types Aligned with Target Reading Skills	
Text Type	Questions Type	Task Type	Task Focus
Text A: Exposition	Literal	Matching information Matching Headings	Scanning for specific information Recognizing the main idea or theme in the paragraphs Distinguishing main ideas from supporting ones
Text B: Narrative		Identifying information	Determining author's purpose Understanding of specific/main points Drawing Conclusions
Text C: Factual	Inferential & Interpretive	Multiple choice	Recognizing particular points of information Identifying cause and effect Making predictions

3.9.2 Focus Groups Interviews

In view of the third research question, which is; "*What are the students' perceptions towards Marzano's instructional strategies after being instructed and assessed authentically*?", semi-structured focus groups interviews were used as the second data collection method. The main purpose for conducting the focus group interviews was to obtain data related to the students' perceptions on the strategies and to identify the reasons that underlie these perspectives.

Morgan (1997, p.18) defined focus group interviews as "carefully planned discussions designed to obtain perceptions in a defined area of interest in a permissive, non-threatening environment". Such interviews are believed to provoke cooperative reasoning, which could help researchers obtain ample and diversified ranges of information within a short period of time and will considerably enrich the findings of the study. Regarding their qualitative and group-based nature, Ritche and Lewis (2003) stated that the group context of focus groups generates a process that is in some significant respects distinct from an in-depth interview. The interaction between group participants in which they present their own perceptions and experiences in excess with listening and reflecting on what is said to consider their own viewpoints further, triggers the data. Therefore, and in response to what participants hear, they ask questions, seek clarification, make comments and prompt others to expose more. As the discussion progresses, each participant's standpoint becomes sharpened, refined and developed into a more well-thought out level.

Consistently, Onwuegbuzie et al. (2009) described focus groups as synergistic in the sense that the group interaction produces deep, rich and insightful data. They further added that the spontaneity of the interaction helps uncover further of participants' frame of reference about the study in respects of the language and the general framework of understanding they displayed. In a sense, Creswell (2014) elaborated that the discussion within the group, if managed carefully,

may make participants take over parts of the interviewing role and offer an opportunity to lessen the researcher's load. Walliman (2015, p.15) opined that the strong social context that focus groups produce reflects the "social constructions-normative influences, collective shared meanings" of how people perceive, experience and understand a phenomenon. It is worth noting that some researchers believed that how students perceive learning something affects how they usually perform in it (Ajzen, Czasch & Flood 2009). The researchers explained that when learners hold positive beliefs towards the importance of an instructional strategy, in their case cooperative learning, they will have higher control over it and consequently their performance will enhance. The researchers cited some factors that may affect the students' perceptions towards any instructional strategy, such as past experiences and this where the importance of the focus group interviews lies.

As mentioned in previous sections, two sets of interviews were conducted with each group of participants; which involved 12 male and 12 female students. Each set lasted for a period of around two hours. On this point, Onwuegbuzie et al. (2009) stated that as research questions and research design ultimately instruct the researcher on how to construct the focus groups, well-designed ones typically last between one and two hours and involve between six and twelve participants. The rationale for this choice of focus group size originates from the view that focus groups should comprise adequate participants to yield diversity in the obtained data, yet they should not consist of too many participants for the reason that large groups can produce a stressful environment that may make participants become reluctant and uncomfortable to share and discuss their thoughts, views, and experiences (Onwuegbuzie et al. 2009).

The venue of the focus discussions was the library in the students' schools. The procedures for conducting the focus group interviews included introducing the topic of the research in a very

simplified language. To enhance participants' understanding, different ways for interpretation were used including pictures, examples of graphs and flashcards. Some references to using Arabic language were cited. During the interviews, the researcher presented the focus group participants with nine main questions on Marzano's strategies. Follow-up questions were asked when there was a need for further probing (Appendix H). These questions were grounded in the comprehensive framework for effective instruction suggested by (Marzano 2007), and in the framework related to best classroom instructional practices used in applying the research-based instructional strategies for increasing student achievement developed by Marzano et al. (2001) and its related text suggested by Dean et al. (2012). The questions, which aimed to gain knowledge on participants' experiences, opinions, values, and feelings on using Marzano's strategies in answering reading comprehension questions, were constructed to answer the research question in consistent with the body of the literature review [2.13]. Various forms of data were compiled; including notes taken and audiotapes of the male participants only. Literature recommends that audio-recording diminishes the interviewers' bias to make ignorant selections of data (Fraenkel & Wallen 2008). However, due to some cultural constraints, the principal of the girls' school advised the researcher to depend on taking notes only and as such the data from the female participants were note-taken and compiled with the help of one teacher who volunteered to help the researcher.

To provide insights to the obtained data, the researcher attempted to capture and record any non-verbal data (Gay et al. 2009). The researcher also consulted the checklist of focus group practicalities suggested by Riche and Lewis (2003) to help make this process more feasible and successful. To avoid acting only as a moderator that intervenes only to keep the topic of discussion on the area of interest, the researcher was responsible for facilitating and guiding the

discussion without controlling it, prompting participants to speak, and encouraging all the students to participate. As suggested by Walliman (2015) and to allow for the exploration for not only what students think of Marzano's instructional strategies but how and why they think this way, the researcher created an environment that is conducive and supportive for group discussion, which encouraged all participants to speak and as such gather deep and meaningful data.

3.10 Procedures and Data Analysis

Once the research design, sampling techniques and participants were identified, procedures were translated into action. Obtaining authorization for study's participants and site was based on BUiD's Letter of Permission that was presented to the Research Department in ADEK (Appendix I). Upon obtaining the Research Department approval, the researcher visited the selected schools and discussed with the principals the research aims and significance. The principals welcomed the researcher's initiative to conduct the study in their schools' campuses and expressed their wishes that this study brings significant contribution to promote student's achievement in reading comprehension. To facilitate the researcher's mission, the principals contacted the academic vice principals and the English advisors to arrange for the selection of the teachers, who would participate in the PD training sessions and sample selection. The researcher met with the teachers, whom the intervention would be carried out in their classrooms. That first two-hour meeting was in the first week of July 2018 when teachers had only to invigilate and mark final exams with no teaching. Thankfully, the principals made it easy for the researcher to meet with the selected teachers by exempting them from exam's invigilation. During that meeting, the researcher introduced herself and thoroughly explained the purposes, aims and procedures to be implemented. Teachers expressed their willingness to participate; particularly when the roles of the principals, academic vice principals, English advisors and the researcher were clearly

identified. During the second meeting of the same week, the researcher briefly described the scope and purposes of the training sessions to be conducted during the PD week in the last week of August 2018 and handed them some sheets designed by the researcher that briefly describes Marzano's instructional strategies. As described in previous sections, the training hours were counted in the employee' records and entered by the school's principals in ADA'E performance appraisal system.

During the last week of August 2018 when teachers reported to work, the researcher delivered the training sessions during the PD week [3.7.1]. Interestingly, the researcher kept in touch during the Summer vacation to establish rapport and build trust. As conducted by Al-Husban and Al-Khawaldeh (2017) and Black (2012), the training encompassed five sessions in a total of 20 hours. Each session consisted of four hours and focused on the daily practical techniques and procedures rather than the theoretical knowledge. Adapting these strategies and modeling them to be involved in the teacher's planning processes were based on the 1st term units in "*Bridge to Success*" grade 10 General coursebook. In consistent with the instrumentation of Hill and Cohen (2016) and Miller (2014) and Morewood et al. (2010), different methods of delivery were used in the training; such as PowerPoints, videos, differentiated handouts and different teaching techniques.

The researcher explained the objectives of the scales to be used during classroom observations and ensured that they would be used for research purposes. The selected teachers undertook the intervention in students' regular classrooms during regular class hours. The pretests were carried out one week before the intervention. The duration of the intervention was six periods a week in approximately three consecutive months. The researcher herself administered both pretests and posttests while the teachers helped in the invigilation process. The researcher marked the exam

papers and the teachers moderated. The overall data was collected and statistically analyzed to draw conclusions (Creswell 2014). The interpretation of the obtained quantitative data helped modify focus group questions that were constructed in reference to the body of literature review.

As described in pervious sections, the focus group interviews aimed at giving participants an opportunity to describe their experiences and elaborate on benefits and challenges during the intervention. During these interviews, the researcher established rapport with all the participants. Glesne (2015) maintained that to engage and motivate participants to share their opinions, reflect on their experiences, and provide honest information, establishing rapport becomes a requisite. In this study, establishing rapport with the students helped to make them voice their opinions on their experiences and encouraged all to participate in the discussion. The interviews were conducted in English, however the researcher allowed the participants to refer to Arabic, when needed, in their explanations and descriptions of their lived experiences during using Marzano's strategies in the reading classes. Also, to create a friendly atmosphere during the interviews, snacks and beverages were provided. In the first ten minutes, the researcher introduced the topic and presented a brief overview of the background and purposes of the study. Some warm-up questions were asked to help participants feel at ease. During the focus groups, the researcher moderated the discussion to encourage the participants to present their own views on the instructional strategies and highlight whether they facilitated or hindered their learning. By means of active listening and observation, the researcher kept a mental note of the discussion and captured any non-verbal data. The researcher probed the entire group and individual students equally using open questions expressed in simple language.

3.10.1 Analysis of Quantitative Data

Quantitative research produces data that provides quantifiable and objective results. Typically, the researcher summarizes the data in a way that allows for reproduction and generalizations of results to the greater population (Cohen et al. 2007). Babbie (2013) posits that quantitative data analysis is an influential research form, originating in part from the positivist approach, that involves the techniques by which researchers translate data to numerical form for statistical analyses. According to Gay et al. (2009, p.303), statistics is "simply a set of procedures for describing, synthesizing, analyzing, and interpreting quantitative data" of which quantitative researchers should have a conceptual understanding.

For the quantitative part and in consistent with the analyses conducted by Bernel (2012) and Jeanmarie-Gardner (2013), the researcher employed descriptive and inferential statistics to describe the ratio data to make predictions or inferences if the obtained data from the sample can be generalized to the entire population. To this end, the researcher imported the data into the Statistical Package for the Social Sciences (SPSS) version 23 (IBM 2012) for the statistical analysis. Initially, the participants in both groups were assigned different codes against which their quantitative results from the pretests and post-tests were recorded. Descriptive statistics of mean scores (x) and standard deviations (SD) were computed for scores of all the administered tests. These descriptive statistics were examined and tested to ensure that the required assumptions of normality (inspection of histograms), homogeneity (equality) of variance (Levene's test at 5% level of significance), linearity, homogeneity of regression slopes (customized analysis of covariance (ANCOVA) model on SPSS), and independence of covariates and treatment effects (t-test), for use with parametric statistical analyses were met (Field 2009).

According to Field (2009, p.61), "the core element of the assumption of Normality is that the distribution of means across the sample is normal". For this study, the normality was computed using the mean score of the main study variables of pretests and posttest scores of total scores for the categories of Literal and Inferential scores. Normality was evaluated using frequency distribution, skewness and kurtosis values near zero between -2 to +2 (Pallant 2011). A visual examination of the data using a histogram was used to graphically represent the descriptive statistics of the study variables. On the other hand, Field (2009) explained that Linearity assumes that the relationship between variables has nearly a linear shape. Independence means that each value of the dependent variables is not affected by other values, while homogeneity of variance assumes that variances of the populations from which different samples are drawn are equal (Pallant 2011). This is assessed using Levene's test, which tests the null hypothesis that the population variances have equal distributions (Pallant 2011). The importance of using appropriate preliminary analysis is to certify that the data does not violate the assumptions of the statistics planned to be computed (Gay et al. 2009).

As the assumptions tested using Levene's test of homogeneity and scatter plot revealed that there is no violation in all test scores for both methods of teaching, parametric tests were used to answer the first and second research questions. Pallant (2011, P,17) stated that parametric tests are more influential and suitable when the variable measured is "normally distributed in the population and the data represent an interval or ratio scale of measurement". Parametric tests also suggest that the participants are randomly nominated for the study and the variances of the population comparison groups are equal.

To answer the first research question (What is the impact of Marzano's instructional strategies on grade 10 students' achievement in reading comprehension?), paired *t*-test and one-way Analysis

of Co-variance (ANCOVA) were used. The *t* test is used to determine whether two groups of scores are significantly different at a selected probability level by comparing the actual difference between the means of the groups with the difference expected by chance if the null hypothesis (i.e., no difference-zero) is true (Field 2009). On the other hand, Gay et al. (2009) describes the analysis of covariance (ANCOVA) as a form of simple, one-way analysis of variance (ANOVA) that is used in quasi-experimental non-equivalent control group design for controlling and eradicating extraneous variables, particularly the pretest covariates that may extremely correlate with posttest scores. Thus, by using pretest scores as covariates, an ANCOVA of posttest mean scores was used to compare the pretest scores of the experimental and control groups after the intervention and as such to adjust posttests scores for initial differences on some variable. This is significant because in quasi-experimental non-equivalent control group design, the posttest scores may have a significant linear relationship with pretest scores (Field 2009). In all statistical testing of hypotheses in this study, a p-value equal to or less than 0.05 ($\alpha \leq 0.05$) was considered statistically significant at 5% significance level.

To answer the second research question (Are there any gender-based significant differences in students' achievement in reading comprehension in response to Marzano's instructional strategies?), an independent t-test was used to find the statistical differences in mean score between male and female students.

3.10.2 Analysis of Qualitative Data

In the words of Cohen et al. (2007, p.461), qualitative data analysis can be defined as the "process of making sense of the data in terms of the participants' definitions of the situation, noting patterns, themes, categories and regularities". Consistently, Gay et al. (2009) explained that qualitative data analysis involves transforming the collected qualitative data into clear,

comprehensible, perceptive and most importantly reliable findings using various analytic procedures. The essence of qualitative data was aptly described by Walliman (2015), who stated that as this kind of analysis involves organizing, explaining and elucidating the data, it tends to be a constant, developing and iterative, but necessarily successive process by means of having data collection, analysis and reporting results intertwined.

In short, Creswell (2014) posited that this analysis serves as a pursuit for wide-ranging statements and conclusions about relationships among categories of data to explain their meanings inductively and deductively and establish patterns or themes. He also suggested several procedures that aim at reducing the volume of raw information, scrutinizing significance from trivia, identifying important themes and constructing an interpretive, narrative framework that includes voices of participants, interpretation of the stated problem, and contributions to the body of literature (Creswell 2014). The procedures as also described by Gay et al. (2009) involve organizing the data based on the research strategy and data collection techniques, describing the several pertinent aspects of the study such as the opinions of participants and the impacts of any activities on the participants, and finally interpreting and explaining the findings by attaching significant results and putting patterns or themes into an analytic framework.

As a matter of fact, there are variations in the number and descriptions of qualitative data analysis steps, yet all suggest a recursive, interactive process with interrelated steps that develop overtime (Creswell 2014). With this fact in mind, the qualitative data analysis of this study was conducted according to a qualitative thematic analysis form as described by Braun and Clarke (2006) and Gay et al. (2009). As a foundational method of analysis in qualitative research, Braun and Clarke (2006, p.79) defined thematic analysis as: "a method for identifying, analyzing, and reporting patterns within data". The authors added that thematic analysis is a widely used method

of analysis in qualitative research as it is very supportive to novice researchers. This method of analysis ensures that the initial data is systematized by thematic organization to glean more information needed to better understand the phenomenon of interest. To ensure conducting an effective thematic analysis, the following procedures were considered prior to the analysis:

1. Recording of data was done by audio recording on a digital voice recorder (except for girls). Taking notes served as additional backup, particularly when students commented on each other's points.

2. Verbatim transcription of the students' responses commenced upon interviews' completion. Ensuring a speedy completion was significant to better capture the context and the significant details. Then, the original interview of the entire verbatim transcription was listened to again with a keen ear and more attention to details. To certify that the researcher captured an overall and comprehensive impression of the content and context, the finalized transcribed text was thoroughly read. Then, the completed verbatim transcriptions were presented to several participants for verification purposes to ensure the reliability and validity of the obtained data.

As the thematic analysis involves searching across data to find repeated patterns of meaning, the researcher followed the inductive approach and implemented the steps of the analysis suggested by Braun and Clarke (2006). Interestingly, some of the stages of thematic analysis are similar to the phases of other methods of qualitative analysis (Gay et al. 2009). Braun and Clarke (2006) provided an outline to guide researchers through the six phases of analysis. They further suggested examples to demonstrate the process. The phases of the thematic analysis along with the procedures carried out in each phase are summarised in Table 3.4.

Table 3.4: Phases of Thematic Analysis (Adapted from Braun and Clarke 2006)

Phase	Description of the process	Procedures
1. Familiarising yourself with your data:	Transcribing data, reading and re-reading the data, noting down initial ideas.	The researcher immersed herself in the data and reread the transcripts at least twice to identify patterns and meaning
2. Generating initial codes:	Coding interesting features of the data in a systematic fashion across the entire data set, collating data relevant to each code.	The data was coded into meaningful and manageable chunks of text, such as passages, quotations, single word. Initial codes were advantages and challenges
3. Searching for themes:	Collating codes into potential themes, gathering all data relevant to each potential theme.	The researcher analyzed and sorted the codes to identify theme
4. Reviewing themes:	Checking in the themes work in relation to the coded extracts (Level 1) and the entire data set (Level 2), generating a thematic 'map' of the analysis.	The researcher read through the entire data set to ensure that the themes fit in relation to the data.
5. Defining and naming themes:	Ongoing analysis to refine the specifics of each theme, and the overall story the analysis tells; generating clear definitions and names for each theme.	The researcher focused on defining each theme, identifying the essence of the theme and determining the aspects of the data and research questions the theme that fit.
6. Producing the report:	The final opportunity for analysis. Selection of vivid, compelling extract examples, final analysis of selected extracts, relating back of the analysis to the research question and literature, producing a scholarly report of the analysis.	The researcher analyzed the data and wrote a narrative about the data

It is important to mention that the interrelated themes and categories were interpreted and integrated into a coherent whole to provide a description of the emerging themes. Comparing and contrasting data was significant in providing information about an array of ideas and illuminating the differences in perspectives between the participants (Walliman 2015).

The following Table 3.5 provides an overview of the data collection instrument and analysis procedures in relation to each question.

Table 3.5 Data Collection and Analysis Procedures

Research Questions	Research instruments	Analysis
1. What is the impact of Marzano's instructional strategies on grade 10 students' achievement in reading comprehension?	Pre-tests and post-tests	Measures of central tendency: mean scores and standard deviations. Inferential statistics were applied to establish the statistical significance of the differences between the means of the pre-test and the post-test scores
2. Are there any gender-based significant differences in students' achievement in reading comprehension in response to Marzano's instructional strategies?	Pre-tests and post-tests	An independent sample *t*-test was conducted to investigate if students' gender has effects on the students' achievement.
3. What are the students' perceptions towards Marzano's instructional strategies after being instructed and assessed authentically?	Focus group interviews	Thematic content analysis to generate codes, categories, and themes.

3.11 Quality Criteria of the Research

Methodologists have been seeking guidance to support them in the judgement of the quality of qualitative and quantitative research (Creswell 2014). To assess the quality of applied and practice-based research, Bakioglu and Kurnaz (2009) suggested that research should encompass important questions, should connect research to theory, and have a coherent chain of reasoning. They added that quality of research can be considerably evaluated based on the appropriateness of the instrumentation and the methodology that can make researcher replicate and generalize it across studies. As coined by the advocates of conventional paradigm, Lincoln and Guba (1985, cited in Walliman 2015) stated that the quality of the quantitative research is judged against the concepts of validity and reliability while the holders of the naturalistic inquiry suggest the

concept of trustworthiness for judgment the qualitative research. This mixed methods research used procedures that are typically employed in both quantitative and qualitative approaches to comprehensively understand the problem and improve the validity, reliability and trustworthiness of the study (Gay et al. 2009).

3.11.1 Validity and Reliability in Quantitative Part

The principles of validity and reliability are central cornerstones in any social science research (Babbie 2013). One of all-encompassing and reasonable descriptions of validity that describes how the varying epistemologies and methodologies generate different concepts of validity is cited by Hammersley (1987 cited in Gay et al. 2009). Hammersley stated that "An account is valid or true if it represents accurately those features of the phenomena, that it is intended to describe, explain or theorize". Cohen et al. (2007, p.134) cited numerous possible definitions and replacement terms for validity, such as "accuracy", "degree of approximation of reality" and "the extent that differences in scores yielded…reflect actual differences". Babbie (2013, p.154) also opined with numerous definitions cited by researchers on the significance of validity and indicated that, in conventional usage, validity refers to "the extent to which an empirical measure adequately reflects the real meaning of the concept under consideration".

A description of validity; internal and external validity can be detected in any typical research methodology textbook. For instance, Gay et al. (2009, p.295) defined internal validity as "the condition that observed differences on the dependent variable area direct result of the independent variable, not some other variable." They explained that when reasonable challenging explanations in the research cannot be eliminated, internal validity is threatened. On the other hand, Johnson and Christensen (2000, p.200) described external validity as "the extent to which the results of a study can be generalized to and across populations, settings and times". They

stated that even if a specific finding has high internal validity, the generalization outside the study context may not be guaranteed. Undoubtedly, numerous works have identified a number of threats to internal validity, including history, maturation, testing, instrumentation, statistical regression, differential selection of participants, mortality, and interaction effects. Also, threats to external validity have been classified into three areas population validity, ecological validity and external validity of operations (Gay et al. 2009).

Creswell (2014) claimed that almost all educational studies have threats to internal and external validity and sometimes it is difficult to eliminate these potential threats. For instance, even if the instrumentation is acknowledged in research reports, it is difficult to eliminate its potential threat to internal validity. In terms of external validity, population and samples in virtually all studies in the field of education are subject to sampling error. However, identifying validity threats is vital since it provides significant information needed for replication, which is the essence of research (Johnson & Onwuegbuzie 2004).

It is worth it mentioning that the degree to which an account is considered generalizable is an aspect that evidently differentiates between quantitative and qualitative researches. For instance, generalizing results to wider groups is one of the most important tests of validity in quantitative approach, yet is believed to be of no importance in qualitative approach (Winter 2000). On this point, Winter (2000) joined the claims made by many researchers that qualitative research touches upon the meanings and experiences of the "whole person" or localized culture," while 'quantitative research is concerned with fragmenting and defining phenomena into measurable categories that can be used to all subjects or even larger populations and parallel circumstances. Hence, it can be concluded that although the quantitative research can claim validity for wider populations, it is confined to measuring elements that are detected common to all.

The numerous definitions, which illustrate that validity is an important key to successful research, suggest that it is a concept entirely associated with the term of 'reliability' (Cohen et al. 2007). In everyday English, reliability means dependability or trustworthiness. The term means almost the same when describing measurements (Gay et al. 2009). In his comparative discussion of the notions of validity and reliability, Winter (2000) stated that the definitions of reliability are wide-ranging and as multifaceted as those for validity. Reliability can be defined as "the ability to measure consistently" or "capacity to yield the same measurement...stability" (Winter 2000, p.5). Consistently, Gay et al. (2009) described reliability as the degree to which a test consistently measures whatever it is measuring and as such it is associated with the degree to which a study is replicable or provides similar findings if administered to the same sample at diverse times. In essence, reliability describes the consistency of the scores produced whereas validity is concerned with the appropriateness of a test.

In the quantitative part, achieving validity and reliability of the current study stems from the researcher's secure knowledge of the previous studies that tackle the same topic and highlight issues regarding reliability and validity, yet undertaken in different contexts. A theoretical framework based on an extensive body of literature assured the reliability and the validity of the measuring instruments. The administered test was nationally created and authorized by a pool of English language experts in the MoE and administered for the same population in the same setting. Also, it assessed authentic language skills and provided a benchmark that measures actual students' progress against standards and anticipated performance levels expected in English and that established the validity of the instrument.

Moreover, as discussed in the previous section [3.8.1], these assessments are matched to learning outcomes and reflect students' learning of the twenty-first century language needs and goals. As

a result, these assessments truly ascertain whether students can demonstrate these skills and outcomes, and this achieves the concept of validity. It is worth it mentioning that as the assessment developers work to create highly valid and reliable assessments, they consider the concept of practicality. This concept is significant since the practical implications of assessments play an integral role in administering assessments realistically and successfully by taking into consideration several factors like time constraints on marking and number of students. Addressing these factors to assess the assessments' practicality helps assessment designers to fine-tune as necessary and viable.

Based on the English Language Assessment guide issued by the MoE (2018-2019, p.5), a decent way to examine reliability in a test is "when two or more markers mark the same exam and their scores are the same or, at least, very similar". Simply put, it is about attempting to use objective criteria and eliminate subjective feeling in marking. The reliability of the test in this study was achieved as the form of questions of exams only have one right answer.

To establish test-retest reliability on the reading scores, the researcher administered the same test to the same group on two occasions with three-month time interval and then calculated the correlation coefficient. Additionally, the classes for both experimental and control groups were randomly allocated to one of the treatments and the participants' assignment to the treatment was by class, not by individual in order to reduce some of threats and avoid the discrepancy in intervention within the class that may affect reliability. In terms of identifying differences between groups, analysis of covariance was used to equate the groups statistically. Creating and using the rating scales of teacher's formal observations by the experts and specialists in ADEK for evaluation purpose validated their use for examining teacher's performance in classrooms (Appendix L).

3.11.2 Trustworthiness in Qualitative Part

Trustworthiness is of great vital in qualitative research. Richards (2104) indicated that trustworthiness can be enhanced by employing several data sources, verifying raw data, ensuring trustworthiness in coding data, respondent validation, verification and validation of findings, identifying the researcher's role to control for bias, choosing of quotes carefully, maintaining confidentiality and anonymity and stating the limitations honestly. Lincoln and Guba (1985, cited in Walliman 2015) explained that trustworthiness has four aspects; namely credibility, transferability, dependability and conformability. These concepts are parallel to internal validity, external validity, reliability objectivity, respectively.

Credibility refers to the extent to which findings of the study are sincere and undistorted (Gay et al. 2009). To meet this criterion, the researcher established the respondent validation and shared the transcripts of the interviews with the participants as a kind of member checking and verification. Richards (2014) stated that the tenet of credibility in trustworthiness can be enhanced by member checking and securing interviewee confirmation regarding what they said. Transferability denotes the degree to which the obtained findings can be generalized or transferred to other contexts (Gay et al. 2009). Thick description of methods and findings that the researcher provided will be of utmost significant to allow readers to assess and make informed judgment and as such transfer the conclusion to other contexts. Dependability is associated with the reliability and stability of the collected data while confirmability is about the neutrality and objectivity of the data (Gay et al 2009). Therefore, to show that the researcher's personal values and theoretical affiliations do not have impact on this research, an account of the findings was provided to participants for member checking and participant validation.

To lessen problems that might arise in trustworthiness while conducting the focus groups interviews, the researcher consulted the relevant studies to generate questions that were relatively specific and highly trained herself on moderating and facilitating techniques. Also, Richards (2014) pointed out that it is possible that the researchers' prior knowledge and preconceptions lead to a kind of unconscious bias to the data, which may affect the concept of reliability. Therefore, documenting these preconceptions would be of a great significance while making data.

Content validity of the questions was established through a panel of experts including university professors and professionals in the field. As such, prior to conducing the interviews, the focus group questions were submitted to eight specialists, who were required to judge their face and content validity. Some specialists were three members of the teaching staff at three different universities. Two were MoE native English coordinators while three were licensed English teachers in two secondary schools in Al Ain (Appendix M).

As a matter of fact, the questions were piloted to help improve any deficiencies. The researcher carried out the pilot study with a convenient sample of 4 student respondents, who were selected by their teachers and not included in the assigned sample.

Conducting the preliminary assessment of the questions yielded significant feedback used to make the following adjustments;

1. Some questions should be articulated in both Arabic and English as some terms seemed difficult for participants to understand. Thus, pictures, flashcards and graphic organizers were displayed.

2. While asking about the strategies that aim at helping students apply knowledge, the strategies were very ambiguous to the participants. Therefore, the researcher prepared a

very brief explanation on these strategies, which was accompanied by displaying some of the students' samples of their previous classwork.

3. Some questions seemed to prompt the wanted answer and, therefore, these leading questions were avoided in the focus group interviews.

4. Simplifying language was of great significance to enhance participants' understanding of the questions.

5. To establish the degree of confidence, accuracy and trustworthiness of the obtained data and to avoid biases in the qualitative part, the researcher followed several techniques suggested by Fraenkel and Wallen (2008). First, the researcher recorded her personal thoughts considered as researchers' reflexivity while conducting interviews. This technique aided in recording unusual or incorrect responses to be checked later against other comments or data. In addition, various forms of data were compiled; including notes taken and audiotapes. Using different ways to record data was significant to guarantee that no spoken information was missed. Also, the researcher asked four participants; both boys and girls to check the transcription of their own responses.

3.12 Ethical Consideration

Elliott (2005, p.134) described all matters relating to "the relationship between the researcher and the research subjects or participants, and the impact of the research process on those individuals directly involved in the research" as ethical. Cohen el. at (2007) stated that this term comprises of the moral issues implied in the research in reference to individuals directly involved in or impacted by the study. They added that it is crucially important to avoid doing harm to respondents involved along with avoiding harming the educational system.

As this study involves human subjects and due to the novelty of the topic, adhering to the research ethics requirements; privacy, honesty, fairness, confidentiality and other ethical issues, was considerable (Walliman 2015). With evident transparency, the researcher supported with the letter of permission from the BUiD university (Appendix I) requested approval of the Ministry, which in turn issued a no-objection letter to implement the procedures of the study in the selected schools (Appendix K). Embedded in the ethical guidelines, the researcher briefed the administration of the chosen schools about the purpose, significance the timeline and procedures. During the meetings with teachers and students, the researcher explained the role of all those involved in the study; researcher, teachers, advisors and school administration. Cohen et al. (2007) maintained that the rights of participants should always be respected. Achieving this implies that the consent form should include a few items such as;

1. The purposes and aims of the study should be clearly described, so participants become knowledgeable of the nature of the research.

2. The procedures of the study should be clearly stated.

3. The anticipated advantages and possible disadvantages of the research should be demonstrated.

4. Participation in the study should be voluntary and withdrawing at any time should be permitted.

5. Assurance that the participants' responses remain anonymous and that the obtained information will remain confidential.

A consent letter was subsequently circulated in both schools with comprehensive details about the objectives and procedures of the study. The consent letter highlighted the strict confirmation of privacy and confidentiality of all the participants and ensured that the participation is

voluntary. The right to withdraw at any time during the intervention without any consequences was also stated. The consent letter also confirmed that the collected data will be used for research purposes only and will not be passed to any other parties under any circumstances (Appendix J).

To safeguard anonymity and confidentiality of the participants, their names were changed into pseudonyms and their schools referred to as "School A and School B" and the protection was ensured in both analysis and interpretation. Also, the participants' perceptions and their teachers' performance during the observations were kept confidential and were not disclosed to anyone. During the interviews, no names were mentioned of any participant, but instead coded names were utilized. Cohen et al. (2007) defined anonymous respondents as participants whose answers cannot be recognized as theirs, by the researcher. On confidentiality, Cohen et al. (2007, p.62) stated that "[a]lthough researchers know who has provided the information or are able to identify participants from the information given, they will in no way make the connection known publicly; the boundaries surrounding the shared secret will be protected".

The teacher's pedagogy is another concern to consider in this study. That is, although the selected teachers follow the same ADEK curriculum and performance indicators, the study guaranteed that those teachers were given the instructional freedom to tailor their instruction to correspond with their individual technical preference and their students' capacities. Hence, the ethical consideration regarding not confining teachers' innovative practices, which might lead to less fruitful instruction, was one of the ultimate concerns of the researcher. Although the information collected was not regarded as sensitive, the researcher adhered to the research ethics requirements to ensure that none of the participants was physically or psychologically harmed at all research phases.

The following table summarizes the methodology section (Table 3.6).

Research Question	Participants		Sampling	Design-Research instrument	Approach	Data Analysis
What is the impact of Marzano's instructional strategies on grade 10 students' achievement in reading comprehension?	Grade 10 students	N= 480 240 males and 240 females	Convenience sampling	Quasi-experiment-Nonequivalent control group design Pre-tests and post-tests	Quantitative	Descriptive statistics SPSS version 23
Are there any gender-based significant differences in students' achievement in reading comprehension in response to Marzano's instructional strategies?	Grade 10 students	N= 480 240 males and 240 females	Convenience sampling	Quasi-experiment-Nonequivalent control group design/ Pre-tests and post-tests	Quantitative	Descriptive statistics SPSS version 23
What are the students' perceptions towards Marzano's instructional strategies after being instructed and assessed authentically?	selected Grade 10 students	N = 24 12 males and 12 females	Homogenous sample selection	Focus Group Interviews	Qualitative	Qualitative thematic analysis process

Table 3.6 Summary of the Research Methodology

3.13 Chapter Summary

This chapter discussed the research design and methodology adopted in this study. Having followed the pragmatism philosophical stance, the research questions have employed an explanatory sequential mixed method, involving a quasi-experimental non-equivalent pretest–posttest control group design

and focus group interviews. The chosen sample size was 480 students (*n=480*) in grade 10 General stream. Given that randomization of the participants was not easily achievable due to practical constraints, convenience sampling was employed. The participants in the quantitative part were divided into two groups: group one comprised eight classes; four for boys and four for girls in a total of (*n=240*) students who were assigned to the treatment group. For the qualitative part, two separate groups of twelve female students and twelve male students engaged in a guided discussion on their perceptions towards Marzano's instructional strategies after being instructed and assessed authentically.

 To ensure that the participants who would undertake the tests were statistically representative, a sampling protocol that reflected two perspectives, namely PD training and classroom observations, was followed. Training teachers on Marzano's instructional strategies helped reinforce the teachers' knowledge on these strategies and inevitably observe use them in their instruction. The observations were undertaken to ensure that the selected teachers' effectiveness in delivering the instruction based on Marzano's strategies is evident in their actual practices.

Once the research design, sampling techniques and participants were identified, procedures were translated into action. The study followed a specific workplan developed to collect all the essential data within a specified timeframe. The process of data collection included; (1) initial preparation and establishing contact, obtaining permission; (2) visiting the selected schools and meeting with the teachers who instructed the prospect participants; (3) Training teachers of the experimental group on Marzano's instructional strategies; (4) administering pretests (5) undertaking classroom observations; (6) administering posttests; (7) conducting focus group interviews (5) data analysis; (6) writing up the thesis.

The quantitative analysis involved importing data into the SPSS to determine if the differences between scores were statistically significant. Descriptive statistics were examined and tested to ensure that the required parametric assumptions were met. Inferential statistics were applied to establish the statistical significance of the differences between the means of the pre-test and the post-test scores Thematic analysis to generate codes, categories, and themes was used for the qualitative analysis. Ethical issues and quality research criteria were also discussed.

CHAPTER FOUR: Results and Findings

4.1 Overview of the Chapter

This chapter presents the findings drawn from the quantitative and qualitative data and retrieved from the field work. The findings from the pretests and posttests and semi-structured focus group interviews will be demonstrated in the format presented in figure 4.1
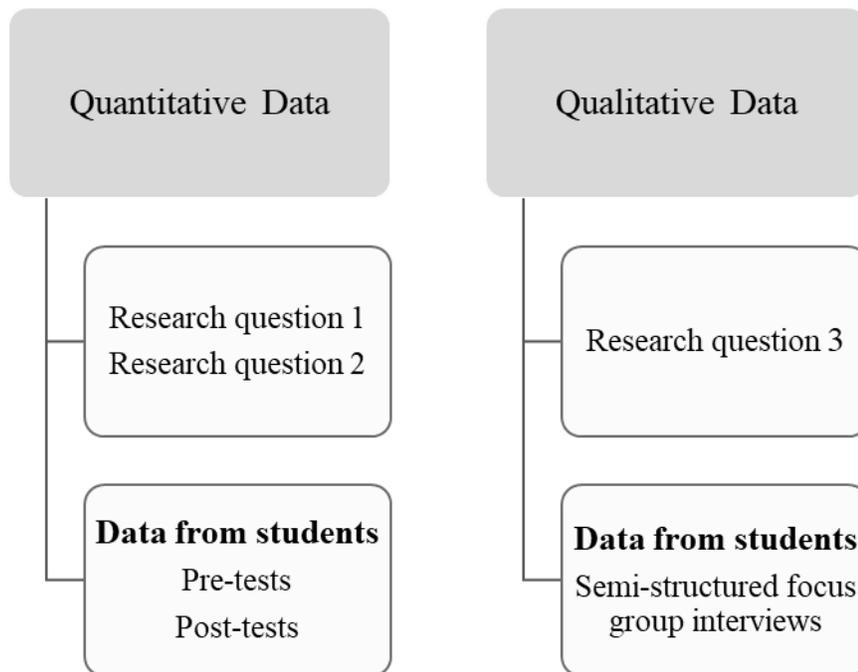
Figure 4.1: Graphical Presentation of Findings

The quantitative data was set out to investigate the impact of Marzano's instructional strategies on grade 10 students' achievement in reading comprehension. It also investigated if there are any gender-based significant differences in students' achievement in reading comprehension in response to Marzano's instructional strategies. The qualitative data aimed at exploring the

perceptions of students towards Marzano's instructional strategies after being instructed and assessed authentically.

4.2 Quantitative Data Presentation

A comprehensive review of literature on research methodology highlighted that there are basic, crucial questions that researchers should consider answering when examining relations between variables in quantitative data analysis (Kirk 2001, p.213). As such, the questions that guide the researcher in the data analysis process of this study include:

1. Is the observed effect real or should it be attributed to chance?

2. If the observed effect is real, how large is it?

3. Is the observed effect large enough to be generalisable or to be useful?

According to social scientists, the first question is about the statistical significance, which is answered using a null hypothesis significance test. In this study, the researcher examined the differences between the scores of the pretest and posttest using the paired *t*-test and ANCOVA procedure to examine if the statistically observed outcome between the students' achievement and using Marzano's instructional strategies was a result of chance. The second question signifies the effect size and was addressed using descriptive statistics and reliability test. For this purpose, the Cronbach's Alpha reliability test was used. The third question implies the practical significance or importance of the effect, which comprises the element of subjectivity (Kirk 2001; Pallant 2011).

According to Kirk (2001), researchers should consider several factors when judging the practical significance of the outcome; such as the benefits and societal concern in the context of the study as will be discussed in the following chapter.

4.2.1 Data on Classroom Observations

Prior to exploring the obtained quantitative data that answers the first two research questions, classroom observations, which aimed at ensuring that teachers' effectiveness in delivering the instruction based on Marzano's strategies is evident, need to be illustrated. As mentioned in previous sections, the high-yield Marzano's instructional strategies have been used as the main rubric of teacher's formal observations. The importance of analysing these observations is twofold. First, to ensure that the teacher's understanding of Marzano's strategies in teaching reading is reflected in their actual pedagogical practices in classrooms which will consolidate the validity of the quantitative instrument. In addition, conducting several observations and using descriptive statistics to report them may give a better picture that illustrates if teachers' performance in using Marzano's instructional strategies has been enhanced over time. Although ensuring teachers' effectiveness in using Marzano's instructional strategies in classroom observations is beyond the scope of the study, it may support the validity of the proposed training program and as such provide evidence to adopt it in Abu Dhabi schools.

This section comprises descriptive analysis reported as averages based on the evaluation of the selected teachers' practices of Marzano's instructional strategies. To ensure that the ethics protocols cover the rights of participants as described in previous sections, the researcher used pseudonyms to the participants concerned.

Figure 4.2 shows the total grade that the selected teachers obtained based on the classroom observations conducted by the advisors and the vice academic principals. It is important to mention that the observation form that the inspectors used for evaluation comprises elements other than Marzano's instructional strategies such as aspects related to the use of information technology and links to the UAE culture and heritage. However, the researcher excluded such

aspects and focused the evaluation on evidence of teachers' use of Marzano's instructional strategies. The graph provides evidence of the systematic growth in the performance of teachers over time, which was one of the main objectives of the PD training conducted by the researcher. The following Figure (4.2) shows the average of teachers' performance based on the observation form used.
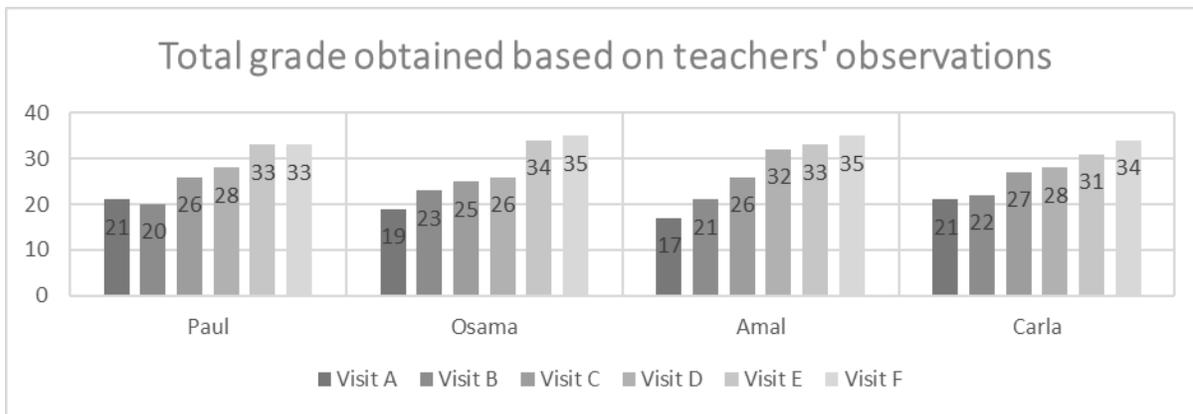
Figure 4.2: Total grade based on teachers' observations

It can be seen in Figure 4.3 that the averages of the selected teachers' performance who underwent the PD training sessions on Marzano's instructional strategies are approximately similar with very slight variations. The average falls between slightly less than 27 and 27.3 The justification for this result stems from the fact that the researcher controls most of the confounding variables that are anticipated to cause considerable variations. The controlled variables include selecting teachers; both males and females with approximately same years of experience and who were rated as very good achieving teachers in their final evaluation on ADA'E performance appraisal system.
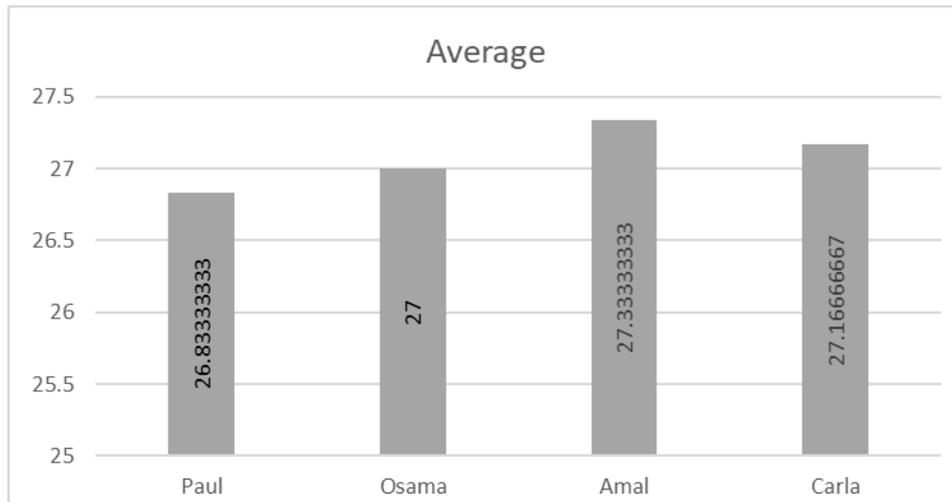
Figure 4.3: Average of teachers' performance based on Marzano's instructional strategies

4.2.2 Parametric Statistical Analyses

As described in chapter three, parametric statistical tests were used to ensure that the required parametric assumptions have been met. Having taken the parametric approach to inferential statistics, the values that are assumed to be normally distributed are the means across samples (Field 2009). In reference to Central Limit Theorem, the distribution of the sample means becomes normal as the size of the samples increases above thirty. As the sample of this study contains a large number of observations ($n=480$), the sample distribution should be systematically normal.

The parametric tests assume that means across samples are normally distributed as shown in the following figures. The figures below show the frequency distributions for the continuous variables of the study; Marzano's pretest scores, Marzano's post-test scores, traditional pretest scores, traditional posttest scores. It can be seen that the values of interest calculated from the

samples exhibit a bell-curve distribution and that the skewness and kurtosis for all of these variables are around zero. That is to conclude that the distribution of means across samples for all variables is normal and does not show substantial deviations from normal distribution (Pallant 2011).
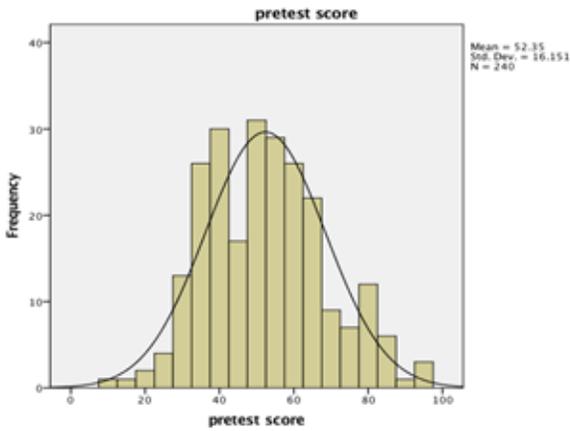
Figure 4.4: Pretest total scores for control group
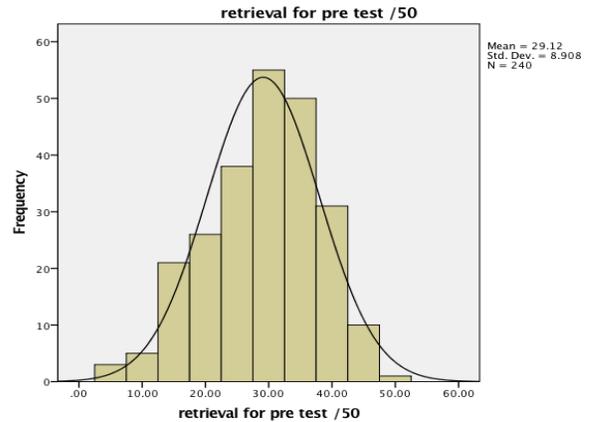
Figure 4.5: Pretest literal scores for control group
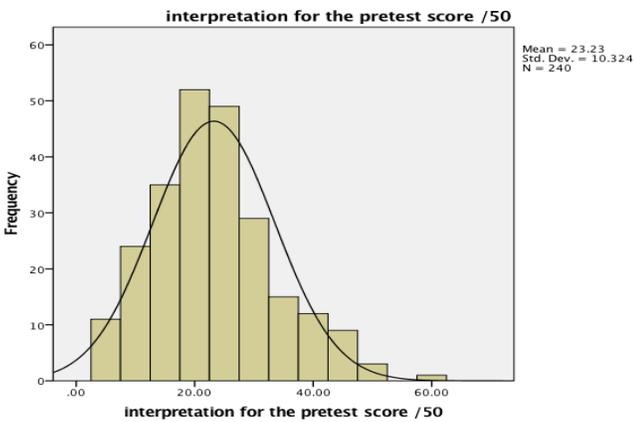
Figure 4.6: Pretest inferential level scores for control group
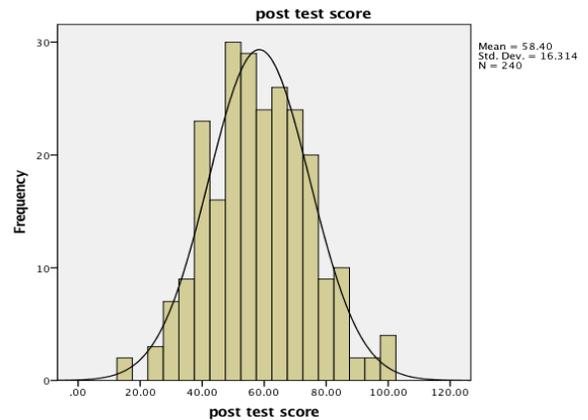
Figure 4.7: Posttest total scores for control group
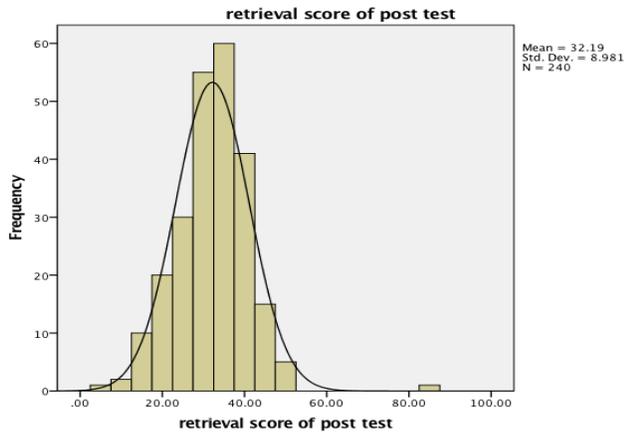
Figure 4.8: Posttest literal level scores for control group
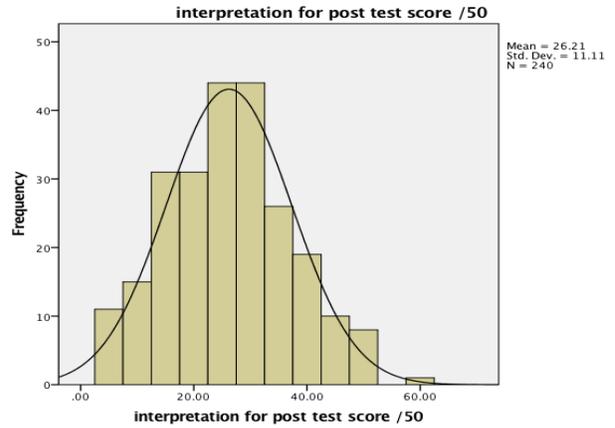
Figure 4.9: Posttest inferential scores for control group
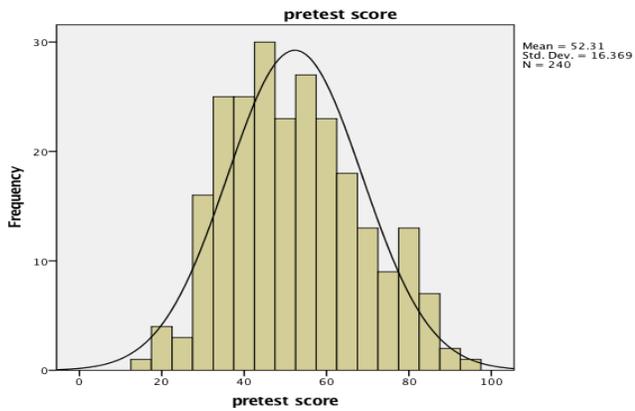
Figure 4.10: Pretest total scores for experimental group
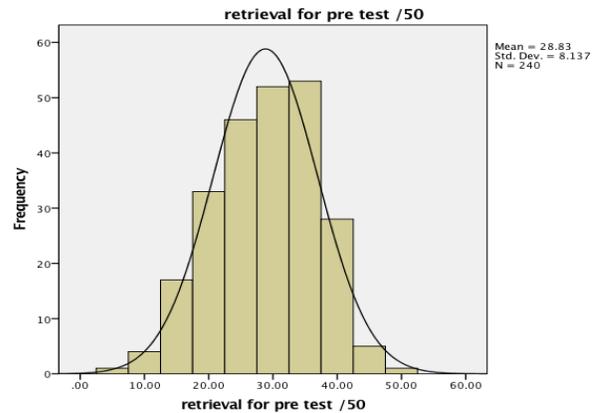
Figure 4.11: Pretest literal scores for experimental group
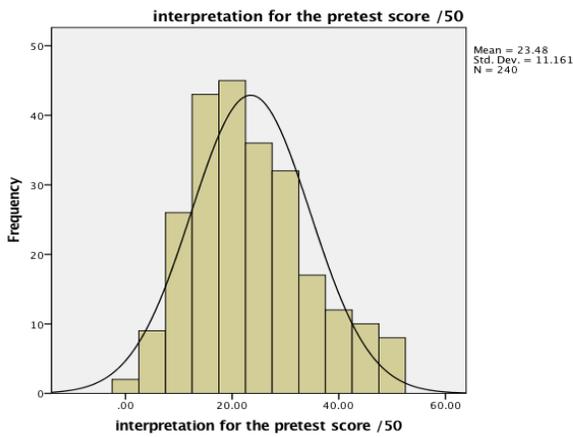
Figure 4.12: Pretest inferential level scores experimental group
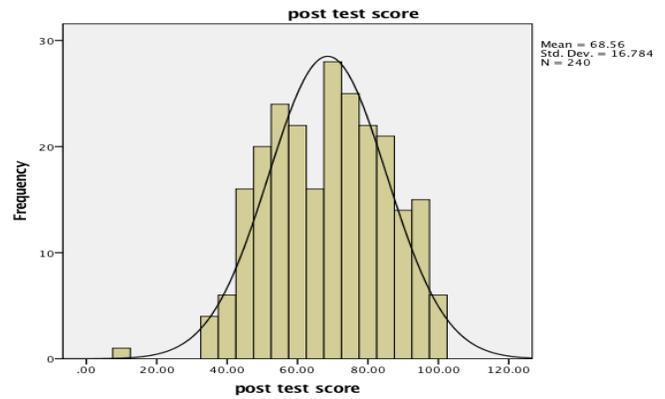
Figure 4.13: Posttest total scores for experimental group
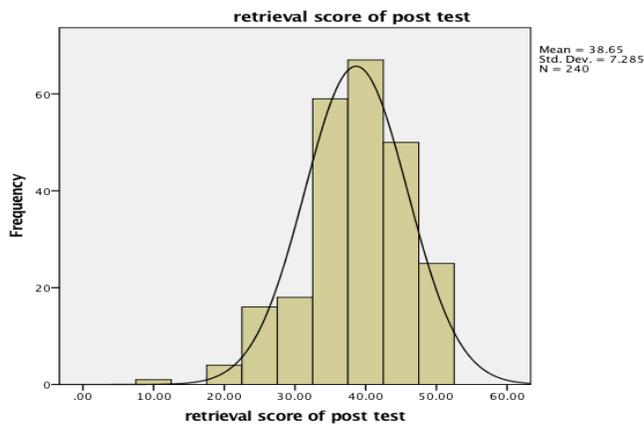
Figure 4.14: Posttest literal level scores experimental group
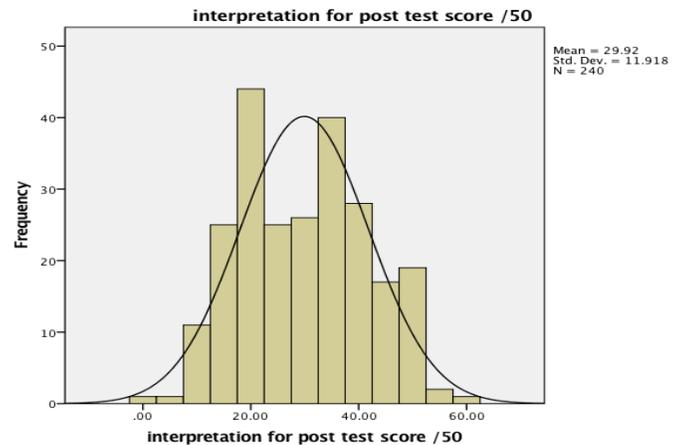
Figure 4.15: Posttest inferential scores for experimental group

Homoscedasticity assumption refers to whether the residuals across the regression line are equal. This assumption is needed for linear regression. This assumption was tested for linear regression strategies using a scatter plot of predicted values and residual. In this study, the data in the scatter box plot does not have an obvious pattern and the points nearly have equal distribution above and below zero.

The following figures display testing the homoscedasticity assumption for linear regression for the variables of the study.
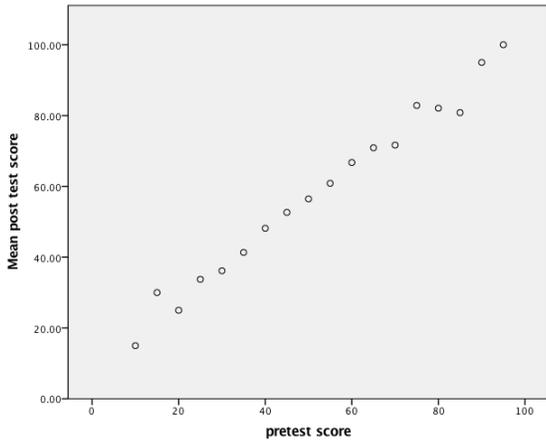
Figure 4.16: Scatter plot of total scores for control group
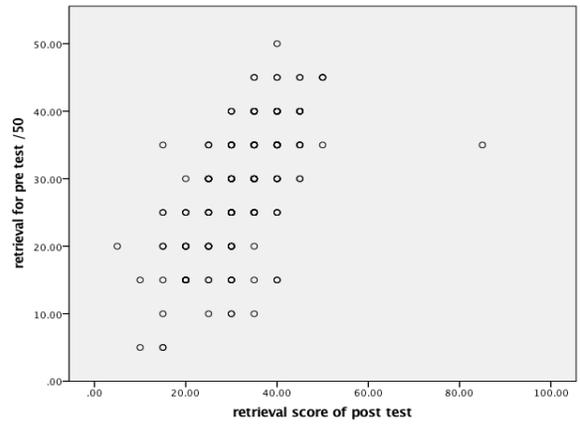
Figure 4.17: Scatter plot of retrieval scores for control group
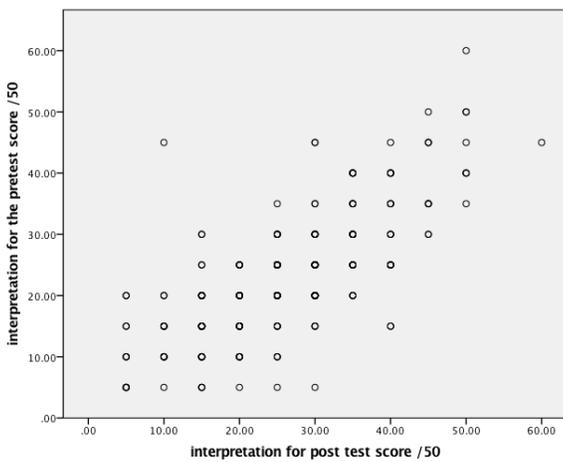
Figure 4.18: Scatter plot of inferential scores for control group
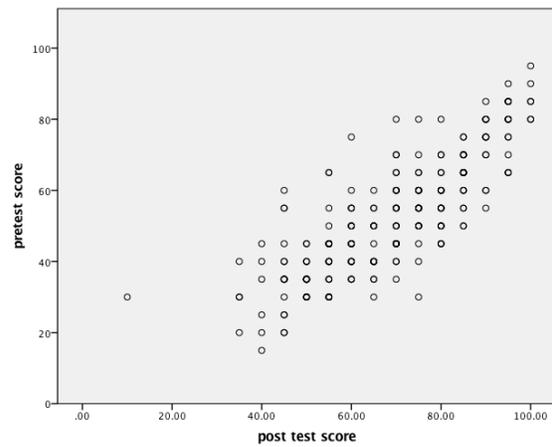
Figure 4.19: Scatter plot of total scores for experimental group
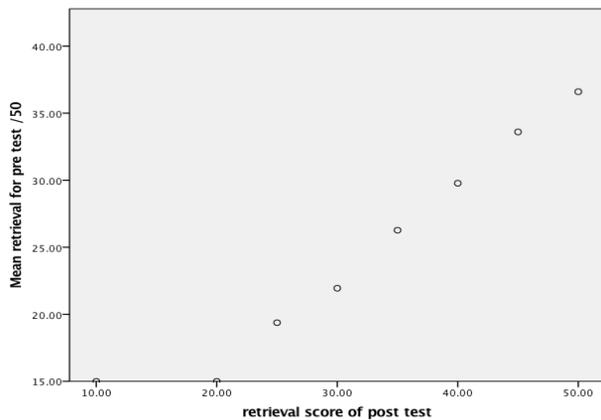
Figure 4.20: Scatter plot of literal scores experimental group
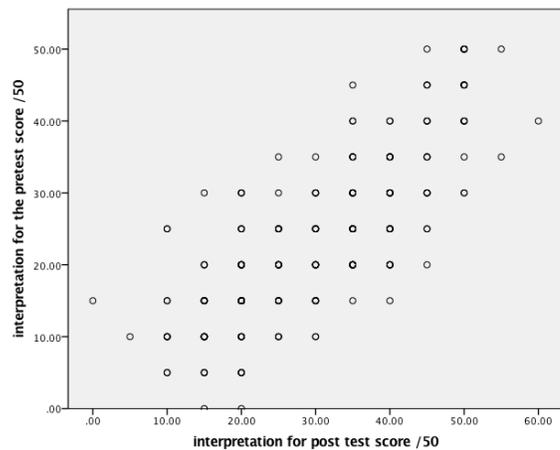
Figure 4.21: Scatter plot inferential scores for experimental group

Based on the results of *t*-test and ANCOVA, the assumptions tested using Levene's test of homogeneity and scatter plots revealed that the variances of the populations from which different samples are drawn are equal to a *p* value more than .05. As such, there is no violation of assumptions in all test scores for both control and experimental groups.

4.2.3 The Reliability Tests Applied to Pre-Tests and Post-Tests

The reliability of the quantitative instrument; pretest and posttest applied on participants, was measured using the Cronbach's Alpha. As described in previous sections, Cronbach's Alpha is the most commonly used objective measure of reliability evaluation of assessments that is used to test a specific construct in a measure based on the computation of correlations between each individual test item and the overall test items (Gay et al 2009). Field (2000) stated that the value of Cronbach's α ranges from 0.0 to 1.0. The closer Cronbach's Alpha coefficient is to 1.0, the greater the internal consistency of the items in the scale and the more reliable the test is. Based

on the formula: rk /[1 + (k -1)r] where k is the number of items considered and r is the mean of the inter-item correlations, the size of alpha is determined by both the number of items in the scale and the mean inter-item correlations. With regard to the criterion of an acceptable Cronbach's Alpha coefficient α, George and Mallery (2003, p.231) provided the following approximate principle: "_ >0.9 – Excellent, _ >0.8 – Good, _ >0.7 – Acceptable, _ >0.6 – Questionable, _ >0.5 – Poor and _ <0.5 – Unacceptable". Pallant (2011) also suggested that the value of Cronbach's α above ,8 is considered preferable.

Taking this into consideration, a standardized item Alpha coefficient reliability test was carried out for the pretest and the posttests for both strategies of teaching. The pretest written by grade 10 students has an Alpha coefficient of 0.8319 which suggests that instrument has relatively high internal consistency. As for the posttest; the Alpha coefficient is 0.8344 which also shows relatively high internal consistency. Given that all of Cronbach's Alphas were greater than 0.7, Cronbach's alphas computed for the tests are regarded as reliable and consistent. Table 4.1 shows the internal consistency reliability of the instrument.

Table 4.1 Internal Consistency Reliability Results

N of items	Cronbach's Alpha Coefficient for Pre-test α	Cronbach's Alpha Coefficient for Post-test α
20	.8319	.8344

4.2.4 Descriptive Statistics for Study Variables

The following tables present the means, minimum, maximum, standard deviations, kurtosis and skewness of the pretest and the posttest for the study variables. It can be seen that the mean scores for the study variables were within acceptable range of skewness. The table shows that

since there are no significant differences between the mean scores and standard deviations (SD) of the experimental and control groups in all categories prior to the intervention, it can be concluded that their linguistic competence was approximately similar before the intervention. Table 4.2 shows the descriptive statistics for the pretests and posttest scores. A general glance shows that the mean of posttest total scores is higher than the average marks of pretests. Moreover, the most frequent score of posttests is higher than the mode of pretest student scores. Skewness and kurtosis are around zero, which indicate that the data is normally distributed.

Table 4.2 Descriptive statistics of pretest and posttest scores for the experimental group

Variable	Min	Max	M (SD)	Mode	Skewness	Kurtosis
Pre-test	15	95	52.31 (16.36)	45	0.308	-0.374
Post-test	10	100	68.56 (16.28)	70	0.001	-0.423

Table 4.3 shows the descriptive statistics of pretests and posttest scores for the control group. The data shows that the mean of posttest total score is higher than the mean of pretest. The skewness and kurtosis are found around zero which indicates that the data is normally distributed.

Table 4.3 Descriptive statistics of pretest and posttest scores for the control group

Variable	Min	Max	M (SD)	Mode	Skewness	Kurtosis
Pre-test	10	95	52.35 (16.15)	50	0.314	-0.196
Post-test	15	100	58.39 (16.31)	50	0.111	-0.135

Figure 4.22 shows the histogram for mean difference of pretest and posttest score between experimental group (Marzano's instructional strategies) and control group (traditional method).
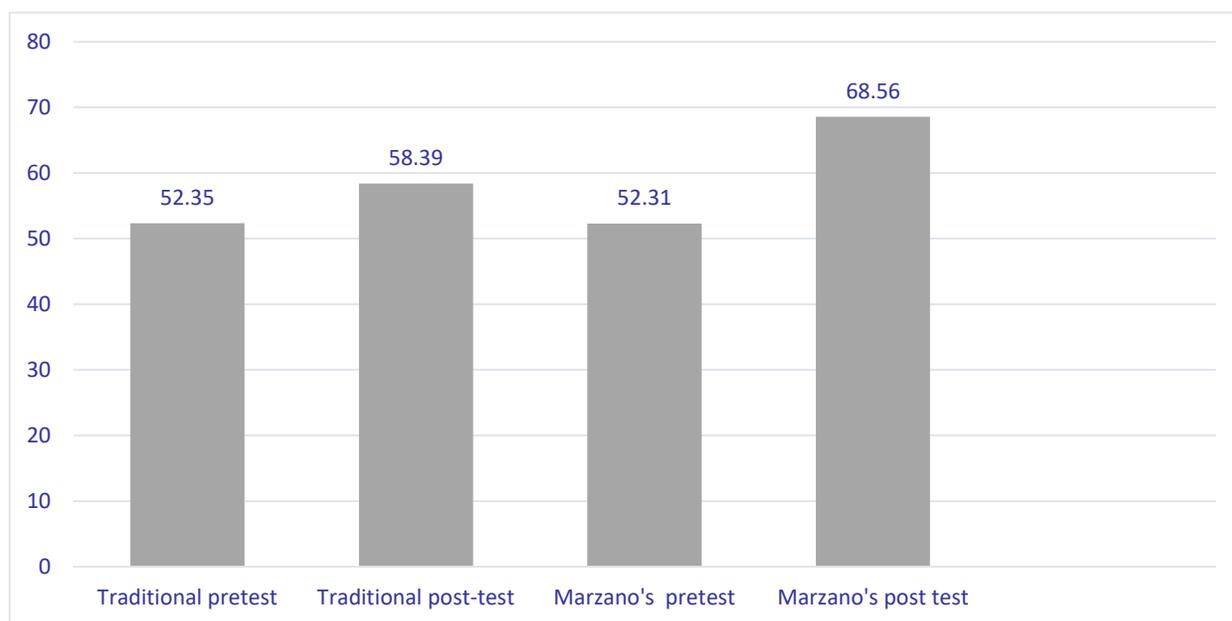
Figure 4.22: Pretests and posttest mean scores for both strategies

4.2.4.1 Descriptive Statistics for Pre-test and Post-test Scores in the Literal part

As presented in Table 4.4, the data on the literal part of the traditional method of teaching shows that the mean of posttest score is higher than the mean of pretest literal scores. The most frequent score is 30 in pretest while it is 35 in posttest literal score. The skewness and kurtosis are found around zero and that supports that the data is around normal distribution.

Table 4.4 Descriptive statistics of literal pre-test and post-test scores of control group

Variable	Min	Max	M (SD)	Mode	Skewness	Kurtosis
Literal Pre-test	5	50	29.12 (8.90)	30	-0.355	-0.292
Literal Post-test	5	85	32.18 (8.98)	35	0.509	0.313

The data presentation of literal part of Marzano's instructional strategies of teaching in Table 4.5 shows that the mean of posttest score is higher than the mean of pretest literal scores. Also, the most frequent score is 35 in pretest while it is 40 in posttest literal part. The results of skewness and kurtosis are around zero which support that the data is around normal distribution.

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Table 4.5 Descriptive statistics of Marzano's literal pretest and posttest scores

Variable	Min	Max	M (SD)	Mode	Skewness	Kurtosis
Literal Pre-test	5	50	28.83 (8.13)	35	-0.223	-0.382
Literal Post-test	10	50	38.64 (7.28)	40	-0.600	0.495

Figure 4.23 shows the histogram for mean differences of pretest and posttest scores between experimental group (Marzano's instructional strategies) and control group (traditional method) in the literal score category.
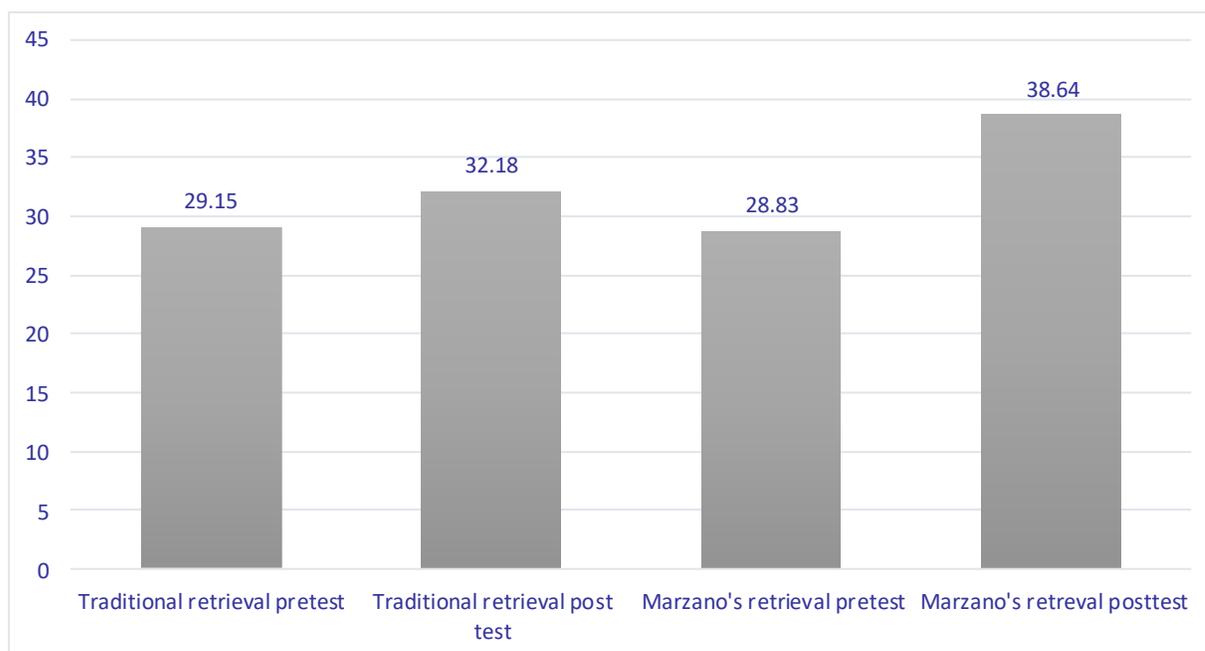
Figure 4.23: Pretest and posttest literal mean scores for both groups

4.2.4.2 Descriptive Statistics for Pretest and Posttest Scores in the Inferential part

As shown in Table 4.6 below, the data presentation of the inferential part for the control group shows that the mean of posttest score is higher than the mean of pretest literal scores. Results of skewness and kurtosis are around zero which supports that the data is around normal distribution.

Table 4.6: Descriptive statistics of inferential pretest and posttest scores for control group

Variable	Min	Max	M (SD)	Mode	Skewness	Kurtosis
Inferential Pretest	5	60	23.22 (10.32)	20	0.564	0.288
Inferential Posttest	5	60	26.20 (11.10)	25	0.193	-0.289

As shown in Table 4.7, the data presentation of inferential part for the experimental group shows that the mean of post test score is higher than the mean of pretest literal scores. Furthermore, skewness and kurtosis are found around zero and that supports that the data is around normal distribution.

Table 4.7 Descriptive statistics of inferential pretest and posttest scores for experimental group

Variable	Min	Max	M (SD)	Mode	Skewness	Kurtosis
Inferential Pretest	0	50	23.47 (11.16)	20	0.496	-0.245
Inferential Posttest	0	60	29.91 (11.91)	20	0.117	-0.807

The following figure 4.24 shows the histogram for mean differences of pretest and posttest scores between experimental group and control group in the inferential score category.
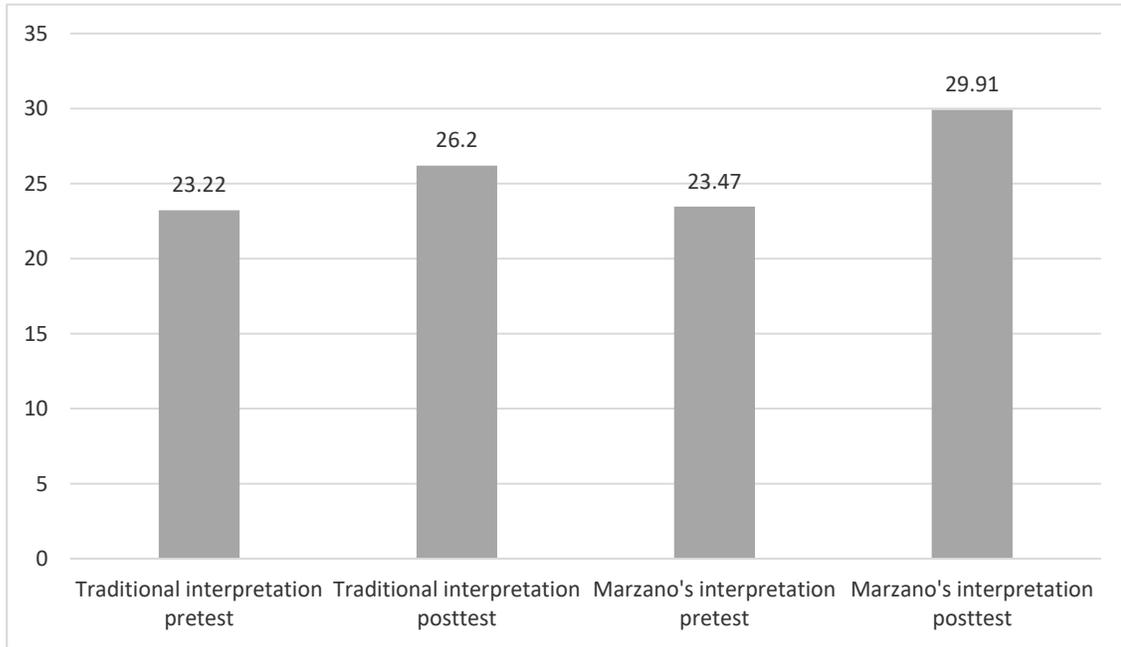
Figure 4.24: Pre-and post-test inferential mean score for both strategies

Table 4.8 summarizes the descriptive statistics of mean, median and standard deviation for both strategies. It is noted that the students in the pretest have close mean scores in both groups. The means of posttest scores are higher than pretest mean scores. Looking into details, it can be concluded that Marzano's posttest for total scores, literal and inferential are higher in mean than traditional strategies posttest scores. This will be discussed using inferential statistics to find if the high mean is statistically significant or not in the next section of this chapter.

Table 4.8 Description of the main study variables (*n=480*)

Variable	Control Group M(SD)	Control Group Median	Experimental Group M(SD)	Experimental Group Median
Overall Pretest	52.35 (16.15)	50	52.31 (16.36)	50.00
Literal pretest	29.12 (8.90)	30	28.83 (8.13)	30.00
Inferential pretest	23.22 (10.32)	20	23.47 (11.16)	20.00
Overall Posttest	58.39 (16.31)	60	68.56 (16.28)	70.00
Literal posttest	32.18 (8.98)	35	38.64 (7.28)	40.00
Inferential posttest	26.20 (11.10)	25	29.91 (11.91)	30.00

Figure 4.25 summarizes the results of all the study variables and presents the histogram of means for both experimental and control groups in pretests and post-tests.
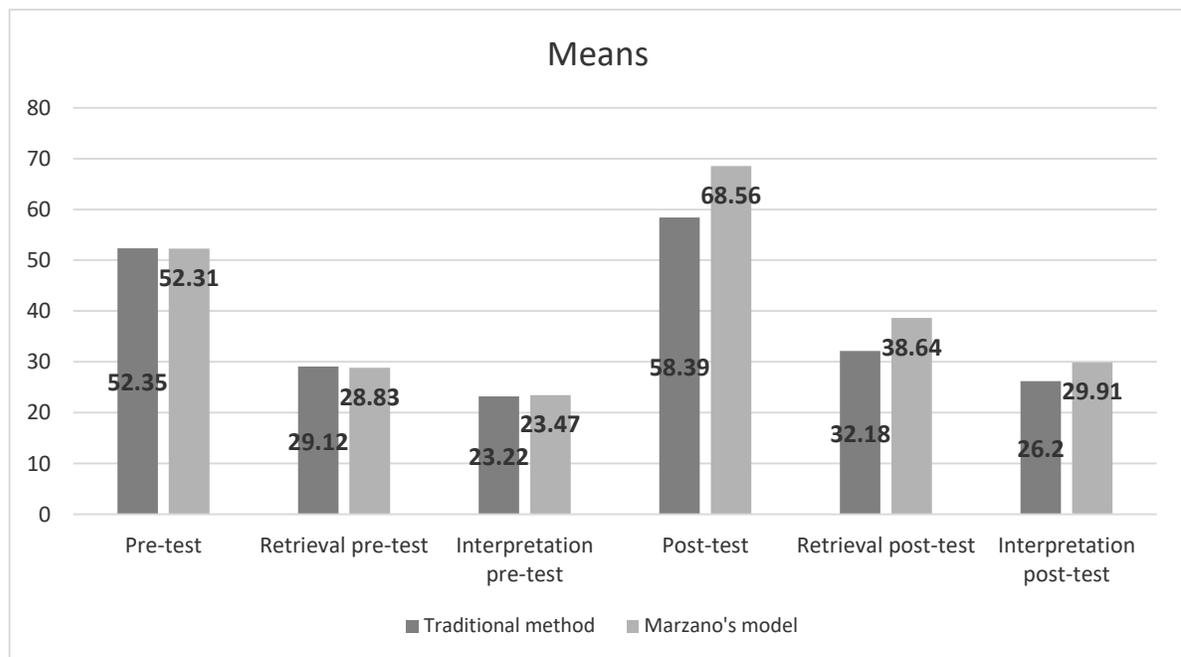
Figure 4. 25: Pretests and posttests mean scores of control and experimental groups

4.2.5 Comparison of Students' Achievement in Reading

Research Question 1

What is the impact of Marzano's instructional strategies on grade 10 students' achievement in reading comprehension?

Null Hypothesis (H0a):

There is no statistically significant difference in students' achievement test scores between tenth-grade students instructed using Marzano's instructional strategies and students not instructed using Marzano's instructional strategies.

T-Test Procedure Comparing the Means of Pre-Test and Post-Test Scores for all Groups

To investigate if there were significant differences between the means of the pretest and posttest scores, the *t*-test procedure was conducted. This would assist to determine whether the intervention had any effect on the results. In hypotheses testing for the *t*-test, the null hypothesis −H0a stated that the means of the pretest were equal to the means of the posttest (A = B) with the alternative hypothesis −H1 stating that the means of the pretest were not equal to the means of the posttest (A ≠ B). As the p-value was small ($p<0.05$), it implied that there was a significant difference between the pretest and posttest mean scores summarized and that the null hypothesis would be rejected. If the p-value was large ($p>0.05$), the null hypothesis would be accepted (Field 2009).

Data Presentation for the Pretest and Posttest Means and the t-test for the Overall Marks.

To provide a measure of academic growth, the researcher first analyzed the learning gains; i.e. posttest means–pretest means for each variable which provided primary indicators on the learning gains according to *t*-test results.

Table 4.9: Comparison of the mean learning gains between experimental and control groups

Groups	Posttest	Pretest	Mean Gain score
Control (Non-Marzano's strategies)	240	240	6.04
Mean	58.39	52.35	
SD	16.31	16.15	
Experimental (Marzano's strategies)	240	240	16.25
Mean	68.56	52.31	
SD	16.78	16.36	

Table 4.9 shows that the pretest scores for both groups were relatively similar while knowledge gain of the total mark is proportionately higher after the intervention. A learning gain over 16 was achieved for the students instructed using Marzano's instructional strategies while 6.04 was achieved by students in the control group. The mean of posttest scores of the experimental group is higher than the mean of postscores in the control group presented as (68.56) and (58.39) respectively.

As described in the methodology section, the administered test comprises two sections that assess different reading sub-skills, namely the literal and inferential categories. The summation of the scores from both categories makes the total score of the pretests and posttests. It can be concluded that the greatest impact of the intervention was evident on the literal section with mean of 38.64. The impact of the intervention on the inferential section is found as 29.91.

Table 4.10: Comparison between pretest and posttest, means, standard deviation and inferential statistics

Variable	Min	Max	Control M(SD)	Experimental M(SD)	Skewness	Kurtosis
Pretest	10	95	52.35 (16.15)	52.31 (16.36)	0.308	-0.374
Literal	5	50	29.12 (8.90)	28.83 (8.13)	-0.293	-0.323
Inferential	0	60	23.22 (10.32)	23.47 (11.16)	0.528	-0.013
Posttest	10	100	58.39 (16.31)	68.56 (16.28)	0.001	-0.423
Literal	5	85	32.18 (8.98)	38.64 (7.28)	-0.097	1.88
Inferential	0	60	26.20 (11.10)	29.91 (11.91)	0.178	-0.563

Table 4.10 summarizes the means, minimum, maximum, standard deviations, kurtosis and skewness of the pretest and the posttest for all the 480 students. It can be seen that the mean scores for the study variables were within acceptable range of skewness. The table shows that there are no significant differences between the mean scores and standard deviations of the experimental and control groups in all the categories prior to the intervention. However, after the intervention, there were significant differences between the mean scores and standard deviations of the experimental and control groups. The treatment group demonstrates higher achievement than their counterpart taught using a traditional strategy in reading comprehension. These findings reveal that the mean gain score of students taught using Marzano's instructional strategies is greater than the mean of those taught using traditional strategies. Thus, the findings show the importance of Marzano's instructional strategies on students' achievement in reading comprehension.

As reported in the table, the pretest mean scores and standard deviations of the control and experimental groups were 52.35 ±16.15 and 52.31 ±16.36 respectively. Figure 4.26 shows the mean difference between pre-tests and post-tests scores for the experimental group and control group.
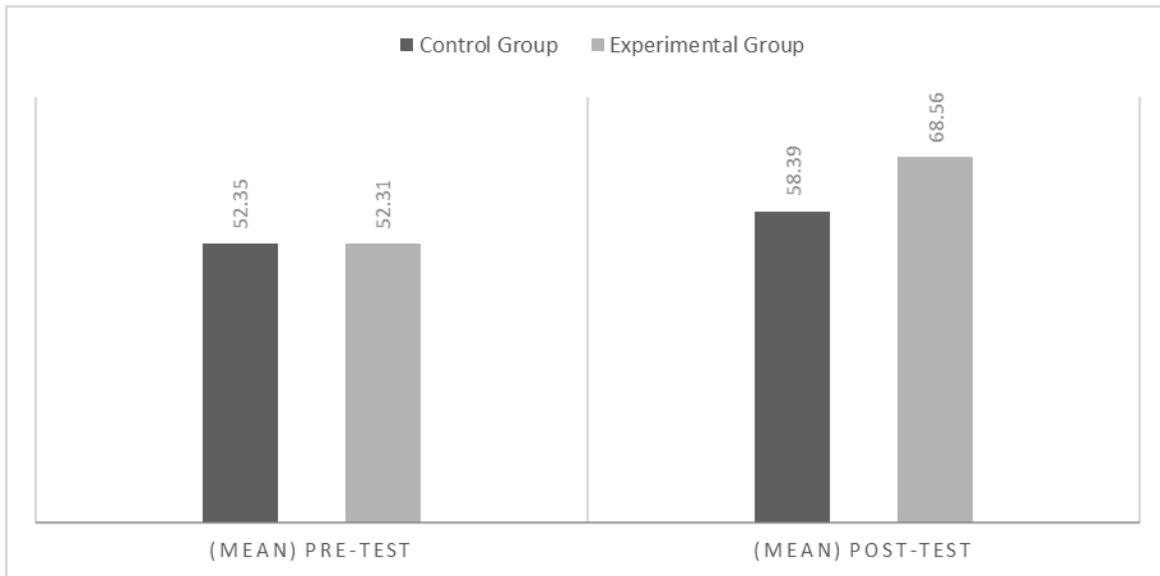
Figure 4.26: Pre-tests and Post-tests mean differences of control VS experimental group

The paired sample *t*-test applied to compare the means of pretest and posttest scores for all categories for the total mark resulted in the *p*-value < 0.0001. It is statistically shown that all *p* values are less than 0.001, which reveals significant differences between the means of the pretest and posttest in both literal and inferential categories; and therefore, the null hypothesis was rejected. The change in the test scores was not by chance, but possibly due to the effectiveness of the intervention represented in instructing students using Marzano's instructional strategies. Table 4.11 provides a summary of the pretest and posttest mean scores, standard deviations and inferential statistics for all groups.

Table 4.11 Paired-samples *t*-test of Pretests and Post-tests (Literal and Inferential)

Groups	Mean	SD	*t* statistics	*Df*	*P-values*
Pre-test vs post-test	- 11.14	10.14	- 24.07	239	.000**
Literal pretest vs literal posttest	- 6.43	7.93	- 17.77	239	.000**
Inferential pretest vs inferential posttest	- 4.70	7.86	13.10	239	.000**

H0: A = B   H1: A ≠ B   (α = p< 0.05) ** p < 0.001

To determine whether the means of the dependent variable are equal across levels of the categorical independent variable, ANCOVA was used. The independent variable was the type of intervention undertaken for the experimental and the control groups while the dependent variable was the posttest scores on reading comprehension test administered after the intervention was completed. The pretest scores of the reading comprehension test administered before the intervention were used as covariates of the analysis. As reported in the parametric statistical analyses section in the beginning of this chapter, preliminary checks were conducted to ensure that there was no violation of the assumptions of normality, linearity, homogeneity of variances, homogeneity of regression slopes, and reliable measurement of the covariate. Since pretest scores were not significant across traditional and Marzano's strategies (*F= 0.001, p= 0.978*), (F= *2.581, p= 0.109*) and the assumption of homogeneity of regression slopes was met, pretest scores were used as covariates for ANCOVA.

After partialling out the effect of the pretest scores, a significant difference between the posttest scores of experimental and control groups on the reading comprehension achievement test was detected; (*F (1,477) = 15.125, p=0.000*). Since P value is less than .05, the null hypothesis that there is no significant difference between students exposed to Marzano's instructional strategies

and those exposed to traditional teaching approaches in reading comprehension achievement was rejected. This result concludes that there is a significant effect of Marzano's instructional strategies on students' achievement in reading comprehension. Therefore, the importance of Marzano's instructional strategies on students' achievement in reading comprehension is reported and as such Marzano's instructional strategies demonstrate higher students' achievement in reading comprehension than students in traditional strategies for grade 10 students in the UAE.

Table 4.12 shows the result of a one-way between-group analysis of covariance conducted to determine the effect of Marzano's instructional strategies on grade 10 students' reading comprehension scores in secondary schools in the UAE.

Table 4.12: Results of ANCOVA on the Differences between Experimental and Control Groups

Source	Sum of Squares	Df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Strategies	108627.99	2	54313.99	746.36	.000	0.75
Intercept	13361.98	1	13361.98	183.61	.000	0.27
Pre-test	96224.66	1	96224.66	1322.29	.000	0.73
Group	12492.18	1	12492.18	171.66	.000	0.26

a. R squared = .565 (Adjusted R squared = .552) $F_{(1, 67)}= 14.939$, e. = .000

4.2.6 Influence of Gender on Students' Achievement in Reading

Research Question 2

Are there any gender-based significant differences in reading comprehension performance in response to Marzano's instructional strategies?

To answer this research question, a hypothesis in relation to the influence of gender on the reading comprehension performance was tested.

Null Hypothesis (H0b):

There is no statistically significant influence of gender on students' achievement in reading comprehension in response to Marzano's instructional strategies.

An independent sample *t*-test was conducted to investigate if students' gender has any effects on students' achievement. As shown in the Table 4.13, female students showed significantly higher mean scores than male students in achievement scores of pretests and posttests. Results showed no significant differences between male and female students in the literal part of pretests (*t (1,239) = -1.672, p= 0.069*). However, all other parts revealed that female students achieved higher scores than male students in the experimental group as summarized in tables 4.14 and 4.15.

Table 4.13 Means and Standard Deviations for total pretests and posttests by gender

	Participant	N	Mean	Std. Deviation	Std. Error Mean
Reading score Total pre-test	Male	240	48.42	16.3	1.49
	Female	240	56.21	15.54	1.42
Reading score Total Post-test	Male	240	63.7	16.92	1.54
	Female	240	73.41	15.22	1.39

Table 4.14 Means and Standard Deviations for pre-tests and posttests in literal section by gender

	Participant	N	Mean	Std. Deviation	Std. Error Mean
Reading score Literal pretest	Male	240	27.95	7.79	. 71
	Female	240	29.70	8.4	. 77
Reading score Literal Posttest	Male	240	20.45	10.24	. 94
	Female	240	26.50	11.25	1.03

Table 4.15 Means and Standard Deviations for pre-tests and posttests in inferential section by gender

	Participant	N	Mean	Std. Deviation	Std. Error Mean
Reading score Inferential pre-test	Male	240	37.20	7.93	.72
	Female	240	40.08	6.28	.57
Reading score Inferential Post-test	Male	240	26.5	12.06	.98
	Female	240	33.3	10.78	1.10

The differences in achievement between male and female students in the reading comprehension test are shown in the histogram Figure 4.27 with higher mean test-scores for female students than male students in all the categories of the test.
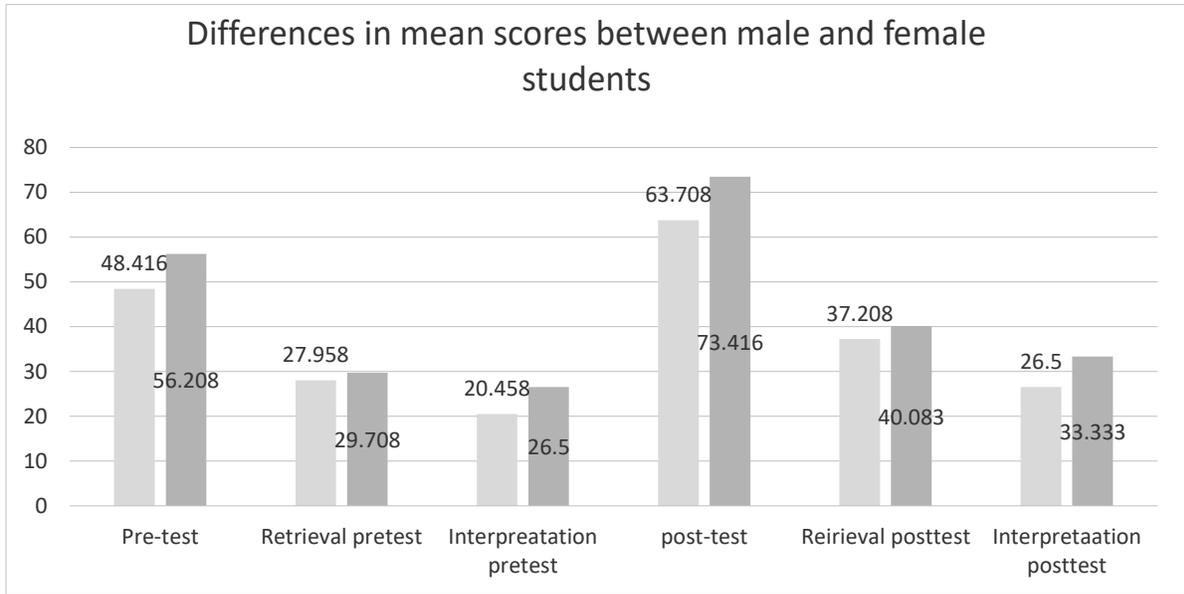
Figure 4.27 Differences in mean scores between male and female students

The boxplot Figure 4.28 shows the description of male and female in all scores for both strategies. The figure shows that female students have higher median results than male students.
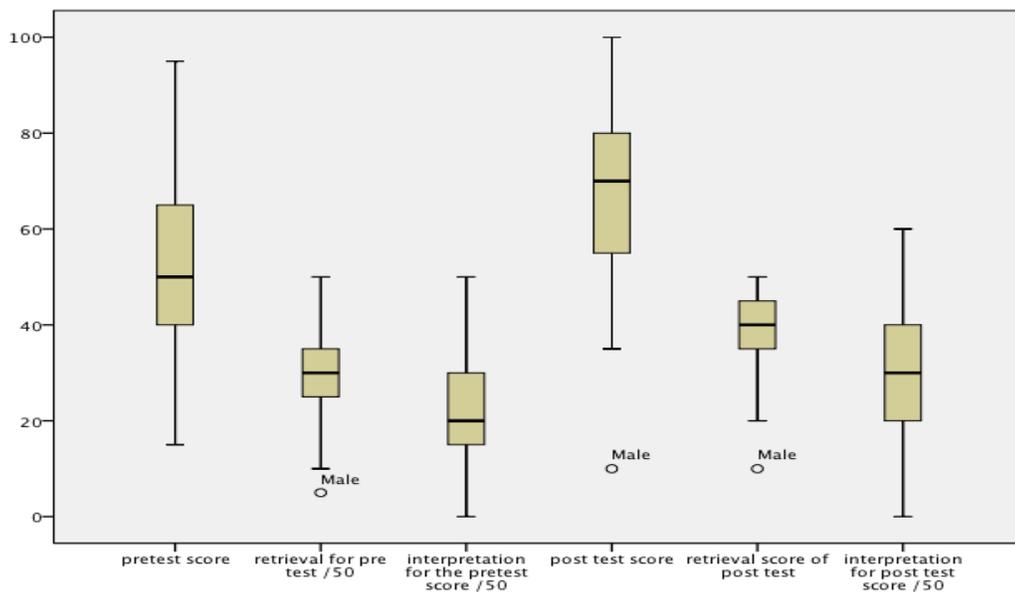
Figure 4.28 Box and whisker plots learning gain differences between male and female students

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Upon calculating the means and standard deviations of the pretests and posttests, including the literal and inferential levels of the tests, an independent sample *t*-test was used. That is, the mean values of males' reading comprehension achievement were compared with females' values in order to determine if there was any difference between these two groups that fall under the title "gender". The value of .001 has been considered to determine the significance level in the comparisons.

Since the mean value of females is higher than males (73.41 > 63.7), it can be concluded that females outperformed males. The standard deviation value of males' scores is higher than females' deviation (16.92 > 15.22), and this means that the variation in males' scores is higher than the variation in females' scores.

Table 4.16. Mean differences, Standard Deviations and *t* value of the Reading Achievement Test

Students' gender	N	**Mean	Std. Deviation	t	Sig. (2-tailed)
Male	240	63.7	16.92	- 4.672	.000*
Female	240	74.41	15.22		

*Note. Std = Standard Deviation, t = T value and df = degree of freedom * The mean difference is significant at .05 level** Test total mark is 100*

The results shown in Table 4.17 reveal a significant gender difference in the means of literal level of the reading achievement at 0.05 level of significance. This difference is in favor of females whose mean value is (40.083) compared to the mean value of the males (37.20).

Table 4.17. Mean differences, Standard Deviations and the T Value of the literal level of the Reading Achievement Test

Students' gender	N	**Mean	Std. Deviation	t	Sig. (2-tailed)
Male	240	37.20	7.93	- 3.112	.002*
Literal					
Female	240	40.083	6.28		

Note. Std = Standard Deviation, t = T value and df = degree of freedom The mean difference is significant at .05 level** Literal mark is 50*

The results shown in Table 4.18 reveal a significant gender difference in the means of inferential level of the reading achievement at 0.05 level of significance. This difference is in favor of females whose mean achievement is (33.33) compared to the males mean achievement (26.5).

Table 4.18. Mean differences, Standard Deviations and the T Value of the Inferential level of the Reading Achievement Test

Students' gender	N	**Mean	Std. Deviation	t	Sig. (2-tailed)
Male	240	26.5	12.06	- 4.627	.006*
Inferential					
Female	240	33.33	10.78		

Note. Std = Standard Deviation, t = T value and df = degree of freedom The mean difference is significant at .05 level** Inferential mark is 50*

As shown in the table 4.19, the F. value on the independent *t*-test shows greater value than Alpha value (1.235 > 0.05) and this indicates that the P. value falls within the first raw of Sig (2-tailed) values. The first-raw value of sig (2-tailed) is (0.05) which equals the Alpha value. This

means that the difference between male students and female students in overall scores in reading comprehension tests is at the level of significance. In other words, females being outperforming males is at the level of significance statistically in the total score of the administered test. Based on these results, the null hypothesis that there is no significant influence of gender on students' achievement in reading comprehension in response to Marzano's instructional strategies was rejected.

To determine if there are variations in scores between male students and female students in the literal level, the F. value was calculated. The independent sample test shown in Table 4.19 shows F. value bigger than the Alpha value (.639 > 0.05). This means that the P. Value falls within the first raw of Sig (2-tailed). As the first values of Sig (2-tailed) in the literal and inferential levels of comprehension are smaller than the alpha value (.001 > 0.05), (.001 > 0.04), respectively, the difference between male students and female students in achievement for the second grade has a statistical, significant value in favor of females.

Table 4.19 Independent sample T-test for the total and the two levels of comprehension

		Levene's Test for Equality of Variances		t-test for Equality of Means					95% Confidence Interval of the Difference	
		F	Sig.	T	Df	Sig. (2-tailed)	Mean difference	Std. Error Difference	Lower	Upper
Total Score	Equal variances assumed	1.235	.270	-4.672	478	.005	-9.71	1.4847	-7.281	-1.37
	Equal variances not assumed			-4.147	318.462	.003	-9.71	1.374	-7.090	-.156
Literal	Equal variances assumed	.639	.546	- 3.112	478	.001	-1.75	1. 243	-4.797	-.783
	Equal variances not assumed			-2.221	326.892	.000	-1.75	1.16	-.714	-.875
Inferential	Equal variances assumed	.610	.436	- 3.789	478	.004	-6.8	1.641	-.6.283	-.849
	Equal variances not assumed			- 4.672	319.563	.003	-.6.8	1.373	-4.472	-.543

4.2.7 Summary of the Quantitative Results

In this section, the presentation of the results of quantitative data has brought to the fore the following:

1. The descriptive data obtained from the classroom observations of English teachers, who were trained on Marzano's instructional strategies and whom the intervention was implemented in their classes, was presented. Some of the highlights established from the six classroom observations data include averages based on the advisors' evaluation of the teachers' practices

of Marzano's instructional strategies. The average falls between slightly less than 27 and 27.3.

2. The results of the Cronbach's Alpha reliability test for the pretest and posttest were presented. The results showed that the instrument was reliable.

3. Preliminary checks were conducted to ensure that there was no violation of the assumptions of normality, linearity, homogeneity of variances, homogeneity of regression slopes, and reliable measurements of the covariate.

4. The results of the pretests and the posttests, which were administered to 480 grade 10 students from the two selected schools, were presented, discussed in terms of the means, standard deviation, kurtosis, skewness and percentages, and displayed in graphs and scatter plots. Some of the highlights established from the pretest and posttests data include the finding that there were statistically significant learning gains between the means of the pretest and posttests in the experimental group for both genders. A learning gain over 16 was achieved for the students instructed using Marzano's instructional strategies while 6.04 was achieved by students in the control group. The mean of posttest scores of the experimental group is higher than the mean of posttest scores in the control group presented as (68.56) and (58.39) respectively. In other words, the treatment group demonstrates higher achievement than their counterpart taught using traditional strategies in reading comprehension.

5. The inferential statistics were applied to establish the statistical significance of the differences between the means of the pretest and the posttest scores. Pretest scores were used as covariate for ANCOVA since the inferential statistics used to compare the performance of the students in pretests were not significant across traditional and Marzano's strategies ($F= 0.001, P= 0.978$) and the assumption of homogeneity of regression slopes was met ($F= 2.581, P= 0.109$).

6. After partialling out the effect of the pretest scores, there was a significant difference between

the posttest scores of experimental and control groups in the reading comprehension achievement test, (F $(1,477)=15.125$, $P=0.000$). Since P value was less than .05, the null hypothesis that there is no significant difference between students exposed to Marzano's instructional strategies and those exposed to traditional teaching approaches in their achievement in reading comprehension was rejected. This brings out the stark fact that using Marzano's instructional strategies enhanced students' achievement in reading comprehension.

7. An independent sample *t*-test was conducted to investigate if students' gender has effects on the students' achievement. The results of the mean scores showed that female students significantly outperformed male students in the pretests and posttests as summarized in Table 4.20.

Table 4.20: Differences between Male and Female Students' Achievement in Reading Comprehension

Group		Male		Female	
		Mean	SD	Mean	SD
Total score	Pre-test	48.42	16.30	56.21	15.54
	Post-test	63.70	16.92	73.41	15.22
Literal	Pre-test	27.95	7.79	29.70	8.40
	Post-test	37.20	7.93	40.083	6.28
Inferential	Pre-test	20.45	10.24	26.50	11.25
	Post-test	26.50	12.06	33.33	10.78

4.3   Qualitative Data Analysis

A qualitative approach, specifically the thematic, interpretive analysis, was utilized because this study was interested in empowering students by giving a voice to their perceptions of Marzano's instructional strategies. As described by Larkin, Watts and Clifton (2006), the interest of the interpretive phenomenological analysis is to explore how people perceive their experiences by

developing their concerns into an interpretative level. This entails providing intensive and reflective accounts captured by the participants along with conceptual commentary on the participants' sense-making processes. This section will provide the intensive and reflective accounts from the research participants that aim at answering the third research question "What are the students' perceptions towards Marzano's instructional strategies after being instructed and assessed authentically?". However, discussing these accounts will be presented in the following chapter.

To answer this question, focus group interviews with 12 male students and 12 female students were used. The interviews aimed at collecting qualitative data from the grade 10 students who participated in the intervention. The interview schedules comprised of several questions formulated to obtain participants' perspectives and views on specific themes related to Marzano's instructional strategies (Appendix H). The findings obtained from focus group interviews will be introduced in a narrative presentation, with reference to precise verbatim quotes that would contribute in supporting arguments.

As outlined in the interview questions, the researcher started with a number of warm-up questions to help the participant feel comfortable. To obtain detailed, reflective data from the participants, the researcher broke the main question into nine main interview questions that tackled each instructional strategy. The main questions were supported with one or two sub-questions or brief explanations of the strategies to ensure participants understood the questions clearly and to seek additional clarifications and broader understanding on their responses.

Warm-up questions

Most of the students in both groups showed positive attitudes towards reading. Their responses reveal that they are fully aware of the importance of the reading skill on enhancing other literacy

skills and vocabulary. However, some participants stated that not comprehending texts is frustrating and has a knock-on effect on their engagement in English learning classrooms. Few female students expressed that: "*we don't like reading in English because we usually get low grades in reading tests when we don't understand the themes of paragraphs*". Three male students described reading as "*un-cool*" because it requires great efforts and that makes it laborious and "*difficult*". One of these male students replied by saying "*sometimes I don't get the point of reading texts that are not relevant to my interests*". Two female students expressed they like reading but answering comprehension questions "*makes this skill boring*". They stated that: "*we usually don't understand the question*" and that's why we "*lose marks in the exams*". When asking participants in both groups about their capability to find specific details in texts to answer comprehension questions, all participants said that it is an easy task especially when they are asked to cite numbers or specific detail in one paragraph. However, tracking details in many paragraphs to answer comprehension questions is really difficult as they said: "*we have to read many paragraphs and connect ideas to answer one question, UGH!*". True or false questions that require students to scan for details seem to be suitable for nearly all participants, but most of them explained that: "*when Not Given is one of the choices, I feel lost*". According to the majority, multiple choice questions are easy to answer if students are not required to draw conclusions on given details or determine the author's purpose. They claimed that: "*I hate the question that asks me to choose a word that describes the character or his deeds*"; "*The question that I always face difficulties in is the one that asks me to choose the writer's purpose*" as expressed by five female students and two male students, respectively. All agreed that they can identify the main idea of the text if "*the topic is about something we know or study before*", but they struggle if the topic cannot activate their prior knowledge or "*not interesting*".

4.3.1 Marzano's strategies that aim at helping students develop and deepen understanding

The first three questions aimed at exploring the participants' perspectives on Marzano's instructional strategies used to help students develop understanding; namely cues, questions, and advance organizers, summarizing and notetaking, nonlinguistic representations and homework and practice.

4.3.1.1 Cues, Questions, and Advance Organizers

Q1: What are the students' perceptions of the use of cues, questions, and advance organizers when learning to answer reading comprehension questions in reading comprehension tests?

Regarding the first question on the participants' views about using graphic organizers to help them construct meanings of what they are reading, all participants agreed that using different types of graphic organizers aids in guiding and organizing their thinking. Participants in both groups highlighted the importance of using graphic organizers in enhancing their organizing and brainstorming skills which enhanced their comprehension of texts. One female student said that: "*l like to fill in and build upon a visual map because it helps me organize my ideas especially if the text is informational like the one we study on protecting environment*". Two female participants second what was highlighted by their colleague and pointed at the concept maps and webs graphic organizers that the researcher was displaying and added that: "*using these helped me to understand the text and answer the reading comprehension questions*", "*it is easy because I begin with the big idea and then put here the other topics. I can draw also*". They added that concept maps helped them represent knowledge of a subject by starting with a main idea or concepts and then branching out to show how it can be broken down into detailed topics. It could be understood from their discussion that using advance organizers and cues helps them to

interact with the content prior to the actual presentation of content as a form of previewing activity. This is "*very useful because I sometimes don't have before knowledge about the topic (i.e. background knowledge)*" as reported by most male students. One male student described the same stated idea on concept maps and added that using this strategy aids transfer of knowledge by creating direct links between new content and content previously studied: "*when we studied the "Two Brothers" story, we used pictures, emojis and words to describe Jack. This was easy for me to understand*". His colleagues agreed and pinpointed that graphic organizers, like the story map, helped them better identify the main elements of the story and relate information to main themes. Another male student stated that: "*when we read the story, we used like these, pointing at the story map, to know characters, time and place*". His colleagues claimed that: "*I like the story mountain, it helped me understand the story very well*". Few female students commented that they used the story map plot for understanding the events of the story and that was very useful in helping them answer almost all the reading comprehension questions. Few female participants outlined that graphic organizers are effective visual learning strategies that enhance understanding the relationship between ideas and concepts and as such help them think critically. That was illustrated in their discussion on the KWL chart as they said: "*when the teacher asked us to fill in the KWL chart, we think of what we learn before and then ask questions to understand the text about the Year of Zayed", "because the text has hard words, this chart helped us understand"*. From their responses on this idea, it can be understood that graphic organizers, like the KWL chart helped elicit their prior knowledge of the subject of the text, set a purpose for reading and as such assisted them to monitor their comprehension. One male and one female student revealed that they are visual learners and graphic organizers help structure information in a way that allows them to understand and retain significant information and

relationships. On this point one said that: "*when I arrange the information in a web or chart, I understand and remember the ideas*".

Regarding the second part of this strategy, all participants agreed that when the test includes questions on the literal comprehension level that require them to understand, remember, or recall the information explicitly contained in a text, they do not face a lot of difficulties. Some of their views include: "*I read the paragraph and understand important ideas and then find the answers*"; "*these are easy questions*". However, the inferential questions, which require them to elaborate on information and consider the clues in the passage in light of their prior knowledge and experience, are difficult and this makes them sometimes uncapable to answer them correctly. That was revealed in their responses: "*the questions that their answers are not stated directly in the text are hard*". Participants are not likely aware of the importance of using questions to facilitate their comprehension because such questions were not posed in the reading comprehension classrooms but rather included in their tests. Some quoted saying: "*teacher asks easy questions in class but in the exams, she put that triangle (*i.e. Bloom's Taxonomy*) on the exam paper and asks questions from up (*i.e. questions that tackle higher order thinking skills). Male students seemed to have less knowledge about this strategy to voice their opinions about.

4.3.1.2 Summarizing and Notetaking

Q2: What are the students' perceptions of the use of summarizing and notetaking when learning to answer reading comprehension questions in reading comprehension tests?

Regarding the questions on their views about practicing summarizing and notetaking strategy in their learning, most of the participants in both groups agreed that when their teachers explain and let them practice how to sift out extra verbiage and extraneous examples within the text and extract the most essential and relevant ideas and information, their ability to weave the ideas into

a succinct written or visual summary augments and this fosters their understanding and reduce confusion. All agreed that these strategies helped them identify the main and supporting ideas in passages and as such scaffolded comprehension. Responses shared by the participants include: "*when the teacher showed us how to organize information in the text into short ideas, I better understand the text and answer the questions*"; "*I like this way;* meaning strategy *because I don't like to read long texts to answer the questions*"; "*Yes, when I did the (FS) as the teacher explained, I find the answers for the questions easily*"; which they explained as to summarize, they should *find* main ideas and *subtract* irrelevant examples. They added that: *"the teacher asked us to read, highlight important events and then write notes on what I read… this helped me remember the events of the story and complete the mountain plot".*

One female student mentioned that these strategies strengthened her vocabulary skills and that enriched her understanding while reading the passages. She said: "*my teacher encouraged me to put some information into own words…that helped me to use the words I studied before*". Some male students stated that: "*we like to use this strategy when we work in small groups*", but when the teachers required them to categorize, prioritize and process information as an individual assignment, they find it very *"difficult".* Few male participants claimed that the activities that require students to summarize and take note while reading become extremely laborious if they are unfamiliar with the subject of the topic or if it is not interesting to read as they stated that: "*it is hard to summarize texts that we didn't study it before or not nice*".

As summarizing and notetaking require students to create a personalized account of information and translate it into own abbreviated form, a high degree of comprehension along with sufficient time will be needed as illustrated by two female students and five male students: "*I have to read all the text and understand all the details and organize information and then find most important*

and then make a summary", "it is a lot of work and will take a lot of time", "I agree, it is double the work and it is hard, I don't like to use it and I don't have the ability to organize information". Their colleagues agreed with the view that the strategy of breaking down content into succinct pieces is challenging especially in large selections of texts, but it is effective in increasing their comprehension.

4.3.1.3 Non-linguistic Representations

Q3: What are the students' perceptions of the use of non-linguistic representation when learning to answer reading comprehension questions in reading comprehension tests?

Participants were asked about their perspectives on using non-linguistic representations to enhance their performance in reading comprehension. All pinpointed that creating a non-linguistic representation helps them deepen their conceptual understanding and promote even greater understanding of the written passages. They claimed that encoding information using summarizing and notetaking into non-linguistic or imagery form improves memory, enhances recall, and increases retention of information. That was shown in the views: " *I liked the activity when the teacher asked me to draw and get pictures on the text; means of communication...it makes me understand and remember the ideas*"; " *when the text has pictures, I understand the paragraphs better*"; "*the teacher asked my colleagues to act some events of the stories"; "I like to create images after reading the story… this makes me understand it".* Few participants stated that when the teacher teaches them how to visualize the text and retain knowledge non-linguistically, the ideas in the text become more meaningful. They indicated: *"I remember the events of the story because the teacher asked us to summarize them in pictures*"; *"The teacher asked me to summarize the story and do a PowerPoint presentation, I put images that describe the events... all my friends understood the story*". Others consider using non-linguistic

representations powerful tools that help them process and make sense of new information using pictures and illustrations as they said: "*it makes us understand the meanings of words when the teacher shows us a picture*". Some female students reported that prior to reading an informational text, the teacher usually asks students to keep one question for each paragraph in mind. They explained: "*she writes the question on the board*" and then asks them to skim the text by reading the heading and subheadings and then find the answer and summarize what they understand using pictures. They added that: "*in groups, we read the paragraph and we answer the question by drawing*". Male participants demonstrated that their teacher used a note-taking format that entails processing the new knowledge in two different modalities- linguistic and non-linguistic. In this way, students record important ideas in a written form on the left and represent these ideas on the right as graphic representations and pictures. They said that: "in g*roups, we write words on the left and draw what we understand on the right…this makes us understand and remember what we learned*". The description of these activity reveals how their teachers linked several Marzano's instructional strategies to enhance students' reading comprehension.

4.3.1.4 Homework and Practice

Q4: What are the students' perceptions of the use of homework and practice when learning to answer reading comprehension questions in reading comprehension tests?

When the participants were asked about their views on using homework and practice to enrich their performance in reading comprehension, the majority agreed that they do not prefer the reading comprehension homework. Their responses demonstrated that they are not aware of the benefits and purposes of homework and practice, which made them less motivated. Some of their responses include: *"it takes time*"; "*homework is boring*"; "*we have other subjects to study, not only English*"; "*tell my teacher to cancel homework because it is not useful"*. Some students

commented that they do not like to do a homework assignment if the teacher assigns it as a single, big practice session. They rather prefer homework to be assigned in multiple, smaller practice opportunities because they make their achievement more successful. They stated: "*if the teacher can't cancel it, ask her to make it smaller*".

When asking the participants about the daily reading comprehension practice that their teachers assign, their responses reveal that they are knowledgeable of the importance of practice in building and maintaining proficiency in the acquired skills and that practicing extends their learning opportunities. They stated that: "*I know it is important to practise reading at home because it makes me know the words and find answers*"; "*I was only eager to read and answer the questions of the text that I like its topic, especially the very short stories, but the other ones about environment were very boring*". Some female students demonstrated that they believe that homework develops effective study habits when it is done using interactive websites: "*when the teacher asks us to use websites that show the text and answer*", and such websites are more appealing to them. Other students revealed that the assigned homework does not mirror the teachers' instructions or the practice they undertake at school and most of the time the homework assignment is not designed to be completed independently and this makes them consider homework an ineffective practice in enriching reading comprehension skills. They mentioned that: "*we do the easy ones at school and the teacher gives the hard ones for homework*"; "*my sister is at university and she always helps me because the teacher puts 5 marks for each homework*". One female student said that: "*reading comprehension homework has two sections, easy and short questions and hard questions (*i.e. Literal and Inferential levels); "*in most of my homework, I get all the first section correct but I make mistakes in long questions (i*.e. inferential questions)*". Having asked additional questions to further understand the student's point, the

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researcher concluded that students do not receive any corrective feedback on the homework assignment to help her master the targeted content and skills and that makes her "*answer these questions wrongly in most of my homework"; "when the teacher doesn't explain the answers of the homework especially in hard questions (i*.e. inferential questions*), we don't learn and make mistakes again"*. This illustrates the importance of providing feedback to students to improve their achievement.

4.3.2 Marzano's instructional strategies that aim at creating a suitable learning environment

The following questions aimed at exploring the participants' perspectives on Marzano's instructional strategies used to create a suitable learning environment; namely setting objectives and providing feedback, cooperative learning, and reinforcing effort and providing recognition.

4.3.2.1 Setting Objectives and Providing Feedback

Q5: What are the students' perceptions of the use of feedback and setting learning objectives when learning to answer reading comprehension questions in reading comprehension tests?

Regarding their views on their teachers' communication of the learning objectives, few participants agreed that stating the learning objectives verbally in the beginning of the class, displaying them on board, and calling attention to them throughout the lesson establish a direction to guide their learning. On this point, students recalled some events in which clearly stating and identifying the objectives assisted them to be aware of the connections between the tasks completed in class and what they are supposed to learn. The discussion included responses such as; "*it helps me focus on what I should learn"; "I know what I have to do in the end of class to get a high mark*". Upon request for more inferences on this point, one male student said: "*how to explain…mmm can I speak in Arabic?*". Since describing how the teacher implemented this

instructional strategy to support students and achieve learning targets seemed difficult for them; the researcher recorded their explanation in Arabic, translated it immediately and shared it with them for verification. With help from his colleagues, the student explained that their teachers communicate the learning objectives using "*all must, many should, and some could*" to allow for differentiation and setting a constructive baseline for all students. All students commented that they understand that if they know what's expected of them, they can achieve it successfully if , however, the learning objectives are stated in a student-friendly language; "*the words in the SWBAT* (i.e. Students will be able to) *are very hard and I sometimes don't understand what I have to do to move from all must to some could*".

Some female students described how their teacher communicated the learning objectives with them. One said that: "*the teacher makes us guess the title of the lesson using… a puzzle (named it in Arabic,) *and then she asked us to think what we should learn*". The student used kinetic movements to illustrate a mental picture for the researcher. It was interpreted that their teacher designed a poster that has a football net and asked students to expect the learning goals using Bloom's Taxonomy. Upon introducing the topic of the lesson, student recalled one topic; *indoor and outdoor activities*. The student explained in Arabic that their teacher asked them to write their expectations and post them on the poster. Then, the teacher read one by one and then chose the ones that were consistent with the MoE leaning objectives and success criteria. The students said that: "*I wrote to give examples of indoor activities while my friend wrote to state activities that we do indoors…we were both right*". Another way that showed how their teachers engaged them in setting learning objectives was described by few male students. One student stated that: "*the teacher asks us to complete a K-W-L chart in each lesson*"; as a way to record what they know (K) about the topic, what they want (W) to know, and what they learned (L). From the

students' discussion, the researcher concluded that when students were provided with opportunities to personalize the learning objectives, their motivation for learning increased.

All participants revealed that when teachers provide them with feedback on their homework and projects, they develop a coherent understanding of their strengths and skills in which they need to improve. They stated that "*when the teacher writes comments on my work, I understand the task better"; " I will know how to make my work better to get a higher mark*" ; " *our teacher always says use the comments I write to improve your work until you succeed"; " when the teacher writes comments, I know what is correct and what to do next*". One student mentioned that his teacher provides them with "*a shape"* (i.e. graphic organizer) to evaluate their own work, give peer feedback, and receive feedback from the peers: "*the teacher asks me to read my friend answers and write my comments*". On the point that feedback addresses what is correct and elaborates on what students need to do next, all students mentioned that they use an online platform called "*Mohammed Bin Rashid Smart Learning Program (LMS)*", which is provided by the MoE to give and receive feedback from peers and teachers. They consider using it an interactive program that encourages them to practice and reflect on their own learning. They explained that: "*when I gave my friends feedback on the story map they designed on a PowerPoint they posted on the class wall on LMS, I get points*"; "*I always use my teachers' comments and change the mistakes*"; "I *like when my peers and teacher give me fast*; i.e. immediate *feedback on my work so I can get points.. I have 918 point*s"; "*I have 438 points because I like and make comments on my friends' works... I like this reward*".

4.3.2.2 Cooperative Learning

Q6: What are the students' perceptions of the use of cooperative learning when learning to answer reading comprehension questions in reading comprehension tests?

The next question tackled the students' perspectives on cooperative learning. In general, all participants revealed that using cooperative learning has provided them with successful academic and social support. They acknowledged that this instructional strategy was vital in enhancing their performance in English classes and in reading comprehension activities. Few participants mentioned that through dialogue, they discover what leads to correct and incorrect answers and that sharing learning experiences with their peers helped foster their understanding of the reading passages. They explained that: "*my friend has a different understanding of the ideas we read so I listen to her explanation and then I understand better*"; "*when we read the text together, we share our understanding and that made us answer all questions*"; "*the teacher said learn from your friends' experiences and their opinions*"; "*sometimes I don't know the meaning of words, so my friends help me*"; "*when I work alone, I feel afraid and make many mistakes…but when the teacher asks us to read the text and answer in groups, I become more not afraid;* i.e. more confident *and I have good work;* i.e. my performance improves". One participant indicated this strategy enhanced her presentation skills by saying that: "*I was afraid to do the presentation after you read the text about outdoor activities, but when the teacher said work in pairs I was happy, and my friend helped me*".

Four male students described an effective comprehension-building strategy that their teacher implements to build a meaningful cooperative learning environment. The students added that their teacher used the cooperative reading role cards and that made them proactive learners. The participants were not able to describe the process in English and referred to many Arabic words in their responses. Their discussion reveals how this cooperative learning activity increased their comprehension around complex texts by ensuring equal participation and student engagement. The participants highlighted how their teacher reinforces group work practices while each

member is responsible for completing a specific task. Students mentioned some roles such as: *"I am the illustrator… and there is the questioner", "I'm the connector... I have to connect the text to the world", "I like this way, it makes us understand the text".*

Consistently, several female students outlined another comprehension-building activity that they practiced in English classrooms. They stated that: "*we use read, pause and question*". Based on their description, the researcher concluded that they refer to the Patterned Partner Reading Strategy, which is a cooperative learning activity that aims at providing a structure for reading interactively with another. The students highlighted some of the benefits of this activity in promoting strategic reading: "*I should be focused in the reading whether I'm reading or listening"; "I like when we have to draw a picture of what my friend reads"; "it is hard sometimes to connect what my colleague reads with the world, but I always try... my teacher gave me two points for my idea".*

Two female students described some factors that make cooperating learning less useful from their perspectives. They stated that: "*I don't like to work in groups because I'm the leader and all depend on me in answering the questions"; "the group has six girls, only two work and others copy from us".* Others highlighted the importance of having students with equivalent proficiency levels to be able to perform better in reading comprehension: *"my teacher puts me with students who are not good like me in English, and asks me to help them, they copy from me most of the time"; "I like to help them but sometimes I don't know the answer and I need help…".* However, a contradicting view was shared by another participant who asserts that supporting and encouraging each other through discussion lead to higher comprehension and greater retention*: "I like to support my colleagues…when I read and explain to them, it makes me understand the text more and answer the questions better".*

4.3.2.3 Reinforcing Effort and Providing Recognition

Q7: What are the students' perceptions of the teachers' use of praise when learning to answer reading comprehension questions in reading comprehension tests?

The last question of the larger goal of creating a suitable learning environment aims at exploring participants' views on praising their efforts and holding high expectations. All participants in both groups described how praising their efforts and displaying their work have had positive effects on their academic learning and social behavior. They mentioned how the points' system in the LMS platform created a motivating learning environment that motivates them to work harder. Their responses include some words in Arabic but in general they stated that: " *I liked when I put the mountain plot I created on the LMS and received points from my teacher and friends", " my teacher wrote you are an awesome summarizer"; "my teachers said: the concept map you created about healthy lifestyle is awesome"; "I am so proud of the effort you put into creating the chart"; "I can see your hard work in this assignment"; "I can see a difference in this task compared to the previous one".*

 Some students believed that the efforts and persistence they put forth should be recognized in different ways. Students insisted on receiving tangible rewards by saying that: "…*not only points on the participation chart"; "we want them to reward us by taking us on a trip", "I like to be praised in front of my peers… let them praise me in the morning assembly".* Students understand that praising their efforts pays off in terms of behavior and significantly contributes in promoting their achievement *"if the reward is big, our behavior will improve, we promise*". On this point, female participants described a project that is implemented by the English Department in their school. The project aims at supporting the various aspects of students' distinctive performance, such as their academic excellence in English and abiding by the school rules and regulations.

Their description of the project illustrates their understanding that such initiatives reflect positively on their attainment and personal development in addition to reinforcing values to affect students' behavioural patterns. They described that: "*in our school there is a project called Well Done. The English teacher gives cards to the students who work hard, and we put the cards in the box. On Thursday, they make a choose "*i.e. a draw*" and the winner gets 100 Dirhams… I won in November*"; "*I never win but I put many cards for being… mmm…. like to work "*i.*e.* proactive*" and helping worker* "i.e. cooperative" *in the group... I hope I win next term*". Consistently, male students described a project that is implemented to support students' academic achievement. One stated that: "*we are young businessmen and we sell food. The money is like cards from teachers for students who work hard in English class… I like it because my teacher gave us many cards*".

4.3.3 Marzano's instructional strategies that aim at helping students apply knowledge

The following questions aimed at exploring the participants' perspectives on Marzano's instructional strategies used to help them practice, review and apply learning; namely identifying similarities and differences, and generating and testing hypotheses.

4.3.3.1 Identifying Similarities and Differences

Q8: What are the students' perceptions of using the strategy of identifying similarities and differences when learning to answer reading comprehension questions in reading comprehension tests?

On asking participants about their viewpoints on the effect of using this instructional strategy on their achievement in reading comprehension, all participants revealed that it is very challenging: "*it is hard because I should think more deeply about what I am reading in order to fill in the diagram*". Although they find this strategy challenging, their responses revealed that determining

the likenesses and differences between objects, ideas and concepts is a thought-provoking process as they stated that: "*we should understand all details, know their features and connect between ideas*"; "*when we read the text to compare and contrast the outdoor and indoor activities, we used this (*pointing at the Venn Diagram*), we highlighted the ideas (i.e. features) of both and then…*the student stated some words in Arabic that describe the processes of classifying, connecting, integrating ideas and creating non-linguistic representations to enhance their understanding. Most of the male students agreed that identifying similarities and making differences helped them make meanings of texts during and after reading. Female students also revealed that identifying characteristics and understanding relationships between objects or people will be beneficial if the teacher points out the similarities and differences in an explicit manner using clear strategies. They added that the whole process will be easier when they observe a demonstration of a concept or activity. On this point, one illustrated that: "I *prefer to read the text with the teacher* (i.e. guided by the teacher)*, so she will show us what to highlight… after that we can fill in this diagram"*.

4.3.3.2 Generating and Testing Hypotheses

Q9: What are the students' perceptions of using the strategy of generating and testing hypotheses when learning to answer reading comprehension questions in reading comprehension tests?

For this question, the researcher had to explain the strategy in terms of making predictions and drawing conclusions. Upon the researchers' explanation and provision of examples, participants seemed to understand and remember how their teacher applied this strategy in the classroom. One female student stated that: "*now I understand, you mean when the teacher asked us to think what will happen at the end of the story before we reach the last page*". Another added that: *"the teacher always asks us what you think will happen next".* A group of female students highlighted

that they were engaged in decision-making tasks when they their teacher gave them a selection of short stories with no endings. She required them to generate and test their predictions by acting out the ending scene to the rest of the class, and then using their input to check how accurate their prediction was and to contrast their initial predictions with the actual outcome. Few male students described how their teacher always shows them pictures dealing with the short stories or the text they are reading and asks them to predict the result of the actions of the characters. They stated that: *"the teacher put a picture of Saeed in the National Day celebration and asked them to predict how he will celebrate with his family".* Consistently, two female students described how their teacher gets them engaged in problem-solving tasks and challenged them to decide what should be done differently given the unusual context or the constraint. They illustrated that: *"we learned how to use FANBOYS* (i.e. conjunctions) *and then the teacher gave us a paragraph to read and then asked us to rewrite it without using any of the conjunction but still doing* (i.e. conveying) *the basic meaning".* The students added that prior to engaging in this problem-solving task, their teacher asked to predict how not using conjunction will affect that writing. Few male students described how their teacher showed them a video about the Year of Zayed when Lulu supermarket helped needy people and donated many products and then asked students to predict the outcome of this action.

4.3.4 Summary of the Qualitative Results

This section has presented and discussed the qualitative data. This included:

1. In reference to the framework of pillars of the larger goals of Marzano's aggregation along with the theories that underlie this framework, participants were asked a total of nine open-ended questions divided into three main categories. These categories aimed to

collect participants' opinions about each instructional strategy, uncover the reasons why students have these perceptions, and explain the advantages and challenges of integrating them in reading comprehension. The focus group interview also uncovered the key successes of adopting Marzano's strategies in reading comprehension instruction.

2. A narrative data was presented from the responses obtained by the twelve male students and twelve female students during focus group interviews. The researcher quoted some statements to help provide an established inferential approach of these accounts.

3. As a matter of fact, the perceptions of the participants from both genders were considered positively supportive to utilizing Marzano's instructional strategies in learning reading comprehension.

4. Many themes were recurrent when participants were asked about the benefits of using Marzano's instructional strategies that aim at establishing a suitable learning environment. Their responses include that their teachers' practices that aim to reinforce their efforts and provide recognition enhanced their self-confidence which made them have a positive feeling of accomplishment. That feeling enhanced their determination to work harder and move forward especially when they were praised in front of their colleagues. The role of technology, particularly the interactive platforms, was also highlighted as being a means to improve engagement and enhance positive relationships between students and teachers. Enhancing students' motivation and engagement and helping students monitor their achievement are some of the benefits expressed by the participants when asked about the impact of setting objectives and providing feedback on their reading comprehension proficiency. Students also stated that this strategy helped them develop a coherent understanding of their strengths and areas of improvement,

which also established a direction to guide their learning of reading skills. Setting objectives in student-friendly-language and encouraging peer-feedback using technology were also pinpointed. When asked about cooperative learning, participants stated that working in groups provided social, academic support needed to enhance greater understanding and retention. They stated that cooperative learning activities that aim at providing a structure for reading interactively with another further enhanced their presentation skills. The participants emphasized the importance of having equivalent proficiency levels in groups.

5. Participants seem to have positive perceptions towards applying Marzano's instructional strategies that aim at developing understanding; namely cues, questions and advance organizers, summarizing and note-taking, non-linguistic representations. However, their perceptions seem to vary when asked about homework as an instructional strategy in answering reading comprehension questions. When asked about the benefits of applying cues and advance organizers as an instructional strategy in reading comprehension, they stated that the representation of knowledge in organizers elicits prior knowledge and helps them to construct meaning, which in turn monitors comprehension. They all agreed that this strategy helps them to find the big idea and supporting details, which also enhanced brainstorming and organization skills. Participants acknowledged their teachers' use of Bloom's Taxonomy in formulating questions, but they were not supportive of such use in tests. Consistently, teachers' practices to teach students the skills of summarizing and notetaking helped to strengthen their vocabulary skills, identify the main idea and extract most essential information. However, from their perspectives, these skills are challenging and laborious in large selections of texts and require high

degree of comprehension, especially if they are not familiar with the topic of the reading text. Using non-linguistic representations was favoured by the participants as pictures deepen their conceptual understanding, retain knowledge, and help make sense of information. Although participants understand that using homework and practice builds and maintains proficiency in reading, but they become less motivated when homework is assigned as a single, big practice session and no feedback is provided or if the homework does not mirror their class work.

6. When participants were asked about their perceptions towards using Marzano's instructional strategies that aim to help them apply knowledgee, they reported that using the strategy of similarities and differences helped them think more deeply and monitor their comprehension. They added that as this thought-provoking process integrates skills of connecting ideas and creating analogies, it should be demonstrated clearly using direct, explicit instruction. Understanding the importance of using the strategy of generating and testing hypothesis seems to be challenging for most participants. However, their perceptions shift towards considering it beneficial when they link using it to make predictions in reading.

7. Based on the students' responses on each instructional strategy and in reference to Hill and Miller's (2013) outline that serves as a framework of pillars of the larger goals of Marzano's aggregation, the following categories and codes emerged (Figure 4.29).

Marzano's strategies that create a suitable learning environment	Marzano's strategies that develop and deepen knowldge	Marzano's strategies that help students apply knowledge
Advantages and benefits	Advantages and benefits	Advantages and benefits
Challenges and concerns	Challenges and concerns	Challnges and cocerns
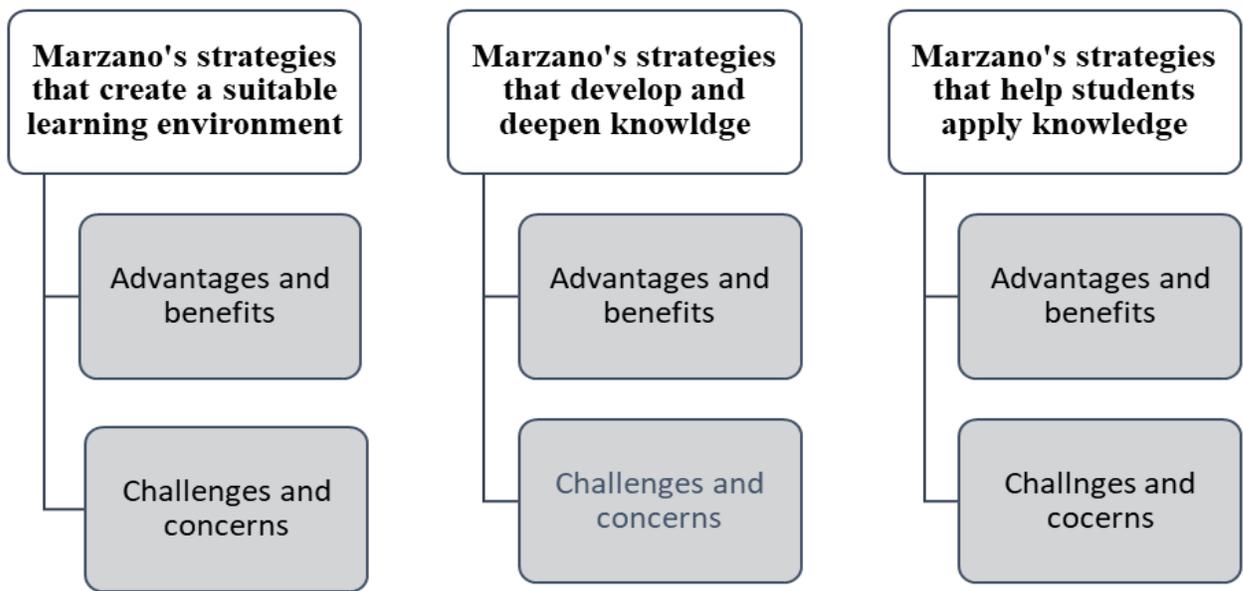
Figure 4.29 Themes of the qualitative data

Based on the category that underlies the nine instructional strategies, the following figures present a summary of the advantages and benefits as emerged from the participants' perceptions on using these strategies in reading comprehension instruction.
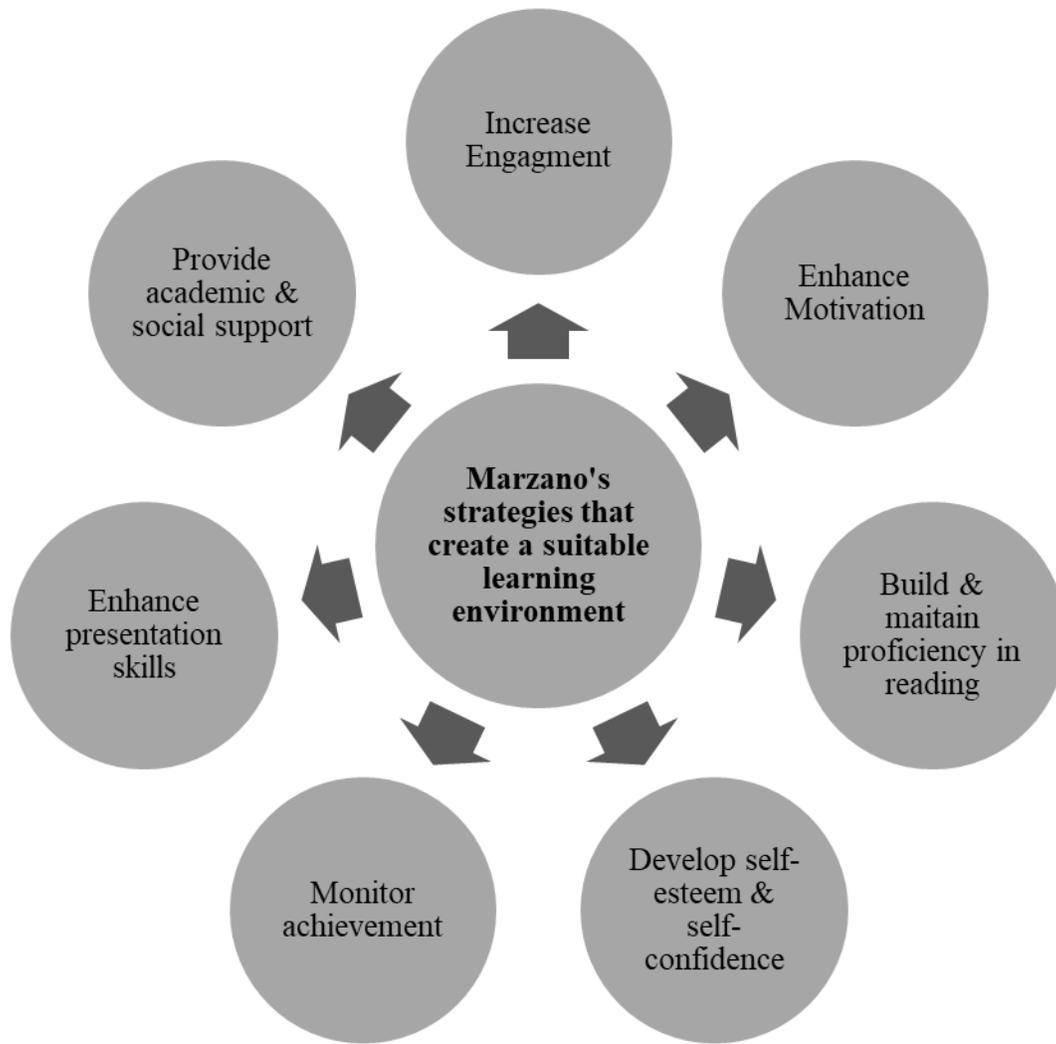
Figure 4.30 Advantages and benefits of using Marzano's instructional strategies that aim at creating a suitable learning environment
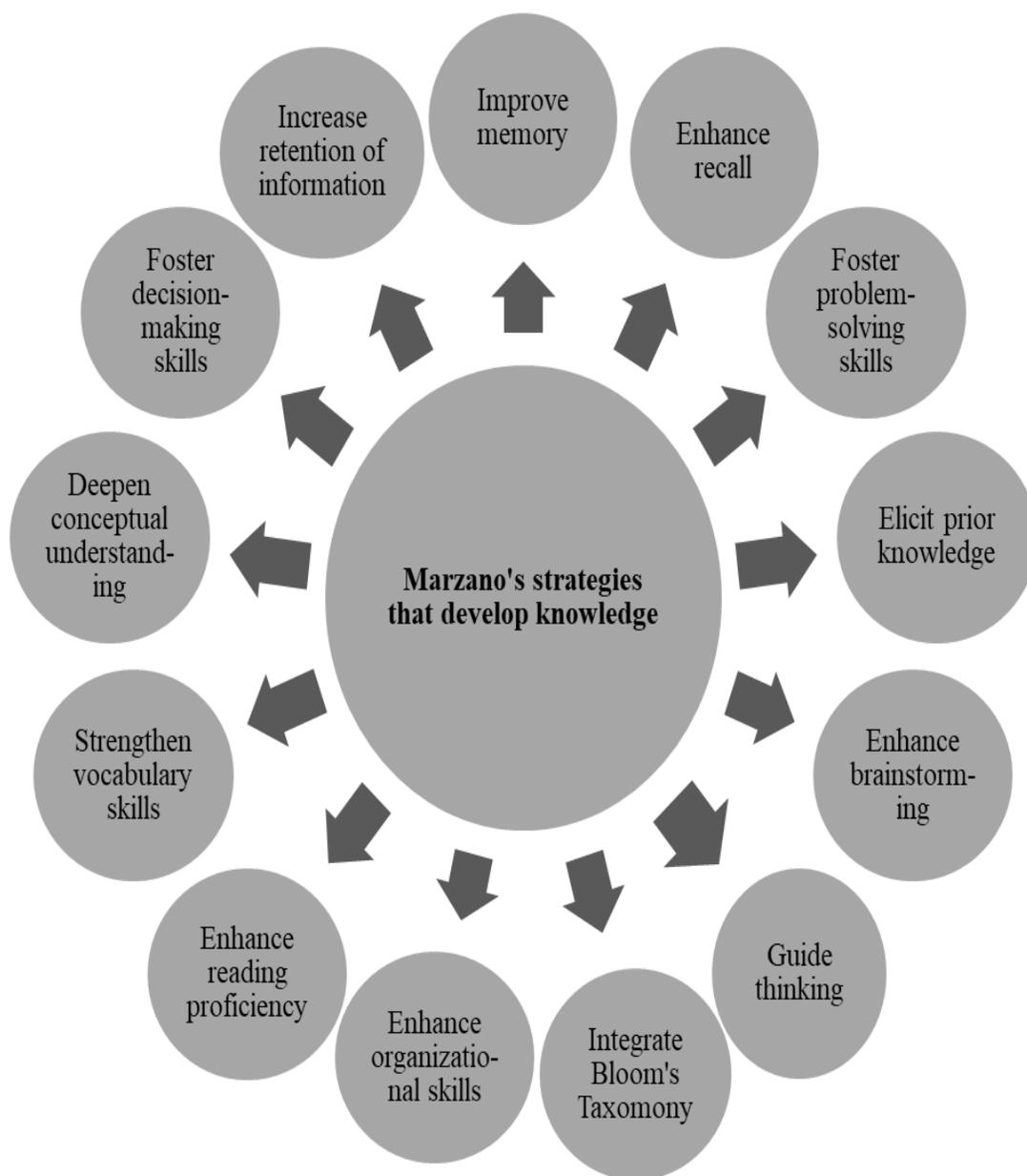
Figure 4.31 Advantages and benefits of using Marzano's instructional strategies that aim at developing knowledge
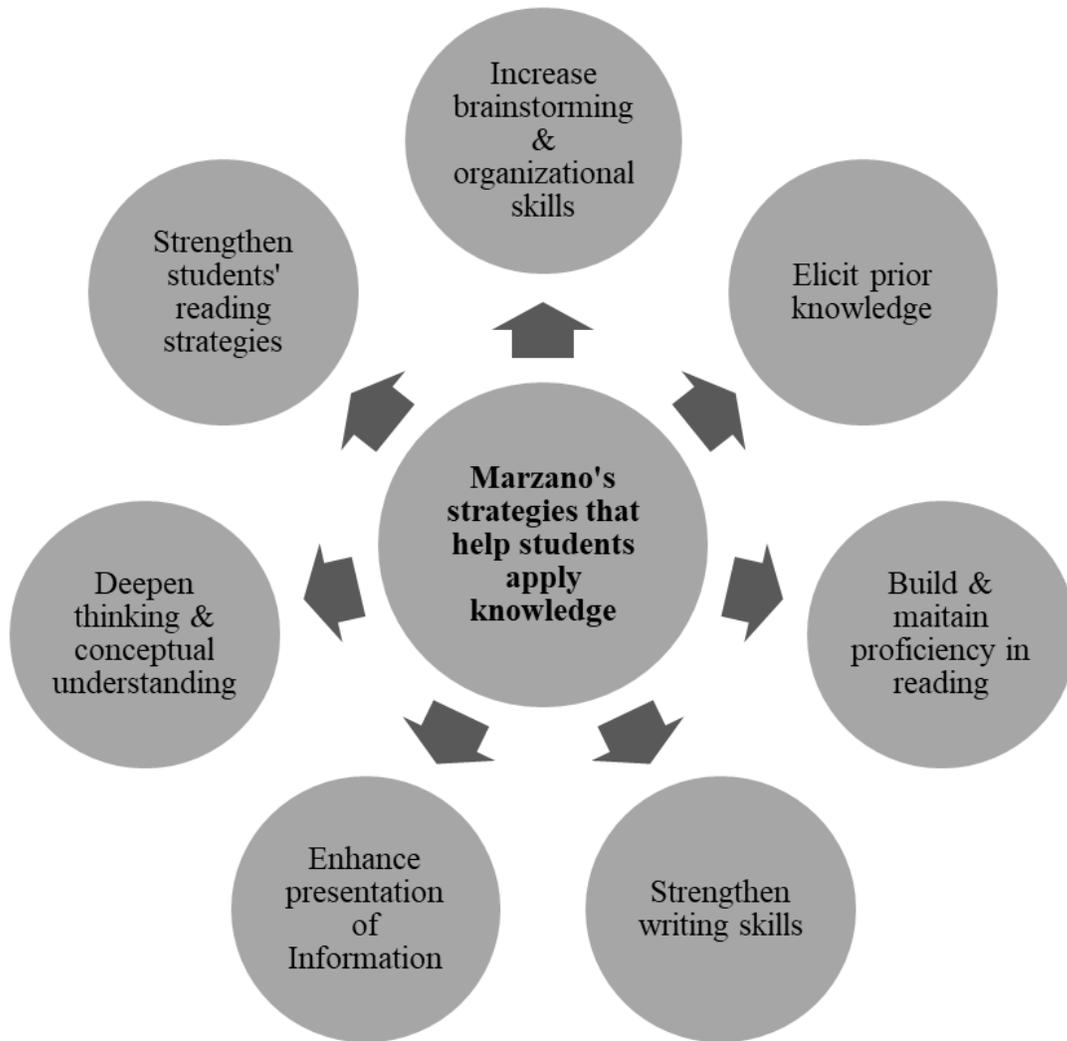
Figure 4.32 Advantages and benefits of using Marzano's instructional strategies that aim at helping students apply knowledge.

Based on the category that underlies the nine instructional strategies, the following figures present a summary of the challenges and concerns as emerged from the participants' perceptions on using these strategies in reading comprehension instruction.
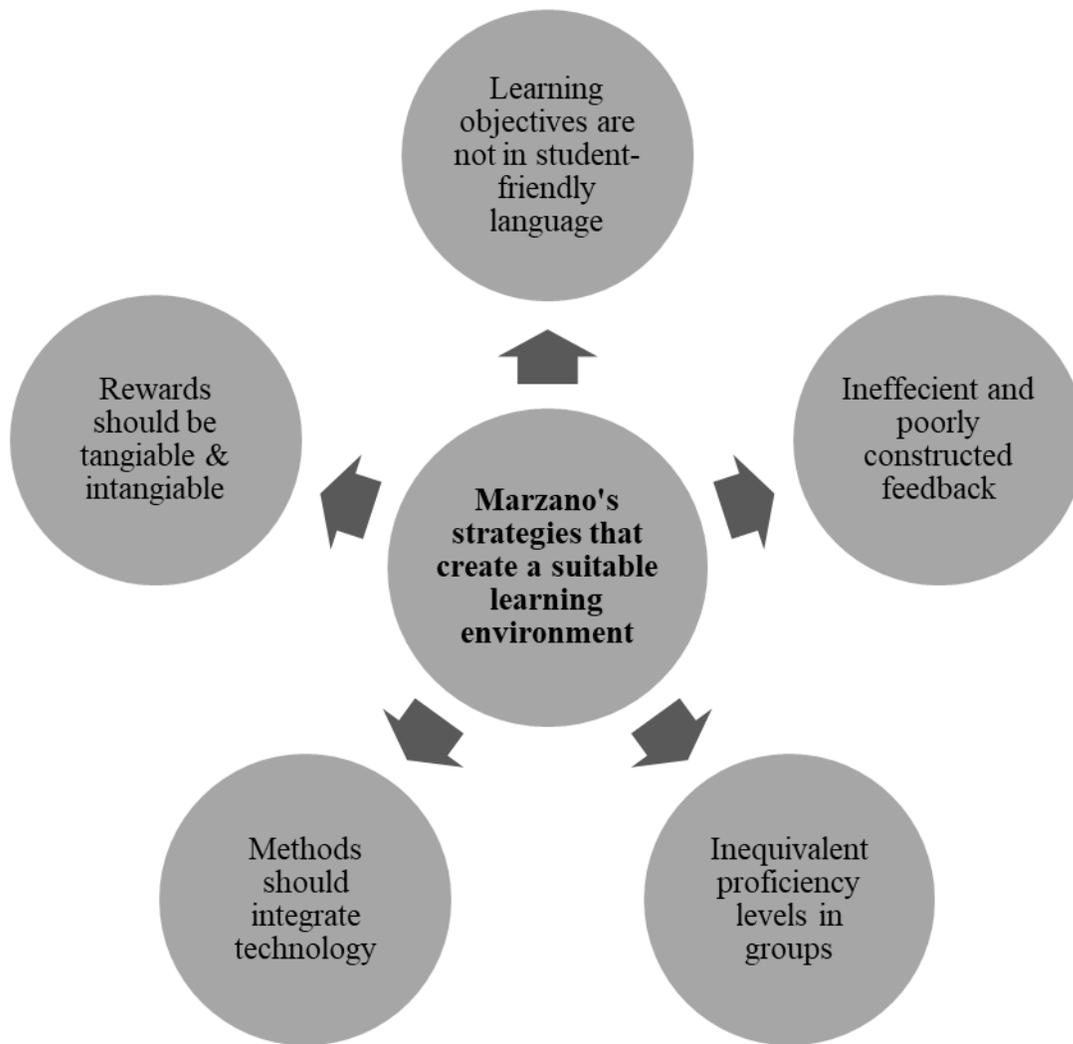
Figure 4.33 Challenges and concerns of using Marzano's instructional strategies that aim at creating a suitable learning environment
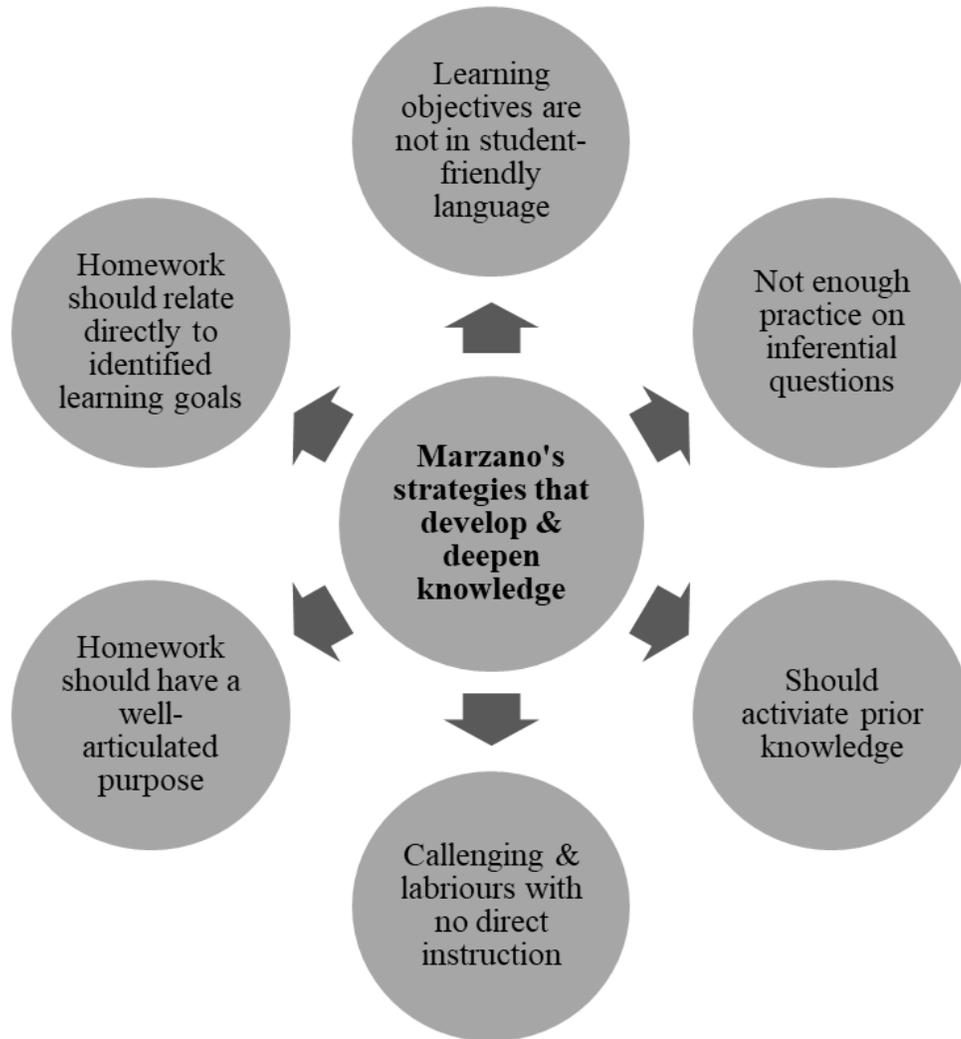
Figure 4.34 Challenges and concerns of using Marzano's instructional strategies that aim to develop and deepen knowledge
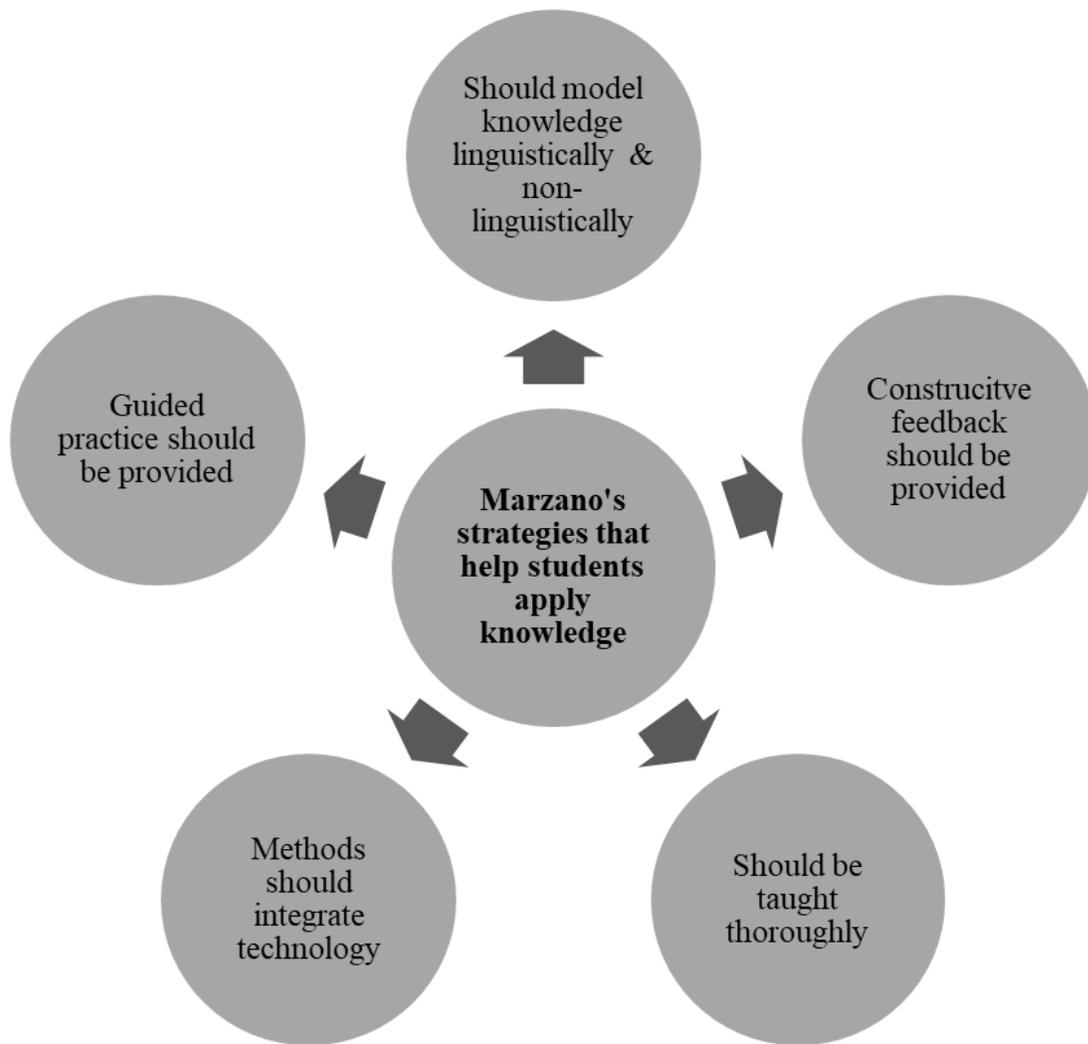
Figure 4.35 Challenges and concerns on using Marzano's instructional strategies that help students apply knowledge

The following Table 4.21 provides a summary of the themes that emerged from the thematic analysis process.

Table 4.21 Summary of Themes

Codes	Themes
Advantages and benefits of using Marzano's instructional strategies in reading comprehension instruction	Enhancing comprehension Providing social and academic support Fostering brainstorming and organization skills Increasing retention of information. Strengthening vocabulary skills Deepening conceptual understanding Strengthening students' reading strategies Eliciting prior knowledge. Increasing engagement Enhancing motivation Fostering Decision-making and problem-solving skills Developing self-esteem and self-confidence Monitoring achievement
Challenges and concerns of using Marzano's instructional strategies in reading comprehension instruction	Application should be linked to learning goals Guided practice should be provided Practices should integrate technology Constructive and timely feedback should be provided Instructions when applying these strategies should be in student-friendly language Sufficient practice is required Application should cater for learners' diversity

4.4 Chapter Summary

In summary, the results of this study showed that using Marzano's instructional strategies was more effective in improving students' achievement in reading comprehension than traditional teaching approaches. The study results showed a significant effect of gender on students' achievement in all the learning outcomes. The qualitative data seems to expand the quantitative findings about the effectiveness of Marzano's instructional strategies in enhancing students' performance in reading comprehension.

CHAPTER FIVE: Discussion and Conclusion

5.1 Overview of the Chapter

As chapter four presented the findings obtained from using the quantitative and qualitative data collection techniques, fully triangulating these findings requires further discussion and analysis. Accordingly, an integration of the collective results emanating from both the quantitative and qualitative studies will be presented and discussed in detail in this chapter.

Data analysis "involves organizing, accounting for, and explaining the data; in short, making sense of the data…noting patterns, themes, categories and regularities" (Cohen et al. 2007, p. 147). The systematic search for meanings from the obtained data that the process of data analysis includes will qualify the researcher to deduce the implications of the findings of the study. The research questions will be also revisited to demonstrate to what extent they have been answered. Conclusions based on the findings and recommendations for future research in this field will be also highlighted.

5.2 Summary of the Study

The impact of globalization has yielded major developments in the skills and competences of English language learners (Elyasi 2013; Stronge et al. 2011). According to Marzano and Pickering (2003), catching insights on improving learners' capabilities produces quality education, which is reinforced by incorporating quality teachers, employing quality learning methods and instructional strategies and establishing supportive, safe quality learning environments. These pillars serve as the foundation of generating educational environments that are undeniably driven by a prevailing concern with the link between classroom instruction and students' achievement (Hill & Cohen 2016). In the field of English language instruction, a

wealth of researches stated that improving students' achievement in literacy skills, i.e. reading comprehension is congruent with the employment of adequate research-based instructional strategies that induce fundamental, desirable changes in the learners' competencies (Bernel 2012; Dean et al. 2012; Dubas & Toledo 2016). In response to the needs of incorporating instructional strategies that are supported by research and theory, the work of Marzano et al. (2001) evolved an aggregation of effective, high-yield instructional strategies that have been recognized as mechanisms of high-quality instruction. The identified nine areas of instructional strategies, which are believed to enhance learning and reinforce students' attainment in all subjects, are based on determining the percentile gain in students' achievement as found in the synthesis of a series of quasi-experimental studies conducted by Haystead and Marzano (2009) and supported by Hill and Miller (2013).

Marzano's instructional strategies had sparked an interest among researchers investigating the significance of those strategies on students' achievement in literacy skills, namely reading comprehension. In the field of language learning, Al Husban and Al Khawldhe (2017) found out that using Marzano's instructional strategies has solidified students' reading comprehension skill and that teachers' utilization of strategies that are not research-based can cause a major drawback in students' achievement. Having acknowledged Marzano's realization of compiling fundamental findings from research into nine instructional strategies, Thomas and Green (2015) pointed to the many advantages of Marzano's strategies in creating a dynamic ESL learning environment that fosters student's ability to construct knowledge and think intellectually. Likewise, using graphic organizers and encouraging students to predict, generate and test hypothesis generate strategic readers (Black 2012); and this is correspondent with Manoli and Papadopoulou (2014), and Hill and Millers' (2013) findings that Marzano's strategies are translations of Constructivism and that

the quality performance of teachers in teaching reading comprehension is congruent with their solid knowledge of these instructional strategies. Correspondingly, Guthrie and Klauda (2014) identified the significance of Marzano's instructional strategies in developing learners' memory, expanding students' aptitudes to explain, engaging and fostering motivation and nourishing students' creativity when reading stories. Goodwin and Webb (2014) concluded that teachers' lack of knowledge of these research-based strategies deprives students from paths of active learning, which is of a great significance in increasing knowledge discovery and exploration. In the same vein, Ganyaupfu (2013) and Suing (2012) concluded that these strategies motivate goal-oriented attitudes among students and develop reading and vocabulary skills needed to aid comprehension. Correspondingly, Sonbul and Schmity (2012) and Cummins (2001) highlighted that teachers' utilization of research-based instructional strategies can be translated into noticeable improvements in ESL learning.

In the UAE, the MoE upholds the value of education that produces noticeable student learning in all subjects, including learning English (Pennington 2016). As such, learning English as L2 has developed to be a necessity for ESL students in the UAE and several reading initiatives and tremendous efforts were excreted to consolidate the view that promoting students' reading skills in English is one of the priorities that advances the national education and fosters students' pursuit of knowledge, imagination and innovation needed in the twenty-first century (MoE 2019). Notwithstanding the number of the executed plans and the education reform initiatives, English language teachers share the common world-wide experience that most students fail to read adequately, and that improving reading comprehension has been one of their major concerns (O'Sullivan 2004). In addition, numerous concerns about an apparent decline in students' reading competencies has been documented (OECD 2015). Instructors in the UAE also cited that

reading is perceived as the skill that has the lowest achievement ranking in many proficiency tests (Traish 2015). As such, improving students' reading performance should not only be a critical aim for instructors (Lane & Hayes 2015), but also a concern for learners including the ones in the public schools in the UAE whose reading performance is below the average (OECD 2015). Having in mind how globalization has developed learning English to be a critical requirement for ESL students in the UAE and based on the alarming results of many students who are classified as underperforming (Sahlberg 2016), it is anticipated that critical achievement gaps between reform endeavors and students' performance continue to exist (O'Sullivan 2014), and consequently it appears challenging to close these gaps without practical and meaningful implications of the pillars of effective pedagogy (Marzano et al. 2001).

As one of its topmost items of the educational agenda, the MoE has devoted considerable attention to support teachers to use instructional and pedagogical strategies (Pennington 2016). With several researchers advocating the impact of instructional strategies in enhancing students' achievement in literacy skills (Miller 2014; Thomas & Green 2015), investigating the impact of a selection of high-yield instructional strategies becomes a requisite to create a learning environment that develops understanding and extends knowledge. To lead the transformation and improve its trajectory, the MoE in the UAE has devoted considerable attention to enhance students' achievement, support teachers to use Marzano's instructional strategies and adopt these strategies for formal observations in the teachers' performance appraisal system.

The above discussion created the need for conducting this study and guided its aim and objectives. Accordingly, the purpose of this study has been to examine the impact of Marzano's instructional strategies on grade 10 students' achievement in reading comprehension. It also aimed at exploring the perceptions of grade 10 students towards using these strategies in their

learning of reading comprehension strategies. Finally, it examines the emerging change, if any that students' gender may have on students' achievement in reading comprehension based on Marzano's instructional strategies.

To address these objectives, the study sought answers to the following research questions.

1. What is the impact of Marzano's instructional strategies on grade 10 students' achievement in reading comprehension?

2. Are there any gender-based significant differences in reading comprehension performance in response to Marzano's instructional strategies?

3. What are the students' perceptions towards Marzano's instructional strategies after being instructed and assessed authentically?

Having followed the pragmatism philosophical stance, the research questions for this study have employed an explanatory sequential mixed method, involving a quasi-experimental non-equivalent pre-test–post-test control group design and focus group interviews. In the quantitative part, the chosen sample size was 480 students ($n=480$) in grade 10 general stream who were divided into two groups: experimental group ($n=240$) and control group ($n=240$). For the qualitative part, two sets of focus group interviews were conducted with boys ($n=12$) and girls ($n=12$) selected from the experimental group. To ensure that the participants who would undertake the tests were statistically representative, a sampling protocol, which reflected two perspectives; namely PD training and classroom observations, was followed. Training teachers on Marzano's instructional strategies helped reinforce the teachers' knowledge on Marzano's instructional strategies and inevitably observe them implement those strategies to teach their students who were the study's sample. The PD training in this study conforms to the procedures undertaken study of Al Husban and Alkhawaldeh (2017) and Miller (2014). The observations

were undertaken to ensure that teachers' effectiveness in delivering the instruction based on Marzano's strategies is evident in their actual practices.

Answers of the first and second research questions depended on quantitative data represented in reading comprehension pretests and posttests scores that were assigned numerical forms. To some extent, this established a sense of certainty that findings are valid and logically scientific. The effectiveness of the intervention of instructing students using Marzano's instructional strategies and gender differences in students' scores in reading comprehension tests with significantly better performance of female students were identified as the findings of the first two research questions. The answer of the third question was dependent on empirical evidence represented in students' perceptions, and as such multiple realities were constructed. Marzano's instructional strategies have yielded positive results in reading comprehension from the perspectives of students.

To the degree possible, the researcher attempted to control for and reduce the effects of the confounding variables. This was enhanced when students studied the same curriculum and similar set of learning objectives and success criteria were followed. The comprehension tests were also considerably linked to vocabulary words and themes studied throughout the semester and were administered in the same time in the students' regular classes.

The use of Marzano's instructional strategies in reading classes has been the primary focus for this study, and the interactive impact of gender and treatment along with students' perception towards the primary focus have been another focus needed to be investigated. This was accomplished using quasi-experimental non-equivalent pretest–posttest control group design and focus group interviews. Given that the quantitative and qualitative findings have supported using Marzano's instructional strategies in reading classes, a number of key findings have been drawn.

5.3 Key Findings of the study

 The following findings will be discussed in relation to reading comprehension;

5.3.1 Effects of Marzano's Instructional Strategies on Students' Achievement

 Analyzing the impact of Marzano's instructional strategies on students' achievement in the Emirati context has been sought by answering the first research question. The purpose of this question has been to investigate if employing an aggregation of quality-proven, high-yield instructional strategies by teachers of English during one trimester will support students' reading comprehension proficiency and help them achieve higher scores during a reading test in comparison to students who were not taught using Marzano's instructional strategies.

In this study, students' achievement, represented in reading comprehension test scores, was assigned a numerical form and that according to Gay et al. (2009) established a sense of certainty that findings are valid and logically scientific. Data was collected and computed to obtain a statistically quantifiable result that allowed for the quantitative data analysis. As described in [3.10.1], summarizing data in mathematical and objective results creates a better understanding of the impact of the diverse variables that affected the results which allows for reproduction and generalizations of results to the greater population (Cohen et al. 2007), for instance to all secondary public schools in the UAE.

Upon importing the data collected from pretests and posttests into the SPSS to determine if the differences between scores were statistically significant, results showed that a learning gain over 16 was achieved for the students instructed using Marzano's instructional strategies while 6.04 was achieved by students in the control group. The mean of posttest scores of the experimental group is higher than the mean of postscores in the control group presented as (68.56) and (58.39)

respectively. Accordingly, the statistically significant differences between the mean scores and standard deviation of the experimental and control groups reject the null hypothesis.

This study used pretests and posttests method to measure students' knowledge gained after participating in an intervention using Marzano's instructional strategies in learning reading comprehension. The fact that pretests can act as score gains for student assessment is a realistic concern that was mentioned in many researches (Hartley 1973 cited in Ochsendorf & Pyke 2007). Different views have been raised on the role that pretests have on the posttest results. Some studies found out that pretests can have orienting and motivational functions in testing while others suggested that pretests do not result in measurable increase in learning (Ochsendorf & Pyke 2007).

Building on this ground, the researcher analyzed the differences in posttest scores using analysis of covariance procedures by partialling out the effect of pretest scores and holding the pretest scores constant. Therefore, the pretest scores in the reading comprehension test administered before the intervention were used as covariates of the analysis. Results from ANCOVA of posttest mean scores of the experimental and control groups showed that the experimental group performed significantly better than the control group. Significant differences were observed between the experimental and control groups in the literal and inferential levels of reading comprehension questions. As such, the importance of Marzano's instructional strategies on students' achievement in reading comprehension is reported and that using Marzano's instructional strategies in reading comprehension instruction yields higher students' achievement in reading comprehension than students in traditional strategies for grade 10 students in the UAE. This implies that Marzano's instructional strategies yielded significant differences and did aid in the achievement of higher reading comprehension scores, which would justify the MoE

stance of using these strategies in formal observations in the teachers' performance appraisal system.

At this point, it is important to restate that both control and experimental groups experienced the same factors that may explain their performance. One of the factors is the administration of a reading comprehension test that is considerably linked to vocabulary words and themes studied throughout the semester. This is very significant since there is substantial amount of research that highlight the strong relationship between reading comprehension and vocabulary knowledge. Cain and Oakhill (2011) found that students with weak vocabulary knowledge had poor reading comprehension performance. As such, it can be concluded that there is a kind of reciprocal relation between comprehension and vocabulary and that each develops and influences the other. The findings of Dennis (2012) support this idea and that students who struggled with word meaning also exhibited poor comprehension skills. Similarly, Nergis (2013) found out that deepness of vocabulary knowledge has been one of the most important estimators of academic reading comprehension as his results highlighted a high and positive correlation between students' deep knowledge of vocabulary and their comprehension of texts.

As the vocabulary and reading activities practiced in classrooms were thematically consistent with the themes and types of texts recurred in the administered tests, a question arises of the reasons of the higher scores of students in the experimental group, taken into consideration that teachers followed same curriculum, same set of learning objectives, and success criteria as provided by the MOE [3.9]. That indicated that participants in both groups deemed to share a consistent level of difficulty. However, the instructional strategies employed in reading comprehension classrooms were not the same. On this point, Suing's (2012) research documented a correlation between comprehension and vocabulary and concluded that using

Marzano's instructional strategies in reading comprehension instruction develops students' competence in retrieving words effortlessly, which leads to expanding students' word knowledge and increasing the flow of understanding the author's purpose and the main idea. This idea was discussed by Sonbul and Schmity (2012) who highlighted that enhancing students' vocabulary competence will lead to noticeable improvements in ESL learning.

Moreover, similar time for instruction was allocated to both control and experimental groups in respect to the learning objectives of the trimester (set by the MoE). However, the time spent for practising reading comprehension activities at home is not under the researcher's control and so can be considered a factor that affects students' performance. With this knowledge in hand, Marzano (2007, p.61) illustrated that deepening students' knowledge is basically about orienting learners towards skills and strategies, guiding them to effectively practice knowledge either individually or in groups, and engaging them in the "cognitive processing activities of organizing, reviewing, rehearsing, summarizing, comparing and contrasting".

The concept of practice can be further seen from the lens of the Schema theory that serves a significant part of the theoretical framework of this study. As a matter of fact, Schema theory has roots in the types of knowledge development; assimilation and accommodation as suggested by Piaget (1936). As such, it was demonstrated that to aid learners make linkages between old knowledge and prior knowledge as a realization of the assimilation concept, multiple exposures over time are needed. In other words, textual comprehension will be enhanced by the interaction between the Schema categories [2.5.2] and when readers efficiently link the information printed on page to the compatible, stored background knowledge (Rumelhart 1980). Therefore, given that homework is one of Marzano's instructional strategies used in the intervention, its effect is

considered an advantage to support using these strategies to increase students' achievement in reading comprehension classes and as such strengthen the generalizability of results.

It should be mentioned that students' background knowledge on the topics of the texts and the linguistic proficiency have considerable impacts on students' level of comprehension and their performance in English reading comprehension tests (Rydland, Aukrust & Fulland 2012). Rydland et al. (2012) consulted numerous experimental studies that indicate how prior topic knowledge that learners integrate to the reading tasks has a top-down influence on text comprehension. Also, linguistic proficiency plays a significant role of students' comprehension of multiple content-area texts due to its bottom-up influence. In this study, using graphic organizers, such as the KWL chart helped elicit students' prior knowledge of the subject of the text, set a purpose for reading and as such assisted them to assimilate information needed for the reading comprehension assessments. In the same vein, administering a diagnostic test for the purposes of streaming students based on the proficiency levels scale helped control the effect of the students' linguistic competence on their achievement in the pretest and posttest [3.5].

In a similar respect, the findings of Best, Floyd and McNamara (2008) suggested that decoding skills have a tremendous effect on students' level of comprehension in a text, which may affect recall and interpretations. In effect, Marzano (2007) highlighted the importance of providing opportunities for students to deepen their decoding skills by the effective practice as an instructional strategy, which according to Ryland et al. (2012) helps maximize students' success rates in these skills and as such has been a prime explanation of students' reading comprehension performance.

Furthermore, the metacognitive knowledge of the participants can be a significant factor for students' achievement in reading in this study. That is, a positive relationship between reading

achievement and students' metacognitive knowledge has been cited in several studies (Memiş & Bozkurt 2013). The study of Memiş and Bozkurt (2013) suggested that reading comprehension scores of school students will develop if instructional methods are used to teach students metacognitive strategies. Their findings along with many researches they consulted emphasized that using metacognitive strategies enhance students' abilities to organize ideas and develop their problem-solving skills; and as a result, their reading performance in tests was affected positively. This is closely connected to the instructional strategies aggregated by Marzano et al. (2001) because research indicates that explicit teaching of cognitive strategies contributes to higher academic achievement in all skills, including reading (Marzano, 2007; Marzano & Pickering, 2011). In other words, when students are instructed to learn and think, their comprehension will be gradually enhanced (Wilson & Conyers 2016). Researches of Ness (2016); Goodwin and Webb (2014); Manoli and Papadopoulou (2014); and Gooden (2012) on using Marzano's instructional strategies in reading comprehension instruction have provided educators with a wealth of knowledge on the best pedagogical practices to integrate these strategies to help students become strategic, independent and metacognitive readers. Therefore, these findings corroborate the results of this study and highlight the importance of Marzano's instructional strategies on reading comprehension performance. Consistently, developing the habits of mind represented in metacognition and using prior knowledge to build new knowledge is another pedagogical implication of the instructional strategy of identifying differences and similarities in reading comprehension instruction (Costa & Kallick 2009). In the same vein, Praveen and Rajan (2013) found out that employing the strategy of identifying similarities and differences significantly motivated students to create their own logical skills and interlinking of thoughts

after reading the entire article, which pedagogically implied that this strategy improves students' reading comprehension scores.

Age is another factor that is often reported to impact reading comprehension achievement. Researchers indicate that age marks significant differences on students' educational attainment and reading performance. The age effect is signified in differences in memory performance and metacognitive strategies, which frequently disappear by the age of seventeen (Vlachos & Papadimitriou 2015). Vlachos and Papadimitriou (2015) highlighted an empirical evidence on the maturational changes that occur in the brain during the years in which reading proficiency progresses. They concluded that last decade research on the functional brain development provided some important insights into how learning and individuals differences in the learners' ability are generated because of these maturational changes. The same results were found by Silagi, Romero, Mansur and Radanovic (2014) who discussed the age influence on the comprehension of inferences and concluded that the effect of age can be explained by the interaction of inferential aptitudes with cognitive functions such as working memory, vocabulary skills and background knowledge. However, not all researches are in agreement with this conclusion as other studies found no age influence on students' performance in reading (Birdsong 2005). In this study, age of participants differed no more than 12 months, and all participants have been studying English for approximately 10 years. Therefore, age is not considered a variable that affected students' achievement in reading and as such it can be still said that the type of instructional strategies that students received has affected their reading comprehension proficiency.

 Other factors that impact students' reading comprehension performance in the administered tests as expressed by Mohseni Takaloo and Ahmadi (2017) are related to learner' motivation and

attitudes towards reading. At a glance, this factor seems to be beyond this study's scope; however, the way researchers correlated it with reading comprehension proficiency seems instrumental. The researchers stated that readers' comprehension and their performance in reading comprehension texts increase when readers have a positive manner of reading. Mohseni et al. (2017) elaborated that reading comprehension results are significantly associated with the dynamic aspects of motivation. That is, there is an evident correlation between students' achievement in reading comprehension and the way they are motivated by the teacher's use of instructional strategies. On this point, Pagal et al. (2017) found a significant relationship between students' reading perceptions and attitudes towards reading and their comprehension skills in the inferential level of comprehension. Consequently, the researchers suggested that students should be provided with engaging reading texts and scaffolded by instructional strategies that optimize their reading performance. Previously, Duke, Pearson, Strachan and Billman (2011) recommended a number of crucial components of effective reading comprehension instruction in which fostering reading motivation is among. They added that reading motivation can be nurtured by the complex interactions of text topics and the instructional practices that activate students' prior knowledge. On this point, Marzano (2007) highlighted the importance of providing positive reinforcements to stimulate students' motivation towards reading and support students to achieve learning goals and consequently produce better performance outcomes for all students.

As discussed in [2.9], teachers' intentions to improve students' incentives towards reading comprehension may develop a sense of intrinsic motivation. This is consistent with reports of Cuticelli et al. (2016) who concluded that using research-based instructional strategies helps students to overcome the reading difficulties, creates a positive sense and work on the objectives

with improved dedication, motivation and concentration, and develops reading comprehension skills.

Anxiety during reading comprehension tests is another factor pertinent to affect students' achievement in reading comprehension assessments (Dennis 2008, Wu 2011). Dennis (2008) highlighted that when students experience anxiety during exams, they may not be able to completely comprehend instructions, which may lead to confusion and poor performance in reading tasks. When exploring the effects of test anxiety on learners' reading test performance, Salari and Moinzade (2015) found out a correlation between levels of test anxiety and reading comprehension. In other words, they concluded that when the level of anxiety increases, learners may lose concentration and have poor reading comprehension test performance. The study of Vazalwar (2011) has consistent findings and concluded that learners with higher reading anxiety are apt to have lower performance in reading comprehension. In this study, participants in both groups underwent the same tests and the same environmental conditions needed to eliminate any confusion that may make students become overwhelmed to carry out a reading task or answer reading comprehension questions. The exams were administered in the students' regular classrooms and the invigilators were the students' teachers with the help of the researcher. Having these facts in hand, anxiety during reading comprehension tests should not be considered a factor that affects reading comprehension performance of the students in this study.

Gender is another factor evidently affects reading comprehension achievement. According to Vazalwar (2011), the anxiety factor is considerably related to gender. His findings revealed that girls usually have higher levels whereas boys' levels of test anxiety are lower and that denotes boys' higher scores in reading comprehension tests. However, this finding is in contrast with the finding of this study since female students significantly outperformed male students and this

showed that anxiety is not a factor for higher students' achievement in the administered tests. By far, literature review revealed different perspectives on the role of gender on students' achievement and this made this area disputable (Ajai & Imoko 2015). Exploring whether gender accounts for differences in reading comprehension performance for the participants of this study will be discussed on the grounds of the findings of the second research question in the next section.

Hence, a central factor that has not gone unnoticed by the researcher and found to affect the results of this study is using research-based instructional strategies by teachers in reading comprehension classes. The above discussion on the factors affecting reading comprehension proficiency and performance in tests has demonstrated promising findings and has proposed significant support for the use of Marzano's instructional strategies in the field of SLA and mainly reading comprehension instruction. The results obtained from the current study suggest that using Marzano's instructional strategies can enhance students' achievement in reading comprehension. Previous studies on the effect of Marzano's instructional strategies have reported similar, conclusive results on significant differences in achievement between students exposed to Marzano's instructional strategies and those exposed to traditional approaches (Al Husban & Al Khawaldeh 2017; Black 2012; Ganyaupfu 2013; Green & Thomas 2015; Suing 2012). Other studies showed specifically how students' achievement in reading comprehension based on employing Marzano's instructional strategies has been in tandem with prominent theories such as Constructivism and Cognitivism (Guthrie & Klauda 2014; Manoli & Papadopoulou 2014). Similarly, the results advocate the idea suggested by Novak (2010) who argued that the most essential objective of education is to empower students' ability to construct knowledge and think

intellectually and as such teachers should enhance using instructional strategies to serve such requirements.

The results of the first question are in line with Goodwin and Webb's (2014) conclusion that teachers' lack of knowledge on research-based strategies deprives students from paths of active learning, which is of a great significance in increasing knowledge discovery and exploration. In other words, they stated that having achieved an awareness of using Marzano's instructional strategies while reading improves students' performance in reading comprehension tests. For instance, the involvement of graphics organizers as a medium to impose different reading strategies showed improvement in students' reading comprehension skills reflected through successful identification of the main theme of the story, finding supporting details against each and every hypothesis, and having an ability to draw inference via joining stated facts and other associated opinions (Mahdavi & Tensfeldt 2013). Cuticelli et al. (2016) and Wigfield et al. (2016) opined that the instructional strategy of giving feedback to students contributed in creating positive sense of achievement and improving dedication and concentration, which will improve their scores in reading comprehension tests. Furthermore, reports published by Tadesse and Gillies (2015) showed that students, who were exposed to cooperative learning were found to be more focused on their learning, had more productive interaction and enjoyment; and subsequently gained more knowledge on academic grounds in comparison to what they have achieved before joining the cooperative learning program. At this point, it seems important to reflect on the Social Constructivism proposed by Vygotsky (1978) who pinpointed that culture and society, language, and interaction play an integral role in perceiving how humans acquire knowledge.

How these strategies helped refine students' reading comprehension skills and increase level of achievement was mentioned by Desai and Kulkarni (2016) and Slavin (2015). Also, enhancing reading comprehension proficiency of middle school students with learning disability was reinforced by using these strategies as cited by Swanson et al. (2015). Moreover, using non-linguistic representation in teaching reading comprehension engaged students in what they are learning and made them more confident to express their thoughts. Speaking of Marzano's instructional strategies that extend knowledge, LaRusso et al. (2016) found out that teaching students how to test hypothesis can enhance the working memory attention, which helps student to adapt tasks like retrieval, comprehension and knowledge utilization. Since reading comprehension tests include questions that require students to retrieve and interpret, using this instructional strategy enhances students' performance in such tests.

The results of this study are consistent with the findings of Al Alami (2011) which her study was conducted in the context of the UAE. Her study raised recommendations that teachers should acquire a repertoire of pedagogical research-based strategies and approaches to ensure quality outcomes in reading comprehension tests. Although her research population was limited to under-graduate students studying in the UAE, the results seems to be instrumental in this study since the UAE's 2021 vision aims at making the UAE the Middle East regional hub for quality education beginning from the primary to tertiary levels (Vision 2021). This view was reported in the UAE context by Alsheikh and Elhoweris (2011) who concluded that teachers should adapt their instruction and involve instructional strategies to foster students' motivation, which in turn should affect their academic achievement in the field of L2 learning, mainly in reading. The importance of integrating research-based teaching strategies in reading comprehension with real classroom teaching activities and procedures was also evident for deaf and hard-of-hearing

students from the UAE (Al-Hilawani 2003). The steps conducted in the proposed teaching approaches of Al-Hilawani (2003) involve using non-linguistic representations, summarization and note-taking, cooperative learning, providing feedback and using analytic questions that elicit inferences.

It is important to reflect upon the educational evolution that the UAE is taking lead and which has been eminently highlighted in the visionary practices and merits of the UAE educational initiatives. The government continues to exert enormous efforts to develop an innovative education system by ensuring quality of the outputs of the MoE represented in students' achievement (Vision 2021; MoE 2019). To accomplish the visions, the MoE has driven changes in the teachers' practices in the classrooms by aligning their practices with research-based instructional strategies. As the findings of the first question corroborate the findings of studies that support using Marzano's instructional strategies in reading comprehension instruction, it can be concluded that teachers' lack of knowledge on research-based strategies deprives students from paths of active learning and teachers from opportunities of enhancing their performance in ESL classrooms.

5.3.2 Interactive Influence of Gender and Marzano's Instructional Strategies on Students' Achievement in Reading

The second research question; "Are there any gender-based significant differences in reading comprehension performance in response to Marzano's instructional strategies?", aimed at investigating if students' gender had an impact on their achievement in reading comprehension based on Marzano's instructional strategies

To investigate the impact of the gender of students, who were instructed using Marzano's instructional strategies, on their scores in the reading comprehension tests, an independent

sample *t*-test was conducted. As results revealed that females significantly scored higher than male students in the overall average achievement in the reading comprehension tests, it can be concluded that female students significantly outperformed male students. However, no significant differences between male and female students in the literal questions of the pretests were detected.

As a matter of fact, while using Marzano's instructional strategies in reading comprehension instruction reinforced the achievement of both females and males in the experimental group in comparison to students in the control group as concluded from the findings of the first question, the findings of the second research question showed that girls outscored boys in reading tests as a result of using Marzano's instructional strategies in reading comprehension instruction and the students' responses and attitudes towards using them in class as will be illustrated in the findings of the third research question. It is worth noting that evidence for gender differences in reading proficiency has also existed cross-culturally in international assessments of student attainment (Lynn & Mikk 2009). One source as indicated in previous chapters is the PISA conducted by OECD across member countries. The PISA data set revealed that noticeable sized gender differences were found in reading across all nations and that girls outperform boys in every PISA country as identified by Lynn and Mikk (2009) and Reilly (2015 cited in Reilly, Neumann & Andrews 2018).

The results of the current study agree with findings of a realm of researchers from different backgrounds in different settings on male and female achievement differences in response to the instructional strategies employed in reading comprehension instruction (Alsheikh & Elhoweris, 2011; Ay & Şen Bartan 2012; Keshavarz & Ashtarian 2008; Lahuerta Martínez 2014; Logan & Johnson 2010; Lynn & Mikk 2009; Price-Mohr & Price 2017; Reilly et al. 2018,; Voyer &

Voyer 2014; Wheldall & Limbrick 2010; Yazdanpanah 2007). The instructional strategies in these studies include identifying similarities and differences, cooperative learning, prediction and drawing conclusion, using advance organizers, differentiated questions and providing feedback.

On the other hand, this finding contradicts the results of other studies, notable research conducted by Al-Shumaimeri (2005). Al-Shumaimeri found gender differences between female and male students in both pretests and posttests in favor of male students. Additionally, the consulted studies of Ajai and Imoko (2015) revealed different perspectives on the role of gender on students' achievement and that in some reading comprehension questions boys outperformed girls considerably.

In this regard, measuring the differences between the mean performance of boys and girls in reading, defined as gender gap, has been found to vary across countries and as such has been explained in terms of different factors (Price-Mohr & Price 2017). Price-Mohr and Price (2017) suggested that gender gap in reading comprehension can be explained through possible theoretical constructs. Among them is the teaching and learning strategies and approaches used in reading comprehension instruction and the students' responses to those approaches. Additionally, comprehension of texts is affected by having enough vocabulary words necessary to understand the ideas of texts and that vocabulary proficiency can be enhanced by instructional strategies that develop understanding (Price-Mohr & Price 2017).

Correspondingly, Lahuerta Martínez's study (2014) corroborated the findings of this study in the point that females have an advantage in reading comprehension and that students' gender is an important determinant of students' overall proficiency in reading comprehension taking into consideration the type of the instructional strategies used in classrooms. The importance of the instructional strategies and practices that the teacher uses to facilitate concentration, foster

integration of phonological and visual information, and train phonological reading strategies on students' achievement in reading was also found in the study of Logan and Johnson (2010) Another factor for the Higher reading interests that were revealed in the participants' perceptions during the interviews is another factor for the higher scores of girls in reading assessments (Ay & Şen Bartan 2012).

Speaking of the importance of students' interest and different motivational factors that develop reading comprehension skill, Wang and Guthrie (2004) maintained that the motivational internal and external processes direct students to reading as seen from the lens of Motivational and Humanistic theories. That was further illustrated by Lynn and Mikk (2009) who concluded that deeper engagement in language-related activities, which is enhanced using engaging instructional strategies, is another factor for females' superiority in reading. Females' utilization of different strategies to identify unfamiliar words and limited vocabulary proficiency of boys are also factors demonstrated by the study of Wheldall and Limbrick (2010).

The advantage of female in the overall sample that was significantly larger than zero is consistent with the meta-analysis of Voyer and Voyer (2014) who demonstrated that gender differences occur in achievement tests with significantly better performance for females after being instructed using research-based instructional strategies. Recently, Reilly et al. (2018, p.12) discussed that the question that girls are innately better at reading than boys has plagued researchers for decades. They explained that gender differences are generally observed for language and cognitive abilities and that was highlighted in their findings that "girls showed significantly higher reading scores than boys across every wave of assessment and in every grade" because of many factors of which using instructional strategies that enhance lateralization of brain functions is a prime one.

5.3.3 Students' Perceptions Towards Using Marzano's Instructional Strategies

This section presents development of the intensive and reflective accounts from the research participants that aim at answering the third research question; "What are the students' perceptions towards Marzano's instructional strategies after being instructed and assessed authentically?" using the thematic analysis approach.

Students' perceptions on the benefits of Marzano's instructional strategies fell into one main category. The major category was increased students' achievement and marked performance in literacy skills, mainly reading. This was, by far, the most fundamental benefit of using Marzano's instructional strategies in reading comprehension instruction. By all means, this result is anticipated since it has been found that the importance of employing Marzano's instructional strategies is to enhance student learning (Al Husban & Al Khawaldeh 2017; Black 2012; Ganyaupfu 2013; Green & Thomas 2015; Manoli & Papadopoulou 2014; Marzano et al. 2001).

As the increased achievement can be illustrated in the level of competence in school tasks expressed in grades that measure students' performance (Ganai & Muhammad 2013), studies showed that the processes of making inferences in which participants can make their views of reality based on their experiences is part of their academic achievement (Ali 2013). The students' perceptions revealed other fundamental advantages and benefits of using these strategies. As a conception of Bandura (1977) that is based on Social Cognitive Learning theory, the participants expressed that Marzano's strategies helped them build and develop self-efficacy and that was consistent with the study of Shaunessy-Dedrick et al. (2015) and Yoğurtçu (2013). On this point, it is worth mentioning that using Marzano's strategies increased students' self-efficacy and self-confidence, which positively impacted their reading achievement in reading comprehension tests as shown in the findings and the comprehensive literature of Osman et al. (2016). Improving

students' motivation and increasing opportunities for engagement were also reported by the participants as benefits of Marzano's strategies and that is congruent with the studies of Wigfield et al. (2016) and Guthrie and Klauda (2014). As a translation of Vygotsky's Social Constructivism, participants reported important benefits for using Marzano's strategies to cultivate supportive relationships and enhance communication skills and this finding was mentioned in Capar and Tarim's (2015) meta-analysis research. Similarly, student' cognitive abilities are nurtured through their social interactions with the peers (Tadesse & Gillies 2015). Monitoring comprehension while reading was described as a benefit of using Marzano's strategies that aim to apply knowledge. This benefit can be seen through the lens of using metacognitive strategies in aiding comprehension (Memiş & Bozkurt 2013). Marzano's instructional strategies that aim to develop and deepen understanding were reported beneficial in terms of eliciting prior knowledge and enhancing brainstorming and organization skills. Interestingly, researches of Bernel (2012) and Chin and Hirumi (2009) are in consistent with the participants' views.

Remarkably, students' responses revealed other benefits of Marzano's strategies that have indirectly improved other significant skills needed to achieve reading proficiency. Students reported that Marzano's strategies strengthened their vocabulary skills that are critical to reading comprehension; a finding that is consistent with the studies of Ganyaupfu (2013) and Suing (2012). Additionally, they expressed that using them constantly improved memory, enhanced recall and increased retention of information and that was found in the studies of Allen et al. (2015); Guthrie & Klauda (2014) and LaRusso et al. (2016). Also, participants reported that the effective implementation of Marzano's instructional strategies helped them attain learning goals and directed them towards achieving these goals and this goes directly with the interpretations of

Bloom's Taxonomy (Marzano 2007).

Strengthening writing skills was also indicated by the participants and that is congruent with Al Naqbi (2011) and Graham and Hebert's (2010) researches that showed that reading and writing skills affect, reinforce and strengthen each other. Technology-integrated practices were favored by all participants as they believed technology increased their motivation and engagement and yielded positive reading outcomes; a consistent finding of the review of Cheung and Slavin (2013).

The qualitative data uncovered some challenges and raised students' concerns towards employing these strategies in reading comprehension learning. Interestingly, these concerns were considered in most studies and researches that investigate or reflect on using Marzano's instructional strategies to enhance students' achievement (Bernel 2012; Dean et al. 2012; Goodwin & Web 2014; Hill & Miller 2013; Jeanmarie-Gardner et al. 2013; Joseph et al. 2016; Marzano 2007). One area that relates to Marzano's strategies that aim at helping students practise and develop knowledge is the teacher-assigned tasks planned for students to complete outside school hours; known as homework. Participants shared the same beliefs of Kohn (2006) cited in Marzano 2007) that homework is a useless practice and that homework does not always relate to learning goals. Their belief is, however, in contrast with the findings of Little et al. (2016) who supported the use of structured homework with a well-articulated purpose and Cooper, Robinson and Patalls' (2006 cited in Marzano 2007) conclusions that homework causes improved achievement taking into consideration the importance of the direct and explicit linkages between learning goals and homework assignments. Hill and Miller (2013) maintained the idea that students may have negative attitudes towards homework when the amount of time assigned for completing it is not carefully considered. Marzano (2007) recommended that

teachers should assign well-structured homework to ensure high completion rates and produce the desired effect.

Additionally, students raised concerns on the use of teachers' questions and questioning techniques in reading comprehension classes. They agreed that teachers should ask different questions that stimulate thinking. However, depending only on questions of higher level of thinking creates a stressful atmosphere. Students suggested that teachers should begin with the low level of questions i.e. scaffolding questions in order to gradually encourage thought and understanding of ideas. The same idea was mentioned in a very recent study conducted by Nuryani et al. (2018) who concluded that teachers should be skillful in using questions and that the tactics and purposes of questions should be varied to include questions that stimulate participation, encourage students to think critically and creatively, and aid comprehension. One of the tactics that Marzano et al. (2001) considered in questioning is pausing, pacing and giving students ample wait time to answer, particularly if the type of questions and cues aims at retrieving and capitalizing on students' prior knowledge (Dean et al. 2012).

Another challenge that participants shared in the interviews is concerned with how teachers use the instructional strategies in reading comprehension instruction. Participants emphasized the importance of teachers' thorough modelling and direct explanation of these strategies and that not supporting and scaffolding them in their implementation will make using them laborious, challenging and less motivating. This idea was suggested in the conclusion of Miller and Veatch's (2010) investigation on how to choose and use the most suitable instructional strategies for teaching literacy skills. Finally, participants perceived that using Marzano's instructional strategies becomes negative when students are not provided with constructive, informative feedback to track their progress on learning goals. That was mentioned by Cuticelli et al. (2016)

and Marzano (2007) who emphasized the importance of giving detailed feedback to enhance students' learning and teachers' performance.

5.4 Implications of the Study

In addition to the major findings, several thought-provoking implications emerged and warrant a brief mention. Arguably the most significant matter that a teacher should consider is to enhance student learning. Nurturing students' reading proficiency using Marzano's instructional strategies is worth the effort of learning and employing in ESL classrooms; therefore, PD training sessions for teachers should be pursued. The trainings should provide teachers with constructive understanding and knowledge of the essential research foundation and practical suggestions and steps to equip them with the best practices that lead to successful implementation of Marzano's strategies and to foster their confidence in designing different learning activities.

Also, as these strategies are used as the main rubric of teacher's formal observations in the teacher's performance appraisal system in public schools in Abu Dhabi, well-thought plans to support teachers in implementing these strategies seem critical. Support can take multiple forms, such as developing and aligning the objectives and success criteria of the curriculum with the sound activation of Marzano's instructional strategies.

In addition, establishing channels for communication between curriculum developers and teachers is significant since enfranchising different perspectives leads to have a better implementation of any educational strategy and provide valuable opportunities for bridging achievement gaps in language learning.

The qualitative findings generated from this study provide evidence that teachers should be willing to adjust their instruction to the assessed requirements of students and should provide direct instruction and modeling of Marzano's instructional strategies to enable students to

practise them on their own.

Based on the findings of the second question, it is important for the curriculum developers to be aware of the fact that gender differences in the reading comprehension performance exists. Accordingly, and to cater for the differences between girls and boys, the Curriculum Development Department should ensure the curriculum offers a variety of interesting reading materials and text types that appeal for both genders. This will be of a vital importance in helping both girls and boys respond actively towards reading and have more positive attitudes, which will be reflected in better performance in reading comprehension tests. The gender gap in reading comprehension performance found in this study also calls for the ESL teachers to design classroom activities that motivate students to read different genres and activate prior knowledge. Moreover, integrating technology can be considered a vital means to adjust the activities and tests to the students' gender preferences. Students' perceptions on integrating technology while using Marzano's instructional strategies in reading comprehension classes uncovered support for the MoE efforts in the area of leaning languages using technology. Students reported how presenting information in multi-modalities and using an online platform to share knowledge increased their motivation and promoted collaborative learning; and that is a significant finding that curriculum developers and teachers should consider in their plans for students' development. Also, as in the implementation of any instructional strategy, teachers should take into their consideration several variables to support its utility at enhancing student achievement. Time, available resources, number of students, knowledge of the students' abilities and competencies, knowledge of subject matter, knowledge of the action steps, teachers' innovative practices and knowledge of the most appropriate, consistent with learning objectives, instructional strategies to implement in each class are among these variables.

Additionally, an instructional strategy is considered effective only when used in an appropriate learning situation that was designed for; therefore, teachers should not fall the traps that all Marzano's instructional strategies must be used in every classroom or focus on using some exclusively.

Finally, as students in the UAE share the world-wide, lamentable experience of low competencies and performance in international tests in reading comprehension and that students typically devote insufficient time for practice reading comprehension outside the school context, parental involvement that fosters effective reading habits is necessary to help strengthen students' competencies.

5.5 Research Challenges and Limitations

Major concerns and limitations are typically associated with the selection process in any study working with samples to represent the population. As the limitations due to constraints on research design may affect the generalization of the research findings, they should be thoroughly elucidated to help for further research. (Creswell 2014).

The study used 480 male and female, grade 10 students from four secondary schools in Al Ain city in the emirate of Abu Dhabi in the UAE; ideally, a larger group of students from different schools and grades in different emirates would be more advantageous. The sample included only students from the General sections, who were streamed based on a diagnostic test administered in the beginning of the year. Streaming students has been a factor that determined the proficiency level; ideally, including different streams would be more useful for generalization. The intervention was conducted during the first trimester in the academic year 2018-2019. Hence, the time factor has demonstrated a limitation that might have affected the research outcomes. As a matter of fact, a study undertaken over multiple trimesters might have shown the patterns of a

variable over time and as such provided more conclusive or beneficial results.

One of the challenges that faced the researcher while collecting the qualitative data, which should signify a detailed, in-depth account of the phenomenon under study, was the limited English-speaking proficiency of some participants that made them unable to speak English with sufficient structural accuracy and vocabulary. As such, the qualitative data would be richer with more effective participation of students in conversations and discussions. Their limited English-speaking proficiency also affected their willingness to participate in the focus group interviews and that made finding participants difficult to some extent. Due to certain cultural constraints related to females' participation in research, the data from them was note-taken, not audio-recoded, which was a challenge for the researcher until one teacher volunteered to help the researcher.

Also, prior research studies that tackled using Marzano's instructional strategies in reading classes in the context of the Arab world in general were limited. Hence, the novelty of the topic in the context of the UAE directed the researcher to mostly consult studies for the literature review and the discussion of results from the Western world. Including more studies from the context of this study would provide a more reflective and comparative description of the findings.

Finally, it is worth mentioning that the research was carried out in this context because the researcher was interested in investigating the effects of the proposed intervention in that context, if any. As this study was of context-directed research, its key feature is that the motivation for the research derives from something specific in the professional context. Consequently, the researcher intended to develop the context-bound knowledge to better inform future action in

that context, which may offer insights to develop general theoretical knowledge, regardless of whether or not findings are seen to be generalizable to other contexts elsewhere.

5.6 Recommendations for Future Research

The qualitative and quantitative data collection instruments and the quantitative and qualitative findings have prompted several recommendations for future research.

1. An investigation of Marzano's instructional strategies on students' achievement in other domains of language proficiency is suggested for future research.

2. An investigation of the interactive influence of technology and Marzano's instructional strategies on students' achievement in reading may present some further research opportunities.

3. An investigation on how to empower teachers in the development and implementation of Marzano's instructional strategies in literacy skills can be a proposal for future research.

4. A longitudinal study that investigates the impact of Marzano's instructional strategies on students' achievement for an extended period of time may present more reliable results for generalization.

5. As a reflection of the limitations of this study, it would be insightful to conduct an investigation on the impact of Marzano's instructional strategies on students' achievement in reading comprehension in different grade levels and then compare these results across grades.

6. An investigation to explore differences in teachers and students' perceptions and attitudes towards using Marzano's instructional strategies in literacy skills would be another future research opportunity.

5.7 Concluding Note

In the words of Barber and Mourshed (2007), "the quality of an education system should not surpass its learners' competencies" and in light of recognition that building learners' capacities is linked to the effectiveness of instructional strategies, this study was conducted. As instruction will always remain an art, instructional strategies are the central elements that cultivate students' learning. Spoken capability, knowledge on content, academic knowledge, accreditation status, awareness on how to apply various instructional strategies skillfully and interest in teaching English symbolize a more successful ESL teachers' performance and auspicious students' achievement.

Arguably the most significant matter that a teacher should consider is to enhance student learning. In reading comprehension instruction, nurturing students' reading proficiency using instructional strategies and making their learning experiences valuable is worth the effort of learning and employing in ESL classrooms. Teacher's focus on planning activities that encourage using research-based instructional strategies is anticipated to reinforce students' academic outcomes, skills, values, attitudes and dispositions.

Having used the Pragmaticism philosophical paradigm, this mixed-methods research followed the sequential explanatory design. The current study has yielded important findings and has made a novel contribution to the UAE research. The study has produced some findings in line with the studies that conclude that using Marzano's instructional strategies helped boost and promote students' competencies in literacy skills. It is expected that the implications of the results will be a springboard for developing teachers' performance, students' achievement and policy makers' training plans, simultaneously.

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Appendices

Appendix A

The Professional Development Training

Introduction

As quality education aims at developing students socially, emotionally, mentally, physically and cognitively; effective preparation and training of all teachers, including ESL teachers, becomes its fundamental pillar (Darling-Hammond, Hyler & Garder 2017). Put differently, effective teachers are the ones trained to have linguistic competence, efficiency in subject matter and pedagogical knowledge to incorporate various techniques and methods. On these qualities and in line with the worldwide promising education reform movements, Hill and Cohen (2016) stated that it is unquestionably vital that teachers receive trainings aiming at empowering their skills, competences and pedagogical strategies. Numerous models of professional development (PD) have been proposed and tailored to the needs of teachers' development of instructional strategies (Huber & Skedsmo 2016). Although these models have varying structures, they all lead to considerable and promising development of didactic teachers' practices and consequently students' achievement (Huber 2011).

In the United Arab Emirates (UAE), teachers' professional development is considered a systematic improvement and consolidation of knowledge necessary to improve the teaching and learning skills of school teachers (Pennington 2016). To achieve the professional standards, the department of education and knowledge (ADEK) is keenly aware of the role of PD programs in empowering educators and enhancing their performance more efficiently. Therefore, and in line

with Abu Dhabi vision 2030, the Professional Development Division that is supervised by ADEK has developed a comprehensive action plan that emphasizes offering training programs at different levels; namely large group, small group and school-level coaching. In reference to ADEK (2018), the school-level coaching provides trainees with the opportunity to determine their weaknesses and strengths to help them achieve their professional goals. Teachers are provided with targeted trainings to address needs identified through the school improvement planning process, individual professional development plans, and site-based needs identified by school leadership. In other words, schools are expected to organize their own program of events to support their school improvement journey and meet the individual needs of the teachers and students (ADEK 2018).

In this study, the researcher planned to academically and practically train the teachers who instructed the participant using Marzano's instructional strategies. Therefore, and in reference of the purposes of this study, the researcher designed a guiding, tentative theoretical framework of a PD program that reflects the characterized, concentric variables.

This framework shows how the background features, that involve educational aims and the educational system's characteristics, affect the conception and conduction of the program. The features correlate with participants' perceptions and are reflected through their competences and attitudes. Transferring the program into practice supposedly affects the performance of the participants. The last phase includes the program evaluation, that will help in reviewing the program and justify its phases. Having consulted the previous models of PD, this framework has been formulated to add to the understanding of the multifaceted impact of PD on teacher's performance and students' achievement on using Marzano's strategies.
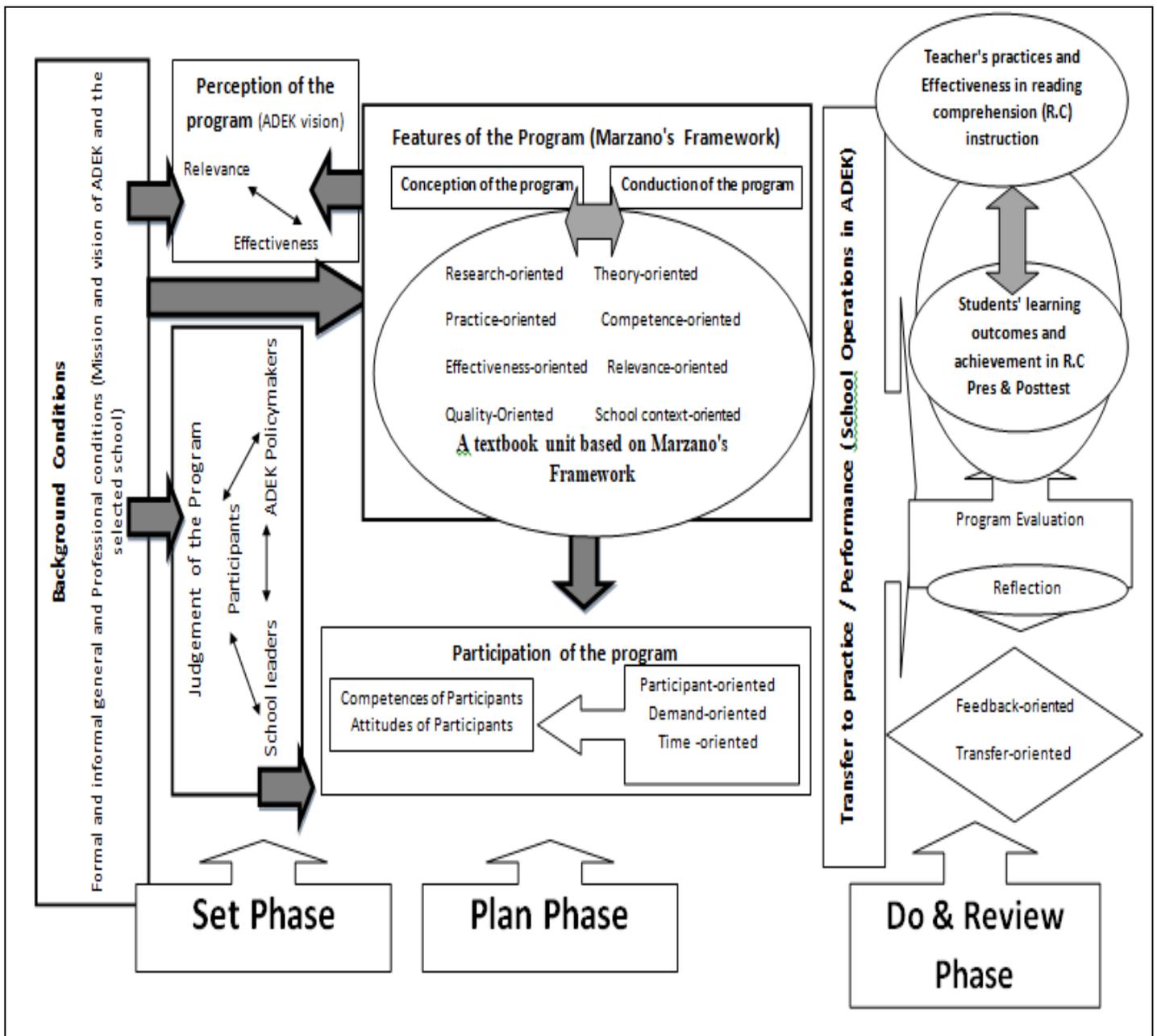
Theoretical Framework of the proposed PD

Allocation of Activities and Time Distribution

The training was implemented over five sessions in a total of 20 hours in the boys' school. Each session consisted of four hours during the allocated week for training. The training started at 8:30 a.m. and ended at 12:30 p.m.

Methodology

To optimize teachers' effectiveness and performance in teaching reading comprehension and to create positive attitudes and better understanding of these strategies, the proposed training program was designed to shed light on the techniques proven by research to be most effective on students' achievement and lead to teacher growth in teaching reading comprehension. Trainees worked individually, in pairs and in groups to actively discuss and share ideas from their own experiences. At times, there were a stage of reflection on the activities and the strategies they have experienced and discussion how they could use and/or adapt them for their own students.

In line with numerous studies, such as Al-Husban and Al-Khawaldeh (2017); Hill and Cohen (2016); Thomas and Green (2015) and Morewood et al. (2010) that the trainer consulted, the following different methods and procedures were adopted to effectively underatke the sessions of the training program:

- Encouraging active learning and promoting participation.

- Using collaborative learning groups effectively.

- Considering trainees' perspectives, concerns and suggestions.

- Providing trainees with immediate, constructive feedback on their responses and ideas.

- Distributing handouts that include suggested procedures and techniques on the specific tasks and activities to optimize better understanding of Marzano's strategies. Time for discussion was further devoted to share teachers' insights and reflections.

- Encouraging trainees to do a follow up activity for formative and self-assessment purposes at the end of each training day.

- Demonstrating practical application of the instructional strategies using the "*Edge*" grade 10 textbook.

- Inviting trainees to demonstrate a part of reading text using the targeted instructional strategies.

Session One (4 hours)

Activity one: Warm up activity: (40 mins)

The trainer asked the trainees to work in pairs to debate and reflect the following sayings[1];

- "*If you don't have time to read, you don't have the time (or the tools) to write. Simple as that*" —Stephen King.
- "*Reading is important, because if you can read, you can learn anything about everything and everything about anything*" —Tomie dePaola
- "*Reading is to the mind what exercise is to the body*" —Richard Steele
-

Using Think-Pair-Share activity, trainees shared their answers and discuss the importance of reading from their personal and professional perspectives.

Activity two: Introduction (60 mins)

The trainer introduced the objectives of the training program and the procedures to be adopted for the purpose of implementing the sessions of the training program more effectively.

Trainees were able to:

- Identify the key nine research-based instructional strategies.

- List the sub-techniques of each strategy.

- Identify how to use and adapt each strategy according to the reading texts.

- Incorporate these strategies into their planning process.

- Practice the strategies while teaching reading.

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1   Available at: https://www.brainyquote.com/topics/reading [Accessed July 1 2018].

In reference to several studies, a discussion on the link between students' achievement and instructional strategies was led. The trainer explained the importance of employing quality learning methods and instructional strategies as a significant pillar of quality education. The trainees were asked to reflect on the current teaching strategies that they employ during teaching reading comprehension. Different questions were asked to enrich the discussion.

- What is reading comprehension?

- How do you usually teach reading?

- What strategies do you employ?

- What do you think research – based strategies are?

Trainees shared responses.

Activity three (60 mins): Rationale for using Marzano's instructional strategies.

Aim of the session:

To understand the work of Marzano in the field of classroom instruction

The trainees were required to read the following text and discuss the questions.

- What is the main point of the text?
- What is the meaning of research-based instructional strategies?
- Why are the research-based strategies important?
- What are the main approaches to teaching reading?

"Marzano found that research-based strategies have a higher probability of improving student learning when they are used at the appropriate level of implementation and in the appropriate instructional

context. It is the responsibility of teachers to determine which strategies to use with students at the right time. After more than 30 years of research on what works in classrooms, Marzano and his team presented the characteristics of effective teachers that, if followed, can help maximize student achievement. Marzano clarified that by saying ―a student scoring 50th percentile that spends two years with an average teacher is likely to continue scoring at the 50th achievement percentile. That same student, having spent two years in a 'most effective school' with a 'most effective teacher' using 'most effective instructional strategies', rockets to the 96th achievement percentile. The converse also holds: if this same student spends two years in a least effective school with a least effective teacher, that students' achievement level plunges to the third percentile.

To illustrate that, it is obvious that teachers, who use research-based instructional strategies, are a key indicator of how student learn, and their level of performance is reflected by the student achievement. Instructional strategies harmonize with the major approaches used to teach reading. Traditionally, reading is viewed as a bottom-up decoding process in which the meaning is embodied, and the reader can extract and comprehend it from the smallest elements at the bottom; i.e. letters and words (Goodman 1988). Goodman (1988) additionally stated that when the reader recognizes these written letters and words and builds up meanings to the bigger elements at the top; i.e. phrases and clauses, reading becomes a decoding process. Although this so-called bottom up model helps students construct the author's intended meaning and memorize new words and phrases, it confines learning of the details. In a different vein, a more constructive top-down model that addresses the learner's background knowledge is believed to play a more consolidating role in reading comprehension (Anderson 1999). Anderson (1999) stated as this model activates learner's prior knowledge and requires them to make connections; it scaffolds critical reading comprehension skills such as making predictions. Top-down and bottom-up models portray the progressive and simultaneous processes that contribute to a comprehensive and interactive construction of the meaning of the text (Eskey 1988) and so that is considered the most applicable in reading instruction.

In this regard, Mikulecky (2008) demonstrated that this process, in which readers compare what they encounter in a text to match the information they know, triggers reacquired knowledge and stimulate many predictions about the content of the text until a certain satisfying probability matches the data and a schema; leading to comprehension. Therefore, and to help construct the intended meaning of the text, a coordination of numerous associated sources of information and an application of a number of strategies

that involve the dynamic comparing of information to their prior knowledge and experiences becomes a precondition in the reading process" [2]

Activity Four (60 mins): Introducing Marzano's research-based instructional strategies

Objective: To identify the nine research-based strategies and gain understanding of the framework for classifying the strategies.

The trainer asked the trainees to watch a video on Marzano's nine research-based instructional strategies and take notes, then work in pairs to discuss the following questions: (What are the research-based strategies presented in the video?). To consolidate understanding of these strategies, trainees were required to work in groups on a worksheet to match each research-based strategy with its definition.

The trainer described the framework of pillars of Marzano's aggregation as pointed by Hill and Miller (2013) and asked the trainees to jot down examples on each strategy based on their personal practices. The trainer provided feedback and generally explained the framework in preparation for the extensive description and clarification on each strategy on the second session.

2 Adapted from Marzano, R. J. (2003). What works in schools: Translating research into action. Alexandria, VA: Association for Supervision and Curriculum Development.
Goodman, K. (1988). 'The reading process', In P. Carrell & J. Devine & D. Eskey (eds). Interactive Approaches to Second Language Reading. Cambridge: Cambridge University Press

1	Setting objectives and providing feedback	Provide students with a direction for learning and with information about how well they are performing relative to articulated learning objectives
2	Reinforcing effort and providing recognition	Enhancing students' understanding of the relationship between effort and achievement by addressing students' attitudes and beliefs about learning and providing students with abstract tokens of recognition or praise for their accomplishments related to the attainment of a goal.
3	Cooperative learning	Provide students with opportunities to interact with one another in ways that enhance learning.
4	Cues, questions, and advance organizers	Enhance students' ability to retrieve, use and organize what they already know about the topics.
5	Non-linguistic representation	Enhance students' ability to present and elaborate on knowledge using mental images.
6	Summarizing and note taking	Enhance students' ability to synthesize information and organize it in a way that captures the main ideas and supporting details.
7	Assigning homework and providing practice	Extend the learning opportunities for students to practice, review and apply knowledge and enhance students' ability to reach the expected level of proficiency for a skill or a process.
8	Identifying similarities and differences	Enhances students' understanding and ability to use knowledge by engaging them in mental processes that involve identifying ways in which items are alike and different.
9	Generating and testing hypotheses	Enhancing students' understanding of and ability to use knowledge by engaging them in mental processes that involves solving problems by making and testing solutions.

Activity five: Plenary (20 mints) Using the 'Exit cards' as a follow up activity for self-assessment purposes, the trainees reflected on the activities used in the first session

Session Two (4 hours)

Aims of the session:

- To gain an understanding of the first category of Marzano's instructional strategies that focus on creating a suitable environment for learning.

- To identify the strategies that are connected to this category; namely setting objectives and providing feedback, reinforcing effort and providing recognition and cooperative learning.

- To identify different practical techniques based on the strategies of the first category.

Activity one: Warm up activity: (30 mins)

The trainees were asked to brainstorm some strategies they use to foster establishing a supportive learning environment. They were also required to use linguistic and non-linguistic representation to show how learning environment affects students learning and asked teachers to reflect on them. Trainees shared responses. Trainer explained Marzano's strategies that enhance creating a suitable learning environment.

Activity two: Setting objectives strategy (30 mins)

Objective: to identify the characteristics of setting objectives.

Trainees were asked to read a passage and create a graphic organizer on the characteristics of the main topic of the text.

"Setting objectives involves specific teacher and student behaviours, including decision- making and communicating. Teachers select and refine learning objectives; these objectives may be narrow or broad, specific or general. Studies of effective objective setting suggest that objectives with narrow focus will minimize learning because students focus on what has been communicated as important. If objectives are too focused, students will ignore related information. Moreover, objective setting is an act of communicating. Since students focus on what has been set forth as an objective, communicating those

objectives becomes central to success. Setting objectives, then, becomes a thoughtful exercise in considering how to generalize selected learning objectives while ensuring student focus and to be aligned with the learning tasks, then letting students in the process through clear communication and negotiating contracts revealing what student should achieve to get the recognition they desire and encourage them to personalize the objectives so learning will increase" (Adapted from Marzano et al. 2001).

Trainees presented their graphic organizers; discussed the characteristics of setting objectives strategy and identified the importance of encouraging students participate in setting objectives. Trainer explained that objectives should be explicit, precise but not restrictive statements of what students will learn. They should also be personalized, relevant and purposeful (Dean et al. 2012).

Activity three: Practice setting objectives (30 mins)

The trainer distributed sets of objectives for each group and asked trainees to rewrite the outcomes to objectives based the characteristics of lesson-level goals that ensure that learning activities are relevant and purposeful as discussed in the previous activity. The objectives have been tailored from the general guidelines, outcomes and specifications of grade 10 English language curriculum [2]. The trainer drew the trainees' attention to the fact that outcomes are expected to be displayed after teaching, whereas objectives are expected to be set before teaching.

2 A document published by the Department of Curriculum and Assessment, ADEK (2018).

Set One: Using reading strategies to understand simple, authentic informational and literary reading materials, demonstrating understanding of reading materials, making connections between prior knowledge and experiences and simple authentic informational and literary reading materials.
Set Two: locating and using facts and opinions to support learners' own ideas, explaining the authors' purposes for writing, and skimming and scanning reading materials to identify relevant information.
Set Three: analysing the content of the reading materials to make inferences, reading independently short passages from magazines and newspapers for information and enjoyment, identifying the relationship among facts, ideas, concepts, and themes in reading material.
Set Four: analysing text content to develop a supported interpretation, explaining connections between what they read and personal ideas and beliefs, explain whether events in the reading texts are believable.
Set Five: interpreting reading materials, outlining sequences of events or ideas, assessing the value of the reading materials.

Trainees presented the objectives and explained how the characteristics of the setting objectives strategy are reflected in these objectives.

Activity four: Presenting techniques for setting objectives (30 mins)

Upon discussing what techniques trainees use in their classrooms, the trainer presented some techniques found to be effective in incorporating setting objectives strategy in ESL classrooms, such as; thinking maps and KWL chart.

The trainer asked the trainees to read an excerpt from "*The Two Brothers*" short story by Leo Tolstoy in unit 1 *Bridge to success* textbook and implement suitable techniques to set objectives

"Two brothers set out a journey together. At noon they lay down in a forest to rest. When they woke up they saw a stone lying next to them. There was something written on the stone, and they tried to make out what it was. "Whoever finds this stone," they read, "let him go straight into the forest at sunrise. In the forest a river will appear; let him swim across to the other side. There he will find a she-bear and her cubs. Let him take the cubs from her and run up the mountain with them. On the top of the mountain he will see a house, and in that house, he will find happiness" [3]

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3 Bridge to success, Grade 10 P. 16

The trainer asked the trainees to suggest objectives suitable to the text and create a thinking map.

Possible responses: to make predictions and then read on to confirm them, to picture sensory details in your mind, to make inferences, to look for clues in the text, to identify and summarize the most important details.

Then, the trainer introduced the technique of KWL and asked the trainees to think aloud about what they already know, what they want to know and what they learnt.

K (what I Know)	*W (what I want to know)*	*L (what I learnt)*

Activity five: Providing Feedback Strategy (40 mins)

The trainer asked trainees to illustrate the importance of tracking students' progress and providing them with timely feedback. Trainees shared responses. Trainees were asked to read a case study and summarize the main ideas.

"Mrs. Sarah overheard some of her students talking about the reading comprehension and vocabulary quiz, which she has spent about five weeks to mark and hand it back to them. When students received the papers after five weeks, they complained that they don't even remember which words and in which lesson. Some of them did not show any interest to ask the teacher for her remarks that should be written on their papers and so left the papers on the desks before break. When she inquired about the reason of their carelessness, some said that if she gave them back next day with comments, they could actually learn something from her comments. Mrs. Sarah thought of the stack of tests in her briefcase and her own methods of providing students with feedback as she just gave marks without comments. At this point, Mrs. Sarah promised herself to grade all the tests, get them back to students and provide them with constructive feedback. In the next day, when she returned the writing exam papers, she shared her concerns with students that grading papers is not enough and promised to provide feedback about the knowledge and skill they are demonstrating. She explained to them the importance of reading the feedback to address

what students have achieved and further what they should do next towards achieving the goals" (Adapted from AlHusban & Alkhawaldeh 2017).

Trainees shared responses. Trainer asked trainees to brainstorm some ways they track their students' progress and how teachers can celebrate students' success. Trainer explained the importance of linking objectives with criterion-referenced feedback, which means providing feedback in terms of specific levels of knowledge. Trainer illustrated that stating objectives in this rubric format helps students understand their strengths and weaknesses.

The trainer asked the trainees to read a selection from "*An Active Brain*" (Bridge to success -Page 4) and suggest an objective for learners. Based on the set-up objective, trainees were required to suggest a rubric to track students' progress toward achieving the objective. An objective, for example was: Students will be able to synthesize the facts and conclude the achievements of the main character. A suggested rubric was:

Performance Level / Objective	Unsatisfactory/ No attempt	Needs Improvement	Good	Very good	Excellent
Students will be able to demonstrate an understanding of the information and ideas of the text.	With the help of teacher, student demonstrates no comprehension of ideas presented of the text. Misses the inferred meaning of a text.	Student demonstrates some comprehension of ideas presented of the text. Shows limited understanding of the inferred meaning of a text	Student demonstrates some comprehension of ideas presented of the text. Shows some understanding of the inferred meaning of a text	Student demonstrates solid comprehension of ideas presented of the text. Can make reasonable inferences that match the author's intended message.	Student demonstrates thorough comprehension of ideas presented of the text. Can make deep and insightful inferences that match the author's intended message.

Activity six: Reinforcing Effort Strategy (40 mins)

The trainer explained how the strategy of reinforcing effort and providing recognition relates to the key issue of students' motivation and thus is likely to affect students' level of engagement in cognitive processes. Trainees were asked to suggest ways to reinforce students' efforts. Trainees worked on a task to identify and classify characteristics of effective and ineffective praise (Dean et al. 2012).

Effective praise	Ineffective praise

Is delivered contingently / Is delivered randomly / Specifies the particulars of the accomplish restricted to positive reactions / Shows spontaneity, variety, and other signs of credibility/ Show uniformity, which suggests a conditioned response made with minimal attention/ Rewards atta specified performance criteria / Provides no information at all / Provides information to student a competence or the value of their accomplishments / Orient student toward comparing themselves w and thinking about competing / Orients students towards better appreciation of their own task behaviour and thinking about problem solving/ Uses the accomplishments of peers as the co describing a students' present accomplishment / Use students' own prior accomplishments as th for describing present accomplishments / Is given without regard to the efforts expended or the m the accomplishment/ Is given in recognition of noteworthy effort or success at difficult task / ى success to ability alone or to external factors such as luck or an easy task / Attributes success to ى ability / Focuses students' attention on the teacher as an external authority who is manipulating th concrete symbols of recognition such as certificates or stickers/ Uses money or food as a rewards / should avoid rewarding students for simply completing an activity / Teachers should reward studen after completing any task.

Activity seven: Cooperative learning Strategy (40 mins)

The trainer asked trainees to discuss the advantages of using cooperative learning. In groups, trainees recorded their responses on a chart paper, suggested the objective of this task, presented their ideas and provided feedback.

Possible answers: exhibit higher academic achievement, greater persistence to finish tasks and achieve objectives, deeper understanding of the learnt material, greater time on task and less disruptive behaviour in class, lower levels of anxiety and stress, greater ability to view situations from others' perspectives, and more positive and supportive relationships with peers (Eggen and Kauchak 2010).

In order to learn some techniques that foster interesting and engaging cooperative learning, the trainer asked trainees to read the text "*The Bike by Gary Soto*" p. 16. As the context of socialization among learners makes them cognitively developed and competent to construct new knowledge, the trainer asked the trainees to answer 20 different 'Thinking Keys by Tony Ryan' each designed to unlock different parts of the thinking process. The trainer modified some of the reading comprehension questions based on the provided text. The trainer explained the importance of establishing some operating rules with their learners, for instance willingness to add your perspective to any discussion, respecting the opinions of other people, making sure you understand what others add to the conversation, willingness to ask questions if you do not understand something and willingness to answer questions of other group members (Ormrod 2009). Different techniques were used to share responses such as; Jigsaw, -Think-Pair-Share (TPS) and Rally table.

Activity eight: Plenary (10 mints)
The trainer asked trainees to reflect on the activities used in the second session as a follow up activity for self-assessment purposes.

The Bike

The Reverse Name 10 things you could never do while cycling.	**The What If?** What if all the streets in Abu Dhabi disappeared tomorrow?	**The Disadvantages** What are some disadvantages of being a sociable person?	**The Combination** List the attributes of rivers. Use these ideas to improve the design of highways.	**The Alphabet** Do an A to Z of outdoor activities.
The Bar Use the BAR key to improve a landform in Abu Dhabi of your choice	**The Variations** How many ways can you cross the Sahab Street?	**The Picture** Draw a shape of anything Find as many links as you can between the landscape and the picture.	**The Prediction** What would the consequences be if most people in the world lived in Abu Dhabi?	**The Different Uses** List many uses for a broken bike
The Ridiculous What would happen if we all had to live underwater?	**The Commonality** What do skyscrapers in Abu Dhabi and books have in common?	**The Question** The answer is my choice. What are 5 questions that could have this answer?	**The Brainstorming** Brainstorm ways to encourage the protection of our environment.	**The Inventions** Invent a way of remembering the names of the streets in Abu Dhabi.
The Interpretation It is sometimes difficult to make choices. Explain why	**The Brick Wall** Consider alternatives to large cities.	**The Construction** How could you cross the Sahab Street using a tennis ball, a rope and a brick?	**The Forced Relationship** How might an explorer use a pencil to find his way through a thick forest?	**The Alternative** List ways of seeing Masdar City without actually going there.

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Day 3: Session Three (4 hours)

Aims of the session:

- To gain understanding of the second category of Marzano's instructional strategies that focus on helping students develop understanding of the content.
- To identify the strategies that are connected to category; namely using cues, questioning and advance organizers, summarizing and note taking, non-linguistic representation and homework and practice.
- To identify different practical techniques based on the strategies of the second category.

Activity one: Warm up activity: (10 mins)

Trainees were asked to brainstorm some strategies they use to help students develop understanding. Trainees shared responses. Trainer explained Marzano's strategies that enhance developing students' understanding of content.

Activity two: Cues, Questions and Advance Organizers to activate prior knowledge (20 mins)

The trainer asked trainees to read two texts the following questions: What is the difference between them? Which one was easy to read? Why? What kind of support would help you understand a passage better?

Text one	Text Two
In 1367, Marainand the settlements ended a 7year war with the langurian and pitoks. As a result of this war, Languria was driven out of East. Bacol. Marain would now rule Laman and other lands that belonged to Languria. This brought peace to Bacolian settlements. The settlers no longer had to fear attacks from Laman. The Bacolians were happy to be a part of Marain in 1367. Yet, a dozen years later, those same people would be fighting the Marish. [3]	The UAE has a rich and fascinating cultural heritage. In the late 1950s, a team of Danish archaeologists discovered a large number of stone-built tombs and signs of an ancient civilisation on the island of Umm Al Nar, close to Abu Dhabi Island. There are signs that in the early days this culture produced pottery. Over time, it developed into using and exploring copper. that was also a lot of trade by land and sea with nearby civilization [4]

The trainer explained that using the strategy of asking questions, stating cues, and creating advance organizers in the beginning of a reading lesson is useful for activating and accessing background knowledge, which students need to connect the known information with the new one. Trainer explained that it is important to activate this strategy when the passage is unfamiliar or when the reader does not have background information about.

Activity three: How to preview a reading passage (30 mins)

The trainer asked the trainees to work in pairs and read the text to answer the following questions: Why do you preview a reading text? What are the techniques used for previewing?

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3 A document published by nlc.nebraska.gov as a reflection on Classroom Instruction that Works with English Language Learners (Hill and Flynn 2006, P.16).
4 Bridge to success, Grade 10 P. 40

When a teacher previews the information in a reading text, the teacher helps student activate prior knowledge relative to that information. Even if a student has little knowledge relative to a specific topic, the teacher will at least activate related knowledge that will allow students to make important linkages. There are a variety of ways used for previewing like the following Preview questions that require students to make inferences: To use questions, a teacher would identify things, people, actions, events, and states or conditions. In this regard, Marzano (2001) organized questions into two broad categories. The First, general inferential questions, which require either using students' background knowledge to fill in information implied but not explicit or using the information in the reading text to infer what must be true. To answer these questions, students must use their ability to reason logically with information presented. The second, elaborative interrogations begin with simple inferential questions. When the students provide an answer, the teacher asks why they believe this to be true.

Explicit cues: cues are very straightforward ways of activating prior knowledge. Present students with advance organizers which could be: Expository advance organizers: these provide students with the meaning and the purpose of what to follow and give students more details about what they will learn. They also focus on the important information, narrative advance organizers which take the form of a story, the teacher provides the essential ideas of the lesson or unit by telling a story that incorporates some of the key ideas, and skimming: this can be employed as a preview activity in the form of an advance organizer. When the teacher asks students to skim a reading text, she gives them the opportunity to preview the important information that they will encounter later by focusing on and noting what stands out in headings, subheadings, and highlighted information. [5]

Possible answers: to activate the background information and link the new data with the known, and cues, and questions, both general inferential and elaborative ones, and the different kinds of advance organizers.

Trainer suggested some ways to employ graphic organizers in ESL classrooms, such as using interactive IPad applications to create a wordle (a word cloud).

5 Adapted from Marzano, R.J. (2007). *T*he Art and Science of Teaching: A Comprehensive Framework for Effective Instruction. Ascd

Activity four: Non-linguistic Representations strategy (40 mins)

The trainer asked trainees to read the following case study and identify the importance of using non-linguistic representation in teaching reading comprehension.

The teacher started reading aloud a story about a bear that attacked a woman. The woman was walking on a trail with her son. The trail was in the mountains. While they were walking uphill on the mountain trail, the bear jumped out of the bushes. The teacher stopped reading and asked students to draw mental pictures and visualize the scenery. The teacher told them they could interrupt her reading to ask such questions: Was it in the morning? Was the woman afraid? Was the bear hungry? Were they hiking with other people? The teacher continued reading the story: The woman screamed. Her son hit the bear with his backpack. The bear grabbed the backpack with its mouth. The woman's nose and ears were bleeding. About five minutes later, a man walked up. The teacher asked students to work independently drawing pictures of one of the scenes from the images they created in their minds. Then the teacher provided one student with a mask of the bear and asked him with three other students to act the story out When they finished, she asked each group to draw an advance organizer to depict and summarize the information from the story they thought was important. [6]

Trainer explained the strategy used by the teacher and asked the trainees to create mental pictures that go along with the information. Trainees discussed its advantages. For example, it meets the different learning styles of learners, stimulates and increases activity in the brain, and helps students elaborate, deepen knowledge and recall it easily.

Trainer displayed some techniques that have been advocated in the bulk of literature and found that this strategy does not only enable students to learn, but it also attentively engages them in what they are learning. Trainees were required to apply some techniques on the text "*A fresh Start*" P. 10.

- 5 Adapted from Marzano et al. (2001), Classroom Instruction That Works: Research- Based Strategies for increasing students' achievements. Alexandria, VA: Association for Supervision and Curriculum Development.
- 6 Adapted from Getting outdoors- lesson 3-4 Bridge to success- Grade 10

The trainers shared some suggested techniques as cited in Marzano et al. (2001) and asked the trainees to reflect on using them. These include using graphic organizers, time Time-Sequence Patterns, Process/Cause-Effect Patterns and Concept Patterns

Activity five: Summarizing Strategy (45 mins)

Trainer explained how this strategy fosters the capability of students to understand different ideas in their own way of thinking and selecting what they consider essential. Trainer asked trainees to think of the rules of summarizing. The trainer presented the rules and asked the trainees to reflect on them.

Suggested rules: Delete things that are unnecessary to understanding, delete things that repeat information, substitute general terms for specific names, select a topic sentence, or invent one if it is missing.

The trainees were required to read the following text about the benefits of drinking water and then in pairs apply the rules of summarizing:

Do you have any idea how water is important for us? We need water to make our body and our brain work properly. Our brain is mostly made of water, and we need to drink plenty of it to help us think and focus to our best ability. If we are dehydrated, our brain doesn't function as well as it should, leading to problem and performance. Dr. Al Al Hosani and his research team went to two schools and investigated the impact of drinking bottled water on students' scores. The students were from grade 9. The team spent one month in their investigation. Their results showed that students who took bottled water into examinations ended up with better grades! Drinking water helps our kidney to work well, which stops the build-up of harmful substances in our body. [7]

Trainees shared responses and trainer provided feedback. Trainer presented reciprocal teaching as a technique to practice summarizing.

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[7] Adapted from Stay hydrated- lesson 3-4 Bridge to success- Grade 10

Trainees were asked to read the following text and answer the questions in groups: What is the summarizing technique mentioned in the text? How do you implement it? Summarize it using a suitable pattern mentioned in the previous activity.

"Reciprocal teaching, developed by Palincsar and Brown (1984, 1985), is an instructional technique that incorporates the process of summarizing but also engages students in cognitive processes that go well beyond summarizing. The summary statement that begins the reciprocal teaching strategy might be considered a first draft of a summary. The other phases of reciprocal teaching are: questioning, clarifying, and predicting. It helps students analyze the information they are attempting to summarize".[8]

Trainees shared responses and trainer provided feedback. The trainer explained that this technique has four steps: predicting, questioning, clarifying, and summarizing. It has four foundations: think aloud, cooperative learning, scaffolding, and metacognition. The trainer used a text on "Robert Falcon" to teach the reciprocal teaching method. To explain how this method will be effectively implemented in teaching reading, the trainer displayed a video that illustrates the steps to apply it before, during and after reading. Trainees took notes and applied the method on the nonfiction texts in "*Bridge to Success*" Coursebook P. 55.

Activity six: Notetaking Strategy (40 mins)

Using the notes that the trainees took in the previous activity, the trainer explained formats of taking notes. The trainer displayed how the trainees used different methods to distil information that is important to the knowledge they are learning, then to state that knowledge in their own words. Using the trainees' different formats in taking notes, the trainer clarified that there is no one correct way to take notes. In fact, different students might prefer different note-taking formats.

8 cited in Marzano et al. (2001).

Therefore, it is desirable to present students with a variety of formats for taking notes. Two common formats are the informal outline and webbing. The researcher practised using both formats with the trainees.

Activity seven: Assigning Homework Strategy (20 mins)

Trainer displayed the findings of the study of Little et al. (2016) and Marzano (2007), which aimed at examining the associations between homework and reading comprehension among special needs students with a focus on their behaviours and attitudes. The study concluded that if homework is intentional to be channelled towards a specific objective, it facilitates learning and improves understanding. The trainer asked the trainees to think of the advantages and disadvantages of this strategy and share their own experiences.

Upon discussion, the trainer shared some useful tips proven by Marzano (2007) to be effective in encouraging learning using this strategy:

• Establish and communicate a homework policy: students and their parents need to understand the expectations related to homework. (What is the aim of homework? How much homework should teachers assign? What are the penalties for missing or late homework? How should parents be involved in their Childs' homework?). Therefore, the homework policy should be feasible and can enhance learning and decrease the tensions about homework that arises among parents.

• Clarify the purpose of homework assignments: inform students if the homework aims to provide opportunities for students to practice skills, prepare to learn new information, or elaborate on introduced materials, or to increase speed and accuracy on a particular skill.

• Use different strategies for giving students feedback on homework: timely and specific feedback on homework can improve students' achievement. To overcome the problem of not having enough time to

provide feedback, the teacher may set up opportunities for students to share their work with one another and offer feedback, or keep their work in a portfolio, which the teacher might examine later. [9]

Trainer asked trainees to reflect on these tips and how much they are consistent with their current practices.

Activity seven: Providing Practice Strategy (30 mins)

Trainer asked trainees how they usually help students practice reading comprehension and learn new words. Trainees shared responses. Trainer asked trainees to read the following text and reflect on the procedures used by the teacher in the selection.

Mrs. Sarah aimed to help her students improve their ability to reading stories. Having taught them how to preview outline and summarize the story using the story map, she sets time for them to practice in class. As she believes that practice, of which speed and accuracy are key indicators, she started assigning a story every week and asked to summarize it in their own words using a reading a log. Mrs. Sarah felt that practice has facilitated learning at an individual level as it improves their understanding and enriched their vocabulary knowledge. She asked students to time themselves as they answer each question and charting how performance as a way to track their progress. Based on the information students recorded, Mrs. Sarah taught students how to adapt the way they use the skill in different situations and consider solutions for the potential problem areas. [10]

Activity eight: Plenary (10 mints)

Asking trainees to do a follow up activity for self-assessment purposes and reflect on the activities used in the third session.

9 cited in Marzano (2007)

10 Adapted from Marzano (2003): What works in schools: Translating research into action

Session Four (4 hours)

Aims of the session:

- To gain understanding of the third category of Marzano's instructional strategies that focus on helping students extend and apply knowledge.

- To identify the strategies that are connected to the larger goal of helping students apply knowledge; namely identifying similarities and differences and generating and testing hypothesis.

- To identify different practical techniques based on the strategies of the third category.

Activity one: Warm up activity: (10 mins)

The trainees were asked to think of some strategies they use to help students extend and apply knowledge. Trainees shared responses. Trainer explained Marzano's strategies that enhance extending and applying knowledge.

Activity two: Identifying similarities and differences (30 mins)

Trainer displayed some pictures to introduce this strategy. Trainees shared ideas.
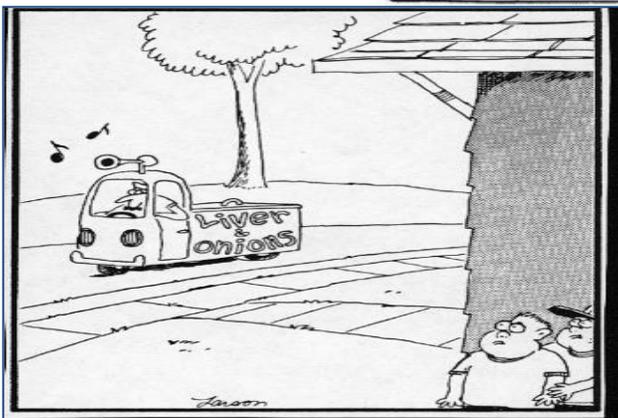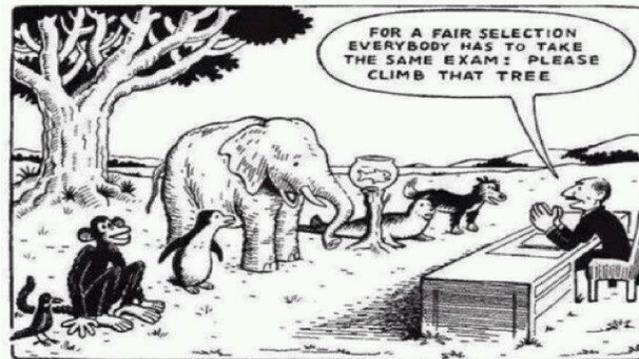
Trainer individually asked trainees to complete this analogy.

Instructional strategies are to teachers as ---------------- are to --------------.

Trainees shared responses. Trainer asked trainees to set a purpose for this activity. Upon responses, trainer explained that analogy is a technique used when identifying similarities and differences to help students see how dissimilar things are similar.

Trainer clarified that when a concept is broken into similar and distinct features, it enables students to understand complicated problems and ideas through analyzation of the ideas in elaborate and simple criteria. Trainer asked trainees to figure out the advantages of this strategy. Trainees shared ideas.

Possible answers: The ability to break a concept into its similar and dissimilar characteristics allows students to understand and often solve complex problems by analysing them in a simpler way. This can be seen from the cognitivism lens as constructing metaphors and analogies fosters deep comprehension of ideas and enables students to make connections of existing knowledge (Dean et al. 2012).

Activity three: Introducing categories of identifying similarities and differences strategy (20 mins)

Trainer introduced several methods that can be used in English language classrooms. This includes; comparing, classifying, creating metaphors and creating analogies. Trainer distributed cut-ups pieces of paper and asked trainers in pairs to match the categories of the strategy of identifying similarities and differences with their definitions and the type of graphic organizers the teacher can use.

Category	Definition	Type of graphic organizer used [11]
Comparing	The process of identifying similarities and differences between and among things or ideas.	Venn Diagram T-Chart
Classifying	It involves grouping things into definable categories based on like characteristics. It is critical to identify the rules that govern class or category membership.	Web Fryer
Creating metaphor	The process of identifying general or basic patterns in a specific topic and then finding another topic that appears to be quite different but that has the same general pattern. It is usually used by authors to provide readers with strong images.	Graphic organizer for a metaphor
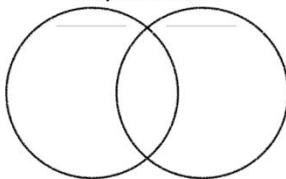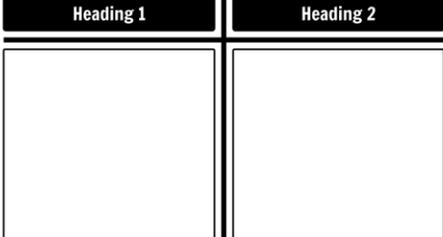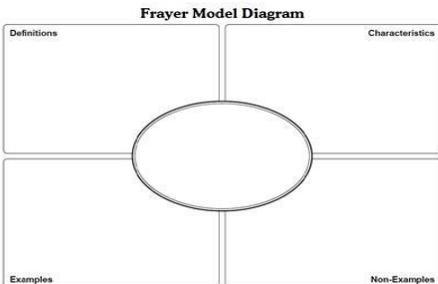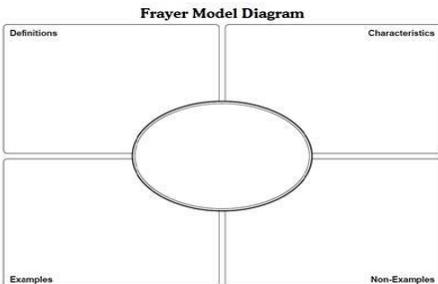
Creating analogies	The process of identifying relationships between pairs of concepts, in other words, identifying relationships between relationships. Like metaphors, analogies help to see how seemingly dissimilar things are similar and increasing our understanding of new information.	There is no frigate like a book**.**

Activity four: Practicing implementing categories of the strategy of identifying similarities and differences (40 mins)

Trainees were required to read a biographical article "*We bought a zoo-a short biography of Benjamin Mee*" P. 19. and present the ideas using the categories of identifying similarities and differences.

Activity five: Generating and Testing Hypotheses (30 minutes)

Trainer explained the meaning of the strategy which involves applying knowledge to enhance learning in new situations by illustrating how it can be linked to English language learning, mainly reading.

11 Adapted from Dean et al. (2012).

Trainer explained that there are different types of tasks that employ generating and testing hypothesis, which include;

- Systems Analysis

- Problem Solving

- Historical Investigation

- Innovation
- Experimental Inquiry
- Decision Making

  Trainer asked trainees to read a story "*The Three Questions*" by Leo Tolstoy P. 13 and examine the King's experience with the old man. Trainees were required to follow the instructions that employ generating and testing hypothesis.

1. Investigate the primary sources of this King's sadness

   2.Identify the setting (Time and place)

   3.Examine and investigate new clues and sources to better identify the changing setting and circumstances.

   4.Suggest some solutions for the kings' conditions.

   5.How can you contribute in solving the kings' conditions?

   6.Using the same sources, settings of time and place and causes, create a new experience for the king.

   Activity six: Presenting the strategy in the classroom. (30 min)

   Upon reflecting on the previous task, trainer asked trainees how they employ this strategy while teaching reading. The trainer emphasized that this strategy falls under the category of predicting. The researcher

explained that research shows that encouraging students to apply their knowledge and use high level thinking skills to generate, test, thoroughly explain hypotheses and draw conclusions using both inductive and deductive techniques improves their learning.

Trainer asked trainees to read a selection of an autobiography about "*Ahmad Bin Majid*" to practice thinking deductively and inductively and make predictions about Ahmad bin Majid's discoveries based on his strengths and preferences. Trainees shared responses.

The famous sailor Ahmad Bin Majid was a very intelligent traveller. He wanted to discover the world, so he started sailing when he was 17. He lived in the 15th century. Most of his travels were to the Red Sea and the western Indian Ocean. He wrote many books and poems about sailing. Indian sailors used his books in their trips. Ahmad Bin Majid was an intelligent sailor. He examined the ship after building it. He knew the direction of the wind by putting a piece of cloth on the ship. He was also good at astrology. [12]

Activity seven: Plenary (10 mints)

Asking trainees to do a follow up activity for self-assessment purposes and reflect on the activities used in the fourth session.

Day 5: Session Five (4 hours)

Aims of the session:

- To practice employing Marzano's strategies using practical techniques and procedures based on the theoretical and pedagogical knowledge.

- To develop lesson plans based on the instructional strategies presented in the training program.

Activity one: Effective and ineffective reading strategies (30 minutes)

The trainer guided trainees to differentiate between effective and ineffective reading strategies before, during and after reading. Trainees shared responses.

Activity two: Lesson plans based on Marzano's instructional strategies (2:30 minutes)

In the beginning of the session, the trainer reviewed the strategies explained in the previous sessions. The trainer guided the trainees to design their lesson plans and prepare the activities on unit one based on the strategies. All worked in groups and shared ideas

Effective reading techniques	Ineffective reading techniques
Before reading	
Setting objectives	No objectives why students are reading
Preview text, title, pictures, and headings	Asking students to read without thinking about the topic
Activate students' prior knowledge	Previewing is waste of time
Make predictions about the text	Prediction does not contribute to understanding
Use summaries and note taking to identify the gist	Read all the text
Chunking the reading texts	No matter how much students read
During reading	
Read selectively by deciding what to read and what not to read	Read on without understanding meaning
Use text structures and text features to support meanings	Reading without paying attention to the features of the text
Provide cues and questions	Understanding the text by just reading the text
During reading	
Track progress in achieving objectives	Paying no attention to progress
Summarizing the key ideas	Copying sentences from the text
Provide feedback to students' responses to questions	Check answers and provide feedback, if necessary

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Appendix B

Logged In:

Evaluator		() -
Evaluatee	-Evaluatee	-Teacher
Language		English ˅

⌂Home Page

Observation مشاهدات الأداء

Employee Name:		Job in ERP:	Region.Teacher
School Name:		Evaluated As:	Teacher

Please select the Academic Year [▼]

Page 1 of 2 (2 items) ◁ [1] [2] ▷

#	Observer Name	Observer Email	Observation Type	Date of Observation	Deadline for Feedback	Actual Feedback Date	Observation Status
			Performance Observation				Submit to Employee

Observation High-Yield Strategies

☐ Identified similarities and differences   ☐ Summarized and took notes   ☐ Reinforced effort and provided recognition

☐ Homework and practice   ☐ Nonlinguistic representations   ☐ Cooperative learning

☐ Set objectives and provided feedback   ☐ Generated and tested hypothesis   ☐ Questions, cues, and advance organizers

Strengths	Opportunities for Growth

Appendix C

Formal Observation Form

Teacher Name		Date		Grade	
Observer Name		Period		No. in Class (out of total)	
Subject		Topic			

1	Outstanding		**Overall Grade Awarded for the Lesson (1 - 4)**
2	Good		
3	Satisfactory – requires improvement		
4	Requires Significant Improvement		

	Comments				
PLANNING AND PREPARATION	1	2	3	4	
Lesson preparation					
Objectives are clearly communicated at the start of the lesson					
Communicating High Expectations for all Students					
TEACHING AND LEARNING	1	2	3	4	
Starter activity					
Helping Students Interact with New Knowledge					
Helping Students Practice and Deepen New Knowledge					
Helping Students Generate and Test Hypothesis					
Lesson delivered at appropriate level for the students					

Helping students identify similarities and differences				
Collaborative learning and/or student-centred activity				
Students are engaged				
Helping students summarize, eliminate of insignificant information and retain of the important information				
Teacher asks analytical and inferential questions				
Student participation is encouraged				
Good student / teacher interaction observed				
Teacher movement / Space management				
Clarity of instruction / Use of voice				
Evidence of differentiation (SLN / Different learning styles catered for)				
Evidence of reinforcing and provision of recognition				
Ending of lesson				
STUDENTS' LEARNING AND ASSESSMENT	1	2	3	4
Formative assessment evident (checks on learning)				
Feedback of progress given to students (by teacher, peer or self)				
Students understand the lesson objectives				
Constructive type of homework is assigned to help students to practice, review and apply knowledge				
RESOURCES AND MATERIALS	1	2	3	4
Appropriate and varied resources are used				
The quality of the resources				
Use of educational technology (where appropriate / available)				
CLASSROOM MANAGEMENT	1	2	3	4
Pacing and time management				

Proactive / Positive / Safe Learning Environment					
UAE CULTURE AND HERITAGE	1	2	3	4	
Reference to UAE life, national heritage and culture (where appropriate)					

Additional Comments:	
Teacher Name:	Teacher Signature:
Observer Name:	Observer Signature:
School Principal Name:	Signature:

**English Exam
(Reading)**

2018-2019

Date: ,   2018

Name:

....

Class: ……………..

**English Reading: Grade 10
Time: 60 Minutes**

➢ **Read these INSTRUCTIONS first:**

1. Write in blue or black pen
2. Read every text and question carefully
3. Attempt every question
4. A non-attempt scores zero (0)

The paper consists of three sections

Text Type Reading	Marker 1	Marker 2	Moderator
Text A Literal (1-5) **/ 10**			
Text B Literal (5-10) **/10**			
Text C Inferential (11-20) **/20**			
Final Mark	**/40**	**/40**	

Part 1

Read the text and match the correct paragraphs **(A-D)** to the number **(1-6).**

You can use each letter more than once.

Improving the Environment

Paragraph A

Scientist have been warning us about Earth's rising temperatures for a very long time and I think it is time we take some action. There are many ways to protect the environment, one of which is preserving water. Wasting a lot of water or using it without care means that governments and water companies need to use more energy in treating water to make it clean. This is, of course, bad for the environment.

Paragraph B

There are actually a lot of eco-friendly conservations and initiatives. A great example is the Dubai Expo 2020 and the building in which it will be held. It will include solar tress that will take energy from the sun to provide power to the event. The building's low carbon footprint will send a message to the world that it is important to promote ecology and sustainability. Also, people will have the opportunity to discuss and exchange ideas about global issues and solutions.

Paragraph C

Another initiative that will protect the environment is the driverless car. I think driverless 'electric' cars will be something of the future. They will cut greenhouse

gases as they will use electrically-powered engines. They will also reduce noise pollution as they are much quieter than regular cars. The fact that these cars do not need petrol or diesel fuel means that no harmful emissions are being produced. I think if we all drive electric cars, we would definitely live in cleaner and quieter cities.

Paragraph D

Not only do we need to make sure the environment is cleaner for us, but for animals too. Many of the U.A.E's most beautiful animals are slowly becoming endangered. I believe it is the responsibility of the government to work toward informing people about the importance of conversation and the dangers facing the environment. There are many initiatives throughout the country such as the World Wildlife Association. They offer workshops and activities to inform people of the value of protecting animals.

Choose the best heading for each paragraph.

1. A building to improve the environment.   _____

2. The government should make a start.   _____

Choose the best paragraph for each question.

3. Which paragraph mentions the government raising awareness of the environment? _____

4. Which paragraph talks about a new invention that will be good for the environment? _____

5. Which paragraph mentions the need to reduce water use? _____

Part 2

Natural Beauty

The UAE is known for its fast-growing economy and tall buildings, but many people forget about the natural beauty this country is home to. Each of the seven emirates has its own unique natural areas that have been untouched by man.

Wadi Bih, in Ras Al Khaimah, is a secret oasis located at the top of a mountain. It has beautiful bird-life, fields of flowers and hiking trails. Wadi Ghalilah, also in the same emirate, is known as the 'stairway to heaven'. This pace is perfect for rock climbers and, once you reach the top, you get the chance to have spectacular panoramic views of nature. It can actually be dangerous though, so you should always be with someone that knows the area well, if you have an interest in Arabian wildlife, then the Wathba Wetland Reserves is the place for you. Forty kilometres south of Abu Dhabi, it can be hard to find, so you might need a guide with you- but you will see the beautiful bright pink flamingos feeding in the marshes. It is amazing!

Another area of natural beauty in the UAE, is Fujairah. Fujairah is the only emirate that is almost completely mountainous. There are a range of adventurous activities to do there, like mountain safaris and deep-sea diving. Not so many tourists go to Fujairah as they tend to stay amongst the more popular emirates like Dubai and Abu Dhabi. However, if you need a break from the busy city, then Fujairah is a relaxing place yet is also full of excitement.

Lastly, Al Hayer Forest in Al Ain is one of the UAE's secret natural beauties. With a forest of ghaf tress in the middle of the desert, it is a perfect camping site. Also, in Al Ain, you will find Green Mubazarrah, which is a major tourist attraction due to its hot springs. You can swim in hot water, bring your whole family and relax in the park or camp on Jebel Hafeet mountain.

Choose the correct option.

6. The UAE's economy is growing fast in all seven of the emirates.

True   **False**   **Not given**

7.It is recommended that you do not go to Wadi Ghalilah alone.

True   **False**   **Not given**

8.You can feed the pink flamingos in Wathba Wetland Reserve.
True   **False**   **Not given**

9.Fujairah is a good choice if you want to have an adventure and relax too.
          True   **False**   **Not given**

10.Young Children are not allowed into Green Mubazarrah.
          True   **False**   **Not given**

Part 3

Uniting Family Through Business

Some say that "*Life is a journey*." In talking with Emirati statistician, Juma Abdullah Al Hosani, we certainly found this to be true of his life." Mr. Al Hosani believes that life is not just about living, but about

learning.

On Early Life
I grew up in the Khor Fakkan Mountains. With eight brothers and sisters, we were always yelling, running and playing. My family was a large, social one with very strong values**.**

Most Important Influences
My mother always looked out for me and taught me to do the right thing. She had a heart of gold and the greatest effect on my life. My older brother, Mohammad also had a huge influence on me while I was growing up. I admired him a lot.

About Character
I am an optimist and dedicated. I always believe that "Action speaks louder than words" and nothing is impossible. Sometimes my heart rules my head when I make decisions, but my family and friends understand that I am just a very positive person.

Education
In 1998, I decided to study abroad in the United States of America. It was a difficult decision as I had never been out of my country before. I would be leaving the customs and traditions that I grew up knowing and
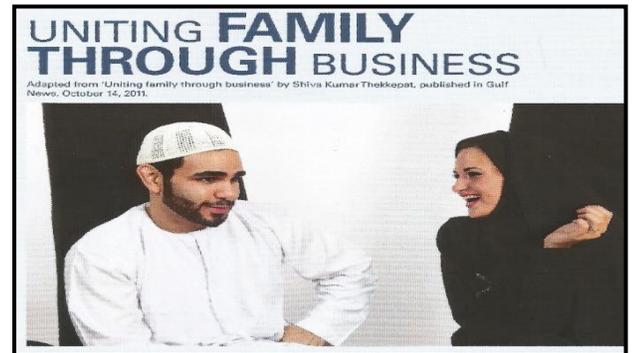
`understanding. However, an excellent education was important to my family and me. After five years of hard work, I completed my Masters of Arts in medical statistics in 2002. By that time I was very homesick and wanted to return to the UAE.

Business and Family Success
We have a huge family and it is sometimes difficult to keep in touch with everyone. After my return from the US, my brother suggested that one way to keep the family together was by starting family businesses. Our businesses are now quite successful, but what makes us most happy is how running a family business has encouraged family unity. Our businesses have built and supported the unity we have in our family.

Future Hopes

My dream is for my children to get an excellent education like I did and to use that to make their country proud.

Choose the best option.

11. What has been the influence of Juma's family running a business?

A. It has broken the family apart.
B. They work very long hours.
C. It has kept them together.

12. Which adjective describes Juma's character?
A. Hard-working
B. Careless
C. Unsuccessful

13. "Action speaks louder than words". This proverb means:

      A. what you actually do is what matters most.

      B. it is important to be praised for your actions.

      C. a good speaker is most likely to impress.

14. Juma's mom has been the most significant influence because:
A. She has a lot of gold
B. She always encourages and cares about her son
C. She has heart diseases

15. "My older brother Mohammad also had a huge influence on me while I was growing up. I admired him a lot"
      What does this quote suggest about Mohammed and Juma's relationship?

A. Mohammad was not kind to Juma.
B. Juma wanted to be like Mohammed.
C. Juma and Mohammed did not like one another.

16. "Sometimes my heart rules my head when I make decisions." What does Juma mean by this?
A. Sometimes his feelings control his thoughts.
B. He is a good person some of the time.
C. He is sometimes kind and generous.

17. How did Juma feel before leaving to go study in the USA?

A. He was very excited.
B. He was very worried.
C. He was very happy.

18. What is the tone of this text?

A. uncertain

B.   unhappy

C.   full of praise

19. What is the purpose of this text?

A. To inform

B. To persuade

C. To entertain

20. Which sentence best summarizes this text?

A. Traveling is important to one's success.

B.   Large family is important.

C. Family support, education and hard work are important for success.

Appendix E

Parents Messages

السادة أولياء الأمور الكرام..
نحيطكم علما بأنه سيتم عقد امتحان
قراءة باللغة الانجليزية لطلبة الصف
العاشر وذلك يوم غد الثلاثاء
11/9/2019 الساعة 9 صباحا راجين
التزام الطلبة بالحضور وحثهم على
التعامل بجدية مع الامتحان.
شاكرين لكم تعاونكم

7:03 PM

السادة أولياء الأمور الكرام..
نحيطكم علما بأنه سيتم عقد امتحان
قراءة باللغة الانجليزية لطلبة الصف
العاشر وذلك يوم غد الأربعاء
12/12/2019 الساعة 9 صباحا راجين
التزام الطلبة بالحضور وحثهم على
التعامل بجدية مع الامتحان.
شاكرين لكم تعاونكم

Modified Lesson Plan Based on Marzano's Instructional Strategies

LESSON PLAN	LESSON: 1
Teacher:	**Subject: English**
Grade: 10	**Unit: 1**	**Date:**

SKILLS AND UNDERSTANDING

Learning objectives: **Reading:** To identify the main points in texts on New Year celebrations. To work out the meaning of new vocabulary using context.	**Learning outcomes: By the end of the lesson, learners will be able to ...** demonstrate understanding of texts ask and answer questions based on a text.

Link to prior learning:
- Knowledge of Islamic culture
- Not applicable

Key vocabulary: *lunar, Islamic, Muslim, homage, fast* (noun)
Key expressions/structures: Question forms with *wh-* questions

Common misconceptions for learners, ways of identifying these and techniques for addressing these misconceptions:
Word order in questions can cause problems: model correct questions and give frequent practice.

Resources/equipment needed:
Coursebook pages 6–7
Workbook pages 5–6

UNIT 1 LESSON 1 TASKS/ACTIVITIES
Please also refer to the *Teaching Strategies* section of the Teacher's Guide (pages 6 to 10).

Resources	Starter
	Introduce the unit title and encourage learners to look quickly at some of the photos and other illustrations in the whole unit. Elicit what they think they are going to be studying. **Instructional Strategy: Cues, Questions, and Advance Organizers**: teacher will ask students to fill in the KWL chart Write the word *celebrations* on the board and elicit the learners' favourite celebrations. **Instructional Strategy: Cooperative learning:** Elicit also what they do at the celebration, and why they like it.

Resources	Main activity
Coursebook page 76	**Reading: Activity 1** Introduce the section title (New Year) and ask the question below it. Elicit reasons for celebrating New Year. Lead this into a discussion of calendars. Direct learners to read the information about the Islamic calendar in the Did you know? box. **Instructional Strategy: Identifying Similarities and Differences** Using the Venn Diagram, students will compare and contrast between the Islamic calendar and the Gregorian calendar. Students answer differentiated comprehension questions using (Thinker's Keys- Commonality Key- What If?) Introduce and explain *lunar cycle* which is used in the text. **Instructional Strategy: Non-linguistic Representation: u**sing an Oreo cookie for each moon phase (Thinker's Keys: The Picture Key). 4. Learners read the pre-reading question in Activity 1 before they read the text. Tell them to read to find the answer. Elicit the answer. Answer any questions learners have about the text. **CORE** **Feedback** Elicit and discuss the answer to the pre-reading question. **Answers** The first day of the Islamic New Year encourages Muslims to think about how to be better in the year ahead.

	Differentiation activities (Support): Give learners plenty of time to read this text – it is quite challenging. Direct them to the second paragraph to find the answer to the question.
Coursebook page 76	**Vocabulary: Activity 2** Learners read the text again to match words and definitions. Encourage them to find the word and then look at the sentence it is in. This will give them a context to help them work out the meaning. **CORE** **Feedback** Elicit and discuss answers. Encourage learners to use some of the new words in sentences of their own. **Answers** 1d; 2b; 3a; 4e; 5c; 6f
Coursebook pages 76–77	**Vocabulary: Activity 3** Learners work in pairs so that they can help each other and discuss answers. Point out that the question asks them to make a connection between each item and Islamic New Year (or in the case of the example, the Islamic calendar) – not to give the meaning of the items.

	CORE **Feedback** Elicit and discuss answers. **Answers** 2 The Hijrah is when the first Islamic year began.; 3 Muslims pay homage to the Prophet Muhammad (PBUH) on the first day of the Islamic New Year.
	Differentiation activities (Support): This is quite challenging so be prepared to assist learners as they work. Direct them to find the items, underline them and then look carefully at the sentences immediately around to find the connection to Islamic New Year.
	Differentiation activities (Stretch): 1. Learners can write full sentence answers.

Coursebook page 77	**Speaking: Activity 4** Review question structures and elicit questions about the Islamic New Year. Learners work in pairs to ask questions using *who, what, when, why, where* and *how long.* Monitor pairs as they work. Focus on the use of question forms and pronunciation. **CORE** **Feedback** Give feedback on the use of question forms and pronunciation. Give examples of some errors you heard and ask learners to correct them. **Answers** Learners' own answers
Workbook page 65	**Workbook: Activity 1** 1. Learners read the text and complete the gaps. **EXTENSION** **Feedback** Elicit and discuss answers with the class. **Answers** 2 calendar; 3 celebrated; 4 lunar; 5 place; 6 festivities; 7 eve; 8 clean; 9 throw; 10 symbolises; 11 clothes; 12 neighbours; 13 throwing; 14 buckets; 15 hottest
	Differentiation activities (Support): Reduce the number of gaps in the text to make this more manageable. Supplying the answers to gaps 2, 4, 7, 9, 10 and 14 will reduce the difficulty. Check that these learners have the correct answers before they move on to Activity 2.
Workbook pages 65–66	**Workbook: Activity 2** 1. Learners re-read the text and complete Activity 2. **EXTENSION** **Feedback** Elicit and discuss answers with the class. **Answers** 2 F; 3 T; 4 F; 5 T; 6 F; 7 F

Resources	**Plenary**
	Discuss learners' experiences of the previous Islamic New Year. Ask questions about what they did, to encourage the use of the new vocabulary.
Learning styles catered for (✓):	

Visual	Auditory	Read/Write ✓	Kinaesthetic

Assessment for learning opportunities (✓):

Observation	Learner self-assessment	Oral questioning	Peer assessment
Quiz	Student presentation	Written work and feedback	Verbal feedback

Standards/SLOs:

(G8.2.1.1.8) Pose and respond to questions related to the current discussion, incorporate others into the discussion.

(G8.3.1.1.1) Read a variety of genres (for example, autobiographical and factual recounts, bulletins, brochures, advertisements narrative reports, explanatory text, information texts, formal letters and emails), in print or digital format, within a range of complexity appropriate for Grade 8, interact with the text proficiently and independently using active reading strategies (for example, skimming, scanning, discerning the overall message, comparing and contrasting text information, evaluating in relation to preferences or purposes).

(G8.3.4.1.1.) Use context to determine the meaning of words and phrases; analyse nuances in the meaning of words with similar denotations.

MoE Lesson Plan

LESSON PLAN	LESSON: 1
Teacher:	**Subject: English**
Grade:10 **Unit: 1**	**Date:**

SKILLS AND UNDERSTANDING	
Learning objectives: **Reading:** To identify the main points in texts on New Year celebrations. To work out the meaning of new vocabulary using context.	**Learning outcomes: By the end of the lesson, learners will be able to ...** demonstrate understanding of texts ask and answer questions based on a text.

Link to prior learning:
- Knowledge of Islamic culture
- Not applicable

Key vocabulary: *lunar, Islamic, Muslim, homage, fast* (noun)
Key expressions/structures: Question forms with *wh-* questions

Common misconceptions for learners, ways of identifying these and techniques for addressing these misconceptions:
Word order in questions can cause problems: model correct questions and give frequent practice.

Resources/equipment needed:
Coursebook pages 6–7
Workbook pages 5–6

UNIT 5 LESSON 1 TASKS/ACTIVITIES

Please also refer to the *Teaching Strategies* section of the Teacher's Guide (pages 6 to 10).

Resources	Starter
	Introduce the unit title and encourage learners to look quickly at some of the photos and other illustrations in the whole unit. Students read the titles.
	Write the word *celebrations* on the board and elicit the learners' favourite celebrations.

Resources	Main activity
Coursebook page 76	**Reading: Activity 1**
	Introduce the section title (New Year) and ask the question below it. Elicit reasons for celebrating New Year.
	Lead this into a discussion of calendars. Direct learners to read the information about the Islamic calendar in the Did you know? box. Students will read two texts on the Islamic calendar and the Gregorian calendar. Students answer the comprehension questions.
	Introduce and explain *lunar cycle,* which is used in the text.
	Learners read the pre-reading question in Activity 1 before they read the text. Tell them to read to find the answer.
	Elicit the answer.
	Answer any questions learners have about the text.
	CORE
	Feedback
	Elicit and discuss the answer to the pre-reading question.
	Answers
	The first day of the Islamic New Year encourages Muslims to think about how to be better in the year ahead.
	Differentiation activities (Support):
	Give learners plenty of time to read this text – it is quite challenging. Direct them to the second paragraph to find the answer to the question.

Coursebook page 76	**Vocabulary: Activity 2** Learners read the text again to match words and definitions. Encourage them to find the word and then look at the sentence it is in. This will give them a context to help them work out the meaning. **CORE** **Feedback** Elicit and discuss answers. Encourage learners to use some of the new words in sentences of their own. <table><tr><td>**Answers**</td></tr></table>1d; 2b; 3a; 4e; 5c; 6f
Coursebook pages 76–77	**Vocabulary: Activity 3** Learners work in pairs so that they can help each other and discuss answers. Point out that the question asks them to make a connection between each item and Islamic New Year (or in the case of the example, the Islamic calendar) – not to give the meaning of the items.

	CORE **Feedback** Elicit and discuss answers. <table><tr><td>**Answers**</td></tr></table>2 The Hijrah is when the first Islamic year began.; 3 Muslims pay homage to the Prophet Muhammad (PBUH) on the first day of the Islamic New Year.
	Differentiation activities (Support): This is quite challenging so be prepared to assist learners as they work. Direct them to find the items, underline them and then look carefully at the sentences immediately around to find the connection to Islamic New Year.
	Differentiation activities (Stretch): 1. Learners can write full sentence answers.

Coursebook page 77	**Speaking: Activity 4**
	Review question structures and elicit questions about the Islamic New Year.
	Learners work in pairs to ask questions using *who, what, when, why, where* and *how long.* Monitor pairs as they work. Focus on the use of question forms and pronunciation.
	CORE
	Feedback
	Give feedback on the use of question forms and pronunciation. Give examples of some errors you heard and ask learners to correct them.
	Answers
	Learners' own answers
Workbook page 65	**Workbook: Activity 1**
	1. Learners read the text and complete the gaps.
	EXTENSION
	Feedback
	Elicit and discuss answers with the class.
	Answers
	2 calendar; 3 celebrated; 4 lunar; 5 place; 6 festivities; 7 eve; 8 clean; 9 throw; 10 symbolises; 11 clothes; 12 neighbours; 13 throwing; 14 buckets; 15 hottest
	Differentiation activities (Support):
	Reduce the number of gaps in the text to make this more manageable. Supplying the answers to gaps 2, 4, 7, 9, 10 and 14 will reduce the difficulty. Check that these learners have the correct answers before they move on to Activity 2.
Workbook pages 65–66	**Workbook: Activity 2**
	1. Learners re-read the text and complete Activity 2.
	EXTENSION
	Feedback
	Elicit and discuss answers with the class.
	Answers
	2 F; 3 T; 4 F; 5 T; 6 F; 7 F

Resources	Plenary
	Discuss learners' experiences of the previous Islamic New Year. Ask questions about what they did, to encourage the use of the new vocabulary.
Learning styles catered for (✓):	

Visual	Auditory	Read/Write ✓	Kinaesthetic

Assessment for learning opportunities (✓):

Observation	Learner self-assessment	Oral questioning	Peer assessment
Quiz	Student presentation	Written work and feedback	Verbal feedback

Standards/SLOs:

(G8.2.1.1.8) Pose and respond to questions related to the current discussion, incorporate others into the discussion.

(G8.3.1.1.1) Read a variety of genres (for example, autobiographical and factual recounts, bulletins, brochures, advertisements narrative reports, explanatory text, information texts, formal letters and emails), in print or digital format, within a range of complexity appropriate for Grade 8, interact with the text proficiently and independently using active reading strategies (for example, skimming, scanning, discerning the overall message, comparing and contrasting text information, evaluating in relation to preferences or purposes).

(G8.3.4.1.1.) Use context to determine the meaning of words and phrases; analyse nuances in the meaning of words with similar denotations.

Appendix H

Semi-structured Focus group Interviews

Questions for Warmup:

Do you like reading?

What is the last book you have read?

When did you read it?

Do you see yourself as a good reader?

Do you usually understand texts in exams?

Do you usually understand the main idea of texts?

Marzano's strategies that aim at helping students develop understanding

1. *Cues, Questions, and Advance Organizers*

   The teacher used KWL to teach you the story of "The Two Brothers". The teacher also used fishbone graphic organizers to teach the informational text on pollution.

a. In what ways do using graphic organizers help you understand the events in a story?

b. Has using graphic organizers given you a clearer understanding of the concepts and ideas of the informational text? How?

c. Have you used this strategy in answering the second text in the administered reading exam? If so, how?

d. The teacher usually asks different questions depending on the students' reading level, let's say easier or shorter questions versus harder or longer ones. Do you think asking questions at different learning levels helps you to answer the questions in the reading exam?

2. *Summarizing and Note-taking*

   a. Does the strategy of summarizing help you to understand texts better? Why or why not?

   b. Do you feel that taking notes while reading helps you better understand the written texts? Why or why not?

   c. What reading strategies do you use when you summarize texts?

   d. Do the strategies of summarizing and taking notes help you in the reading exam? If so, how?

3. *Homework and practice*

   a. The teacher assigned reading comprehension texts for practice as homework on a daily basis. Do you think this strategy helped you to improve your reading skill?

   b. Has this strategy helped you to answer the questions better in the reading exam? Think of examples.

4. *Non-linguistic Representations*

   a. Do visuals help you better understand the text as a whole?

   b. In what ways do visuals and pictures help you to understand the main ideas of a written text?

   c. Do visuals better help you to interpret events in reading texts?

   4. On a scale of 1 to 5, with 1 being the least and 5 being the most, identify how much visuals help you to better remember concepts, events and ideas in the written texts? Explain why that is.

   Marzano's strategies that aim at helping students apply knowledge

1. *Identifying Similarities and Differences*

   The teacher asked you to compare and contrast the character traits of the main characters of the story using a Venn diagram.

a. How does this strategy help you to organize both new and known information?

b. What skills have you gained from this strategy?

c. In what ways does this strategy help you to analyze concepts and ideas?

d. What does mental mapping mean to you? Give an example.

2. *Generating and Testing Hypotheses*

  a. How does testing an idea while reading help you in predicting upcoming events? Give examples.

  b. In what ways does this strategy help you in drawing conclusions and explaining them?

Marzanos' instructional strategies that aim at providing a suitable learning environment

1. *Setting objectives and providing feedback*

  a. Does setting objectives for learning help you to learn better?

  b. How much does the strategy of setting objectives help you to achieve the required learning goals in reading?

  c. Do you think this strategy helps foster responsibility for your own learning? Why or why not?

  d. Do you think providing feedback about your work helps you to know the next step you need to take towards achieving your learning goals?

2. *Cooperative learning*

  a. Do you think working collaboratively has made your participation in reading classes more effective? Why or why not?

  b. Should cooperative learning be implemented in all classes all the time? Why or why not?

c. Does collaborative learning develop other skills and abilities that helped you in learning? Give examples.

3. *Reinforcing Effort and Providing Recognition*

a. Do you think rewarding you for your efforts has made your participation in reading classes more effective? Why or why not?

b. Has rewarding you for your efforts motivated you to continue working when reading tasks get more difficult and challenging? Why or why not?

c. Do you think rewarding you for your efforts has helped you to identify your strengths? Why or why not?

4. Do you think rewarding you for your efforts has helped you to identify your weaknesses? Why or why not?

Appendix I

28 August 2018

Department of Education and Knowledge
Abu Dhabi, UAE

This is to certify that Ms. Ramia Dirar Musmar with Student ID number 2016152050 is a registered full-time student in the Doctor of Education programme in The British University in Dubai.

Ms. Musmar is currently collecting data for her research "An Investigation of the impact of Marzano's instructional model on grade 10 students' achievement in reading comprehension in the United Arab Emirates".

She is required to gather data through conducting Professional development training for teachers -Pretest and posttest- Focus group interviews- Student's information that will help her in writing the final research. Your permission to conduct her research in your organisation is hereby requested. Further support provided to her in this regard will be highly appreciated.

Any information given will be used solely for academic purposes.

This letter is issued on Ms. Musmar's request.

Yours sincerely,

Dr. Amer Alaya

Head of Academic and Student Administration

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CONSENT FORM- Letter of Information

Title of Project: An Investigation of the impact of Marzano's instructional strategies on grade 10 students' achievement in reading comprehension in the United Arab Emirates

Name of Researcher: Ramia Dirar Musmar

Name of Institution: British University in Dubai

Research Purpose

The purpose of this study is to investigate the impact of Marzano's instructional strategies on grade 10 students' achievement in reading comprehension. It also aims at exploring the perceptions of grade 10 students towards using these strategies in their learning of reading comprehension strategies. Finally, it examines the emerging change, if any that students' gender may have on students' achievement in reading comprehension based on Marzano's instructional strategies.

Research questions

1. What is the impact of Marzano's instructional strategies on grade 10 students' achievement in reading comprehension?

2. Are there any gender-based significant differences in reading comprehension performance in response to Marzano's instructional strategies?

3. What are the students' perceptions towards Marzano's instructional strategies after being instructed and assessed authentically?

Research Method

If you decide to let your child participate, he/she will be invited to participate in Pre-test and Post-test on reading comprehension skills and kindly answer questions during focus group interviews.

Dear Mr and Mrs,

I am writing to you to request your permission to talk with (name of student) about his/ her views of selected strategies in reading and what has helped or hindered his/her progress in learning to read. I am doing some research as part of the requirement for my PhD in Education at the British University in Dubai. This research will involve interviewing students in a group situation about their views of using some instructional strategies in learning reading. The interview will take about two hours and will take place at school during school hours. The students will be able to talk about their experiences and this will help the school to plan programmes that better meet their needs. These ideas will also help me as I already work at one public school as a teacher of English language and will be used to inform future programmes in the school All information will be totally confidential. The student's names will not be used. The meetings will be note taken (girls) / note-taken and tape recoded (only for boys) to aid memory recall. Students will be able to have a copy of the interview. All information will be kept in a locked file at my home and I am the only person who will have access to it. It will be retained for up to three years and then destroyed. You may withdraw your child from the study at any time up to the end of the data collection stage. It would be appreciated if you could inform me of that withdrawal. The British University in Dubai Ethics committee has reviewed and approved this study.

Please give your child the separate information and permission forms (attached) once you have given your permission for them to read and sign. I appreciate your cooperation in this study.

Should you have any questions about the research please call the researcher Ramia Musmar on 0502958889 or contact on 2016152050@student.buid.ac.ae

Please tick the boxes

1.   I confirm that I have read and understand the information sheet dated **October 2018** for the above study. I and my daughter/son has had the opportunity to consider the information, ask questions and have had these answered satisfactorily.

☐

2.   I understand that my daughter/son's participation is voluntary and that he/she is free to withdraw at any time without giving any reason.

☐

3.   I understand that relevant sections of my daughter/son's data collected during the study, may be looked at by individuals from **the British University in Dubai**, where it is relevant to my child taking part in this research. I give permission for these individuals to have access to my records.

☐

4.   I agree to let my daughter/son take part in the above study.

☐

Participant   Date   Signature

Researcher   Date   Signature

Appendix K

Letter of Permission: Ministry of Education

DEPARTMENT OF EDUCATION
AND KNOWLEDGE

Date:09/09/2018

التاريخ : 09/09/2018

To:Public Schools Principals

الساده / مديري المدارس الحكومية المحترمين

Subject : Letter Of Permission

الموضوع : تسهيل مهمة باحثين

Dear Principals,

تحية طيبة وبعد،

The Department of Education and Knowlegde would like to express its gratitude for your generous efforts and sincere cooperation in serving our dear researchers.

يطيب لدائرة التعليم و المعرفة ان تتوجه لكم بخالص الشكر والتقدير لجهودكم الكريمة و التعاون الصادق لخدمة ابنائنا الباحثين

You are kindly requested to allow the researcher / راميه مسمار, to complete his research on:

و نود اعلامكم بموافقة دائرة التعليم و المعرفة على موضوع راميه مسمار / الدراسة التى سيجريها الباحث بعنوان:

An Investigation of the impact of Marzano's instructional model on grade 10 students' achievement in reading comprehension in the United Arab Emirates

An Investigation of the impact of Marzano's instructional model on grade 10 students' achievement in reading comprehension in the United Arab Emirates

Please indicate your approval of this permission by facilitating her meetings with the sample groups at your resoected schools.

لذا يرجى التكرم بتسهيل مهام الباحث و مساعدتة على إجراء الدراسة المشار إليها

For Futher information : please Helmy Seada on 02/6150140

للاستفسار : يرجى الاتصال بالسيد / حلمي هاتف 02/6150140

Thank you four ur cooperation. Sincerely yours,

أ.د. مسعود عبد الله بدري
مدير وحدة البحوث والتخطيط وقياس الأداء

شاكرين لكم حسن تعاونكم وتفضلوا بقبول خالص الأحترام و التقدير

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Appendix L

The Panel of Expert Judges

Focus Group Interview Questions

Names of Jurors	Position
Dr. Nabil Khlief	Associate professor- Curriculum and Instruction
Dr. Emad Abu Ayyash	Assistant professor- TESOL
Dr. Enas Shehadeh	Assistant Professor- Curriculum and Instruction
Jessica Kenward	Academic Quality Insurance Officers
Edna Hess	Licensed ESL teacher/Coordinator-Secondary Education
Ellen Lessard	Licensed ESL teacher- Secondary Education
Jaimmelle Carmichael	Licensed ESL teacher- Secondary Education
Adunni Kolade	Licensed ESL teacher- Secondary Education

Professional Development Training Sessions

Names of Jurors	Position
Dr. Nabil Khlief	Associate professor- Curriculum and Instruction
Dr. Emad Abu Ayyash	Assistant professor- TESOL
Carla Beresford	Training specialist- MoE
Alia Al Meqbali	English Coordinator and trainer
Adunni Kolade	Licensed ESL teacher- Secondary Education