The Complexity of Texts Read by Grades 3 to 6 English Learners in Muscat Governorate in Oman

تعقيد النصوص المقروءة من قبل متعلمي اللغة الانجليزية في الصفوف من الثالث إلى السادس في محافظة مسقط بسلطنة عمان

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Abstract

The key to success in reading texts lies in their careful design with progressing levels of complexity that are within the reader's competence. The selection of these texts that hold the right level of complexity is more critical in initial reading phases because it is during these phases that the stage is set for later reading development. Therefore, understanding the factors that contribute to the complexity of texts in a specific context aids towards establishing a text complexity model. Hence, the current thesis attempts towards developing a new model for the concept of Text Complexity for texts that are read by young EFL learners. The model is the result of the exploration of the factors that affect text complexity and which are related to texts, to readers or to the interplay between texts and readers while reading. The exploration of these factors is grounded on the Interactive View of Reading by Rumelhart (1985) while also attending to other theories and models that indirectly tackle factors related to readers and texts. The factors have been explored using a mixed –methods- approach since conducting text complexity research using quantitative tools only or qualitative tools only holds both strengths and limitations. Hence, under Pragmatism, the researcher was able to conduct the current research within both the positivist and the interpretivist paradigms. The data collection tools included readability formula (Lexile), qualitative judgments of texts, a reading fluency test (WCPM), miscue analysis and interviews. The research was conducted in three government schools in Muscat and it included 32 young learners from grades three, four, five and six. Seventy texts were analyzed quantitatively by Lexile and fifty texts were analyzed qualitatively by twenty educational professionals. The Statistical Package for the Social Sciences (SPSS) was used to analyze the quantitative data generated from the different research tools.

The findings of this research suggest that text complexity is influenced by the text factors, reader factors and factors resulting from the interplay between texts and readers during reading. The text factors include the unsystematic progression, the texts' linguistic complexity, the limited focus on learning- to –read skills, the books' layout, and the books' content. The reader factors include reader's prior knowledge, the reader's reading strategies and the reader's interest. The reader- text factors involve the inadequate level of reading fluency, the inability of readers to select books that match their level and the lack of adequate English language proficiency. The findings of this research have several implications towards a renewed model of text complexity for EFL learners. The findings have also several implications on the policies of authoring, evaluating and selecting texts for young learners of English in Oman in addition to its theoretical and methodological contributions to the research of text complexity in an EFL setting.

ملخص الدراسة

يكمن نجاح القارئ في قراءة النصوص وفق قدراته وامكاناته، وتظهر أهمية اختيار النصوص ذات مستويات التعقيد المناسبة بصورة واضحة في المراحل الأولى للقراءة؛ حيث يهيأ فيها الطالب لتمكنه من القراءة الصحيحة، ويرسم مستواه القرائي في المستقبل.

قامت هذه الدراسة على تقصي هذه الإشكالية وبحث الحلول لها، وهدفت إلى اقتراح نموذجًا للعوامل المؤثرة على تعقيد النصوص القرائية لمتعلمي اللغة الإنجليزية في المراحل الأولى لتعلم القراءة في سلطنة عمان، وبنيت على النموذج التفاعلي للقراءة المقترح من رملهارت (١٩٨٥)، والذي يعتبر القراءة الإستيعابية لأي نص قرائي عملية معقدة يتفاعل فيها القارىء مع النص بصفة مستمرة، مما يثني على دور كلا منهما في القراءة. بحثت الدراسة في العوامل المتعلقة بالنص والعوامل المتعلقة بالقارىء، بالاضافة إلى العوامل الناتجة عن التفاعل بينهما أثناء القراءة، والتي تؤثر سلبًا أوإيجابيا على تعقيد النص القرائي.

اعتمدت الدراسة على المناهج البحثية النوعية والكمية؛ وذلك لتلافي الأخطاء والتحديات المتعلقة بتحليل النصوص تبعا لمنهجية كمية فقط أو نوعية فقط، والتي خلصت لها الدراسات السابقة. وتتلخص هذه الأدوات في خمس أدوات بحثية أساسية تم تطبيقها على مرحلتين. المرحلة الأولى تضمنت أدوات بحثية لدراسة التفاعل بين الطالب والنص أثناء القراءة عن طريق اختبار طلاقة القراءة الشفهية وعن طريق تحليل استجابات الطلبة التي تخالف النص، بالإضافة إلى استخدام المقابلات مع الطلبة. أما المرحلة الثانية فقد تضمنت تحليل ٧٠ نصا بطريقة كمية عن طريق برنامج إكزايل، وتحليل ٥٠ نصا بطريقة نوعية من قبل مجموعة من الخبراء التربويين في تدريس اللغة الإنجليزية. طبقت الدراسة في ثلاث مدارس حكومية في محافظة مسقط، وعلى عينة مكونة من ٣٢ طالبًا وطالبةً من الطلبة ذي الطلاقة الشفهية من الصفوف الثالث والرابع والخامس والسادس من الحلقتين الأولى والثانية.

خلصت الدراسة إلى أن تعقيد النص القرائي يرتبط بعوامل عدة تعود إلى: النص، أو القارىء وعوامل ناتجة عن التفاعل بينهما أثناء القراءة. فكانت العوامل المتعلقة بالنص تتلخص في العشوائية في التسلسل التعقيدي للكتب، والتعقيد اللغوي لهذه الكتب، بالإضافة إلى شكل الكتب، ومضمونها، ومحدودية التركيز فيها على مهارات تعلم القراءة والتي تتناسب مع المرحلة القرائية للطلبة. ظهرت العوامل المتعلقة بالقارىء في: اهتمامات الطالب، ومعلوماته، والاستراتيجيات التي يوظفها في الفهم، وارتكزت العوامل المرتبطة بالتفاعل بين القارىء والنص في: ضعف طلاقة القراءة الشفهية المناسبة، وعدم قدرة الطالب على اختيار الكتاب المناسب، وضعف طلاقته في اللغة الإنجليزية. واشتملت الدراسة قدرًا واسعًا من التضمينات في مجال تأليف، وتحليل، واختيار النصوص القرائية للطلبة في المراحل الأولى للقراءة باللغة الإنجليزية في سلطنة عمان.

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Chapter 1

Introduction

1.1 Overview

For English learners to read successfully and to comprehend what they read in English, many reading skills such as decoding skills, sufficient fluency skills, general vocabulary knowledge and an extensive background knowledge are required (Reutzel & Cooter 2012). These reading skills should be interwoven in carefully designed texts with progressing levels of complexity and the key to success in reading these texts is that their complexity levels are within the learner's competence (Fitzgerald 2016). When educators are equipped with a solid foundation of what makes a text more or less complex, they can make the right match between children and books that meet their reading needs (Fitzgerald et al. 2016).

In essence, the selection of books that hold the right level of complexity is more critical in initial reading phases than in any other phase because it is during these phases that the stage is set for later phases of reading development (Ehri 1995). In addition, first books that language learners pick for reading actually determine whether they will continue with the reading experience or not (Allington 2006). While the enjoyment of a successful reading experience tempts the reader to try reading another book, a frustrating experience, in contrast, makes the struggling reader lose motivation and discontinue reading after a few trials (Morgan et al. 2008). This decline in reading motivation appears especially at early stages of reading development when it becomes more critical to consider motivational practices for the young learner (Vaknin-Nusbaum et al. 2018) and to make the right match between children and the books they read (Hiebert & Mesmer 2013).

However, the selection criteria of texts for early graders is a challenging task because of

the uniqueness of these texts which are written to develop certain learning to read skills such as decoding and high frequency words recognition (Fillmore C. & Fillmore L. 2012). In fact, unlike other content disciplinary texts that give preference to reader's processing depth, texts designed for early graders aim to develop reader's processing ease and, thus, require little attention to meaning (Fitzgerald et al. 2014).

On the other hand, findings from many studies (e.g. Amendum et al. 2016; Frey & Fisher 2013; Strong, Amendum & Smith 2018) have cautioned against pushing students to read texts well above their grade level without providing adequate support. When given the right level of texts, students are motivated to read and they usually gain a sense of success because they experience being competent readers (Milone & Biemiller, 2014). Research on text complexity becomes even more critical as all students now need to read high level texts in order to pass exams and to find jobs (RAND 2002).

1.2 Rationale

Globally, there are major research gaps in the topic of texts in general and early grade texts in particular (Amendum, Conradi & Hiebert 2017; Mesmer, Cunningham & Hiebert 2012). For example, although recent research and definitions of text complexity (e.g. Lapp, Moss & Grant 2015; Common Core State Standards [CCSSO] 2010) recognize the roles that readers and tasks play in reading comprehension, the focus has been almost exclusively on text analyses alone (Janan 2011; Hiebert 2015; Valencia, Wixson & Pearson 2014). In addition, the leveling systems that are implemented widely for matching texts to readers lack direct validations (Hiebert & Mesmer 2014). Moreover, there is lack of consensus among researchers on the topic of text complexity (Fitzgerald et al. 2014) coupled with the fact that levelled texts developed

over the past 70 years are not tested and have ill- defined linkages (Mesmer et al. 2012).

As far as the Omani context is concerned, Text Complexity has actually received little attention. Since the researcher in this paper is working in Curriculum Evaluation and has a long experience supervising schools in the Ministry of Education (MOE) in Oman, she notices that there is no systematic evaluation of the complexity of English commercial books in the Omani public schools. In addition, the books are from different publishers and the leveling system, if available, is not consistent across those publishers. Moreover, the majority of these books are written for young native speakers of English who typically have larger vocabulary size than EFL learners. For example, a seven- year- old native speaker of English knows a minimum of 5000 words (Nation 2015) in comparison with an EFL learner who is still at the early stages of learning a language. As these books are intended for independent reading, text complexity evaluation becomes even more crucial since there is no instruction provided to make input more comprehensible for the EFL learner (Krashen 2009).

The English commercial books in the Omani schools are, in fact, the result of efforts of the Ministry of Education in Oman to increase opportunities for learners' exposure to the English language. In cycle one schools (schools involving grades one, two, three and four), these efforts involve introducing "Reading Time" project in order to "generate a love of books" through independent reading (Teacher's Book, MOE, Oman 2016, p. 22). Under this project, students are encouraged to select books by themselves and time is allocated for reading during the English lessons. In addition, another project entitled KidsRead was introduced by the British Council under the support of HSBC and in partnership with the Ministry of Education and has been in place since 2011. Under this project, cycle one schools are supplied with children books that are intended for developing the young learners' reading skills. Additionally, each cycle one school

and cycle two school (school involving grades from five to ten) has a resource center with plenty of English and Arabic books to read and to borrow.

While students from public schools in Oman are encouraged to read independently in English, independent reading may take place using two different approaches. The first approach involves independent reading of some assigned texts by the teacher. The frequency of reading these texts is very low as the majority of students read only once a semester (AlSeyabi & AlRashdi 2016). The teachers in this approach respond to students by giving them a general mark rather than giving a descriptive feedback (AlSeyabi & AlRashdi 2016). The second approach is to allocate time for students to read and to provide them with books to select from. In this approach and to the best knowledge of the researcher, teachers do not provide any support to students in their selection because they are neither trained nor advised to do so.

From the researcher's point of view, both approaches to independent reading run serious risks. In the first approach, learners are compelled to read the same texts regardless to their interests or reading proficiency. In the second approach, learners are not supported in making their selections and, thus, may select books that do not match their proficiency level. In addition, there is no consolidation or follow- up of the reading task inside the classroom. Furthermore, there is no assigned purpose for reading these texts. In both cases, the readers may fail to read and, subsequently, dislike the reading experience.

1.3 Problem Statement

In principle, with the presence of this big number of commercially available English readers in public schools, the researcher has this persisting question of whether these books which originate from foreign and western publishers are actually suitable for the EFL young

learners' independent reading in terms of complexity. The right level of text complexity is, in fact, very critical for any successful reading experience in which students "perform with a high level of accuracy, fluency and comprehension" (Allington 2002, p.3). In order to increase the likelihood of having these successful reading experiences, a text leveling system for estimating text complexity should be established, thus, increasing the chances that readers will develop the reading comprehension skill (Compton, Appleton & Hosp 2004).

The same situation is noticed in the Omani English text books which are developed locally in an ad hoc manner (Al Jardani 2012). Lexical complexity, for example, is considered a very strong predictor of text complexity (Hiebert et al. 2019), and it tends to decrease instead of increasing in these textbooks with more text compact pages in grade one than in grade twelve (Al-Mahrooqi, Al-Maamari & Denman 2016).

1.4 Research Purpose & Questions

In the context of Oman and to the best knowledge of the researcher, there is no investigation of the factors affecting the complexity of texts intended for English language young learners in public schools. Therefore, the researcher in the current paper seeks to examine the complexity of texts read by English language young learners in Oman. The researcher specifically investigates the factors within the text that affect complexity and how the characteristics of readers and the interplay between these characteristics and the text factors affect text complexity. The investigation covers a sample of commercially available readers that are provided for English language young learners as they are learning to read in English in grades three, four, five and six in public schools in Oman. Therefore, the aim of this research is to understand how a text in English is more or less complex for an Omani young learner while

reading in a foreign language. This understanding will eventually facilitate making decisions about texts selection and will also aid in the process of writing texts for young learners in Oman.

Therefore, this study will aim to explore the factors that contribute to the complexity of texts read by young learners of English in Oman and which will aid towards developing a preliminary model for the complexity of of texts read by young learners of English as a foreign language. Specifically, this study seeks answers for the following questions.

1. What are the text -related factors that influence the complexity of texts read by young learners of English in Oman?
2. What are the reader -related factors that influence the complexity of texts read by young learners of English in Oman?
3. How does the interplay between reader- related factors and text- related factors while reading influence text complexity?
4. What are the implications of these factors towards a renewed model on the complexity of texts read by young learners of English in an EFL setting?

1.5 Dissertation Structure

The dissertation is structured in the following organization. The first chapter is an introductory chapter to the research including its significance, rationale, problem and research questions. The second chapter is a review of related literature. The third chapter is a methodology chapter while the fourth chapter will discuss the findings of the research. In the fifth chapter, there will be a discussion of the research findings. Finally, the sixth chapter will pinpoint the theoretical and methodological contributions of this research in addition to its implications on policy.

Chapter 2

2.1 Introduction

As discussed in the previous chapter, this research explores the factors that influence the complexity of texts read by young English learners in Oman. In essence, comprehension of any text is based primarily on aspects of the text (e.g. semantic, syntactic, cognitive etc.) and characteristics of the reader (e.g. reading ability, background knowledge, etc.) coupled with the task factors that operate while reading within a sociocultural context (RAND 2002). Following this conceptualization, the assumption is that the complexity of any text varies according to all of these factors. Hence, in order to achieve an inclusive analysis of text complexity, multiple measures of comprehension performance and reading fluency as well as individual reader measures, such as reading skill and prior knowledge, are to be considered (Crossley et al. 2017). In fact, the more approaches we examine to understand text complexity and the multiple variables that influence it, the more inclusive understanding we have about the topic (Pearson & Hiebert 2014).

In order to approach an understanding of text complexity, this chapter is divided into three major sections. The first section is a conceptual analysis in which a definition of text complexity, its historical roots and the factors that influence it are offered. As such, it discusses the factors that affect text complexity including text variables at the word level, the sentence level and the discourse level in addition to the reader -related variables, reading activities and sociocultural context. The second section provides the theoretical underpinning of the current research under two main headings: the reading debate and theories related to readers and texts. Finally, the third and the last section is a review of related literature to the topic of text complexity.

2.2 Conceptual Analysis

2.2.1 Definition of Text Complexity

According to Lapp, Moss and Grant (2015), text complexity refers to the level of challenge of a text based on the following considerations: its quantitative features, its qualitative features and considerations of task and reader. Similarly, text complexity is defined by the Common Core State Standards in the United States (NGA & CCSSO, 2010, Appendix A, Glossary of Key Terms, p. 43), as "the inherent difficulty of reading and comprehending text combined with considerations of the reader and task variables". In principle, both definitions recognize the role of tasks and readers in determining text complexity in addition to that of texts although there is little explanation on how readers and tasks can affect complexity when compared to the explanation offered to texts (Valencia et al. 2014).

Text complexity has always been linked to reading outcomes (comprehension and reading fluency). Valencia et al. (2014) argue that the reason behind studying text complexity is to understand its influence on comprehension and comprehension is not solely linked to texts but is rather a function of the interaction between the reader, the text and the task factors. Therefore, the exploration of the factors that affect comprehensibility of texts or text complexity is grounded, in this research, on reading comprehension theories in general and more specifically the interactive view of reading by Rumelhart (1985). The theoretical framework in the current research highlights how text factors interact with the reader and the task factors within a socio-cultural context and how this interaction is central to reading comprehension. Presumably, the complexity of a particular text is affected by characteristics of the reader, the text dimensions and

the reading task within a sociocultural context. Figure 2.1 illustrates the variables that affect the complexity of a particular text.

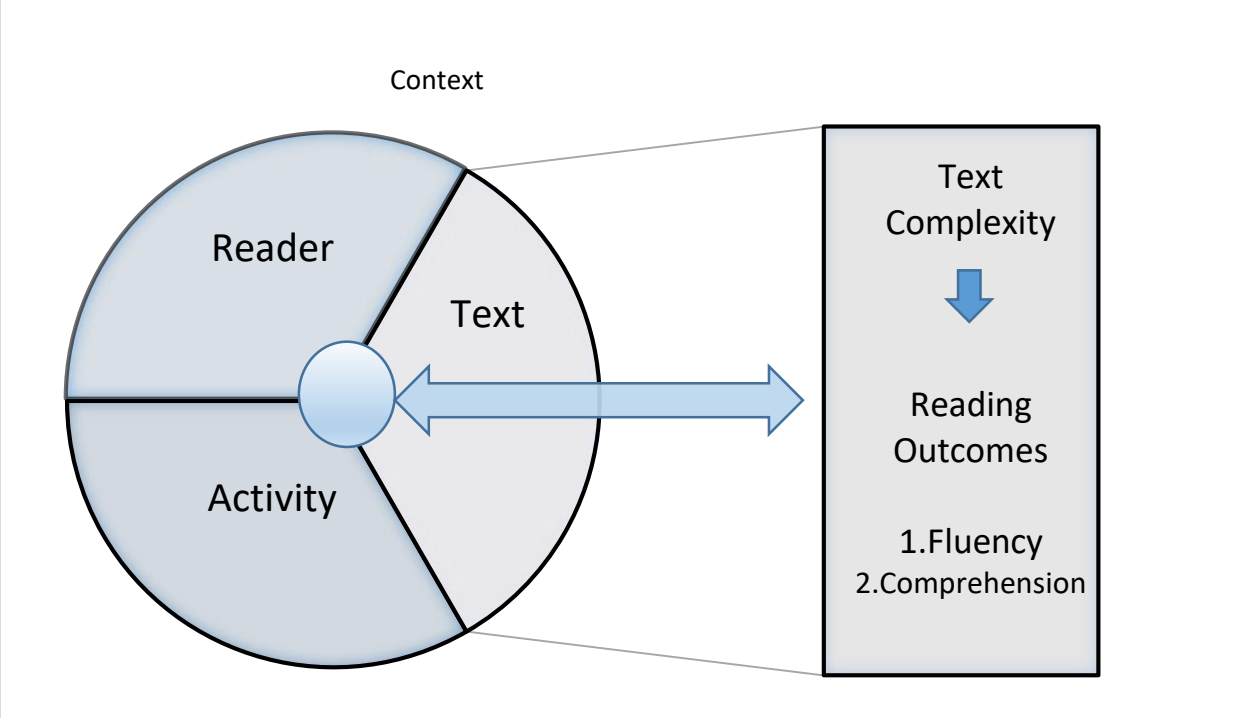

Figure 2.1: Factors influencing text complexity based on reading theories discussed in the current research

The reader element in the figure refers to the factors that the reader brings to the reading comprehension process, such as background knowledge, reading ability, motivation and interest. The text element refers to the factors inherent in the text such as its linguistic aspects and illustrations. The activity or the task element refers to the reader's purpose from reading such as reading for pleasure or reading to learn. The elements within this framework are interrelated and dynamic. Activity – related factors will be discussed very briefly in this research since it is held constant and the same task was given to all participants which was to read and retell.

The interplay between text dimensions, reader's characteristics and the reading task facilitates or hinders reading comprehension. Therefore, when a text which is judged to be complex compared to other texts is read by a reader who is facile with some aspects of it, it will be viewed as easy. In comparison, a text which is judged to be easy in respect to other texts will be viewed as difficult when read by someone who is not facile with its aspects. Moreover, depending on these interactions between readers and texts, some features of texts may weigh more heavily with particular readers than with others (Valencia et al. 2014).

The terms *text complexity* and *text difficulty* have been used in different contexts throughout this research. The distinction between text complexity and difficulty was first presented by Mesmer et al. (2012), and was later accepted by educators. According to their conceptualization, when features or characteristics of texts, such as sentence length and words frequency, are discussed without reference to readers and tasks, the term text complexity is used. Thus, text complexity is determined in relation to other texts and when used, it implies independent predictor variables that can be analyzed, researched and manipulated (Mesmer et al. 2012). Therefore, the term *complexity* is used to describe lexical, syntactic, and discourse-level features of text (Bunch, Walqui & Pearson 2014).

In contrast, text difficulty refers to how difficult or easy a text is for a particular reader (Mesmer et al. 2012). Bunch et al. (2014) contend that text difficulty may be defined as "challenges to comprehension performance experienced by specific readers engaging with specific texts under specific conditions" (P. 536). Reader- text match procedures represented in the use of informal reading inventories is an example of text difficulty research in which efforts are geared towards establishing criteria for interaction between readers and texts. Mesmer et al. (2012), however, argue that it is more important to study text complexity because it is text

complexity that will increase our understanding of the interactions among the text characteristics, reader and task. In addition, understanding text complexity allows us to go beyond the question of aligning particular text characteristics with reading curricula (Mesmer et al. 2012).

2.2.2 Text Complexity- A Historical Perspective

In the past, text complexity and text readability were used interchangeably by practitioners and educational professionals despite their distinct features (Hiebert 2009). While Readability formulas usually look only at vocabulary, sentence structure and cohesion which can be measured quantitatively, text complexity includes other factors such as organization and general structure of the text that can only be assessed through qualitative means (Shanahan, Fisher & Frey 2012). In essence, the early attempts to analyze text complexity were exclusively qualitative in which a rich description of text features that may facilitate or hinder the comprehensibility of texts was provided (Pearson & Hiebert 2014). Later, in the early twentieth century, the use of quantitative methods represented in readability formulas started to dominate the field of texts analysis (Pearson & Hiebert 2014).

Research on text readability has been in the field since the 1920s when Thorndike (1921) published his book *The Teacher's Word Book* listing 10,000 words based on their frequency (Thorndike 1921). One interesting finding about that list is that the first 100 words made up approximately 50% of written material while the first 300 words accounted for about 65% of all written material (Dubay 2007a as cited in Briggs 2014). By publishing his book, Thorndike led the research line in readability studies. He was the first scholar to suggest means of measuring difficult words through mathematical formula (DuBay 2007). Following Thorndike's track, the first readability studies focused on vocabulary aspects, such as difficulty and diversity with

Thorndike's list of words as a reference for measuring these aspects (Janan 2011). One of these studies was entitled 'Vocabulary burden of textbooks' and was conducted by Lively and Pressey in 1923. Lively and Pressey argued that a measure to reduce the vocabulary burden of English textbooks can offer a support to readers. They tested the vocabulary load in 15 textbooks by altering the number of words taken from Thorndike's list of 10,000 words (DuBay 2007) and found that the median index number was the best indicator of the vocabulary burden of these reading materials. Their study has, in essence, demonstrated that a statistical approach is effective in predicting text complexity (DuBay 2007).

Between the years 1920s to 1980, readability research was at its formative years (Klare 1988 as cited in Dubay 2007). Difficulty of any text was assessed through the linguistics in the text itself including semantic and syntactic factors. The focus during these years was towards definitions and development of readability formulae. After that period, there was a drop in the number of studies on readability due to the criticisms it had received. These criticisms were centered around the developmental criteria for readability formulae and their grade level scores (Janan 2011).

During that previous period, it was believed that the complexity of any text lied in the text itself and in its linguistic features. Thus, the complexity of text was judged to be within the positivist paradigm without any considerations of the reader. By analyzing texts using readability formulae, it was believed that a researcher or a practitioner would have a whole idea about the complexity in that text. This idea has been criticized by Anderson et al. (1985) who contend that readability formulas need to be supplemented also by qualitative means of text analysis.

Between the years 1980 and 1995, however, readability research increased vastly with a consideration of reader's factors (Janan 2013). Adding reader's factors to readability studies

moved readability research from the positivist paradigm to the interpretive paradigm. Before that period, it was believed that a text is complex because of some factors that exist within that text such as words frequency and sentence length. When readers' factors such as motivation, prior knowledge and interest were believed to affect the reading comprehension of texts beside the texts factors, it was essential to attend to these factors as well. The fundamental procedure includes assembling expert teachers to judge and examine the complexity of texts and to assign levels to texts using their experience with students and texts. Following this procedure, the emphasis was placed on the reader with the justification that attending to reader factors such as background knowledge and interest could compensate for the complexity in texts (Pearson & Hiebert 2014).

In period following 1995 till date, text complexity research has witnessed two milestones. The first milestone is connected to recent definitions of reading comprehension that recognized the influence of the tasks and the sociocultural context in addition to that of the reader and the text. For example, the definition of the RAND Reading Study Group in (2002) has shed light on the idea that comprehension is not an inherent property of the text but is rather a function of the interplay between the text, the reader and the task factors within a specific context (Valencia et al. 2014). Following that conceptualization of reading comprehension, the task factors were considered in the analysis of text complexity in addition to that of the text and the reader within a specific context.

The second milestone was the emergence of computer research and research related to ease of reading from the computer screen (Janan 2013). Although readability research decreased significantly at that period, there was an increase, however, in readability related to science discipline as a result of ease of reading research. It should be noted, however, that all previous

work on readability was conducted in the data annotated for native speakers. Research on readability analysis for L2 has started to emerge only recently and is still in its early stages due to the lack of significantly -sized- well- labelled data annotated for L2 learners (Xia, Kochmar & Briscoe 2019).

2.2.3 Reading Comprehension

In a report in the United States by the RAND Reading Study Group (2002), a definition of reading comprehension was presented as a result of three decades of reading research. Reading comprehension was defined as "the process of simultaneously extracting and constructing meaning through interaction and involvement with the written text" (RAND 2002, p. xiii). According to this definition, comprehension entails three elements: the reader, the text and the activity. It is argued that these three elements are dynamically interrelated and they vary from pre-reading to reading to post reading (RAND 2002). The definition acknowledges the role of the text as well as that of the reader and holds that reader variables as well as text variables are essential in reading comprehension and should be taken into consideration when matching texts to readers (Bunch et al. 2014). Valencia et al. (2014) present a scenario to further clarify this conceptualization of reading comprehension. They explain that a reader's extensive knowledge of planets, for example, may make a text about the solar system less difficult than it would be for a less knowledgeable reader. In addition, the teacher's choice of instructional strategies can facilitate learning from a text that was initially deemed difficult.

Wixson (2017) has cautioned, however, that the biggest challenge continues to be "the lack of a common understanding of reading comprehension as the product of a multidimensional interactive process" (p. 82). He contends that this multidimensional understanding of reading

comprehension underscores the wide use of assessment tools in addressing all the complexities of reading comprehension and in serving all the purposes for which they are designed (Wixson 2017). This multidimensionality of reading comprehension is observed clearly in the variance among reading comprehension assessment results. For instance, Keenan and Meenan (2014) conducted three widely used standardized tests of reading comprehension to 995 students aged from 8 to 18. Correlations among the three measures ranged from .45 to .68 which means that the three assessments were tapping different aspects of reading comprehension. The consistency of diagnosis was, however, greater for young learners when the comprehension deficits are attributed to poor decoding skills (Keenan & Meenan 2014).

The sole use of readability measures in describing texts treats comprehension as an inherent property of the text (Wixson 2017). However, the interactive view of reading implies that text complexity can not be determined without an understanding of the reader- text – task interactions within a given context. Valencia et al. (2014) argue that it is futile to try to understand the complexity of texts by using a readability measure only and without any considerations of readers and tasks. In principle, understanding these interactions helps teachers plan instruction that builds on students' strengths because it is that understanding that provides us with insight about why and how comprehension varies (Wixson 2017).

2.2.4 Reading Comprehension and Text Complexity

In a review of 26 empirical research papers that investigate the relationship between text complexity and reading fluency and comprehension, Amendum, Conradi and Hiebert (2017) demonstrate a negative relationship between text complexity and reading comprehension in 50% of the studies reviewed, which means that as text complexity increases, reading comprehension

decreases. Across the studies reviewed, text complexity was conceptualized in relation to a variety of aspects including cohesion, decodability, word frequency, and vocabulary, among others. The results of this review, though mixed, have never indicated an increase in reading comprehension as a result of increasing text difficulty. In one of the studies reviewed (Amendum, Conradi & Liebfreund 2016), results indicate a negative relationship between text difficulty and reading comprehension even when students read these texts with less accuracy.

In fact, an adequate level of reading comprehension is a tricky idea and reaching a consensus in defining it operationally is a far-off target. This is due to the varying adopted types of assessment and the threshold an analyst defines as an adequate level of reading comprehension (Chen 2016). One widely- used criteria for levelling texts is Betts leveling system (1946). According to Betts, there are three levels of text complexity; independent level, instructional level and frustration level. Students read at their independent level when they can read within a zone of 99% word-reading accuracy and 90% comprehension. They read at an instructional level when accuracy rates between 95% and 98% and comprehension rates between 75% and 89%. When the text is read with below 90% accuracy and below 50% comprehension, it is said that students are in their frustration level. To establish all of these levels, Betts recommended that students read the assigned text silently before being asked to read it aloud (Betts 1946 as cited in Cunningham 2013).

There have been mixed views regarding Betts's levels of text complexity which were either supported or otherwise questioned by scholars (Allington, McCuiston & Billen 2015). For example, Treptoe et al. (2007) argue that students reading texts at a zone of 95% accuracy or higher are more on task and tend to demonstrate greater comprehension of the material they read compared to their comprehension when oral reading accuracy is below the 95% level. There are

also other studies that proposed different rates for the different levels (e.g. Powell 1970). Allington et al. (2015) noted that many of the arguments against Bett's Levels are related to the use of oral reading fluency, which places additional performance demands on readers compared to silent reading, as a measure of the complexity in texts

However, Betts's levels are widely accepted despite the critiques against them (Allington et al. 2015). One of the assessments inspired by Bett's levels is the Lexile framework which is defined as 'a psychometric system for matching readers with texts of appropriate difficulty'(Koons et al. 2017, p.1). The criteria have also largely become acceptable as a procedure for identifying the complexity of texts that might be used for reading instruction (Allington et al. 2015) and therefore they have been adopted by the researcher in this study.

Recently, Strong, Amendum and Smith (2018) have proposed a four- step process for selecting texts for groups of readers. These steps are 1. Designing reading tasks based on students' grade level and students' needs; 2. Selecting texts using a quantitative measure such as Lexile; 3. Comparing the complexity score from Lexile with another readability measure such as Coh- Metrics; 4. Analyzing the texts' dimensions qualitatively using a rubric to decide if the text might need additional scaffolding. By using these quantitative as well as qualitative measures, texts can be scaled according to complexity into the following types or combinations of texts (Fisher, Frey & Lapp 2016). Table (2.1) presents these types.

Text Type	Definition	Comments
Challenging Texts	Texts that are considerably beyond the student's reading ability.	They should come with explanations and definitions so that students are stretched by exposure to difficult content.
Texts at the Zone of Proximal Development	Texts that are slightly above the difficulty level that students can handle.	They are the "just- right" type of texts.
Easy Texts	Texts that are easy to students to comprehend.	They help students to restore their self efficacy.
Texts with varying-difficulty-levels	Texts that come with varying difficulty levels and different genres but which are mostly in the student's zone of proximal development	Learners benefit from exposure to the different types of texts with the varying difficulty levels.
Texts for developing particular skills	Texts that are designed with the student's complex profile of reading components in mind.	These texts attempt to rectify particular reading deficits or to develop particular reading skills.

Table (2.1): Types of texts according to complexity (Fisher et al. 2016)

The classification of these texts into the above types in Table (2.1) highlights how text complexity may influence the assessment as well as the teaching purposes. It also highlights the amount of scaffolding required depending on the types of texts. For example, texts at the zone of proximal development are a good example of the texts that educators may employ for testing reading comprehension level because they are the texts the learners should be able to handle. To restore learners' confidence and instill the love of reading in them, teachers may employ easy texts. Challenging texts should not be used without definitions and explanations in order to provide the proper scaffolding. If an educator notices a reading problem while teaching reading such as decoding, a text targeting this particular skill is to be assigned .

2.2.5 Reading Fluency

Definitions of oral reading fluency usually suggest that readers read quickly and accurately and with attention paid to proper phrasing and expression as well as comprehension (National Institute of Child Health and Human Development [NICHD] 2000; Rasinski & Padak, 2005). Based on this definition, reading Fluency has three essential elements (Hudson, Lane & Pullen 2005): accurate reading of connected text, at a conversational rate and with appropriate prosody. According to Hudson et al. (2005), accurate reading of a text or reading accuracy refers to the ability to decode or recognize words correctly. Reading rate refers to both automatic reading and recognition of words in addition to speed in reading a text. Prosodic reading encompasses features such as variations in pitch, stress patterns, and duration which aid in reading any text expressively (Hudson et al. 2005).

Fluency has always been connected to reading comprehension. More than 70 years of reading research indicates that young learners are more likely to learn to read and to comprehend content when they attain a high level of accuracy (Allington et al. 2015; Guaresi et al. 2018). The use of fluency tests in assessing reading is based on the bottom -up view of reading. According to this view, good readers are those who are able to decode rapidly and automatically while poor readers are those who have not yet developed this fluency skill and thus they rely on other non-textual strategies such as using context or words prediction. As such, testing students' fluency level gives an overall view of the complexity of the text by relating it to student performance (reading rate and reading accuracy). While a low fluency score (lower reading rate and lower accuracy) implies a more complex text, a high fluency score (higher rate and higher accuracy) indicates an easier text.

Automaticity Theory is often used to understand the benefits of reading fluency. When readers automatically read words, cognition is directed towards higher level processes such as comprehension (Young, Mohr & Rasinski 2015). Research has actually confirmed this association between reading fluency and reading comprehension (NICHD 2000; Stanovich 1986). In fact, reading fluency is essential and a necessary condition for comprehension, but it is considered insufficient (Young et al. 2015).

2.2.6 Reading Fluency and Text Complexity

As far as text complexity is concerned, Amendum et al. (2017) report that on average, young or less skilled readers have less accuracy, rate and prosody when text complexity is increased. The researchers have, however, acknowledged that these relations might be correlated to specific text manipulations and considered it as an area for future investigation (Amendum et al. 2017). The type of text also matters in reading fluency. The speed of reading, prosody and the percentage of word recognition differ in favor of narrative texts compared to informative texts (Saenz & Fuchs 2002; Uysal & Bilge 2018). In both types of texts, however, reading speed and prosody can significantly predict reading comprehension (Uysal & Bilge 2018).

The relationship between a student's reading rate (the number of words read correctly in one minute) and his/ her reading comprehension varies by the texts' grade level. With students reading texts at their grade level, as rate increases, comprehension increases and then it is held steady. In contrast, students' comprehension decreases as their rates increase when reading texts that are well above their grade level (Amendum et al. 2016). It is, therefore, recommended that materials for fluency training of beginning reading contain linguistic elements that are at or below the reader's competence. It is also recommended that, in order to develop fluency, a

substantial amount of practice is performed over an extended period of time. This practice consists of repeated readings whether independent or teacher- assisted (RAND 2000).

Actually, many developing readers make many decoding errors while reading or they read correctly but exert such an effort that they exhaust their cognitive resources in a way that hinders comprehension. Alternatively, readers may decode words accurately and effortlessly but without appropriate meaningful expression that facilitates comprehension. In all of these cases, the result is poor comprehension, lack of enthusiasm and sense of failure on the part of the reader (Hudson et al. 2005).

2.2.7 Factors Influencing Text Complexity

2.2.7.1 Text Factors

Texts and texts features have a significant effect on text complexity and thus on comprehension. According to RAND (2002), texts can be deemed easy or difficult depending on factors inherent in the text itself, on the reader, on the interplay between the reader's factors and the text's factors and on the type of activities in which the reader is engaged.

Texts introduced to young learners in their first years of schooling serve a different purpose than texts introduced in any later years. Young learners should read texts that are meant to teach them the reading skill. This entails the use of simple sentence patterns, high frequency words and decodable words. It also suggests the use of pictures to support comprehension as is evident in early learning to read books (Fitzgerald et al. 2015).

Texts designed for young learners have undergone rapid changes throughout the past 50 years. Hiebert (2015) relates the changes in beginning reading texts to the changes in

demographics and literacy experiences that the young learner might have. Hiebert examines the changes in texts from 1960 to 2010 and finds that the following three types of beginning reading texts have emerged during these 50 years; texts with high frequency words, texts with phonetically regular words, and meaningful and engaging texts. Hiebert's study actually sheds light on the significance of considering the demographics and the early literacy experiences in the design of texts. In essence, her study has its implications on the design of texts for the EFL learner and it highlights the need for studying the targeted readers before any design or matching of texts.

In a study by Fitzgerald et al. (2015), 350 books that are used for young learners were digitized and examined. The researchers use the quantitative analysis in addition to teachers' judgment and students' responses in a maze task. From an initial list of twenty -two text characteristics, they list nine text characteristics that are deemed essential when designing texts for young learners because of their role in text complexity. These characteristics are; decoding demand, number of syllables in a word, age of acquisition, word abstractness and word rareness, inter-sentential complexity, phrase diversity, text density and non-compressibility. The nine characteristics were aggregated under four main constellations:

- Word structure demand, which encompasses the number of syllables in words and decoding challenge;
- Word meaning demand, which includes age of words acquisition, word abstractness and word rareness;
- Sentence complexity; and

- Discourse level characteristics, which include phrases diversity, text density and information compressibility (Fitzgerald et al. 2015). Fitzgerald et al. especially highlight the role of inter-sentential variables such as redundancy, patterning and repetition in predicting text complexity.

These characteristics actually interact while reading. In the selection and authoring of early grade texts, structural complexity and word frequency are often considered because of the opaqueness of the English orthography (Mesmer et al. 2012). When there is lack of regularity in more complex words, frequency compensates that lack of regularity, thus, making the learning of these words easier. In estimating text complexity, frequency could be, however, quite imprecise because it does not address such issues as image-able words which are relatively rare (Mesmer et al. 2012). In fact, accumulating evidence (e.g. Hiebert et al. 2019) points to the significance of semantic features such as words concreteness, morphology and word meaning. Unfortunately, current texts for beginning readers do not integrate these word level variables. Authors produce stand alone texts that aim to develop discrete skills under the labels of sight word readers, decodables and leveled texts without trying to integrate the different semantic features (Mesmer et al. 2012).

In the following section, a discussion of the variables that exist within texts and which contribute to complexity of texts is tackled. Some of these variables can be measured quantitatively using readability formulas while there are also other variables that can only be measured by attentive humans. Hence, a discussion of the quantitative aspects of texts at the word level, the sentence level and the text level in addition to the types of readability formulas will be included. Next, the qualitative aspects of texts will be explained.

2.2.7.2 Quantitative Dimensions of Texts

Quantitative dimensions of texts refer to those aspects of texts that are difficult to measure by a human reader (CCSS 2010). When measuring text complexity quantitatively, each new text is characterized in terms of a number of measurable text features such as average sentence length and average frequency of words. Subsequently, that evidence is used to locate the text on an indexed text complexity continuum. The resulting text complexity scores are called readability scores and they are interpreted as the level of reading comprehension required to comprehend a text (Sheehan 2017). Readability scores are, thus, based on some measurable features of texts that are transformed into a readability formula in order to give an estimate of text complexity.

The history of analyzing text complexity started in the 1920s with the creation of readability formulas which were first based on semantic and syntactic complexity (Fisher, Frey & Lapp 2012) and were later enhanced to include factors resulting from advancement in cognitive research (Benjamin 2012). This long history began in 1923 with Lively and Pressey and has continued to date with more than 200 readability formulas. Recent enhancements of these formulas are based on the view of reading as a skill that enables the reader to connect features in the text with stored representations in his or her mind (Crossley et al. 2008). In the case of L2 learners, research on readability analysis is still in its early stages because of the lack of well- labelled data annotated with quantitative levels from the perspectives of L2 learners (Xia 2019).

Text Complexity as measured by readability formulas is often determined by semantic and syntactic complexity (Pearson & Hiebert 2010). Semantic complexity is usually associated

with vocabulary and most often addresses issues such as the average word length which is measured by the number of letters and syllables. It is also determined by the number of easy or hard, familiar or unfamiliar words which is measured by whether words in the text are included in popular words lists such as The Dale-Chall list. On the other hand, syntactic complexity is most often associated with sentence difficulty variables and it addresses variables such as average sentence length as measured by the number of letters or syllables, number of sentences per passage, number of simple and complex sentences and the number of polysyllabic words in each sentence. In order to reach a more comprehensive view of text readability, however, attention should be paid to the combination of texts characteristics in terms of its morphology, syntax and semantics (Chen et al. 2018).

In the following sections, aspects of texts at the word level, the sentence level and the discourse level and their relations to overall text complexity are highlighted.

2.2.7.2.1 Word-Level Analysis

In readability assessment, word level aspects of text have always been used to predict text complexity level (e.g. Dale & Chall 1948; Kincaid et al. 1975; Lexile 2007). The average word length as determined by the number of letters and syllables is one -word level aspect that contributes to text complexity. Text complexity is also determined by the number of easy or hard and familiar or unfamiliar words. In fact, familiarity of words depends, to an extent, on their frequency of occurrences in the language (Fisher et al. 2012). When other features of texts are held constant, the more frequent the word, the faster and earlier it is learned than other words (Mesmer et al. 2012). However, when word frequency is used to assess text complexity, it is essential to consider the frequency measures, the frequency list and the method used to aggregate

the information at the text level (Chen & Meurers 2018).

The main difference across the texts of different levels lies in the treatment of vocabulary to fit different readers (Hiebert 2018). In texts for challenged readers, for example, main ideas are repeated using the same words which are usually essential for future reading. In comparison, children at young ages should not read books with many unfamiliar words because they are still in the process of consolidating basic reading skills (Milone & Biemiller 2014). Books designed for independent reading likely provide some unfamiliar words (2% to 6 %) as a challenge so that readers get a chance for guessing meaning. However, if there are too many unfamiliar words, readers tend to get "bogged down" and to stop trying to understand the text (Milone & Biemiller 2014). Hiebert et al. (2019) argue that to ensure that students are extending their vocabularies efficiently and strategically, word selection should be based on data on familiar and unfamiliar words and their role in texts at particular grades.

Lexical complexity plays even a more significant role in text complexity than syntactic complexity (Arya, Hiebert & Pearson 2011; Hashemin & Mahmoudi 2016). When texts are designed to represent systematic differences in lexical and syntactic complexity, lexical complexity significantly influences text comprehension while syntactic complexity has a less effect (Arya, Hiebert & Pearson 2011). As an implication of this finding, it is recommended to pre-teach vocabulary and structures to facilitate text comprehension although the teaching of vocabulary benefits learners more (Hashemin & Mahmoudi 2016).

In the case of English learners, lexical complexity is also considered a very significant factor in reading comprehension performance (Hiebert 2005; Sidek & Rahim 2015; Vajjala & Meurers 2012). In fact, research has shown that English language learners, when receiving equivalent

instruction, perform comparably to fluent English speakers on word level tasks but they do not often perform equally on comprehension (Lesaux & Geva 2006) likely because of the differences in oral language and English vocabulary (Kelly 2018). Therefore, providing extra scaffolding in vocabulary is critical in building opportunities for English learners to comprehend texts.

In a study by Nouri & Zerhouni (2018) that investigates the effect of lexical difficulty as characterized by words frequency on reading comprehension, a reading comprehension test was administered to 80 undergraduate EFL students. The test comprised two similar texts (same topic and same text length). One text is modified by replacing 18% of its words by lower frequency synonyms. The t-test results show a significant decrease in comprehension ($p<.001$) in the modified text. This finding actually highlights the significant role of lexical frequency in determining texts difficulty. The researchers recommend the use of words frequency as a significant lexical measure in estimating the difficulty of texts.

The number of words readers need to recognize in order to reach adequate comprehension is an area that needs further investigation (Chen 2016). Based on Betts's (1946) complexity levels, reading educators consider a ratio of 1:10 as the maximum number of unknown to known words for readers to make meaning of text (Rasinski 1999). To begin reading ordinary texts, ESL learners should know the first 2000 words (Nation 1990 as cited in Nation 2016). In the case of authentic texts, however, ESL learners must know the first 3000 high frequency words (Nation & Waring 1997). Actually, texts should feature a sufficient number of high frequency words and these words should be encountered repeatedly in a way that supports acquisition (Nation 2015). Repetition of words supports the use of a very essential principle in language learning which holds that words are best remembered when encountered in meaningful contexts at least seven times over spaced intervals (Thornbury 2002).

After learning the first 3000 high frequency words, Nation (1990) argues that there is little sense in teaching or focusing on other vocabulary with less frequency. Instead, priority is given to helping learners develop strategies to comprehend less frequency words of the language. These strategies include the strategies of 1. guessing meaning from context 2. using mnemonics and word parts to remember words and, 3. using vocabulary cards with the foreign language – first language word pairs (Nation 1990 as cited in Nation 2016). Learning these strategies, in fact, pushes the learners to continue learning words and to increase their vocabulary size without totally relying on the teacher.

Careful selection of words for instruction and for assessment purposes is especially important in the case of English language learners (Hiebert et al. 2019). In texts with controlled vocabulary, as text complexity increases, the support provided from the repetition of high frequency words or familiar words decreases (Cunningham et al. 2005). Additionally, evidence suggests that emphasizing concrete words is supportive for English learners in that it facilitates connecting known words to the English phonological and orthographic forms (Hiebert et al. 2019).

Letter- sound regularity or word structure complexity is another important variable that may also affect text complexity. It is highlighted in books with decodable texts where significant care is paid to words rimes and bigrams (Fitzergrald et al. 2015). Actually, there is deep research base suggesting the criticality of phonological development and word recognition skills in the early learning to read phase (e.g. NRP 2000; Falth, Gustafson & Svensson 2017). Limited phonological knowledge does not only affect reading fluency but is also the main reason behind most of the spelling errors that EFL learners have (Alenazi 2018).

Because of the opaqueness of the English language, however, some spellings are more regular than others. This, in fact, has an implication on the authoring of early grade texts where words can be selected along a regularity continuum. The sequence of these texts follows a typical order which has been dominant in phonics instruction and which always starts with consonants and short vowels and then progresses to blends, digraphs and long vowels (Mesmer et al. 2012). This phonetic control actually fosters students' decoding and enables them to construct probable pronunciations of any words they encounter while reading (Cunningham et al. 2005).

The morphological complexity is another word- level aspect of text complexity. In a morphophonemic language like English, spelling of words is influenced by the morphemes or the meaning units at the expense of phoneme -grapheme correspondences. For example, the word health is spelled in a way that conveys the link to its morphological family (the root word is heal) (Hiebert et al. 2019). The speed of comprehending a word meaning is influenced by the frequency of the root words, derivations and inflected endings (Carlisle & Stone 2005).

In general, morphological complexity is correlated with text complexity measures. A very recent research (Zhao et al. 2019) indicates that morpheme manipulation at the oral level facilitates decoding, thus, promoting reading automaticity and ultimately facilitating reading comprehension. Nonetheless, morphological complexity becomes the function of the speaker's proficiency and the specific language under investigation. Advanced English learners, for example, reach a threshold when morphological diversity becomes constant (Brezina & Pallotti 2019). This is due to the simple inflectional system in the English language so that at a certain stage, native and non-native speakers of the language reach the same morphological ability.

2.2.7.2.2 Sentence Level Analysis (Syntactic Complexity)

In literature, there is no consensus on the definition of syntactic complexity and its measures (Jagaiah 2017). Nonetheless, a study of past literature on syntactic complexity shows that complexity at the syntactic level can be established in relation to the following four variables (Jagaiah 2016 as cited in Jagaiah 2017).

Sentence pattern. This aspect of lexical complexity reflects the sentence type (simple, compound, complex), the word order, the word classes (nouns, verbs, adjectives, etc.) and the phrases types.

Sentence length. Longer sentences are syntactically more complex than shorter sentences.

Sentence connector. It refers to the linking between ideas and clauses in the text.

Sentence sophistication. It refers to examples of phrases such as noun phrases, adverb phrases and embedded clauses in a sentence.

Frantz, Star and Bailey (2015) argue that syntactic complexity is an essential aspect of a text and should be regarded as a distinct component of a text complexity model (Frantz, Starr & Bailey 2015). Traditional readability measures such as Flesch-Kincaid (1948) and Dale-Chall (1948) employ only one indirect measure of syntactic complexity which is sentence length. One major drawback of this approach is that it does not account for other syntactic complexity measures which, according to research, can impact comprehension significantly (Graesser, Person & Hu 2002). Furthermore, increase in sentence length can happen by including prepositional phrases or simple sentences (Frantz et al. 2015). In fact, the use of sentence length as a proxy for syntactic complexity has been the subject for considerable criticism (Mesmer et al

2012) and some researchers (e.g. Mesmer et al. 2015) call for the use of T- unit length as a more precise measure. A T- unit as Cunningham et al. (2005) defines it is an independent clause with all subordinate clauses attached to it.

There are mixed views regarding the significance of syntactic complexity in determining the overall complexity of texts. In a study by Arya, Hierbert and Pearson (2011) that aims to examine the effects of syntactic complexity on third graders' comprehension of science texts, 16 expository texts were designed to represent different syntactic and lexical complexity levels. After reading each text, students were asked to respond to some comprehension questions without access to that text. Results indicate that students' comprehension was not influenced by the syntactic complexity of the text. In comparison, it was largely affected by the lexical complexity. The authors justify these results by stating that syntactically simple versions of the texts required readers to engage in much more inference making in contrast to syntactically complex versions which require readers to hold embedded constructions in short term memory (Arya et al. 2011).

In another study, however, Eslami (2014) investigates the influence of syntactic complexity and simplicity on text readability. By syntactically modifying a set of reading comprehension texts, three different versions (reduced, original and expanded) of the same text are produced. Students are also divided into three different proficiency levels of high, mid and low. Each student takes three different versions of the same text. The results indicate that syntactically complex texts can significantly affect low and mid proficiency level students' comprehension but they do not have that effect on high proficiency students (Eslami 2014).

2.2.7.2.3 Discourse Level Analysis

One of the measures used to examine text cohesion, an important discourse level text characteristic, is Coh- Metrics. Coh- Metrics indexes of cohesion can significantly distinguish high cohesion texts from low cohesion texts (McNamara, Louwerse, McCarthy & Graesser 2010). Coh-Metrics may also be used to examine the differences in cohesion between different types of texts. In a study by Polio and Yoon (2018), it was used as a tool to distinguish between argumentative essays and narrative essays. The findings of that study confirmed previous research that argumentative essays show higher levels of cohesion than narratives do (Polio & Yoon 2010).

Text selection can support English language learners acquisition of written English syntax. Predictable texts, for example, is constructed in a way that the text provides extra cues to readers even if their word recognition and decoding abilities are not sufficient (Cuningham et al. 2005). The predictability in these texts comes from the match between illustrations and print, the familiarity of language patterns and story episodes as well as rhyme and repeated phrases (Hoffman et al., 2002 as cited in Cunningham et al. 2005). According to Mesmer et al. (2012), having English learners read “predictable books” with repetitive syntactic structures and concrete pictures has the potential to improve their sentence comprehension ability.

2.2.7.3 Quantitative Measures of Texts (Readability Tools)

The quantitative dimensions of texts at the word level, the sentence level and the discourse level are used to examine the complexity of these texts through the use of readability tools. Benjamin (2012) reviews the developments in readability tools and divided these tools into three types and methods: (1) traditional methods, (2) methods inspired by cognitive research and

(3) methods based on the use of statistical language modelling tools. The following sections introduce each method in some details.

2.2.7.3.1 Traditional methods:

Traditional methods include formulas that examine text complexity using traditional variables such as sentence length and the percentage of familiar words. For example, the length of the word suggests the effort exerted by the reader in decoding (Fisher et al. 2012). In this sense, single syllable words are easier to read than multisyllabic words. On the other hand, vocabulary is considered by many as the most important factor in language comprehension. To comprehend a specific text, knowledge of most words in that text is essential (NRP 2000).

Vocabulary coverage is usually examined using two approaches. A researcher may investigate learners' vocabulary size and relate the results to adequate reading comprehension. Alternatively, a researcher may investigate the coverage of a set of frequency- based words list from corpora of reading texts (Fisher et al. 2012). Examples of readability formulas that follow traditional methods are the Spache Formula (1969), the New Dale–Chall readability Formulas (Chall and Dale 1995), the Lexile framework (Smith et al. 1989) and the Advantage-TASA Open Standard for Readability (ATOS) formula (School Renaissance Inst., Inc. 2000). The Spache Formula and the Lexile Framework are described in some detail in the following sections.

The Spache formula (1953) was specifically designed for primary level. It considers sentence length and the number of unfamiliar words to assign a grade level for texts. Spache (1969) argues that this formula correlates well (.86) with publishers' grading levels. Compared

to other formulas, this readability formula is designed for texts that fall at or under the third grade. As is the case with most readability formulas, Spache assigns a grade level by comparing words in the text to a list of words, in this case, Spache list of 769 words. According to this formula, words are considered difficult if they are not included in the Spache list.

One of the disadvantages for using the Spache formula is its small word frequency list which may or may not be updated and, hence, the legibility of that list is questioned. Another disadvantage is that this method judges even a nonsense text as readable as long as its words are short, frequent and organized in short sentences (George 2012). In the Omani context, there is no adopted reference list to guide in the readability analysis (Al-Mahrooqi, Al-Maamari & Denman 2016) which means that a word – frequency based analysis is difficult to achieve.

In comparison to the Spache formula, Lexile formula (Smith et al. 1989) is an example of a traditional method of measuring readability that is based on scales reflecting both text readability and student's reading ability. Lexile uses a continuous metric rather than the grade level evident in other methods of measuring readability (Melone & Biemiller 2014). Lexiles ranges from 200 for beginning readers to 1700 for advanced readers. Texts that are below 200L represents materials for beginning readers. Previously, these texts receive the code of BR (Beginning Reader) because it was believed that texts for beginning readers were difficult to assess and, thus, they were left neglected (Meta-Metrics 2017). In October 2017, however, Meta-metrics developed Lexile to allow for greater differentiation at the beginner reader level (Meta-Metrics 2017).

When matching students to texts, also known as targeting, the Lexile framework identifies a range for each student that is 50 points below his Lexile score to 100 above it (Meta-

Metrics 2017). A reader's Lexile score is also obtained by administering a reading comprehension test to the student. A Lexile measure can then be reported for the reader. Educators can use the text score and the reader score to select appropriate texts for the reader.

In general, the Lexile framework takes into account semantic (mean frequency of words) as well as syntactic complexity (mean sentence length). It is based on a complex formula which is performed on entire texts (Rebekah 2012) and results in Lexile Text measure. As far as texts for beginning reading are concerned, researchers spent several years analyzing over 200 text characteristics that may influence reading comprehension of young learners (Fitzgerlad et al. 2015). By conducting that research, it was concluded that there were nine variables that more accurately and reliably influenced text complexity. These nine variables are categorized into four indicators in the Lexile Analyzer for beginning readers (Meta-Metrics 2017). These indicators are: structure indicator, semantic indicator, syntactic indicator and decoding indicator. Therefore, when a text is identified as a kindergarten to grade 2 (K- 2) text, the Lexile Analyzer will assign a level of challenge for the four indicators. The levels are arranged from very low, low, medium, high and very high demand (Meta-Metrics 2017).

One of the criticisms against the use of Lexile is the way in which the semantic component is established. Semantic measures come from the average frequency log of words in a text. In English, the distribution of words is extremely skewed. Approximately, 1000 words account for 67% of words in a text. On the other hand, 60% of English words are used once in every million words. This skewedness in the distribution of words limits the predictive validity of Lexiles (Hiebert 2011). However, Hiebert and Pearson (2010) argue that Lexile performs better than other indices in distinguishing between the texts levels and, thus, it could be used as

an initial stage towards determining the appropriate texts for young readers beside other qualitative methods.

In the case of second language and foreign language learning, the predictive power of traditional features of readability formulas is more than that of a native language. In an experiment, (Xia 2019) compared the predictive power of the different types of readability features on the native data and L2 data in the Cambridge exams and found that the traditional features of readability were more predictive of L2 data. The traditional readability features also correlate better with the readability of L2 data. As a result, it was concluded that the lexical and the discourse features in the traditional readability formulas play an important role for L2 compared to native language (Xia 2019).

2.2.7.3.2 Methods inspired by advances in cognitive theory

Psycholinguists view reading as a multidimensional skill operating at different levels: words, sentences and discourse (Koda 2005). It is also a skill that enables the reader to make links between the linguistic features in the text and the stored representations in the mind. These representations may include the reader's world knowledge, the past reading experiences and, in the case of ESL and EFL readers, L1 reading experiences (see Rumelhart 1985).

Many theories actually have emerged into the field to explain how humans store and retrieve information which pushes researchers to hypothesize that text complexity is more related to coherence and the relationship between the elements in the text rather than the sum of individual surface features (McNamara & Kintsch 1996). When a text moves smoothly from one point to another without placing any knowledge demands on the reader, then this text is a highly

cohesive text. In other words, inferences are clear and the reader does not need to fill information gaps using his own knowledge.

Coherence, however, is a psychological construct referring to how propositions are connected in the reader's mind and, thus, it can not be measured by computational software. In comparison, cohesion refers to surface indicators of how sentences are connected with one another in a text and is measurable using a computer software. One software that reports cohesion is Coh- Metrix which reports over 50 indices related to text complexity (Graesser et al. 2004).

Coh-Metrics- TEA (Text Easability Assessor; Graesser et al., 2014), is considered an advancement to the traditional readability measures because it provides a detailed account on language and text cohesion. It integrates semantic lexicons, pattern classifiers, part of speech and other aspects developed in the field of computational linguistics. When compared to traditional readability measures, Coh-Metrics yields more accurate prediction of text complexity (Crossley, Greenfield & McNamara 2008; Strong, Amendum & Smith 2018). This efficiency in detecting complexity of texts might be attributed to the different dimensions analyzed in Coh- Metrix including narrativity, syntactic simplicity, word concreteness, deep cohesion and referential cohesion (Graesser et al., 2014).

Reed and Kershaw –Herrera (2016) experimentally manipulate the cohesion and readability of science and social studies texts with the support of Coh-Metrics and Lexile Analyzer. Then they randomly assign students to read the manipulated texts before getting them to answer factual and inferential questions based on these texts. The results of their study indicate that reading comprehension is influenced by text readability and cohesion. Challenging

readability and low cohesion passages are the most difficult to comprehend compared to the low readability and low cohesion texts.

2.2.7.3.3 Statistical language modeling

Statistical Language Modelling (SLM) is based on the probability of a word being linked to a particular grade level. For example, computational analysis of a large text corpus reveals that the word red is likely to appear in texts for the primary level. To build this model, the program is given a corpus of texts for a particular grade. This allows the program to build a language model for that grade. Therefore, if any new text is fed into the program, it will assign it to a grade level according to words that are more likely associated with that grade (George 2012). As such, SLM methods analyze texts that have already been considered appropriate for particular grade levels. Thus, they cannot stand alone as tools for measuring text complexity. Rather, these tools could be used to quickly and automatically categorize numerous texts after they have already been labelled appropriate for a particular level (George 2012).

Although readability formulas are useful in giving an indication of the complexity of texts, they fail to recognize several features of words and written discourse (Hiebert 2013). For example, short sentences and high frequency words that result in lower text complexity do not ultimately support reading comprehension. Rare words in informational texts also result in potentially higher levels of complexity compared to narrative text complexity and, thus, the use of readability formulas results in overestimating the complexity of informational texts in comparison to narrative texts (Hiebert 2011). Moreover, traditional readability formulas are not based on theories of reading but rather on statistical correlations. Therefore, their credibility is just based on their predictive power (Crossley, Greenfield & McNamara 2008). In the case of

non- academic texts, traditional readability formulas perform poorly in modelling adults' judgment of text complexity (Crossley et al. 2017). In addition, some readability measures are validated based on their predictive value of text level and not on aspects of reading comprehension (Crossley et al. 2017).

Hiebert (2011) argues that whether our judgment of text difficulty is based on a single measure or multiple measures of readability, it is always essential to augment quantitative data with information gained from qualitative analyses. Since researchers developing these readability measures are largely computer scientists rather than reading researchers, there is a pressing need for researchers from both fields to join efforts in order to develop more universal methods for determining complexity (Benjamin 2012).

Despite the above mentioned criticisms, using readability formulas suffice the purpose of the present study for the following reasons. First, the intention of the researcher behind the use of formulas is to understand how different variables including quantitative ones such as sentence length, words length and words frequency affect text complexity in an EFL setting. Second, the use of readability formulas acts only as an initial stage towards describing text complexity beside other qualitative measures which will be discussed in detail in the following sections.

2.2.7.4 Qualitative Dimensions of Texts

In order to overcome some of the shortcomings associated with the use of quantitative measures of text complexity, the use of qualitative measures is strongly recommended (Hiebert 2012; Pearson & Hiebert 2014). In fact, early analyses of text complexity were exclusively

qualitative focusing on rich data of text features that likely impact text comprehensibility (Pearson & Hiebert 2014). Qualitative measures of text complexity can serve two major purposes; highlighting the confusing parts of particular texts and matching texts to readers. Highlighting confusing or tricky parts is more significant if our intent is to "up the ante in text complexity" (Pearson & Hiebert 2014). Matching texts to students, in contrast, is important in the case of independent reading. This matching requires two estimates:1. an estimate of a grade level at which a student can read and, 2. an estimate of the complexity of books (Pearson & Hiebert 2014).

In essence, qualitative dimensions of text complexity refer to aspects of texts that are best measured by "an attentive human reader" such as meaning levels, the structure of text, language conventionality and knowledge demands (CCSS 2010). The term given to research on these dimensions is considerate texts or friendly texts (Fisher et al. 2012). The challenge facing educators nowadays is that all reading texts tend not to be considerate. Even if they are created to be considerate, there are always violations to the rule (Armbruster & Anderson 1984).

To qualitatively analyze text complexity, there are many different approaches. Pearson and Hiebert (2014) identify three approaches which they claim are distinguished and have been used extensively. The first approach is text leveling system (TL) in which description is provided on who is able to read a particular book. The second approach is called rubric plus exemplars (R E) in which a set of text complexity traits are placed on a continuum. This is the approach promoted by the common core state standards and its aim is to involve teachers in selecting text features that promote or impede comprehension. The third approach is text maps (TM). Text maps focus on the conceptual structure of the reading text in a form of a diagram. Narrative text maps provide a summary of the story, a plot, setting, characters, major events and author's craft.

In contrast, informational text maps have a summary, main ideas and supporting details, text features and author's craft (Strong et al. 2018).

Following is a description of the dimensions of texts that should be considered in the qualitative analysis.

2.2.7.4.1 Levels of Meaning or Purpose

Levels of meaning refers to the density of the ideas within the text and whether the purpose of the text is explicitly stated (Fisher & Frey 2013). Levels of meaning or the relationships between the ideas and the literary analysis is somehow ambiguous but it is generally used to represent the degree of inference required to construct meaning (Pearson & Hiebert 2014). In the case of informational texts, single purpose texts are easier to read than texts that require examining theoretical information. In comparison, literary texts with several levels of meaning pose challenges for learners compared to the single level of meaning text (Fisher & Frey 2012).

2.2.7.4.2 Text Structure

Text structure focuses on genre, text features, organization and narration (Fisher & Frey 2013). In the case of genre, for example, readers must know if what they are reading is fiction or non-fiction. In part, genre affects text difficulty because of learners' experiences (Fisher & Frey 2012). Organization should also be assessed to determine the complexity of texts. Generally, texts organized chronically are easier to follow than texts with other organizational patterns (Fisher & Frey 2012). Typically, informational and narrative texts follow some organizational conventions. For narratives, texts usually follow the plot structure while, for informational texts,

they follow the problem solution, the cause and effect in addition to others. Another consideration that comes under text structure is narration. For example, if the point of view shifts in a text, it is then likely that it is going to be more difficult for the reader (Fisher & Frey 2012).

Text features or the look of the text should also receive great consideration. According to Kelley and Clausen- Grace (2016), there are three major categories of text features: print, graphic and organizational features. The print feature refers to the actual text such as the bold font or the headings. The graphic feature, in contrast, is image- based and refers to features such as a diagram or a map. Organizational features refer to text features such as the table of contents or the index that organize the structure of print and how it is presented (Kelley & Clausen- Grace 2016).

The font size, the use of illustrations, graphics and glossaries within the text can provide both support and challenges for readers depending on how they are used. For example, Risko and Walker-Dalhouse (2011) argue that teaching with a wide usage of text structures and images may deepen students' interest and engagement. Cappello (2017) argues, however, that simply adding images may not be beneficial and that images should be carefully selected for intentional reasons.

2.2.7.4.3 Knowledge Demands

Knowledge demands challenge the readers because of the great variability in readers' backgrounds and experiences (Fisher & Frey 2012). There are four types of knowledge demands; prior knowledge, background knowledge, cultural knowledge, and vocabulary knowledge (Fisher

& Frey 2013). Prior knowledge is the formal knowledge that must be used to understand the information provided in the text (Fisher & Frey 2012). In literal texts, this may refer to the story grammar which aids the students' understanding of the organization of literal texts. In comparison, background knowledge refers to the life experiences of the reader which are gained informally and varies from one student to another (Fisher & Frey 2012). Research shows that it is possible to teach students make active use of background knowledge so that they can make better inferences which can generalize to better reading comprehension across different texts (Elbro & Buch-Iversen 2013). Vocabulary knowledge is also another type of knowledge that a text requires and it is based on the words and phrases that serve as labels for ideas and concepts. In addition, cultural knowledge is also an important type of knowledge. In fact, texts with culturally bond references are considered the hardest to detect (Fisher & Frey 2012).

When it comes to qualitative analysis of texts, an examination of content and the type of knowledge it demands should be in order. In fact, differences between the text- author's experiences and those of the learners can contribute to the complexity of the text (Fisher & Frey 2012). Hervey (2013) argues that a text may have simple vocabulary and short simple sentences but is still complex because of the ideas expressed that require sophistication on the part of the reader.

2.2.7.4.4 Language Conventionality and Clarity

This dimension focuses on standard English and variations as well as register (Fisher & Frey 2013). For example, a narrative with the use of dialect and idioms makes it appear more complex than the story it tells. In informational texts, having complex sentences with dense

information and extensive academic vocabulary makes texts more difficult to read than others with less academic vocabulary and with less information. In literary texts, the use of figurative language such as metaphors and connotative language adds to the complexity of the text (Hervey 2013).

Despite the significance of the qualitative dimensions of text complexity, some concerns have been raised about their use. The first concern is related to the limited time available to teachers to adequately analyze these texts (Mesmer 2008). The second concern is the fact that qualitative measures actually reflect the expectations of teachers and these may vary from one teacher to another (Fisher et al. 2012). The third concern is related to the limited amount of research that could create qualitative text difficulty analysis systems needed for instruction, curriculum and assessment functions (Hiebert & Pearson 2014). The fourth concern is that qualitative measures of text complexity are too subjective to be used. Rating may differ from one rater to another. In order to reduce this variation in rating, it is advised that teachers engage in collaborative conversations and professional development courses (Fisher & Frey 2014).

In spite of the above mentioned concerns which were raised against the use of qualitative dimensions of texts, the researcher decided to use it as one of the research tools in this research for the following reasons. The first reason is that the qualitative analysis serves as only one tool beside other four tools that contribute to our understanding of text complexity. The second ed from having one rater for all the texts sample, the researcher opted to train twenty educational professionals and have them analyze the texts. In addition, the researcher engaged in collaborative conversations with the raters in which some texts were analyzed by making collective decisions before commencing with the individual analysis (see Fisher & Frey 2014).

2.2.7.2 Reader Factors

Reader factors are those aspects that are related to particular readers while reading texts. As Fisher et al. (2012) state, “Text complexity is based, in part, on the skills of the reader” (p. 3). For example, a reader’s motivation may vary from an area to another. Similarly, knowledge and experiences of readers as well as the complexity of the task assigned to them are very context dependent. Decisions on readers are better reached by teachers because of their knowledge of their students (Fisher et al. 2012).

Reader’s variables can lead to variance in performance as a function of the text characteristics and the task required (RAND 2002). For example, the sociocultural differences such as type of instruction and literacy practices can contribute vastly to this variance among readers. In addition, readers themselves have different linguistic (e.g. vocabulary knowledge, structure knowledge, oral language etc.) and non-linguistic abilities (e.g. attention, motivation, background knowledge etc.). Yet, these differences are not static and they can change due to the act of reading. For example, some students may come from homes that do not provide the basic literacy skills that other students may typically receive and, thus, they will be behind their peers in some skills such as vocabulary and background knowledge. In the process of reading, these skills, however, will be developed which, in turn, will contribute to the learner’s future success in reading (RAND 2002). The group also acknowledges that there are children who are “victims of inadequate instruction” (RAND 2002, p. 82) and who can develop as a result of reading.

In a study that examined the influence of student characteristics and the texts characteristics on reading comprehension outcomes in a sample of 181 native English –speaking adolescents (9- 14 years), Spencer et al. (2019) found that students’ skills and characteristics

predict their performance on measures of word reading, vocabulary and cohesive inference more than texts characteristics. The results of this study actually suggests that decoding, vocabulary and syntax manipulations do not substantially impact reading comprehension performance compared to individual differences which have a greater effect (Spencer et al. 2019).

An example to highlight the significance of studying learners is the use of label books with young learners of English. Generally, label books receive low quantitative complexity levels despite the fact that their decoding demand is often high. However, the syntax in these books is low because there are literally no structures. Word meaning demand is also low because label books have pictures of familiar items to learners. Children can say the word without the need to actually read it because the label is familiar to them. This low quantitative level, however, should not be the same for a young learner of English as a foreign language who will be struggling with the decoding of the long unfamiliar word.

Five important reader factors that may have a significant influence on texts are prior knowledge, interest level, motivation, reading ability and purpose for reading (RAND 2002). As far as second language and foreign language learners are concerned, Bunch, Walqui and Pearson (2014) have listed the reader factors that influence text complexity as the following; English language proficiency, reader's literacy in their home language, reader's background knowledge, reading strategies and reading engagement.

In fact, what distinguishes English language learners from their monolingual peers is that they need to read in a language they are in the process of learning (Bunch et al. 2014). The task of developing L2 reading materials is a challenging task in which learners should be provided with suitable developmental input and ample learning opportunities (Parrila, Cain & Compton

2017). Hence, research related to ESL or EFL reading comprehension should also consider factors that have special prominence for English learners. Following is a discussion of all these reader factors with considerations of the ESL and EFL readers' factors.

2.2.7.2.1 Prior Knowledge

Prior knowledge is considered the strongest reading comprehension predictor (Fiske et al. 2016; Gurlitt & Renkl 2010) and studies show that reading comprehension performance of students is significantly better when there is high prior knowledge (e.g. Mohamed & Saleh 2014). Prior knowledge is defined as "the whole of a person's actual knowledge, available before a certain learning task, structured in schemata, declarative and procedural, partly explicit and partly tacit, and dynamic in nature" (Dochy 1994 as cited in Li Wu & Wang 2007). There are three different sources of knowledge; linguistic knowledge, orthographic knowledge and general knowledge (about text structures and the world).

To comprehend a text, readers must activate prior knowledge or schema. Failure to draw on relevant existing schema or prior knowledge can cause particular inference problems which lead to poor reading comprehension (Elbro & Buch-Iversen 2013). In order to activate prior knowledge that is relevant to the reading task, research studies recommend using pre-reading activities such as story discussion, providing learners with background information and explaining lexical items (Galina & Natalia 2017).

In a study that aims to investigate which type of knowledge (the depth of vocabulary knowledge, syntactic knowledge or metacognitive knowledge) is more powerful in predicting

academic reading comprehension in an ESL setting, Nergis (2013) asserts that syntactic awareness is a significant predictor of reading comprehension. Depth of vocabulary knowledge, she contends, is not a strong predictor and metacognitive knowledge has much to contribute to reading comprehension.

Elbro and Buch-Iversen (2015) argue that activating the use of prior knowledge for inference making is a skill that can be taught to students even through a short program. They contend that learners can be trained to make better inferences and this ability can subsequently transfer to comprehending a wide range of texts (Elbro & Buch-Iversen 2015). Tarchi (2015), on the other hand, argues that prior knowledge is multidimensional and that we should activate the different types of prior knowledge before and during reading. When the different types of prior knowledge were activated, students developed significantly in reading comprehension, semantic inferences and metacognition (Tarchi 2015). When it comes to cultural knowledge, students' reading performance on culturally familiar topics is significantly better than their performance on culturally unfamiliar topics (Karimi & Jafneshan 2014).

Kennedy, Onsare and Alonya (2014) argue that prior knowledge has a significant effect on reading comprehension for ESL learners. They contend that since each learner has different prior knowledge, instruction should address all background knowledge- related areas such as language, content and form before starting with reading comprehension. Brevik, Olsen and Hellekjaer (2016) argue, however, that teaching learners how to use prior knowledge to make inferences about a text has a sustained and substantial effect on comprehension more than the teaching of all prior- related areas. This effect is attributed to the training of students on how to use their prior knowledge to fill gaps in their knowledge while reading (Brevik, Olsen & Hellekjaer 2016).

2.2.7.2.2 Interest Level

According to Thomas (2001), reading interest is an indication of how excited an individual is to engage in reading. Bray and Barron (2004) demonstrate that interest in the reading topic has an effect on comprehension performance in a standardized text. Durik, Holt and Magliano (2011) explain this positive effect between interest and reading comprehension performance by affirming that interest increases engagement with the texts and thus leads to better comprehension because of its facilitative role.

On the other hand, research on how text difficulty affects engagement is somehow conflicting. While some empirical research (Fulmer et al. 2015) indicates that reading interest-based texts is an incentive that maintains both engagement as well as deep processing even in the case of difficult texts, other research shows that higher levels of difficulty can be either beneficial or non-beneficial depending on the context and the individual. Soemer and Schiefele (2019), for example, contend that difficult texts increase the levels of voluntary and involuntary mind wandering (thinking of unrelated things to the task assigned) and that the effect is mediated by topic interest. In other words, difficult texts that interest learners are perceived to be less difficult and texts of less interest to the reader are perceived to be more difficult (Soemer & Schiefele 2019). As far as L2 reading pedagogy is considered, Lee (2009) stipulates that reading passages that are not interesting to L2 readers risk the reader's retention of details. Lee recommends that material developers consider topics of interest to the L2 reader in order to increase their motivation and to better retain information (Lee 2009).

2.2.7.2.3 Motivation

Motivation is defined as the behaviors, values and beliefs that individuals hold towards reading (Cambria & Guthrie 2010). Motivation can be intrinsic or extrinsic. In fact, some of the positive values and beliefs may lead to excitement while others may lead to determined hard work (McRare & Guthrie 2009). When incentives such as involvement and social recognition are attached to reading, a reader becomes motivated (Schiefele, Stutz & Schaffner 2016). Research shows (see Schaffner & Schiefele 2016) that involvement which is a component of intrinsic motivation contributes positively to students' reading development even at the early stages of learning to read.

2.2.7.2.4 Reading engagement

As a result of their review of research on reading engagement, Unrau and Quirk (2014) proposed a definition of reading motivation as "the internal processes that sustain reading activity". This perspective of reading motivation encompasses the "thoughts, beliefs, and self-perceptions" (Unrau and Quirk 2014) that provide the impetus for the reader to sustain the reading activity. Consistent with this perspective, Fredricks, Blumenfeld, and Paris (2004) argue that engagement is multidimensional and that it includes behavioral engagement (actively performing academic learning tasks), cognitive engagement (using effective strategies to develop deep learning), and emotional engagement (enjoying learning and expressing enthusiasm about it).

When readers are highly engaged, they tend to be both internally motivated and strategic. In contrast, less engaged readers show less use of strategies and less motivation (Guthrie &

Wigfield 2000). In this sense, engaging readers during reading instruction improves achievement and reading comprehension (Wigfield et al. 2008) which implies the significance of closely studying the instructional practices that improve reading engagement.

2.2.7.2.5 Reading Ability

Reading ability has been described in literature using several terms; proficient or non-proficient, successful or unsuccessful, skilled or unskilled, fluent or non-fluent and fast or slow (Pang 2008). In order to be able to read fluently and successfully, readers need basic decoding skills such as letter identification, word decoding and knowledge of syntax (Ehri 2014; NRP 2000; Reutzel & Cooter 2012). Research indicates that oral reading fluency is also an important indicator of reading skill for students in early elementary grades and it is strongly correlated (r around 0.7) with reading comprehension (Pey, Min & Wah 2014: Yildis et al. 2014). Successful readers also engage in strategic reading by drawing on cognitive and metacognitive resources to modify their reading behaviors to meet text difficulty and task demands (Bunch et al. 2014).

Metacognitive skills are also essential. Possessing metacognitive skills enables the learner to choose and apply cognitive strategies in a given reading task (Baker & Brown 1984). Hye et al. (2016) assert that foreign language metacognitive skills such as making inferences, summarization, fluency and memory predict foreign language academic English reading. In an action research that aims to identify reading comprehension problems of tenth graders in a school in Colombia, Sanchez (2017) found that explicit instruction of metacognitive strategies support making students more efficient readers. Sanchez employed a genre oriented approach which helped students become aware of the structure and patterns of texts they were reading so that they approached these texts with appropriate reading strategies (Sanchez 2017)

Reasoning skills in which readers connect a given text with background information are also considered essential for successful reading (Pang 2008). One other characteristic of a good reader is having self monitoring skills which facilitates the decision making throughout the stages of reading (Pang 2008). In the case of young learners, it was found that phonological ability or the ability to distinguish sounds in words is one of the early predictors of word reading accuracy (Oakhill & Cain 2012). In contrast, skills that aid in the construction of a coherent picture of meaning in a text are inference, comprehension monitoring and knowledge of story structure.

Research also shows that accomplished ELs draw on their bilingual resources of literacy skills and strategies that are not available to their monolingual counterparts (Riches & Genesee, 2006). An example of a cognitive reading strategy is lexical inferencing which helps learners guess meaning of unfamiliar words; a skill that significantly impacts leaners' comprehension of texts (Juliana 2018).

2.2.7.2.6 Purpose for Reading

Purpose for reading can vary from reader to reader. In general, there are two main purposes for reading. The first purpose is to acquire and use information and it includes purposes such as reading for a specific fact, reading to learn and reading to evaluate and assess the strengths and weaknesses of an argument. The second purpose is reading for gaining literary experience or reading for pleasure (Mullis, Martin & Sainsbury 2016).

In a study that aimed to explore how purposes of reading affected text comprehension, McCrudden, Magliano, and Schraw (2010) asked undergraduates to read a text about four remote countries. Before reading, treatment students were assigned to a country and were asked to

imagine that they were moving there. They were asked to consider the pros and cons of living in that country based on their reading. The study found that modifying students' purposes for reading had a significant effect on their text learning, as measured by depth of information recalled and the time spent reading.

2.2.7.2.7 English Language Proficiency

Research has shown that English language proficiency of ESL or EFL learners is an essential predictor of their reading comprehension (Karimi 2018). In the area of vocabulary knowledge, for example, there is a strong evidence indicating that a reader's level of vocabulary knowledge plays an impacting role in predicting reading comprehension performance in the target language (Sidek & Rahim 2015; Neugebauer, Kieffer & Howard 2015). Hashemin & Mahmoudi (2016) assert that although both syntactic awareness and vocabulary knowledge have significant effects on EFL learners' reading comprehension, vocabulary knowledge benefits learners more. They explain that EFL learners pay more attention to lexical cues than to syntactic ones (Hashemin & Mahmoudi 2016).

2.2.7.2.8 Readers' literacy in their home language

Koda (2007) points to the need for research that not only investigates the statistical relationship between reading in the learner′s first language (L1) and reading in the learner′s second language (L2), but also studies the interaction between reading in the two languages. While Brevik, Olsen & Hellekjaer (2016) recognize the complexity of the relationship between

L1 and L2 reading, they contend that L1 reading is the strongest predictor of L2 reading proficiency. Some reading skills gained from L1 can transfer to L2 reading. For example, it was found that Chinese readers who are strong in Chinese-specific morphological structures (derivation of roots and lexical compounds) are also strong in English- meaning inference and reading comprehension (Bae & Joshi 2017).

Chung, Chen and Jeva (2019) conduct a systematic review of some empirical research in order to investigate the cross- language transfer in bilingual reading settings. They argue that despite the substantial evidence supporting the transfer of phonological awareness, other constructs such as reading comprehension and orthographic processing are not yet understood. In fact, Chung et al.'s review provides evidence that transfer is a complex process involving multiple factors.

2.2.7.3 Sociocultural Context

To understand the influence of sociocultural context on learning, Rodscoe and Al Mahrooqi (2014) describe living in one city in Oman (Salalah). They stated "While Salalah, Dhofar's biggest city, is quite modern, one can still see camels straining their necks to browse on trees overhanging garden walls. To the local population this is normal, but to a foreign teacher coming to Oman from a Western country this might seem eccentric. Omani students, though, are amazed by a bizarre and unusual animal they have seen only in movies: the squirrel. In the same way, they find stories about a man with several wives normal but do not understand why American women don't kiss when they greet each other" (Roscoe & Al Mahrooqi 2014). This excerpt actually highlights the variability of cultural context within one demographic area in Oman. Embracing these cultural considerations while designing reading instruction is essential.

A text about an Omani boy growing up in a farm with camels sounds familiar to Omani young learners than a text that discusses a squirrel, an animal they may have never heard of.

In the case of young learners, when the focus should be on learning to read skills rather than reading to learn skills, studying cultural context before authoring of texts becomes even more essential. Therefore, scholars have called for a culturally responsive teaching in order to increase the efficiency of second language reading experience (Wang 2019). Within a culturally responsive teaching framework, students become the center of learning and their language, home and cultural backgrounds are valued (Fenner and Snyder 2017 as cited in Raubaugh 2019).

Successful reading comprehension outcomes can also vary according to contextual factors including economic resources, the school culture, ethnicity and class membership. The learning environment such as students' grouping, inclusion of technology and availability of instructional materials may largely affect the development of reading comprehension skills (RAND 2002). In the case of classroom, context can include the classroom conditions that set the stage for instruction, the nature of activities, the support provided by the teacher and peers and the educational tools (RAND 2002). As Valencia et al. (2014) indicate, scaffolding or how teachers support their students throughout the lesson matters, learning and collaboration among peers matter and teachers' goals matter. Put differently, all experiences and acts that facilitate or otherwise inhibit comprehension are to be taken into consideration. It is, therefore, vital to understand these contexts of the reading act as part of our understanding to facilitate the evaluation process and to address patterns of strengths and weaknesses (Wixson 2017).

In a study, Sparapani et al. (2018) argue that social skills play a role in successful reading comprehension and that students who exhibit stronger social skills in grade one are able to

successfully comprehend texts. This finding, in fact, highlights the role of preschool environment which lays an essential foundation for school success. Grade one students who possess stronger social skills benefitted from rich learning opportunities more than other students with less skills.

In another study that investigates the impact of a sociocultural technique (scaffolding) on reading comprehension, Iranian EFL adult learners benefit from peer and teacher scaffolding in developing their reading comprehension proficiency. The results of the study suggest that the low proficiency learners benefit more from scaffolding than their high proficiency peers (Dehqan &Samar 2014). The researchers justify the results by indicating that the scaffolded group has more exposure to aural language through discussions and peer work (Dehqan &Samar 2014).

In fact, it is argued that teachers need to be mindful of the kind and the amount of scaffolding or supports they design for students in each encounter. These supports should be planned in accordance with students' developmental stage (primary or intermediate) and instructional needs such as reading comprehension or reading fluency (Strong et al. 2018). Teachers are also advised to focus on the content rather than the obscurity of the words or the syntax (Pearson & Hiebert 2014). In other words, the use of explanations, analogies and examples might be more helpful in approaching complex texts than explaining rare words.

The amount of scaffolding may also vary depending on the purpose from reading a particular text (Fisher & Frey 2015). A text selected for close reading, for example, requires a high degree of scaffolding through the use of questioning, discussions and repeated readings and this, in turn, will stretch reading comprehension skills. Conversely, a text selected for independent reading should require less teacher scaffolding and should allow the learners to practice the comprehension skills they have been repeatedly taught and this, in turn, consolidates

their critical thinking skills outside the teacher's presence (Fisher & Frey 2015).

2.2.7.4 Activity Variables

Activity is an overarching concept which encompasses purposes, operations and consequences. It may vary according to different purposes which are either self generated or teacher imposed (RAND 2002). Valencia et al. (2014) argue for a conceptualization of task that recognizes its role in instructional conditions, curricular demands and assessment. They contend that tasks can make texts easier or more difficult for the reader. The RAND report (2002) has highlighted the role of the "activity" in that difficulty of a text for a particular reader depends largely on what the reader has to do with it.

In order to understand the role of tasks and activities within an interactive model of reading comprehension, we should reject any fixed views of tasks (Valencia et al. 2014). Ahmed, for example, is a sixth grader with reading difficulty. If Ahmed is given sixth grade text about smoking- a topic he is not interested in- to summarize, he will be struggling and may not be able achieve the grade level expectations. However, if the task is altered to working on a community project about the side effects of smoking, he might approximate or even exceed the sixth grade expectations.

2.2.7.5 Interplay between text and reader factors

In addition to considering the text characteristics, the reader characteristics, the activity the student engaged in and the socio- cultural context, it is equally important to consider the potential interplay between these factors especially in the case of early- grades texts. The interplay of text characteristics at different complexity levels may have conflicting impacts on

readers (Fitzgerald et al. 2015). In the example of Ahmed, a text for grade sixth with many content words about smoking might be difficult for grade six students. The words in the text might be also challenging for decoding which magnify the text complexity problem. In order to lessen the burden on readers, the author may consider ways to reduce the syntactic complexity by inserting simple sentences following the same syntactic pattern. Additionally, the author may think of ways to reduce the words meaning challenge by inserting parenthetical definitions of difficult words.

While text factors, task factors and reader factors interact within a context, none of these factors can be understood in isolation from the others. Actually, the interaction between these factors justifies why and how comprehension varies which, accordingly, helps teachers plan instruction that is based on students' needs (Valencia et al. 2014). Fortunately, a number of tools can examine the interaction of text factors with one another and with the other factors (e.g. reader, text) within a specific context. Valencia et al. (2014) illustrate this process through the example of a study with a fluency outcome examining the effects of cohesion and syntax within a repeated reading activity on EL readers as in the following equation:

[Text variable A (syntax) × Text variable B (cohesion)] × Reader variable (i.e., EL) × Activity variable (i.e., repeated oral reading)]

In other words, the study will address the following variables:

Text Syntax × Text Cohesion × English Learner (EL) × Repeated Oral Reading

Using this equation, the study will address how multivariate dependent reader variables and independent text variables co-vary and impact differing reader behaviors (Valencia et al. 2014).

Actually, all tools assessing text difficulty weighs reader characteristics and text characteristics and their interactions but in different combinations and degrees. It is argued, however, that none of these tools can cover text characteristics and reader's characteristics and their interactions in a satisfactory manner. It is even more challenging to distinguish between text characteristics that the reader has been exposed to and these he/she hasn't (Hiebert & fisher 2007). Understanding these interactions between text, task and reader within a context provides insight about the variability in comprehension and this, in turn, helps teachers plan instruction that builds on students' strengths and needs (Valencia et al. 2014).

2.3 Theoretical Framework

Despite the existence of theories that capture how readers may depend on skills differentially while reading, there is no theory that explains how the reader shifts among skills when facing increasingly difficult texts (Amendum et al. 2017). This might be attributed to the sheer complexity of reading which is affected by the texts' variables, the readers' characteristics in addition to the tasks and the contexts. At the meantime, the formulation of such a theory for text complexity is not possible because of the major gaps in theoretical work related to reading research, which provides "more evidence for associations rather than causations" (Mesmer et al. 2012, p. 236).

In undertaking this research, I join Alexander (2012) in his claim that one theoretical framework is not enough to capture the multidimensionality of reading. Hence, I ground my exploration of the factors that affect the complexity of texts on the interactive view of reading which recognizes the roles that both texts and readers play in the reading comprehension process.

Meanwhile, I also attend to other theories that tackle factors related to text complexity such as factors affecting readers and texts.

The factors affecting text complexity and how they are related to this paper's theoretical framework are depicted in Figure (2. 2).

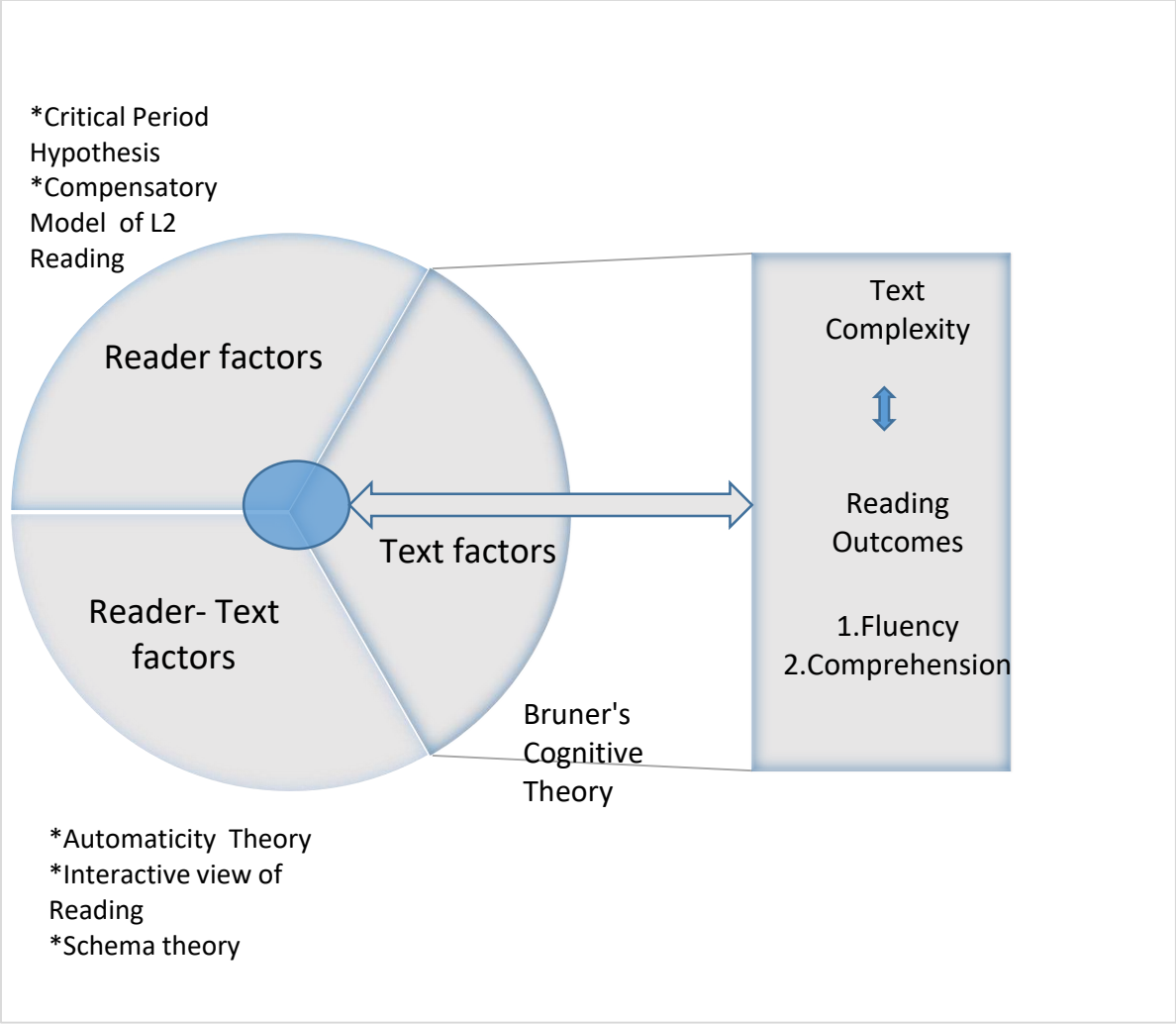

Figure (2.2): Theories related to the complexity of texts read by EFL young learners

The pie graphs in Figure (2.2) are based on the interactive view of reading which places equal weight on the reader, the text and on their interactions. As the figure shows, text

complexity is impacted by factors related to the text, to the reader and to their interactions. As text complexity is influenced by these factors, it may decrease or increase accordingly. This will, in turn, facilitate or otherwise inhibit reading outcomes namely reading fluency and reading comprehension. The two- directional arrow between text complexity and reading outcomes indicates the two- way relationship in which text complexity can influence and become influenced by reading outcomes.

Since the researcher in this paper believes in the multidimensionality of reading comprehension, this research is based on the interactive view of reading while also attending to some theoretical frameworks related to readers and texts as figure (2.2) indicates. For example, Bruner's cognitive theory calls for a systematic progression of complexity in texts and , hence, it is placed under the text dimension. Since this paper is concerned with young learners at their beginning stages of learning to read in a foreign language setting, critical period hypothesis and the Compensatory Model of L2 reading are covered under the reader's dimensions. Theories related to the reading process are discussed under the reader- text factors since they involve the reader and the text while reading the text. In order to approach the topic of text complexity, the theoretical framework is organized into the following two sections. The first section presents the theories related to reading under the heading "the reading debate". The second section presents the theories associated with readers and texts.

2.3.1 The Reading Debate

Two main reading theoretical models dominate literature at the current time. These are the bottom -up (or the skills-based) approach and the top down (or the whole language) approach (Nordin et al. 2013). The contribution that each approach has towards reading acquisition is the

subject of a reading debate, often referred to as the whole language versus the skills- based. In fact, the main difference between the two conflicting approaches lies in the emphasis each of them places on the strategies that skilled readers employ while processing texts (Robinson & McKenna 2008).

The whole- language or the top down approach views reading as a process of active meaning making. It claims that comprehension is a mental process in which stored information is retrieved from memory and connected to the reading text. This view, in principle, emphasizes the role of prediction in making sense of written texts (Smith 2004). In this way, meaning is brought to the text by the reader rather than retrieved from the text. Smith (2004) explains that knowledge and meaning are the deep structure processes while the visual properties of texts are only surface structure processes.

Supporters of Whole language approach such as Goodman, Watson and Burke (2005) argue that oral reading errors are produced by the same processes that underlie successful reading and, therefore, they should not be referred to as errors but rather miscues because, according to them, all readers make errors regardless to their reading proficiency. They contend that these miscues arise from the reader's attempts to construct meaning. In order to construct meaning, readers use all the three cueing systems; semantic, syntactic and grapho-phonic. Although the three systems work together in order to help the reader make sense of the text, they operate at differing levels of importance. Goodman et al. (1987) consider the semantic cues as the most important cues that are utilized by proficient readers followed by the syntactic cues. The grapho-phonic cues, in contrast, are only surface cues and they are utilized by readers only when the semantic and syntactic cues are unavailable (Goodman et al. 1987).

One of the implications of the whole language approach on reading comprehension assessment is the analysis of the miscues that learners produce while reading which is known as miscue analysis. Miscue analysis can describe the strategies that readers employ while reading in addition to describing their oral reading performance (Goodman 1996). Miscue analysis is different from other diagnostic reading instruments in that the results of the analysis may be both qualitative as well as quantitative (Goodman et al. 2005). Goodman (2015) argues that miscue analysis "provides a more complete view of the reading process than any brain scan provides when a reader presses a button in response to a flashed word or non-word" (Goodman 2015, p. 96).

In the case of English learners, patterns resulting from miscue analysis may give us insight into English learners′(ELs) reading processes and allow us to see the experiences these readers bring to text. For example, through the use of miscue analysis, Keh (2017) claims that English learners are able to construct meaning despite miscues even when they do not have full comprehension of words' meanings. Keh attributes the miscues these learners made to attention and personal experience (Keh 2017). Goodman (1973) contends, however, that the reading materials for the ESL learner in his/her beginning stages to read should consider vocabulary and grammar structures that the learner can already control in speaking.

The use of the three cueing systems while reading has been questioned by different scholars. First, the presumption that proficient readers use contextual cues as their main strategy in decoding is not advanced by research but is rather based on a passionately- held belief (Hempenstall 2017). In fact, many studies have highlighted the value of contextual cues including semantics cues (e.g. Hashemin & Mahmoudi 2016; Hiebert 2005; Milone & Biemiller

2014; Sidek & Rahim 2015; Vajjala & Meurers 2012) and syntactic cues (e.g. Eslami 2014) in gaining meaning from texts. Hempenstall (2017) argues, however, that the critical issue is the assertion that these context cues are beneficial in the identification of words instead of their role in the meaning- making process.

The second criticism is centered around the claim that the grapho-phonic system is used by the least proficient readers which underscores the fundamental role of phonics and runs counter to current research that highlight the role of phonics in learning to read (e.g. NICHHD, 2000; Rand Reading Study Group 2002; Rose Report 2006). Stanovich (2004) challenges this claim and contends that good readers rely on phonics but they actually expend less capacity to process visual information. Spear -Sweling (2007) argues that unskilled readers and beginners are the ones who rely heavily on context by guessing, for example, unknown words based on the first letter or the meaning of the surrounding sentences. Lauren and Esther (2009) assert that average and above average readers tend to use the visual and sound properties of the texts (phonics) more frequently than the below average readers.

The bottom-up or the skills -based approach, in contrast to the whole language approach, focuses on the breakdown of the whole into parts in order to comprehend. Hence, it is more associated with the learning of phonics, which demands the skills of how to match letters with sounds in a defined sequence (Pardede 2008). Chall (1983) highlights the significance of learning phonics by stating that children need to pay attention to letters while reading and learning phonics helps them to pay attention. She considers phonics as the first stage of learning to read and argues that children who fail to master the first stage will unlikely be able to master the following stages (Chall 1983). Recently, the teaching of systematic phonics has been

recommended for beginning reading instruction as a result of two influencing reading research projects; the National Reading Panel Report (2000) in the USA and the Rose Report (2006) in the UK (Robins 2010).

There are two theoretical frameworks that are closely related to the skills-based approach of reading. The first one is Ehri's Model of Reading Phases and the second is the theory of automaticity. In 1998, Ehri proposed a model of reading phases to describe the phases that learners pass in the learning of phonics till they reach automaticity in reading (Ehri 1998). LaBerge and Samuels' Theory of Automaticity (1974), in comparison, offers a conceptual framework that illustrates the sequential process of visual perception of letters to comprehension.

In Ehri's model, there are five phases in the learning of phonics: pre-alphabetic, partial-alphabetic, full alphabetic, consolidated alphabetic and automatic. Following is a description of each of these phases

1. Pre-alphabetic. This phase characterizes preschoolers and disabled readers with limited knowledge of the alphabetic principle and phonemic awareness. Children in this phase may read words that they encounter frequently in their environment such as the word "milk". However, when environmental cues such as logos and distinctive print are removed and the word is presented by itself, they can no longer read it. This is because they are not actually decoding but rather using visual cues such as the shape and length of the word to read. To push students from this phase to the next one, phonics and phonemic awareness instruction is needed.

2. Partial Alphabetic. This phase characterizes kindergartners, first graders, and older disabled readers with partial knowledge of the alphabetic system but not full knowledge,

particularly vowels. At this phase, children use their partial knowledge of letters and combine it with context cues to guess the identities of unfamiliar words. They often misread some words because they confuse them with others having similar letters (e.g. house for horse). Some children also tend to read words such as “saw” backward (was) because they have not acquired strong left to right orientation. To move students to the next phase, instruction in phonics especially vowels and graphemes involving more than one letter (e.g. sh, th) is essential. Learners should also practice the reading direction until it becomes automatic.

3. Full –alphabetic. This phase characterizes students in first grade and older students with knowledge of the major grapheme- phoneme units in English. Students use this knowledge to build a good reserve of sight vocabulary. Learners in this phase should practice reading a lot to move from slow effortful decoding to faster decoding. Compared to the previous phases, mastery of this phase is essential to move to the next phase (Ehri, 1998).

4. Consolidated alphabetic. This phase characterizes learners, usually in second grade and beyond with working knowledge of the major grapho- phonic relations. As full alphabetic learners retain more sight words in memory, they become familiar with letter patterns that recur in different words and these patterns become consolidated into larger units. Readers in this phase are able to read multisyllabic words by chunking in comparison to the full alphabetic phase learners who read using the grapheme- phoneme units.

5. Automatic Phase. It is also the phase of proficient word reading. Words that readers

encounter in this phase are usually from their sight vocabularies. When encountering an uncommon or a technical word, they can use a lot of strategies to identify it (Ehri 1998; 2005).

One theory that is related to the skills- based approach of reading is LaBerge and Samuels' Theory of Automaticity (1974) which offers a conceptual framework that illustrates the sequential process of visual perception of letters to comprehension. This framework is built on the premise that humans possess limited attentional resources and that attentional resources exploited for performing one task are not necessarily available for another. LaBerge and Samuels (1974) also noted that weak connections between the letters and the words they form, for example, need costly attentional resources whereas strong connections smooth the reading process (LaBerge & Samuels 1974). Logan (1997) listed four properties that define the criteria for distinguishing automatic processes from non- automatic processes. These four properties are; speed, autonomy, effortlessness and unconscious awareness. Logan claimed that these four properties are common in definitions of automaticity (Logan 1997).

Automaticity Theory is often associated with reading instruction and is especially used to highlight the benefits of reading fluency. Reading as a highly complex process requires many tasks to be performed at the same time. Therefore, for these tasks to be completed successfully, some tasks have to be automatized in a way that allows for more attentional resources to be available for other tasks that can not be automatized. In order for a reader to comprehend a complex text, being able to read that text fluently is an essential competency that lays the foundation for growth in reading. Reading fluency is, however, insufficient condition for comprehension and there are other skills and strategies that should be available to the reader in order to comprehend and these skills and strategies receive the reader's attention while reading

(Young, Mohr & Rasinski 2015).

As beginner readers progress in the reading skill, their ability in decoding words increases so that they can read words quickly and automatically. Hence, word recognition becomes automatic and effortless (LaBerge & Samuels 1974). With practice, beginners become more fluent readers and develop a reserve of more "sight words" or words that they can recognize instantly without conscious decoding efforts (Rasinski et al. 2011). As this corpus of sight words grow larger, fluency improves and, thus, comprehension is nurtured.

There are three components of reading fluency that, when working together, excel fluency and set the stage for text comprehension. The three components are: (1) accuracy in word decoding or competency in phonics, (2) automaticity in word recognition, and (3) appropriate use of oral expression (prosodic features), such as proper stress, pitch and suitable phrasing (National Institute of Child Health and Human Development 2000; Rasinski et al. 2011). Accuracy in word recognition refers to the ability of a learner to accurately decode the written words into their oral forms (Samuels 2007). Word recognition automaticity, in contrast, reflects the learner's ability to read words accurately and with minimal cognitive effort (Paige et al. 2014).

Based on the three components of reading fluency, automaticity is usually measured by a reader's rate of reading. Slower reading means that a reader needs to exert a greater amount of cognitive effort while a faster reading signals that a reader is able to recognize the words in the text with less effort (LaBerge & Samuels 1974). Accuracy in reading words in connected texts is also essential because poor word-reading accuracy could negatively influence reading

comprehension and fluency (Hudson et al. 2005). Words Correct Per Minute (WCPM) is one assessment that is used to estimate the reader's word reading accuracy and rate.

Despite its advantages, the skills -based approach views language as a code that the reader needs to identify and convert from graphemes into phonemes. In other words, meaning exists in the text and readers are regarded as passive recipients of it (Pardede 2008). Hence, this approach emphasizes the role of grapho-phonic system in comparison to the other two cueing systems. It proposes that proficient readers rely first on the visual and the sound properties of texts and later on semantic and syntactic cues (Glazzard 2017). Another criticism is based on the fact that the English language has an opaque orthography with complex letter- sound mapping which makes learning to read through phonics a challenging task (Spear -Sweling 2007).

The influence of the skills-based approach on textbooks is clear on the focus on exercises that focus on literal comprehension and the disregard for the reader's knowledge or experiences with the subject matter. It is also evident on the sole focus on the decoding dimension (Paradede 2008). Thus, the model has been criticized for its overreliance on the formal features and text-related factors of the language and for neglecting aspects within the reader. Text related factors include any graphic signs (visual stimuli) in the text and the role of the reader is to extract them in order to comprehend. Subsequently, the complexity of the reading text depends solely on text features such as the sentences' length and the number of syllables in words. The sole use of traditional readability formulas to analyze texts is an example of the adoption of this limited view of understanding text complexity which marginalizes the reader's factors in comprehending text and limits it to that of a decoder.

Based on the above arguments, it is evident that supporters of the whole-language value semantic and syntactic cues while skills-based proponents value grapho-phonic cues. It is evident also that whole language disregards the use of visual cues from the text such as phonics while skills- based approach disregards the reader and the experiences he/she may bring to the learning experience and limits their role to that of a decoder. The researcher in the current study values the contributions that both the text and the reader can make to the reading process and considers them as both vital in understanding the factors which influence reading comprehension and which, in turn, influence text complexity. Therefore, the interactive view of reading by Rumelhart (1985) is adopted since that view has been proposed to reconcile the two conflicting approaches of reading.

The interactive view by Rumelhart (1985), in contrast to the above two approaches, combines the text variables and the reader's variables and considers them as both important and that they interact to give the reader a hypothesis about the text. According to Rumelhart (1985), a reader should be able to use the sensory, semantic, syntactic and pragmatic information to comprehend. These sources actually interact in many complex ways while reading. A reader may begin with a set of expectations about what information is available in the text and which is based on his/her knowledge of the structures of the visual input on the page in addition to the context or situation. While reading, expectations that are consistent with this input are strengthened and inconsistent ones are weakened (Rumelhart 1985). Within this interactive frame of reading, comprehension is, in fact, a complex dynamic process (Wixson 2017).

This interactive nature of reading was later affirmed by the RAND study in 2002 (RAND 2002). The RAND model also centralizes comprehension as a product of interaction between a text and a reader. The model further considers the activity variables while also emphasizing the

role of sociocultural context. Reading comprehension is defined by the RAND model as "the process of simultaneously extracting and constructing meaning through interaction and involvement with written language" (p. xiii). In this definition, "extracting" highlights the role of the text (the grapho-phonic cues) in comprehension while "constructing" points to the fundamental role of the reader and that the text alone is not sufficient.

Another theoretical framework that considers the interactive process between the reader and the text is the Schema Theory. Schema theory, however, emphasizes the role of reader's background knowledge in reading comprehension. According to this theory, every language input is mapped against existing schema which should be compatible with that input. This results into two modes of information; bottom -up processing and top- down processing. Bottom up processing is called data driven and is evoked by the incoming data. Top- down processing, in contrast, makes general predictions and searches the input for information that fits into higher order schemata. Top- down processing is, thus, conceptually driven. The theory also states that text does not carry meaning in itself but it is rather the reader who constructs it from his/her own previously acquired knowledge (background knowledge). The text only provides directions for readers on how to construct meaning (Slavin 2005).

Schema theory asserts that learners in the process of comprehending a text or new situation bring to mind a schema linked to the ideas in the message (Slavin 2005). If a learner is to comprehend a text efficiently, he/she should be able to relate the textual material to his/her own knowledge (An 2013). Then the schema is internalized in the brain and this guides and controls the use of information by the learner. Without this schema, learners can not make enough sense of the text. Actually, comprehension is a matter of activating this schema and making a new schema that provides a coherent explanation of the new ideas. Schema actually

works in one of three ways to facilitate comprehension (Vaca, Vaca & Gove 2000). First, it allows readers to organize information effectively. Second, it helps learners to make inferences. Third, it allows readers to elaborate and to engage in cognitive activity which involves speculation, judgment and evaluation (Vaca et al. 2000). In fact, proficient readers are continuously engaged in the process of making inferences, evaluating the soundness of texts and connecting inferences to their prior knowledge (Rholetter 2018). Thus, variations of meanings are expected.

One major contribution that schema theory has offered to language learning is the call for a reader-oriented position which stresses the interactions between the readers and the written texts. This position implies building reading texts that strike a balance between background knowledge and the knowledge which the text is built on (Carrel & Eisterhold 1983). Schema theory highlights the role that reader's background knowledge plays in reading comprehension which has been stressed in current research. In the case of cultural background, for example, research indicates that texts with unfamiliar cultures are more difficult for readers to comprehend than culturally familiar texts (Yang 2017).

Research on schema highlights the challenges that the English language learner encounters due to culture specific schemata, non activation of schemata and the overuse of the learner's background knowledge (Stot 2001). In a setting like Oman where English is taught as a foreign language, adopting commercially available readers and books for young learners of English means presenting culturally unfamiliar schemata. When presented with a text with unfamiliar culture, the reader will look for a schema in order to make sense of that text. If those schemata are not available, efforts in comprehending the text will fail. This, in fact, underlines the difficulties faced by the Omani young reader at the beginning stages of reading who are

challenged by the task of mapping the unfamiliar incoming input into existing schema in addition to the challenges of learning the essential learning to read skills.

Adopting an interactive view of reading that recognizes the reader and the text as essential factors in the reading process has several implications on reading comprehension assessment. Nowadays, reading comprehension is frequently assessed by getting students to answer multiple choice, open ended or a recall of a text content they have read. Research supporting the interactive view of reading contends that performance on these measures is influenced by a number of factors such as background knowledge, topic familiarity, text organization, nature of task, reader's motivation and reader's interest (Wixson 2017). Therefore, an important implication for the interactive view of reading that runs counter to the use of these assessments is that the interpretations of student performance on any of these assessments should be linked to the specific demands of that particular reading task rather than a fixed reading comprehension ability generalized to other reading comprehension situations (Wixson 2017). Wixson (2017) attributes the limitation of reading assessments to the complexities of reading and that no single assessment can serve all the purposes. Thus, multiple measures are needed for multiple assessment purposes.

While the contributions that each of the above theories have made to our understanding of the reading comprehension process are recognized within the context of the current paper, this study is largely based on the interactive theory by Rumelhart (1985) which capitalizes on the reader factors and the text factors in reading comprehension. Reading according to this interactive nature is the "the process of extracting and constructing meaning through interaction and involvement with written language" (RAND 2002, p. xiii). In the process of extracting

meaning from texts, or the skills- based view, the reader's transition through the various phases of mastering the alphabetic principle (Ehri's Model of Reading Phases) and how they develop fluency in reading (automaticity theory) are appreciated. Meanwhile, in the process of constructing meaning, or the whole language view, the reader's experiences and their use of the three cueing systems are also appreciated. In other words, the current study is based on the interactive view of reading while also attending to other theories that tackle readers and texts.

2.3.2 Theories Associated with Readers and Texts

2.3.2.1 Bruner's Cognitive Theory

Bruner believes that children (of any age) are able to understand complex information. Therefore, any child at any stage of development can learn any subject matter provided that it is taught effectively in an intellectually appropriate way (Slavin 2005). In fact, Bruner stressed two elements of organization in the learning experiences. First, the sequence in the material should be appropriate. Second, the material is to be taught repeatedly within the syllabus. Attending to these two elements means that the rate of introducing material should also be considered (Mesmer et al. 2012).

To that end, Bruner introduced the concept of spiral curriculum where information is structured in a way so that complex ideas are taught at a simplified level first and revisited later at more complex levels. Therefore, subjects would be taught at levels of gradually increasing difficulty. Teaching children in this way should ideally, according to Bruner, guide them to solving problems by themselves (Slavin 2005).

To further illustrate Bruner's idea of spiral curriculum, Purdy (2019) contends that this type of curriculum building mirrors that of a concrete building. The spiral curriculum is based on

the idea that education should be introduced in a cumulative manner with new information and skill adding complexity to already learned knowledge. It begins with a foundation by teaching the basic knowledge and skills of a subject and then continuing to build on that foundation with new levels of knowledge and skill. Similarly, once a foundation is laid in concrete building, new blocks are added until the structure is completed and the goal is achieved.

A central question to Bruner's theory is the extent to which we can raise task and text complexity. One indirect effect of increased text demands could be the reduction in levels of automaticity and fluency of word recognition especially in the early grades. Another potential effect may be a decrease in students' motivation and engagement (Hiebert & Mesmer 2013). In addition, deciding on how much text complexity is enough depends on several factors including the particularities of each context (Williamson, Fitzgerald & Stenner 2013). In the context of Oman, for example, exposure to the foreign language is almost limited to the seven weekly lessons which suggests that a careful planning of the complexity staircase should be in order.

In dicipline, the use of commercial books originating from different publishers challenges the use of the spiral curriculum in two ways. First, there is a mismatch between the level of knowledge and skills in the English textbooks, English for Me (EFM) and those in the commercial books since they originate from different sources. Second, there is no continuity in the teaching of these knowledge and skills.

2.3.2.2 Critical Period Hypothesis

Critical Period Hypothesis (CPH), which is based on biology and neurophysiology research, holds two different meanings in language learning (Pallier 2007). The first meaning is empirically tested and states that humans are more efficient at learning a language in their first

years of life. The second meaning of the hypothesis posits that the decline in neural plasticity explains the increasing difficulties in language learning. According to this meaning, it is assumed that the decline in plasticity may be due to maturational factors or, otherwise, an outcome of language acquisition (Pallier 2007). In 1976, CPH was expanded by Lenneberge and was given a new meaning. Lenneberge (1976) argues that there is a critical period for language learning which starts in infancy and continues till puberty and that any language skills learned outside this period will develop neither normally nor sufficiently. Hence, this critical period is when language learning is at its peak and the young English learner can even reach a proficiency level of native speakers (Slavin 2005).

The relevance of the CPH in the context of text complexity can similarly be explained in two different dimensions. First, learning to read in a foreign language is best achieved in first years of life (NRP 2000) and, thus, strategies for comprehending complex texts are best established in the first years of schooling. The decline of neural plasticity in the second dimension also highlights the significance of starting early in raising the staircase of texts complexity. However, Pearson and Hiebert (2013) contend that assigning a grade level for a set of books for the lower grades through the use of readability formulas may lead to confusion and unreasonable expectations to the young readers. This confusion is attributed to the proportion of intellectual growth which is greater and more comparable in the first grades than the proportion of intellectual growth in the later grades. In addition, being able to read many conversationally written stories by a proficient second grader, for example, does not mean comprehending the imbedded ideas between the lines (Pearson & Hiebert 2013). In other words, the visual features of the text as well as the reader's factors are to be considered while assigning text complexity levels to books.

Despite its wide application in language acquisition, CPH remains less clear about the scope of the language areas it covers (Vanhove 2013). Most researchers agree that Critical Period (CP) is relevant to the acquisition of grammar and pronunciation (Birdsong 2006) whereas there are other researchers who try to define other distinguishable CPs for the other language areas such as phonetics and morphology (Long MH 2007 as cited in Vanhove 2013). Schouten (2015) has also challenged CPH claiming that, in addition to age, sociological, physiological and psychological factors must be taken into consideration when trying to determine the factors that facilitate or hinder language acquisition. DeKeyser (2000) contends that children are better than adults in some areas of language learning that can be learned implicitly without being able to figure out its explicit structure such as pronunciation.

2.3.2.3 Compensatory Model of L2 reading

Bernhardt (2005) proposes that L1 literacy is responsible for about 20% of the variance in L2 reading comprehension and that L2 language knowledge is responsible for 30% of the variance in L2 reading comprehension. For the remaining 50%, these refer to the unexplained variance or the dimensions that are still under investigation but not yet explained such as comprehension strategies and engagement. According to this model, readers tend to compensate for inadequacies in one area by drawing more heavily on others. This may present both benefits as well as challenges. For example, to compensate for low levels of L2 proficiency, readers can draw more heavily on background knowledge. Nevertheless, the overuse of background knowledge may lead to deficiencies in reading comprehension (Bernhardt 2005).

The model illustrates how knowledge sources operate “synchronically, interactively and synergistically” (Bernhardt 2005, p. 140). For example, knowledge of orthographic patterns in

L2 can facilitate decoding and word recognition without actual language knowledge. In addition, the more word knowledge a learner has, the more resources are freed to operate on more complex syntactic patterns. L1 literacy level can also compensate for deficiencies in L2 comprehension.

Although the compensatory model of L2 reading explains a large portion of second language reading, it does not specify relative contributions of areas such as strategic knowledge and background knowledge in reading and which has later been added by McNeil (2012), thus, enlarging the portion of explained variance. The model is, in fact, a reference that sheds light on the complexity of L2 reading which is influenced by many variables including the cross-linguistic ones.

2.4 Review of Related Literature

This section includes a review of some research conducted under the umbrella of text complexity. The first part involves research conducted in contexts where English is a first language and the second part involves research conducted in contexts where English is spoken as a second language (ESL) or as a foreign language (EFL). Finally, a critical analysis of these studies will be used to draw general trends and research gaps in the area of text complexity in these contexts.

In the United States where English is the native language in the country, Fitzgerald et al. (2015) carried out a study to analyze text characteristics that are more specific to early-grades text complexity. In order to run that analysis, they selected and digitized a sample of 350 primary-grades texts and identified 22 text characteristics at four linguistic levels by conducting

quantitative analysis. In addition to the quantitative analysis, the researchers used teacher judgment of complexity level in all the texts and took students' responses using a maze task. Then they conducted analysis using a logical analytical progression. From the initial 22 text characteristics, researchers claimed that nine text characteristics were most significant for early-grades' text complexity. These characteristics are decoding demand, number of syllables in words, age of acquisition, word abstractness, word rareness, intersentential complexity, phrase diversity, text density and non compressibility. One major implication of this study is that discourse –level text characteristics should be considered in early-grade reading texts more than any other characteristics. While most text analysis tools solely measure word frequency and sentence length, publishers of early grade texts should create optimal texts that account for multiple text characteristics beside these two factors which also play a significant role in easing students' reading growth. Therefore, more attention should be paid to discourse –level features of texts such as repetition, redundancy and patterning. In addition, the interplay of these characteristics is equally important and can modulate one another's challenges (Fitzgerald et al. 2015).

Compared to the above mentioned study, the current research investigates the text complexity variables that are specific to young learners in a foreign language setting. In addition to the readability analysis and qualitative judgments of texts employed in Fitzgerald et al.'s study, this research uses different data collection tools such as WCPM, miscue analysis and interviews. By employing these three data collection tools, this text complexity research recognizes the essential role of readers and their interactions with the text in the reading process, hence, moving this research from the positivist paradigm of thinking into a mixture of the positivist and the interpretivist paradigm.

In another study, Mesmer and Hiebert (2015) empirically examined the performance of third graders at two proficiency levels while reading texts of varied levels of complexity. Their sample consisted of 39 third graders at a summer school in the United States. The researchers also investigated the influence of text length on comprehension. They used a repeated measure design with two within- subjects (text complexity and text length) and one between-subjects' variable (reader proficiency level). Results of their analysis indicate that text length and text complexity affect reading proficiency of students. Results also suggest that when text complexity is the same, students have lower comprehension in the lengthier texts than the shorter version of the same text. However, texts with challenging vocabulary prove to pose challenges for learners more than the lengthier texts with longer sentences and easier vocabulary.

Toyama, Hiebert and Pearson (2017) also investigated the complexity of levelled texts that were used in four reading assessments in the USA. The researchers analyzed a total of 167 passages using four analytical tools of text complexity; two traditional two –factor measures and two newer multi- factor measures. The traditional measures found a general trend of consistent progression of text complexity among the four assessments but there was considerable variability across the assessments in terms of the size of increase from one grade to another and within grade text complexity. In the case of the multi- factor analytical tools, there were less differences. Texts in the four assessments differed also in the extent to which they met the guidelines of the common core state standards.

Toyama, Hiebert and Pearson (2017) concluded that neither the assessment products nor the analytical tools were precise when it came to estimating text complexity. Therefore, teachers have to be aware of the variability among assessments as well as analytical tools when estimating text complexity. The researchers also cautioned teachers and researchers about the

complex interactions among the different measures of text complexity.

Another study on text complexity that was conducted in the United States is Reed & Kershaw-Herrera (2016). With the aim of achieving a better understanding of the influence of text complexity on reading comprehension, 103 high school seniors were randomly assigned to 4 groups. Each group received versions of two identical informational passages. The first group (A) read passages that had a challenging readability level and high cohesion. The second group (B) received passages that had an easier readability and low cohesion. The third group (C) read passages that had a challenging readability level and low cohesion. The last group (D) read passages that had an easier readability and high cohesion. All the groups were required to answer comprehension test items targeting factual recall and inferences of causal content. Students in Group D who read texts with lower readability and high cohesion significantly outperformed students in Group C ($g = 0.78$) who read passages with a challenging readability and lower cohesion. The effect sizes of comparisons among all the groups ranged from $g = 0.13$ to 0.73 and no other comparisons were statistically significant. Results indicate that reading comprehension is dually influenced by text readability and cohesion. Findings also suggest that gauging text complexity by readability alone is problematic and that teachers need to consider whether the texts they assign to their students have sufficient cohesion or will require teacher-led scaffolding so that students can grasp complex relationships among ideas.

In the United Kingdom, Janan (2013) used quantitative as well as qualitative data collection methods in order to explore the concept of readability. Her study involved 32 school children aged between 6 and 11 years from public schools in the UK. All participating children were competent readers according to their teachers. After selecting books to read, the researcher used readability formulae; miscue analyses; text feature analyses; retellings and interviews in

order to find out the factors that affected readability of texts. Findings of Janan's research revealed the influence of reader and text factors on readability.

According to Janan's research, the reader factors include nine elements that are embedded within the reader namely prior knowledge, attitude, interest, reading ability, motivation, engagement, purpose for reading, age and gender. The text factors or the physical features of the text include genre, content, author, linguistic difficulties, legibility, illustrations and organizations of the text. Janan(2013) concluded her research by stating that the concept of text complexity involves a dynamic interaction between the reader and the text which makes matching books to readers a complex process.

As far as the context of English as a foreign language is concerned (EFL), Chen (2016) examined the the progression of text complexity in some textbook series in Taiwan. The rationale for his study was to provide an assessment framework that could be generalizable to other ELT contexts. To that end, Chen employed a quantitative corpus- based approach to analyze both vocabulary coverage rate and structure complexity. In addition, Chen utilized a clustering-based statistical algorithm variability neighbor clustering to empirically identify the developmental stages in text complexity. Chen's research provided a framework for the assessment of text difficulty progression in ELT materials. The general conclusion derived from that study is the lack of coherence in the progression of text complexity in the Taiwanese ELT text books and that not all the transitions from one textbook to another are due to a positive increase in vocabulary and structure's complexity.

Another study that aimed to examine the consistency of text complexity across different publishers was conducted by Rodrigo (2016). In that research, 213 titles by different publishers

were analyzed using a readability test as a tool. After that, ANOVA was employed to find out if there was significant difference between the grouped readers. Findings of this study indicate that there is a lack of consistent progression of text complexity in the reading levels across the different publishers which poses a challenge for educators who attempt to set up a library for their students (Rodrigo 2016).

The study the researcher is proposing in this paper is similar to Rodrigo's study in that it is driven by discrepancy of reading levels across a corpus of texts. However, Rodrigo's study employs readability formulas alone while it is a mixture of both quantitative as well as qualitative measures in this paper.

Kebede and Milkitie (2018) evaluated literary texts in English text books for preparatory students in Ethiopia. The researchers used a mixed method design in which both quantitative and qualitative tools were used. The quantitative data were collected using questionnaires distributed to students in which they were asked to comment on the difficulty level of the texts. Meanwhile, qualitative data was collected through two focus group discussions with teachers. Results from this research suggest that the difficulty level of the texts in the English textbook is beyond the language competence of students as well as teachers. Additionally, since the texts are written by foreigners in a foreign context, there is no cultural considerations. Moreover, the majority of the texts do not fit within the themes in the textbooks.

Although Kebede and Milkitie (2018) employed a mixed methods data collection tools, their methods depended solely on participants' opinions; whether they were teachers or students. Students, for example, were asked to respond to statements in a Likert scale about aspects related to texts and texts difficulty. The problem with the use of these tools is that they are unclear and

they do not allow the participants to expand their ideas (Fraenkel, Wallen & Hyun 2015). Therefore, the questionnaire makes it easy for us to know that the difficulty level of the texts is beyond the students' ability but it is ambiguous why and what aspects of these texts are most difficult for learners. The researchers could have examined the difficulty of these texts in relation to a reading outcome (fluency or comprehension) or through the use of an objective measure such as readability formulas beside the use of the subjective questionnaires.

Another study that attempts to examine the readability of English textbooks used in the primary grades in an ESL setting is Gupta (2014) which was conducted in India. Specifically, Gupta's study examined the texts readability using a text analysis tool; Coh-Metrix. The analysis showed differences on four parameters— text length, narrativity, type-token ratio, and use of anaphora—between the commercial textbooks and the new government textbooks. The findings of Gupta's study show that commercial textbooks use texts to teach language by manipulating linguistic variables including the length of the text, incidence of vocabulary, and syntax. In contrast, the government textbooks do not focus on linguistic features but rather on meaning.

In terms of educational philosophy, Gupta (2014) concluded that the focus on linguistic features in the case of commercial books entailed that the target readers were viewed as language learners who had to learn the language system first. This linguistic orientation was justified by the need to reach out students with low English levels and, thus, the texts were shorter and they used limited vocabulary items and easier sentence structures. In contrast, readers under the umbrella of government textbooks were viewed as children who had to be encouraged to read through stories regardless to their linguistic competencies.

In conclusion, from the analysis of the above research on text complexity, the following

observations may be listed regarding the differences between text complexity in English speaking countries and text complexity in ESL and EFL contexts. First, it seems that all the research conducted in ESL and EFL contexts is still exploratory with the aim of examining the consistency in the progression of readability scores among text books series or commercial books. In contrast, the majority of research conducted in English speaking countries is experimental in order to examine the influence of some text factors on complexity. In principle, this observation may suggest that text complexity research is still in its early stages in EFL and ESL contexts. Second, while readers are involved in the majority of text complexity research in English speaking countries, text complexity research in ESL and EFL settings focuses solely on text factors through the use of readability formulas and without any regard to the reader. Finally, all the above discussed research papers, except for Janan (2013), approach text complexity by analyzing texts or analyzing texts as well as readers without considering the interactions that may happen between the readers' factors and the texts while reading.

2.5 Summary

This chapter presented a review of the literature related to the topic of text complexity. The first section was a conceptual analysis in which text complexity was defined and the factors that influenced it were listed accordingly. First, the text factors, whether quantitative or qualitative, and which contribute to text complexity were described extensively. An account of the types of readability measures was also included. Next, the reader factors were presented with a special focus on factors related to ESL and EFL readers. Then the socio-cultural context and the activity factors were highlighted. The second section presented the reading theories underpinning these factors and they were listed under two main headings; the reading debate and theories associated with readers and texts. Finally, the chapter was concluded with a review of related studies in the area of text complexity.

Chapter 3

Methodology

3.1 Chapter Overview

This chapter introduces the theoretical paradigm underpinning the current research design. The rationale for using a mixed-methods approach is explained. In addition, the study context, including sites and participants, is discussed in depth. Data collection tools and procedures are discussed sequentially following the order of the two phases implemented in this research. Data collection instruments from the first phase, termed Texts Only Phase including readability formula (Lexile) and qualitative evaluation of text complexity form are described. Next, there is a discussion of the instruments used in the second phase, termed as Texts and Readers Phase. The Texts and Readers phase included analyzing data obtained from WCPM (Words Correct Per Minute) fluency test, interviews and miscue analysis. Validity and reliability of these instruments are also addressed. Finally, ethical considerations are presented.

The data collection methods addressed the following aims and questions:

Aims of the research

- *To explore the factors that contribute to the complexity of texts read by young learners of English in Oman.*
- *To develop a preliminary model for the complexity of texts read by EFL young learners.*

Research Questions

1. What are the text -related factors that influence the complexity of texts read by young learners of English in Oman?
2. What are the reader -related factors that influence the complexity of texts read by young learners of English in Oman?
3. How does the interplay between reader- related factors and text- related factors while reading influence text complexity?
4. What are the implications of these factors towards a renewed model on the complexity of texts read by young EFL learners?

3.2 Research Paradigm and Design

To investigate variables related to the text, variables related to the reader and the interplay of these variables during reading, mixed methods design was the best available design. In mixed methods research, qualitative and quantitative methods are mixed in a single research in order to investigate a problem (Creswell 2008; Fraenkel, Wallen & Hyun 2015). Mixed methods design can serve different purposes. It can help in explaining and clarifying the relationships between variables, it can explore the relationship between variables in depth and, finally, it can confirm and validate relationships between variables (Cohen, Manion & Morrison 2011; Creswell 2008; Fraenkel et al. 2015).

Following this design, the researcher simultaneously collected both quantitative and qualitative data and combined the results in order to understand the variables that affect text complexity. Quantitative methods included the use of readability formulas and reading fluency test scores. On the other hand, qualitative data methods included the use of interviews, miscue

analysis and qualitative evaluation of texts by a group of educational professionals. Combined, quantitative and qualitative methods facilitated our understanding of text complexity and the factors that influence it.

Since the interactive view of reading was adopted in the current study, the researcher found it more comfortable to place this research under Pragmatism. In pragmatism, researchers use whatever works to answer the research questions whether it is quantitative, qualitative or a mix of both. World views are considered less important (Fraenkel et al. 2015). The use of pragmatism in the context of this paper justifies employing quantitative as well as qualitative methods which belong to two different paradigms in order to answer the research questions.

Pragmatism has grown in popularity in recent years as a result of efforts that try to avoid the shortcomings of single approaches and to "do what works" (Morgan 2014). It is a principled approach and has its own rigorous standards, which demands useful answers to research questions (Cohen et al. 2011). It considers the traditional research paradigms as prescriptive approaches to answering research questions, and believes that they hamper intellectual curiosity (Davies & Fisher 2018). Pragmatism also acknowledges that there are both single and multiple realities so that research attention is focused on solving real world problems rather than philosophical positioning (Feilzer 2010).

According to the interactive view of reading adopted by the researcher in this study, the text variables and the reader variables are both important, and they interact during the reading process. Therefore, complexity of texts is affected by variables related to the text, to the reader and to the interplay between the text and the reader while reading. As a result, investigating text complexity requires the investigation of all these variables.

When investigating texts, variables existing within texts, such as words length, sentence structure and words frequencies are all considered. Investigating variables related to readers, such as prior knowledge and reading ability are also essential. Looking at areas existing within texts and readers implies the adoption of a positivist paradigm of thinking in which it is believed that knowledge is obtained from sense experience and is advanced by observation and experiment (Cohen et al. 2011). An example of a tool used for investigating variables existing within texts is readability formula which can give an overall indication of the complexity in texts. Another example is the analysis of the qualitative dimensions of texts such as levels of meaning and text structure.

Nevertheless, it is argued that judging the complexity of texts is not possible without actually being involved in reading that text (CCSS 2010; Janan 2011). Determining the complexity of texts in this manner is thus context specific and depends on the reader of a specific text and what that reader brings to that text. This method of judging complexity is grounded on the interpretive way of thinking. The interpretivist sees reality in the minds of the people involved in the experience and thus suggests working directly with them in order to build a theory (Cohen et al. 2011). Therefore, following the interpretive paradigm, interviewing readers and the analysis of their reading behaviors while reading texts contribute to our understanding of text complexity.

Research on text complexity within the positivist and the interpretive paradigms have displayed both strengths and weaknesses (Fisher et al. 2012; Hiebert 2013). Thus, neither research paradigm can be regarded as sufficient to analyze text complexity. Assessing text complexity under the umbrella of positivism does not consider the reading process and, therefore, is not enough to describe what happens during the reading process and which, in turn,

influences text complexity (Hiebert & Pearson 2014). On the other hand, the use of qualitative tools under the interpretive paradigm is subject to controversy as it is difficult to tell what is going on in people's minds (Silverman 2006). Accordingly, the merging of the two paradigms under a mixed method approach allowed the researcher to overcome, to some extent, the limitations of both paradigms. In fact, pragmatism allowed the alignment of both paradigms in order to answer the research questions.

It is noteworthy to mention that there are three major types of mixed-methods design that involve a combination of quantitative as well as qualitative designs. These designs are: the exploratory design, the explanatory design and the triangulation design. In exploratory designs, the researcher first uses a qualitative method in order to inform the quantitative method. In contrast, the explanatory design employs qualitative data in order to explain the results obtained from quantitative analysis. In both designs, the two types of data are analysed separately with priority given to the qualitative data in exploratory designs and to quantitative data in explanatory designs. The triangulation design, in contrast, uses data collected simultaneously from quantitative and qualitative methods to study the same phenomenon. The data may be analysed separately or together. The researcher in this design seeks to determine if the two methods converge upon the same understanding of the investigated research topic (Cohen et al. 2011; Creswell 2008; Fraenkel et al. 2015).

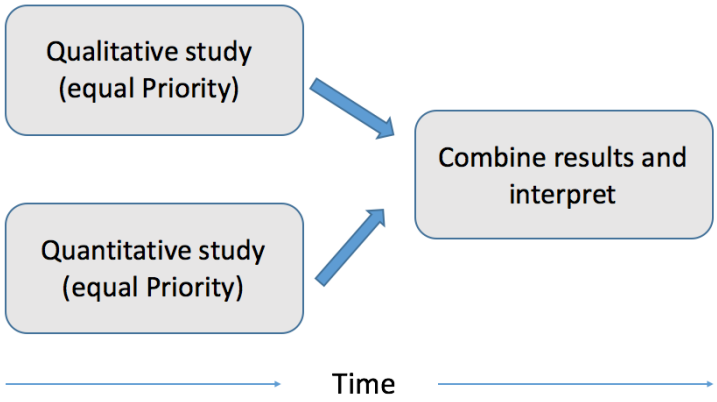

Figure 3.1: Triangulation Mixed Methods Design (adapted from Fraenkel et al. 2015)

The triangulation mixed methods design (Figure 3.1) was the best design to address the research questions of this study for the following reasons. First, the researcher sought to understand the factors that affect the complexity of English texts read by young learners in Oman through qualitative as well as quantitative means. However, both means of assessing text complexity display some weaknesses if used alone. Therefore, the use of both methods allowed for "the strengths of the two methods to complement each other and offset each method's respective weakness" (Fraenkel et al. 2015, p. 559). Second, both methods are given equal priority in this research. Quantitative data obtained from readability formulas and reading fluency scores may equally contribute to our understanding of text complexity alongside qualitative data obtained from interviews, miscue analysis and qualitative analysis of texts. Third, qualitative and quantitative data are collected simultaneously.

3.2.1 Research Questions and Methods

The aims of the current research were to explore the factors that influence the complexity of texts that are read by young learners of English in Oman and to develop a preliminary model for the complexity of texts read by EFL young learners.

To serve these purposes, this research paper addressed the following four questions:

1. What are the text -related factors that influence the complexity of texts read by young learners of English in Oman?
2. What are the reader -related factors that influence the complexity of texts read by young learners of English in Oman?
3. How does the interplay between reader- related factors and text- related factors while reading influence text complexity?
4. What are the implications of these factors towards a renewed model on the complexity of texts read by young EFL learners?

In order to answer these research questions, the researcher employed both quantitative as well as qualitative methods. The first question is about the text- related factors and is examined using a readability formula, books' qualitative analysis and interviews. The second question addresses the reader- related factors and is examined using the one-on-one interviews. The third question investigates the interplay between the reader and the text factors while reading and is examined using the fluency test, miscue analysis in addition to the one-on-one interviews. All these factors will eventually facilitate towards the development of a preliminary model for the complexity of texts read by young EFL learners. Figure (3.2) illustrates the research tools for this study.

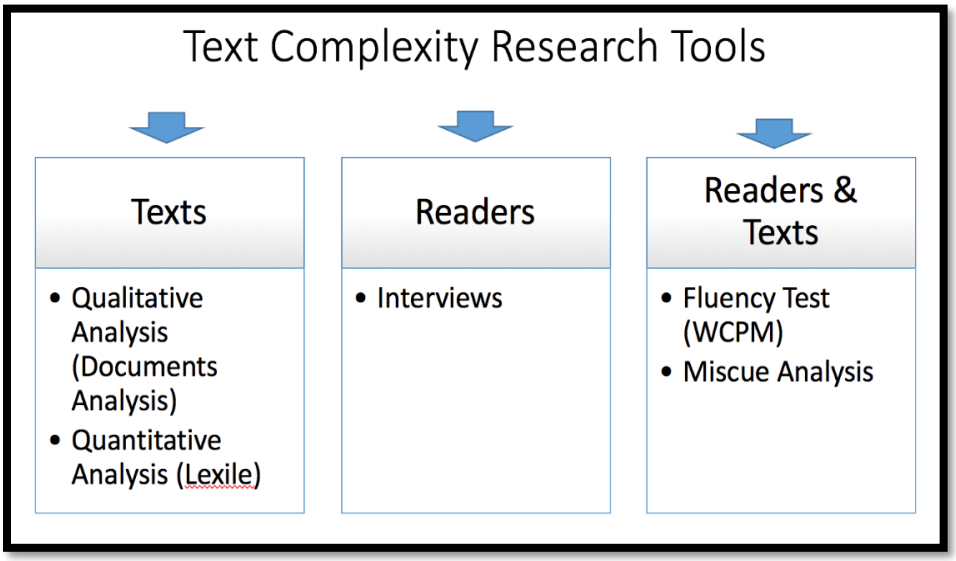

Figure (3.2): Text Complexity Research Tools

3.2.2 Context, Site and Sampling

Government schools in Oman are divided into three cycles; cycle one, cycle two and post basic. Cycle one schools have classes ranging from grade one to grade four while cycle two schools have classes ranging from grade five to ten. Post- basic schools have grade eleven and grade twelve only. According to the report issued by the National Center for Statistics and Information (NCSI) in 2017, there were 1100 government schools distributed in 11 governorates in Oman. In Muscat, the capital city of Oman, there were 160 schools. This research took place in three government schools in Muscat; a cycle one school and two cycle two schools. It was conducted in the academic year 2017/ 2018. Access to these sites was granted through the Directory General of Education in Muscat Governorate.

In the academic year 2017/ 2018, the total number of cycle one students in Muscat governorate was 18128 while the total number of cycle two students in the same governorate was 12711. The sample in this research consisted of 16 cycle one students and 16 cycle two students within an age range of seven to eleven years old. From each grade, 4 girls and 4 boys were selected making a total of 32 students (16 boys and 16 girls) from the four grades.

The research took place in the town of Bousher, one of the biggest towns in Muscat Governorate. Participants from grades three and four were all from Al-Fatteh School (sixteen students). On the other hand, participants from grades five and six were from Shugaa Boys School (8 students) and Arwa bint Al-Harith Girls school (8 students). The three schools were located within the same area, just a few kilometers from each other. Young learners from the three schools were involved in the first phase of this research entitled "Texts and Readers Phase". They participated in the research by reading books of their choice in front of the researcher and then by taking a fluency test (WCPM). Following the test, there was a short retelling of the points in the book and an interview with each participant regarding the reasons behind their selections and the strategies they used for comprehension.

The nature of this research demanded that the young readers in the sample were fluent readers of English texts in order to minimize the chance for fluency intervening with the results. This is due to the fact that fluency is considered the gate to comprehension and without it learners will not be able to comprehend (e.g. Allington, McCuiston & Billen 2015; Guaresi et al. 2018; LaBerge & Samuels 1974; Rasinski 2003; Solari et al. 2017) and this, in turn, affects our interpretations of the data.

Since the researcher sought particular characteristics in the participants, it was appropriate to use purposive sampling (Cohen et al. 2011). Specifically, the researcher used

maximum variation sampling in order to have a sample of learners with diverse characteristics. Since this research sought to explore the factors that facilitate or hinder comprehension and not fluency, the purposive selection of fluent readers ensured, to some extent, that only targeted factors are investigated. By using maximum variation sampling, the researcher was also able to include an equal number of participants from both genders. This was important because the purpose of research is to understand the factors that affect text complexity of English texts for young learners – whether boys or girls.

Table 3.1 illustrates the sample of the young readers.

	Sample		Total
	Boys	Girls	**32**
Grade 3	4	4	8
Grade 4	4	4	8
Grade 5	4	4	8
Grade 6	4	4	8

Table 3.1: Participants Involved in Texts and Readers Phase (Young Learners)

To ensure that the young participants in this research were fluent, the selection was conducted in two steps. First, teachers were asked to nominate fluent readers from their classes. Initially, the number was ten from each grade level. Second, the researcher tested the selected students individually on reading some grade- level texts to ensure that only fluent readers are included. The reason behind the second step is that reading fluency is not assessed in government

schools in Oman and, therefore, the researcher anticipated some errors in teachers' judgment. In addition, this initial testing gave the researcher a clearer picture of the fluency level of students and thus aided in the interpretation of the results later.

The best thirty- two students from the three schools were selected. One widely used measure for assessing fluency is Words Correct Per Minute (WCPM). Students were assigned a grade- level text to read for one minute. The number of correct words that students were able to read in a minute was an indicator of their fluency level. Students were selected based on their reading fluency level. However, there were no benchmarks for the selection for the following reasons. First, reading fluency is not assessed in government schools in Oman and therefore, there are no well- established fluency levels that the researcher can take as a reference. Second, the level of students' English proficiency varied widely among girls and boys in the sample. Therefore, the researcher judged students' fluency based on WCPM and their level in comparisons to other students in the same sample. Having only fluent readers as participants in this research implies that the results of this research is only applicable to fluent readers.

In addition to the young readers, this research involved educational professionals as participants. Educational professionals are English regional supervisors and English senior teachers, and they participated in the second phase. The educational professionals were entrusted with the responsibility of analyzing the text books qualitatively following a two -day training program by the researcher. They used a text evaluation form that was adopted by the researcher for analyzing qualitative dimensions of texts.

The educational professionals were also selected through the use of purposive sampling. The topic of text complexity was new in the Omani educational context. In other words, there were no professional development programs conducted previously on this area. The researcher

anticipated some challenges while evaluating the books even after the two- days training on text complexity. In order to minimize these challenges, the researcher sought senior teachers and supervisors who were highly competent and possessed analytical skills. Therefore, the researcher approached an outstanding supervisor in another governorate and asked her to nominate names for the two-days training from the best senior teachers and supervisors in that governorate. The reason behind having the educational professionals from a different area is that the topic of text complexity is tightly related to the teaching of literacy and in that area there were a lot of professional development programs carried out in that topic. Accordingly, by having educators from that governorate, the researcher minimizes the training period.

As it is clear from the table, the ratio of male to female participants in the sample of educational professionals was 2 to 18. The number of male participants was far less than the number of female participants for the following reasons. First, the researcher looked for Omani educational professionals and the number of male Omani educational professionals is far less than females. Therefore, the ratio represents, to some extent, the percentage of male educators compared to female educators. Second, according to the supervisor who prepared the list, the nominated educators were selected based on their capabilities and their critical thinking skills. Since the aim of having the educational professionals is to conduct the qualitative analysis of texts and not the young learners, the researcher does not think that this selection has any influence on the findings.

Table 3.2 illustrates the sample of educational professionals

	males	females
Supervisors	1	3
Senior teachers	1	15

Table 3.2 Sample of Educational Professionals

3.2.3 Texts Selection

Initially, the researcher thought that a sample of 80 texts would be adequate to ensure that different genres and different levels were covered. However, it was difficult to analyze all the eighty texts as a result of the two- day training. Moreover, the majority of texts available in schools were fiction, which meant that the selected texts for analysis would be only fictional texts. The researcher, therefore, decided to analyze 70 texts quantitatively using Lexile and 50 texts out of the total 70 texts qualitatively using the evaluation form for the qualitative dimensions of texts. These texts comprise commercially available readers from different popular publishers such as Oxford Reading Tree and Macmillan which were used in government schools in Oman. The selection included a sample of readers available in the classroom library in addition to readers in the school Resource Center (see Appendix 2 for the list of books analyzed in this research).

There were also some considerations in the selection of the books sample in this study. First, the majority of books that were selected by the young participants in the pilot or the actual research were included in the books sample. Second, the selected books represented the wide range of levels and publishers available in the three schools. Third, only narrative and informational texts were included in the study. To ensure that texts with the previous description were only included, the researcher developed a Text Selection Checklist (Appendix 3). As a result of this selection criteria, picture books, for example, were excluded from the analysis.

For the quantitative analysis by readability formula (Lexile), There were 70 texts in the texts sample; 40 books from cycle 1 and 30 books from cycle 2. The number of cycle one books in the sample exceeded cycle two books in order to represent the actual number of books in cycle

one and two schools. In fact, the researcher realized that the number of books in cycle one schools far exceeded the number of books in cycle two schools. This difference in number might be attributed to the different projects running in cycle one schools in comparison to cycle two schools.

The selected texts were used in the two phases of this research. In the first phase, the texts were given to participants to select from and, eventually, were used for conducting the fluency tests, the miscue analysis and the interviews. In the second phase, the texts were analyzed quantitatively using readability tools and qualitatively by a group of trained supervisors and senior teachers.

Initially, students from the three schools were asked to select an English book from those available in their school. In the case when books are available in two different rooms within the same school, all books were brought to the same room. Books were usually available in the school Resource Centre or/ and the English Club. All the books selected by participants in the pilot stage or during the actual research were included later for quantitative and qualitative analysis.

3.3 Pilot Study

A pilot study was conducted at the beginning of this research. The pilot study was carried out on the 27th of February 2018 and lasted for one day. The aim of the pilot study was to determine the suitability and the practicality of the research tools. The researcher asked four fluent students from a cycle one school to select books and got each one to read his/her selected book. The reading was followed by an interview in order to get students to retell the story and to

ask them about their book selection. Then the researcher marked students' readings (the WCPM score) and analyzed the miscues produced.

3.3.1 Outcomes of the Pilot Study

The researcher's initial plan was to include seven data collection tools, consisting of readability formulae, professionals' qualitative analysis of texts, retellings, text features analysis, fluency test score, miscue analysis and interviews. As a result of the pilot study, however, the researcher decided to exclude one research tool and to limit the use of another tool. The researcher realized that conducting seven research tools would produce an overwhelming amount of data which was impossible to analyze within the given research timeline.

The first excluded tool was the texts features analysis. The researcher had initially intended to examine some text features that may affect the complexity of texts such as the legibility of print, colour, illustration and organization. However, upon starting the analysis of interviews, the researcher realized that students sometimes mention the text features that were behind their choices of books. Besides, the qualitative analysis of books involved some aspects related to these features such as print, font and illustrations. Therefore, the researcher decided to use the interview as a source for highlighting only some of the important text features for students.

The second excluded research tool was retelling. During the pilot study and while conducting the retelling sessions with the participants, the researcher came to realize that they were unaware of the retelling structure. In order to evaluate students' comprehension of the text, the researcher asked each student "Can you tell me what the text is a bout?". The researcher

used a 5- point rating scale to score responses. The same scale was used to score comprehension on the National Assessment of Educational Progress in the United States. However, it seemed very difficult for students to retell what was the text about. The researcher anticipated that the reasons might be the following. First, the participants' English language was limited and they were unable to express their ideas in English. When trying to retell in Arabic, their retelling was brief and they avoided telling many ideas. Second, retelling of stories should follow a certain structure and that structure was not taught to students. Third, students were not used to retell stories and texts in English since retelling was not reinforced through their English syllabus. Therefore, the researcher decided to limit the use of retelling. Instead of having retelling as a separate research tool, it was included under the reading fluency test tool in order to strengthen the construct validity of the fluency test (see Valencia et al. 2010). In addition, the retelling was employed as a reading task required from all participants.

3.4 Data Collection Methods

Text difficulty is conceptualized in the current research in relation to an individual reader, a text or a text/ reader match. Accordingly, aspects related to the reader, such as reading ability, linguistic knowledge, reading strategies, motivation and interest may aid or otherwise hinder comprehension and thus contribute to the overall complexity of texts. Interviewing readers may highlight some of these areas that influence text complexity. In addition, a learner's reading fluency and comprehension of a certain text is also an indication of the complexity of that text. This orientation justifies the use of fluency tests and miscue analysis. The assumption is that the complexity of a text may vary according to all these reader- text interactions. Moreover, a text may be complex because of some factors that exist within the text itself. In this case, analysis of the text factors apart from the reader is required. This orientation justifies the use of readability

formulas which look at the semantic and syntactic complexity in addition to the text cohesion. It also justifies the qualitative analysis of texts by trained professionals in order to look at other text aspects that cannot be analyzed by quantitative means.

According to the above conceptualization, data collection procedures were divided into two major phases. The first phase was termed Text and Readers Phase while the second phase was termed Text only Phase. The idea of dividing this research into two phases was inspired by the interactive reading theory by Rumelhart (1985), which stresses the role of text's dimensions as well as reader's dimensions and the interplay between them while reading in reading comprehension. The theory stipulates that these dimensions interact while reading to facilitate or hinder comprehension. Accordingly, complexity of texts is influenced by all these dimensions.

In order to build a comprehensive view of text complexity, phase one procedures addressed the young readers and their interaction with the texts while reading and phase two was concerned with texts only. Therefore, the first phase of data collection included collecting data from participants while and after reading the texts. In contrast, phase two involved determining the readability index of the 70 texts using readability formulas. It also included judging other elements of texts qualitatively by a group of trained professionals.

The initial plan was to conduct the Texts Phase before the Texts and Readers phase. However, it was difficult to conduct the training of educational professionals at the planned time since it required meeting with senior teachers and supervisors during the school days. The senior teachers and supervisors, therefore, set an alternative date which suited their busy schedules. Thankfully, delaying the texts phase was for the best of this research since the researcher found it better to include the texts selected by students from the texts and readers phase for quantitative and qualitative analysis in the texts only phase since these books may reflect students' interest.

The two phases of data collection are illustrated in Figure (3.3).

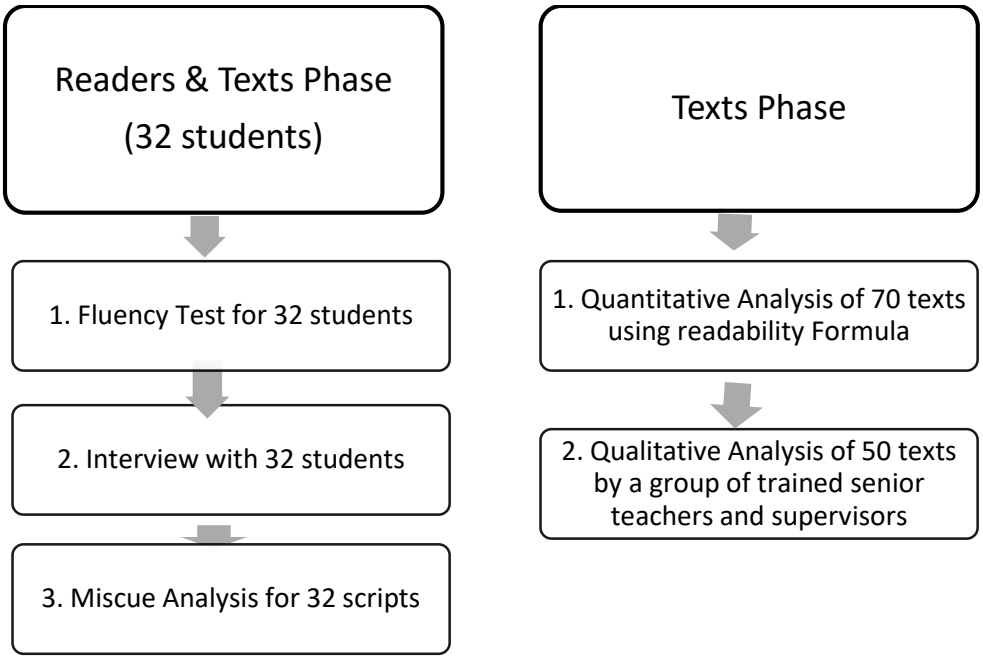

Figure 3.3: Data Collection Procedures

3.4.1 Data Collection Instruments in Texts and Readers Phase

The second phase investigated the complexity of texts as a result of the interaction between the reader and the text while reading. The procedures in this phase were conducted individually for each young reader from the thirty- two participants in the following manner. First, participants selected a story to read in front of the researcher. Then, the researcher took the stories home for typing and printing. Then the typed text was pasted in the website: www.interventioncentral.org in order to generate a Reading Fluency examiner copy and a

student copy (Appendix 4).

The reading fluency forms allowed the researcher to test students' fluency apart from any contextual cues that may help the participants to make guesses. In addition, since all participants read from the same font and font size, the test was directed towards the text variables and its linguistic features and how they affected text complexity. Further, having two copies of the text was easier for both the examiner and participants.

In the following day, the researcher examined the students' reading fluency using the texts scripts. The fluency test lasted for one minute for each student and it was audiotaped for later analysis. The researcher, however, let the students continue reading their stories for the miscue analysis. After that, students were asked to read their stories individually in a quiet place. Next, each student was asked to retell or to pinpoint the main ideas in their books and then they were interviewed regarding the reasons for the selection of that particular book. Finally, the recordings of the interviews and the fluency test were analyzed. Each data collection method is described in detail in the following sections.

3.4.1.1 Fluency Test Scores

One widely used reading fluency assessment is Words Correct Per Minute (WCPM). In this assessment, fluency level is calculated by taking the total number of words read in one minute and subtracting the number of errors. WCPM represents students' fluency levels by taking into account two indicators; accuracy and reading speed. By fluently reading a text, readers can get the words off the page unconsciously, effortlessly and quickly. This effortless

reading when combined with acceptable speed will leave more attention for comprehension (Deeney 2010). Thus, less complex texts have lower word recognition demands (e.g. more high frequency words and more decodable words), which means that they are read with greater fluency by young readers. On the other hand, reading rate is concerned with the speed of reading only. It simply involves the words read per minute (WPM) or reading automaticity without consideration for accuracy in reading.

3.4.1.1.1 Validity of Fluency Test (WCPM)

As Samuels (2007) indicates, fluent readers combine many skills so that they can engage in comprehension simultaneously. Three well documented indicators of fluent reading are speed or reading rate, accuracy, and prosody. Nevertheless, WCPM takes into account only two of these indicators; accuracy and speed, which are fairly straightforward to measure (Torgesen 2000). Prosody is not considered in this measure. Deeney (2010) cautions that one- minute fluency measures capture a reduced view of fluency, accuracy and rate, rather than a deeper view". However, Deeney notes also that this measure is useful when the purpose is to assess how students are faring to grade- level benchmarks.

On the other hand, Fuchs et al. (2001) argue that underpinning this assessment is a well-documented empirical and theoretical base suggesting that orally reading a text with appropriate speed and accuracy reflects the orchestration of a reader's word and text level skills (Fuchs et al. 2001). If automaticity is reached in word and text level skills, the reader's capacity will then be freed for higher level comprehension processes (LaBerge & Samuels 1974) and this makes it a valid and reliable measure because it indirectly considers comprehension (Deeney 2010). In fact,

popular standardized assessments, such as *Dynamic Indicators of Basic Early Literacy Skills* (DIBELS) use that measure to assess students' reading fluency (Good & Kaminski 2002).

In addition to its validity in assessing reading fluency, the WCPM was utilised in the current study for the following reasons;

1. This measure is widely accepted as an indicator of reading fluency
2. Although WCPM misses one important aspect of reading fluency, which is prosody, we can reliably assess the remaining two aspects; rate and accuracy (Torgesen 2000).
3. The results of this assessment were to be used for having an insight about the text complexity and not for diagnostic purposes.
4. This measure serves as only one measure among four other tools faring towards the same research aims which are to have an insight about the complexity of texts read by young learners in Oman and to accordingly develop a text complexity model.

3.4.1.1.2 Fluency Test Procedures

The researcher followed the following procedures in conducting the fluency test:

1 Participants were asked to bring the books they selected with them and to read them silently in a quiet place.

1. The researcher explained individually to each participant the aim of the test and that they would read their books out loudly to the researcher for one minute and that reading would be followed by a retelling task. The comprehension check included asking each

participant “what the book they read was about?”. This was essential to strengthen the construct validity of the fluency test (Valencia et al. 2010).

2. The researcher explained that each test would be conducted individually for each participant.
3. The researcher gave each student a copy of the text in the book he/she had selected. All the texts in books were typed and produced in a unified format (Appendix 4). This unified format allowed the researcher to have two copies of each text; an examiner copy and a student copy. It also directed the focus of each participant towards reading fluency rather than other elements and features in the original text.
4. The researcher signaled to each participant when to start reading. The researcher used the stop watch app in her mobile phone to time reading for one minute. At the end of one minute, the researcher placed a bracket after the last word read by the student. The participants, however, were not stopped and they continued reading their texts for the miscue analysis.
5. The researcher asked one general comprehension question about the text each participant read and made a note of that. The question was “What was the book// story about?”. Each participant’s response was scored as one of the following: 1. Full comprehension 2. Partial comprehension 3. No comprehension. Full comprehension of the text indicates

   that the participant can give a full account of the main events and the characters in the story. Partial comprehension indicates that the participant can retell some of the events, but misses other main events. Sometimes, the participant may also have some confusion regarding some of the events/points. No comprehension is a sign that the participant is not aware of the main/ events or points in the book.

6. Scoring was conducted later to avoid distracting the students. It was conducted by the researcher in addition to another rater who was a master holder in education at the time of carrying out the analysis.

3.4.1.1.3 Scoring

The scoring of the fluency test was done by two raters in the following manner. Substitutions, mispronunciations and omissions were scored as errors. Repeated words, self corrections, slowly decoded words and mispronunciations due to dialect were considered correct. The scores by both raters were entered into the same form (Appendix 5) for analysis purposes. In order to find out the fluency level of students, the number of errors that each student made was subtracted from the total number of words read by each student in one minute. In other words, the following equation was used:

Words Correct Per Minute (WCPM)= Total number of words read by a student – the number of errors made by the same student.

WCPM gave the researcher an estimate of the complexity of the text read by the student. A higher WCPM score indicated an easier text while a lower score indicated a more complex text. In contrast, the reading rate WPM was established by calculating the number of words read in one minute. Therefore, WPM indicates how fast is the reading without any regard for accuracy.

3.4.1.1.4 Inter-rater reliability

In order to establish reliability in the evaluation of the fluency test, it was marked by two evaluators; the researcher and another evaluator who was a master holder at the time of conducting the analysis. Thus, it was essential to establish inter- rater reliability between the two raters. Inter- rater reliability represents the extent to which the data collected in the research represent accurately the measured variables (McHugh 2012). In order to establish enter –rater reliability between the researcher and the second rater, simple percent agreement figure was used. Simple percent agreement was calculated by adding the typescripts that received the same marks by both markers and dividing it by the total number of typescripts (32 typescripts). The results showed that 24 typescripts received the same mark by both markers. This number accounted for 75% of the total typescripts. In addition, SPSS was used to compute the correlation coefficient (Pearson r) between the two evaluators' rating of typescripts, and it was significantly correlated (r= .998, P > ,001).

3.4.1.2 Miscue Analysis

The aim of this study was to identify the factors that influence the complexity of texts whether these factors exist within texts, or characteristics of readers or they occur as a result of the reading process. Hence, it was essential to observe and examine what readers were doing while reading. This justified the use of miscue analysis in the context of this study as an effective method of observing readers' behavior. Specifically, miscue analysis addressed the factors that affected text complexity and were more related to the readers' strategies while reading. Additionally, the miscue analysis, being a qualitative and a quantitative research tool, served the purpose of the current research which employed both.

The researcher in the current study used data obtained from the miscue analysis in understanding the factors that affect the complexity of texts read by young learners in Oman. The interpretations of the miscues helped in understanding the reader's quality of reading and the strategies he/she employed for comprehension, and this, in turn, helped in understanding the factors that contributed to the complexity of texts. In principle, analyzing an individual reader's miscues after a recorded reading of a text highlights the reader's knowledge of the language and the reading strategies that they have never been directly taught (Goodman 2015).

Miscue analysis appreciates the linguistic knowledge and experiences that readers bring to the reading process and allows for the analysis of the reasons behind these unexpected responses while reading (Davenport 2002). The unexpected responses may include substituting words with others, inserting words that are not in the original text, omitting words, rereading words or phrases, reversing parts of words or phrases, hesitating while reading words or correcting errors made while reading words (Goodman et al. 2005).

According to Goodman et al. (2005), substitution miscue happens when a reader replaces the expected word from the given text with another word. Insertion miscue involves inserting a word that is not from the text. Omission miscue happens when a reader does not read a word from the text. Correction miscue is when a reader corrects himself and replaces a word to its original form in the text. Repetition happens when a reader rereads words or phrases in the text. Hesitation miscue involves hesitating and pausing in front of a word in a text (Goodman et al. 2005).

Substitution miscue is probably the best miscue when it comes to providing information about the reader (Goodman et al. 2005). Substitution miscues, in fact, reflect the use of three levels of language; 1. whether the substituted words look like or sound like the text words

(Grapho-phonic similarity) 2. whether the substituted word is grammatically acceptable (Syntactic Acceptability) and, 3. whether the substituted word make sense within the whole sentence (Semantic Acceptability).

When miscue analysis is used, researchers conceptualize language as taking place in different contexts. There is a literacy event in which there is a written text. Authors and readers are transacting with that text. The text has a structure which makes it possible for it to represent meaning. Thus, miscues are analyzed within the context of the sentence and the sentence within the context of the whole text (Goodman 2015).

Following this conceptualization, miscue analysis accounts initially for miscues in the context of a sentence. When a reader produces a miscue, evaluators consider how this miscue affects the grammar and the meaning of the sentence. For instance, the substitution of draw for write in the sentence "I can write" is considered grammatically and semantically acceptable because it illustrates how the reader uses prediction based on the grammar and the meaning of the sentence. Goodman (2015) refers to these grammatically and semantically acceptable miscues as high- quality miscues. These miscues illustrate how readers are effective while integrating reading strategies with linguistic cues in order to make sense of the text. When a miscue is semantically and syntactically acceptable, then change in meaning within the context of the whole text should be analyzed.

When portions of texts read with no miscues were compared with those read with high quality miscues, the later were more likely to be remembered in the retellings than the no – miscues portions (Kucer 2016). In fact, readers produce an alternate way of expressing the same basic idea in an effort to maintain meaning. That is, in order to maintain the deeper meaning of the text, they tend to rephrase or reformulate the surface structure by relying on context and their

understanding of the text (Kucer 2016). In comparison, low quality miscues disrupt the sense – making process inherent to the reading process (Goodman, Martens & Flurkey 2014 as cited in Kabuto 2017).

The researcher decided to generally consider all the miscues and to concentrate on the analysis of substitution miscues for the following reasons. First, substitution miscues can provide the researcher with valuable information related to the reader's ability to use the three cueing system (grapho-phonic, semantic and syntactic). Second, the number of miscues generated from the 31 scripts was big and the analysis of all of the miscues would have taken time beyond the limits of this research. Third, the substitution miscues were the most frequently produced miscues by the readers in the sample.

While analyzing the substitution miscues, the researcher noticed that two patterns of miscues emerged: real word substitutions and non- word substitutions. The real word substitutions included words that were different from the expected words and words that were the same as the expected words but with one phoneme omitted. The omitted phonemes included plural-s- , third person singular –s and progressive –ing among others. The non- word substitutions outnumbered the real word substitutions. Each type of word substitutions was investigated separately.

3.4.1.2.1 Miscue Analysis Procedures

Miscue analysis procedures have undergone many changes since they have been introduced by Goodman in 1973 (Jenan 2013). While Goodman et al. (2005) emphasize that the material used for miscue analysis should be an unfamiliar text, Clay (2000) thinks that any text in the classroom setting, familiar or unfamiliar, can serve the purpose of understanding how

children are using what they know in order to comprehend. The length of the text used for miscue analysis has also been a controversial area. Goodman et al. (2005) think that the text length depends on the reader's age and and the purpose of analysis but should generally be above 200 words. Clay (2000), in contrast, thinks that 100 – 200 words is enough.

In undertaking this research, the texts selection was decided by the young learners in order to simulate the real situation in government schools in Oman. The texts were familiar to the young learners in the sense that they were asked to read them silently before sitting for the reading fluency test. However, according to participants, it was the first time for them to read those texts. The researcher did not stop the students after the first minute of reading and they were asked to continue reading for the miscue analysis. The length of the texts selected by the students varied a lot. While some books were only around 100 words in length, there were also some books which exceeded 900 words in length. In order to follow the general guidelines for conducting miscue analysis, only texts with more than 100 words were included in the miscue analysis. As a result, one text was excluded and the remaining 31 texts were initially all analyzed for the different types of miscues. While analyzing the oral reading of the remaining 31 texts, it was found that one script was read successfully without any miscues and, thus, the analysis was conducted for the remaining 30 scripts only.

3.4.1.2.2 Miscue Data Analysis Procedures

Readers' produced miscues were analyzed for the thirty texts using In- Depth Procedure for miscue analysis introduced by Goodman et al. (2005). Nonetheless, the researcher did not conduct the interviews with the students regarding the miscues that they made. Discussing the miscues with the readers actually invites them to value themselves as readers and to become

aware of their transactions with the text. In addition, it allows the researchers to learn about the ways that readers respond to their own miscues (Goodman 2008). The researcher was interested in understanding the ways that EFL readers transact with texts in order to construct meaning. Although the researcher thinks that the interviews could have enriched the findings of this study, she believes that the miscue analysis along with the other four research tools can capture a very good picture about the factors that contribute to text complexity.

The miscue analysis was conducted by the researcher in addition to another evaluator who was PHD holder of education and specialized in reading fluency. At first, the researcher listened to the oral reading of each learner and marked all their observed responses that were different from the expected responses. Each recording was heard several times in order to decide on a miscue. After that, all the observed responses that were different from the expected responses were listed and they were then classified according to their type (Appendix 6).

In the case of having a miscue, the produced sentence was first coded for its syntactic acceptability and semantic acceptability. If the produced sentence with all its miscues was syntactically and semantically acceptable, change of meaning was considered within the whole text.

The coding was conducted in the following manner:

1. Syntactic acceptability. If the produced sentence was grammatically acceptable, it was given a Yes (Y).

2. Semantic acceptability. If the produced sentence made sense, it was given a Yes (Y).

3. Change in meaning. If the miscue did not change any significant aspect of the text, it was given a *no*. If it changed some aspect of the text, it was given a *Partial*. If it changed a significant part, it was given a *yes*.

After that, the produced sentences that were syntactically and semantically acceptable were calculated. The sentences that had no meaning change and some meaning change were also calculated. Finally, word for word substitutions were calculated to indicate 1. High graphic similarity 2. Some graphic similarity and 3. No graphic similarity. All these data were entered into a Miscue Analysis Form (Appendix 7).

3.4.1.2.3 Reliability of the miscue data

There is always some subjectivity built into the miscue analysis measure. That is, the evaluation derived from the measure is going to differ from one evaluator to another (Johnson 2016). It should be noted that the miscues in the current research are analyzed according to the expectations of the researcher as an EFL Arab researcher who is also familiar with the Arab pronunciations of English. In fact, the focus of the miscue analysis is not on the accuracy of decoding but rather on the factors that contribute to the meaning construction while reading texts. Since mis-pronunciations did not affect intelligibility, the were not considered by the researcher. For example, it was noted that learners in the sample tend not to produce the unvoiced /p/ sound correctly. In Arabic, there is no sound equivalent to the /p/ sound and, therefore, Arab learners tend to substitute it with the voiced /b/ sound. Following my judgment, a word such as paid / peid / is considered correct if pronounced as /beid/ whereas it is considered an error for a native English listener.

In order to minimize the subjectivity in evaluation, the miscue analysis was carried out mainly by the researcher in addition to another colleague who has a PHD in education with a specialization on reading fluency. The second evaluator is also a teacher in a primary school in the United Arab Emirates and she evaluated the miscues generated from 10 recordings accounting for 35% of the total number of papers. In order to standardize the marking system between the two evaluators, a miscue coding guideline was used (Appendix 8). In addition, a discussion of the guidelines was carried out with the second evaluator before conducting the analysis. All students' readings were audio-taped and analyzed on a double spaced typescript of the original text. In order to verify and revise the participants' miscues, the recordings of students' readings were heard a few times before deciding on each miscue.

The researcher evaluated the same 10 recordings and data provided by the two evaluations were imported into SPSS statistical software. First, agreement percentage was calculated by adding up typescripts with identical marks by both markers and dividing that by the total number of typescripts. The results showed that 72 % of the researcher's typescripts were the same as the second rater. Inter- rater agreement through Cohen's un-weighted kappa scores were also calculated for evaluator 1 and evaluator 2 for the ten recordings. Next, the records were reviewed to discuss disagreement between the two evaluators. After that, the researcher continued the miscue analysis bearing in mind the data analysis and comments provided by the second rater. The researcher also checked the reliability of the miscues data through the use of intra-rater reliability. The miscues were checked several times by the researcher to ensure consistency in evaluation. The researcher also checked the data once more after a one- month interval.

3.4.1.3 Interview

Interview enables multisensory channels to be used; verbal and non-verbal (Cohen et al. 2011). Interviews also provide useful information when observations are not possible because researchers have better control over the types of information received when compared to observations (Cresswel 2008). Further, the use of interviews allowed the researcher to gain an understanding of interviewees' perspectives regarding the books they read as well as the elements in the books that attracted them and encouraged them to select for reading.

The interview in this research aimed to explore the variables that affect the complexity of English texts read by Omani young learners. By understanding the young reader's reasons for story selection and the strategies they use to understand these books, we were actually tapping on some of the texts and the readers' factors that can affect text complexity. These factors may include reader's interest and motivation, reading ability, prior knowledge among others. They may also include some text factors, such as the book layout. In fact, all of these factors affect the concept of text complexity and are difficult to investigate through tools other than interview.

The use of interviews in this context is especially useful in the case of children, who are considered the best sources of information when it comes to talking about themselves (Cohen, et al. 2011). Actually, it is important to understand the child's world through his/her eyes rather than the eyes of an adult (Docherty & Sandelowski 1999 as cited in Cohen et al. 2011). In the case of this research, there were other factors that influenced the text complexity, and they were investigated through other tools. Interviewing the young readers allowed the researcher to tap into the factors that contribute to text complexity through the eyes of the readers themselves. In addition, the interviews enabled the researcher to explore some of the reader's factors, such as the reading comprehension strategies they employ and their reasons for selecting a particular

book and these factors were not investigated through the other tools.

To meet that end, all the thirty -two participants involved in the study were interviewed through a one –on- one interview. In this approach, the researcher asks questions and record responses from one participant at the time (Creswell 2008). Each interview lasted from 3 to 6 minutes. The researcher used the interview guide (appendix 9) approach in which the topics were specified in advance in an outline, but the wording and the sequence were decided during the interview (Cohen et al. 2011; Fraenkel et al. 2015). This type of interview is especially relevant in the case of this research since the researcher needed information on specified areas. In addition, one of the ethical considerations while interviewing children is that "the information must be adapted and age-appropriate" (Brodin & Stancheva-Popkostadinova 2009, p.6). Hence, it was difficult to use the same exact wording of questions for all the interviewees especially for those who were 8 years old and needed a much simplified language than the older participants.

The interview guide made the wording of each question flexible since the interviewees were children aged 8 to 11. The researcher, nevertheless, used the same sequence of questions for all interviews. Most of the interviews were conducted in Arabic except for four interviews with female participants from cycle two who preferred to use English. The interviews were audiotaped and transcribed for later analysis.

3.4.1.3.1 Interview Procedures

The interview topics were first designed based on the study questions and associated literature on text complexity. The topics were fitted into the interview guide while the wording of each interview question was maintained during the interview time. The interviews were first piloted to a group of four students from the first school (Cycle one school), and changes to the

interview questions were made accordingly. By piloting the interviews, the researcher came to realize that conducting the interviews in English was very difficult especially in the case of boys' participants. In addition, the interviews took far less time than expected and the children needed a lot of probes in order to elicit the desired information. After that, interview validity and reliability were established.

The interview sessions were conducted directly after the reading of the selected book by each participant so that information about the books is still fresh in the young reader's mind. Each interview was conducted in the following manner.

1. The researcher asked some general questions about the student's attitude towards the English class and what he/ she likes or otherwise dislikes about it. The aim of this friendly talk is to establish rapport and to break the ice with the participants. The participants were also introduced to the purpose of the interview and that they are allowed to withdraw if they feel uncomfortable. After that, the researcher took the participant's permission for recording the interview.
2. The interviews were conducted in three different places. In the first school (cycle 1 school), it was conducted in one of the administration rooms. It happened that the room was vacant during the days of the interviews and, thus, it was an ideal place for the interviews since it was in a quiet place. In the second school (Cycle 2 girls school), it was in the English Club. The room was devoted to the English club activities and, thanks to the senior teacher, it was assigned for the interviews. In the third school (cycle 2 boys school), the interviews were conducted in the resource center. The resource center is a big room with two sections: a books- reading section and a computer class section. The interviews were conducted in the books section. In all the three cases, the interviews

were conducted in a quiet place away from distractors except for Cycle 2 boys school in which there was a computer class during two of the interviews. Although the computer class was at the other end of the big Resource Center room, the researcher had sometimes to wait for the noise to become less so that she can carry on with the interviews.

3. The researcher had to rephrase the questions in order to get the target answers. Sometimes there was also the use of probes. At the end of the interviews, the researcher thanked the participants for their cooperation and they were again assured that all the gathered information will be used only for answering the research questions. The researcher also offered the participants some gifts to select from as an appreciation for their participation in the research. The gift was a small colourful notebook and a chocolate candy. It seems that the children liked these gifts. In cycle one school, there were two cases in which a participant brought his/ her friend in order to participate and take the gifts. Thankfully, there were extra gifts for those extra visitors!

3.4.1.3.2 Interview Data Analysis Procedures

1. The recordings were labelled using alphabet letters and numbers to ensure anonymity. The transcribing process started immediately after the labelling process and it was conducted by the researcher. Data from the interviews were transcribed word by word to ensure that all data were included.
2. The researcher read the transcribed data several times to get a sense of it.
3. A *cross- case analysis* design was employed to organize the data generated from the interviews. Cross- Case analysis is an analysis that allows the researcher to examine the commonalities and the differences across the different cases (Khan & VanWynsberghe

2008). Using this design, the responses to the interview questions were organized according to questions. The first category was reasons behind the book selection and the second category was the strategies used for comprehension.

4. The categorized data were then analyzed using content analysis approach. In undertaking this approach, the researcher followed the steps recommended by Cohen et al. (2011) and Fraenkel et al. (2015). Hence, after organizing the interviews into two categories, the researcher started coding the information from the interviews' content. Coding units are " units that are distinguished for separate description, transcription, recording, or coding. (Krippendorff 2013, p. 99).

5. The coding process involves coding both the manifest and the latent content (see Fraenkel et al. 2015). After that, similar and related codes were included under one representing theme. For example, under the category "reasons behind the book selection", there were the themes: interest, reading ability and book layout. After that, the researcher conducted the data analysis by counting the frequency for some codes in the text. The researcher also looked for the relations and the associations between the words and codes. Next, the researcher looked for the patterns, regularities and relationships between the segments of texts. At the end of the analysis, the researcher summarized the data by identifying key factors and key concepts for subsequent investigations. The researcher also made some speculative inferences based on the data.

3.4.1.3.3 Interview Validity and Reliability

The terms validity and reliability have often been linked to quantitative research, but, recently, they have been increasingly considered important concepts in qualitative research as well (Anderson 2010). Validity is related to the genuineness of the research data, while reliability is more related to the reproducibility and stability of the data (Anderson 2010).

In establishing interview validity, researchers must minimize the amount of bias as much as possible. According to Cohen et al. (2011), the sources of bias in interviews are related to the characteristics of the interviewer, the characteristics of the respondent and the content of the questions. In fact, these sources can cause bias in the form of biased sampling, poor rapport between the interviewer and the interviewee, poor prompting or biased probing, alterations to the sequence of the questions, selective or interpreted recording of data, inconsistent coding of responses and poor use of support materials (Cohen et al. 2011).

In order to minimize bias and to increase the validity of the interview as a tool in this research, the researcher followed these procedures:

1. The participants in this research were nominated by the teacher and not by the researcher in order to minimize bias in sampling.
2. The use of the interview guide helped the researcher avoid poor prompting, biased probing and alterations in the questions sequence.
3. The pilot study was used as a platform to minimize the poor handling of support materials. For example, after piloting the interviews, the researcher realized that she needs more training with operating the audio-recording facility.

4. All the interviews started with a friendly chat with participants in order to establish rapport with them and to increase their confidence. The chat was usually about their opinion about the English class and what they like or hate about it.
5. The researcher also reported her thoughts while conducting the interviews (researcher reflexivity) (Fraenkel et al. 2015). There were sometimes some noteworthy observations from the participants' interviews and, therefore, the researcher either noted them down in writing or by recording a voice note immediately after the concerned interviews.

On the other hand, reliability of this research was increased following the claim made by Silverman (2005) regarding the reliability of interviews. Silverman argues that the reliability of an interview is established by pretesting of the interview schedules, training of the interviewers and having as many fixed choice answers as possible. In addition, data has to satisfy low inference description which can be achieved through audio- recording of all face to face interviews (Silverman 2005).

Therefore, the researcher established reliability of the interviews by following these steps:

1. The interview was piloted to four students from cycle one school. The piloting allowed the researcher to use wording which is suitable to the age of the participants and to be aware of the level of the language used. In fact, the researcher first used the English language as a medium for the interviews but realized that the participants' English language was very limited. As a result, the interviews were conducted in Arabic for all cycle one students and according to the participant's preference for cycle two students. In addition, the topics in the interview guide were minimized into two main topics. Initially, the researcher had intended to ask other questions regarding the books the participants

usually read and what they like about these books. However, she realized that the children were repeating the reasons behind their choice of books. As a result, the topics were minimized into two main topics instead of four. The first topic was concerned with the reasons behind the participant's choice of the selected book while the second question was concerned with the strategies that the participant use for comprehension while reading.

2. The interview to all participants was conducted by the researcher only. This was important in order to avoid discrepancy generated from having different interviewers.
3. To obtain data with low- inference description criteria, a mobile with voice recording facility was used. The researcher checked the quality of recording immediately after conducting the interviews. The recording of the interviews allows the researcher to listen to the interviews many times while and after transcribing data.
4. Two interview transcriptions were given to two independent raters. One rater was a PhD holder in Education and specialized in reading and the second rater was a master holder in education. The two raters were introduced to the purpose of these interviews and the topics the researcher intended to investigate. To examine the consistency between the two raters and that of the researcher, the marked typescripts by the three raters were compared and similarity was counted. To determine inter- rater reliability, simple agreement percentage was calculated by finding the percentage of similarly coded categories. The results showed 82 % agreement between my categorizing of data and the first rater categorization and 87% agreement between my categorization and the second rater categorization.

3.4.2 Data Collection Methods in Texts Phase

The aim of this phase was to quantitatively and qualitatively measure the complexity of texts that were used with young learners in Oman. Quantitative analysis of text complexity implied the use of readability formulas. On the other hand, analyzing texts qualitatively was carried out by a trained group of educational professionals and was conducted through the use of an evaluation form of the qualitative dimensions of texts.

The following section introduces the research instruments that were used in the texts phase; the readability formula and the qualitative dimensions of texts form.

3.4.2.1 Readability Formula

Readability formula is a mathematical equation that is derived from regression techniques to examine readability of texts (Anderson & Davison 1986). In addition to their use in the measurement of texts, readability formulas are also used to grade reading materials according to complexity. Traditional readability formulas measure the extent of complexity or reading demand of a given text by evaluating its syntactic complexity (i.e. longer sentences are more complex than shorter sentences) and its semantic complexity (i.e. frequent words are less complex than non- frequent words) (Fisher et al. 2012). As a result of developments in cognitive research, some researchers argue that text complexity is more related to coherence within the text, an area that is considered in recent readability formulas, such as Coh-metrics.

As a quantitative measure of text complexity, readability formulas have enjoyed more prominence than qualitative measures for both instruction and assessment purposes. This is due to their straightforwardness in use compared to the qualitative measures which require considerable training of raters (Hiebert 2014). In the context of this research, readability

formulas were used in estimating the individual readability index for the 70 reading texts available in three cycle one and cycle two schools. The readability index served the purpose of exploring the complexity of texts that are used with young learners in Oman. In readability formulas, each text is characterized by a number of machine – measurable text features such as average sentence length and average word frequency which are in turn used to infer the location of that text on a quantitative text complexity scale. The text complexity scale can be interpreted as the level of ability in reading needed to comprehend a text.

In selecting a readability assessment method, it is essential to select linguistic features that significantly affect text readability (Yoshimi, Kotani & Isahara 2012). Since the focus in the current paper is on texts designed for early grades, the researcher considered the characteristics empirically investigated by Fitzgerald et al. (2015) and which were deemed important for early grades texts. Accordingly, nine essential text characteristics for early grades texts were contemplated while selecting a readability tool for determining text complexity. These were decoding demand, number of syllables in a word, age of acquisition, word abstractness, word rareness, inter-sentential complexity, phrase diversity, text density and non- compressibility.

As far as English learners are concerned, Fillmore and Fillmore (2012) studied the aspects of text variation that are likely to be problematic for English language learners. They argued that the grammatical structures and devices used to present ideas may present a challenge for English language learners who require additional support in these areas. Similarly, Shanahan and Shanahan (2008) noted the same argument and added that the types of structures are not the same across content areas. Bunch, Walqi and Pearson (2014), thus recommended adopting readability metrics that incorporate a broader array of text features (e.g. cohesion) and which might be more effective at predicting text difficulty for English language learners, compared to

other metrics that are focused only on the syntactic and semantic complexity.

Taking into consideration the above mentioned arguments, the researcher decided to use the Lexile readability metric for the following reasons:

1. Lexile is a readability metric that incorporates all the nine essential text characteristics for early grades texts as specified by Fitzgerald et al. (2015). The nine text characteristics have been incorporated in the readability formula since October 2017. Since then, it has become possible to analyze texts using Lexile which were previously identified as BR (Beginning Reader) with more information provided regarding the source of their complexity.

2. Lexile incorporates a broader array of text features compared to many other metrics that only focuses on syntactic and semantic complexity.

3. Lexile is an open access tool. Although Meta-Metrics charges users who analyze longer than 1000 -words texts, all the texts analyzed in this research were less than 1000 words and thus they were analyzed free of charge. In addition, the researcher was able to access the professional mode of analysis used by researchers after contacting Meta-metrics. The professional mode allows researchers and interested educational professionals to obtain further details about the analysis results.

4. Lexile is a widely used readability metric compared to other metrics. More than 100 million books, articles and websites have Lexile text measures.

Despite the above mentioned advantages that favor the use of Lexile over the use of other metrics, some weaknesses may be present. The first weakness is related to the validity of the

variable of word familiarity and frequency. Lexile is based on frequency counts conducted on American word lists while the studied texts in the present research originated from different publishers (mostly British and American). It should be noted, however, that there is also no adopted vocabulary list in the Omani curriculum which questions the validity of other formulae as well. In the following section, a discussion about Lexile, its validity and its conducting procedures is presented.

3.4.2.1.1 Lexile

According to Koons et al. (2017, p.1), "The Lexile framework for reading is a psychometric system for matching readers with texts of appropriate difficulty" In the past, early reading texts used to receive a sign of BR without providing any further information about their complexity level. Recently, the Lexile analyzer has been enhanced to incorporate more information about early reading texts. According to Fitzgerald et al. (2015), texts for early reading should be evaluated according to nine variables which are organized into four primary early reading indicators: the structure indicator, the semantic indicator, the syntactic indicator and the decoding indicator. A high demand text, therefore, indicates that the four indicators present a high level of challenge for readers.

When using the Lexile measure, both the text and the reader are placed on the same measurement scale. The Lexile scale ranges from below 0L for beginning readers and beginning texts to above 2000 for advanced texts and readers. Typically, a text for beginner readers is 650 Lexile or less. When a book scores 650 Lexile or less, the level of challenge for the four complexity indicators is offered along with the text's Lexile measure. The levels range from very low and low demand to medium, high and very high demand. This information is accompanied

by other descriptive information such as the mean sentence length and the word count (Figure 3.4).

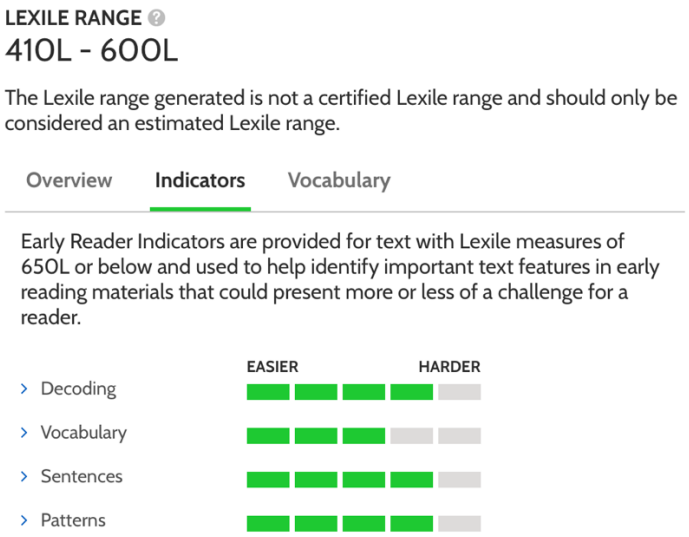

Figure 3.4: The Four Complexity Indicators in Lexile

A Lexile score that is below 0L indicates less reading challenge and is reported as BRXXL. For books that are below 0L, the more distant the values from 0L, the less challenge these books offer for readers. For example, a text measuring BR30 is more challenging than a text measuring BR120. For any student, the Lexile should range from 100L below to 50L above the student's specific Lexile measure so that they can read the book. According to students' Lexile measure, teachers should select texts with 50L above students' level provided that scaffolding is available to aid comprehension or if the topic is of interest to students. Easier texts with lower Lexile measures are usually selected with the aim of developing reading fluency skill

(Koons et al. 2017).

3.4.2.1.2 Validity of Lexile for predicting text complexity

Parameters of a readability equation are generated by statistical modeling in which a texts sample is analyzed and the produced score for each text is assigned a complexity level. Then the model is fitted to the data in a way that maximizes the model's prediction of text complexity. The equation resulting from this process is subsequently used to predict the complexity of other texts from that population of texts (Hiebert & Mesmer 2013).

All readability formulas are, in fact, regression equations in which countable features of a text serves as predictor variables and a measure of text difficulty as a dependent variable or a criterion (Mesmer, Cunningham, & Hiebert, 2012). Therefore, validity of a readability formula for predicting the complexity of a text has two dimensions. The first dimension is related to the criterion validity of the regression equation which addresses the percentage of variance in the criterion accounted for by the formula. In other words, it refers to the degree to which the formula predicts the criterion variable (Cunningham, Hiebert & Mesmer 2018). In readability, a relatively high R^2 is expected in order for a formula to be valid for predicting the complexity of other texts.

The second dimension in validity is the validity of the criterion as a measure of text difficulty for readers. If the criterion lacks validity for measuring text difficulty, the extent to which the formula can predict the text difficulty is useless (Cunningham et al. 2018). In text research, norming passages with pre- assigned complexity levels is one dominant criterion variable in validating and in constructing readability formulas. Another criterion variable is reader's comprehension performance which can be determined through close tests, multiple

choice questions or retellings (Cunningham et al. 2018).

In a study that investigates the validity of Lexile by using Bormuth's (1969) rigorously developed criterion measure, Cunningham et al. (2018) contend that the best performance for Lexile in detecting text complexity is within 1- 3 grades band. When classifying texts from 4- 6 grade band and higher grades, however, accuracy drops and the errors Lexile makes increase. The higher the grade, the less accurate is the Lexile score. Fortunately, the books analyzed in this research are within the lower grades range which gives the readability estimates in this research more accuracy.

3.4.2.1.3 Readability Formula Procedures

In order to run the text analysis using Lexile, the researcher followed these steps;

1. Type the text from the sample books in a word document. In the case of short texts, the whole text is typed. In the case of longer texts with more than 1000 words, only a portion of the text is typed. Having only a portion of the text for analysis instead of the whole text may pose problems if the case of very long texts. In the books sample, however, there are only a few books with more than 1000 words and they exceeded that limit by no more than 500 words. Therefore, having 1000 words as a sample in the case of lengthy texts actually represent the original length of the text.

2. Proofread the text for typos

3. Copy the text and paste it in the analyze text tab in the Lexile website.

4. Transfer the results of the analysis to the texts analysis sheet (Appendix 9).

5. The following screens show the process of analyzing texts using Lexile. The first screen (Figure 3.5) shows the Lexile Analyzer submission form in which the one of the texts from the texts sample is analyzed. The second screen (Figure 3.6) shows the analysis results as it appears in Lexile Professional Analyzer.

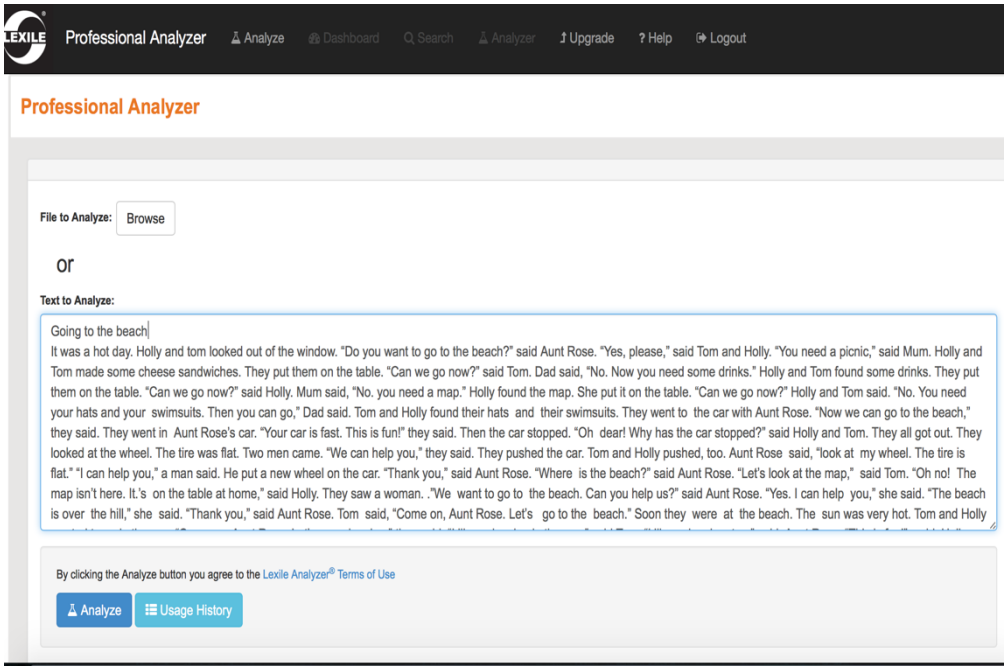

Figure 3.5: Lexile Analyzer Submission Form

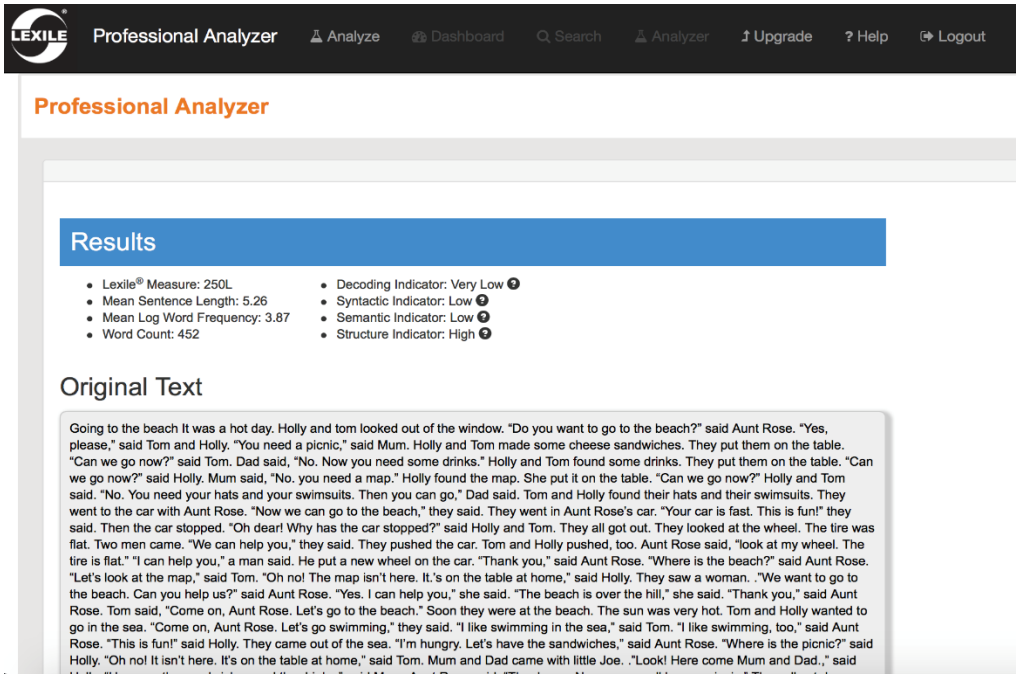

Figure 3. 6: Lexile Analysis Results Screen

3.4.2.1.4 Readability Formula Data Analysis Procedures

To analyze the readability index for the 70 texts using Lexile, the following procedures were followed:

1. All readability indices for the 70 texts were transferred to SPSS software.
2. Through SPSS, the researcher calculated the mean of the readability indices for each cycle.
3. T- test was used to examine whether there is any statistically significant difference between cycle one and cycle two in readability indices.
4. T- test was also used to find out if there is any significant difference between the four text complexity indicators in contributing to text complexity.

3.4.2.2 Qualitative analysis of text dimensions

To investigate other dimensions of texts that cannot be analyzed using formulas, the researcher used a text complexity evaluation form to analyze text structure, language clarity and conventions, knowledge demands, and levels of meaning and purpose of reading. Fifty texts were analyzed qualitatively using the qualitative text analysis form. The form was originally used by educators in the USA for evaluating texts qualitatively within the Common Core Standards Framework. In order to establish the validity of the form and its suitability for use in the Omani context, it was reviewed by three English language supervisors. No changes have been made to the form and it was used later by educational professionals in order to explore the factors that contribute to the complexity of texts on areas that can not be assessed quantitatively using formulas.

In order to evaluate complexity of texts using the evaluation form, the researcher trained a group of 20 professionals comprising English supervisors and senior teachers. The training took two days and tackled theoretical as well as practical aspects concerning text complexity. As an outcome of the training, trainees were expected to analyze the fifty texts qualitatively. In order to establish inter -rater reliability, the analysis went through the following steps;

1. The first ten texts were analyzed by making collective decisions so that trainees agree on some common criteria of analysis with the researcher. There were 4 groups of trainees; each group consisting of 5. Together, the five members of each group evaluated 5 texts which meant that each text was evaluated by two groups. The final analysis for each text from the ten texts was the result of an agreed evaluation between the groups.

2. The remaining forty texts were analyzed in the following manner. At the beginning,

groups consisting of two trainees evaluated some texts together. Later, texts were evaluated by individual trainees. However, 12 texts were left without analysis as a result of the two- day training and they were analyzed later by the researcher.

3. The researcher reviewed the analysis of all texts to check their accuracy and whether there were any inconsistencies.

It should be noted, however, that there were some gaps in the evaluation. For example, some comments were written under the texts structure while they should be written under the language features. The researcher revised all the evaluation forms and entered the data into one analysis form (Appendix 10) to facilitate the data analysis process. The Text Complexity topic is new in the Omani context and the training should had taken at least four days in order to tackle all the complexities related to it. The comments by the trainees regarding each book were sometimes incomplete and they dealt with only some texts aspects. After revising all the evaluations, the researcher tried to fill the gabs by qualitatively analyzing the books again.

3.4.2.2.1 Analysis of data obtained from the qualitative analysis of texts dimensions

Data obtained from the qualitative analysis of texts form were organized using cross-case analysis. This entails that data were organized under the following pre-determined categories: text structure, language clarity and conventions, knowledge demands, and levels of meaning. There was also the reader category which was included in the form. The categorization of data into these five categories was based on the qualitative evaluation of texts form which was used by the educational professionals. The evaluation form is based on review of literature and is widely used in evaluating texts qualitatively in the United States. The five categories from the cross case analysis were all combined into one form (see Appendix 11) to facilitate the analysis.

The use of cross case analysis facilitated summarizing all the information that belong to the same category from different books under one section. After organizing the data, they were coded. A code is a label for a piece of text and it is more specific than a category (Cohen et al. 2011). For example, chronological order, font and illustrations were all codes describing the theme text structure. Once the data were coded, the frequency of each code was counted and the relationship between the codes were established. Next, the researcher identified the key factors that influence text complexity by summarizing the data. At the end, the researcher made speculative inferences based on the data.

One of the disadvantages of using content analysis, which also applies to all qualitative methods, is the excessive interpretation and inferences by the researcher which may present a threat to the success of research (Elo & Kyngas̈ 2007). In order to minimize this source of threat, the researcher followed some of the procedures recommended by Franeklin et al. (2015). First, the conclusions made by the researcher were drawn from different tools which enhanced validity. Second, the researcher recorded her thoughts while conducting the analysis for later reference. Third, the researcher documented the basis for these inferences.

3.5 Ethical Considerations

Ethical considerations are extremely essential in any research project in order to produce a high quality research, to protect researchers and participants and to conserve intellectual and property rights (Cohen et al. 2011; Creswell 2005; Fraenkel et al. 2015). In the case of educational research and since the subjects are the learning and behaviour of humans, research may negatively affect the lives of those participating in it (Tuckman & Harper 2012). However, Pillay (2014) argues that there is always an urgent need for educational researchers to extend

knowledge related to educational activity from all perspectives including learners, policy makers and educators. Therefore, one dilemma faced by researchers nowadays is the balance they should strike between the fact that they are professionals in the pursuit of truth and between the rights and values of their subjects (Cohen et al. 2011).

The participants in this research were children aged from 8 to 11 in addition to educational professionals. Children were asked to read a book of their choice in front of the researcher and to be tested on fluency and later to be interviewed regarding their choice. Educational professionals were English senior teachers and English regional supervisors. Involving both parties in the research requires the researcher to take into consideration some ethical issues especially in the case of children who are often regarded as vulnerable; first because they are children, and secondly because they depend on adults (Brodin & Stancheva-Popkostadinova 2009).

To protect the subjects in this research, the researcher approached the Ethics Advisory Committee in BUiD for an approval to conduct this research (Appendix 12). Next, the researcher sought an approval from the Ministry of Education in Oman to access the research sites. As a result, an approval letter that grants access to the three schools was obtained (Appendix 13).

The researcher also recognizes the participants' right to informed consent (Cohen et al. 2011; Creswell 2005; Fraenkel et al. 2011; Tuckman & Harper 2012) in which a person has the full right not to participate in the research study. Therefore, the researcher sent a consent form to the participants which had an explanation of the purpose of this research and a description of the procedures. The letter also indicated the possible benefits of the research and the confidentiality of records. At the end of the letter, there was a statement indicating that participation is voluntary

and that participants might withdraw at any stage from research. In the case of young learners, a consent form was sent to their parents informing them of the aim of research and how their children were participating in that research (Appendix 1). The form was in Arabic, the mother tongue of the parents, and was scanned and sent by WhatsApp because, according to teachers, this was the most efficient and fastest way for communication with parents. Parents responded to the WhatsApp stating their approval for their children participation.

The use of social media in research with humans is increasing and likely to continue to grow (Gelinas et al. 2017). Obtaining parental consent for a research using a social – media platform, though fast and efficient, provides new challenges (Moreno et al. 2013). One challenge is that it is easier for the minor to pose online as a parent than to forge a parent's signature in a traditional paper consent form. Nevertheless, Moreno et al. (2013) argue that, at the end of the day, forging is possible in both methods. Communication through WhatsApp in this research limits this challenge since WhatsApp is accessed by the parent from his mobile. On the form, it was clearly stated that parents had the right to withdraw their children at any stage. In reporting the results of the interviews, participants were identified by alpha code and there was no specific demographic information included. Paper documents with raw data from participants were stored in a locked file cabinet in the researcher's home and the researcher's laptop was protected by a password.

While interviewing the young learners, the researcher was considerate of the asymmetric relationship between the researcher and the children that influenced the interview situation and in which the researcher was empowered to receive confidential information from the child (see Brodin 2009). The researcher asked the child participants if they are willing to take part in the

research. In addition, the interviews always start with a warm talk about the child and learning English which aims at breaking the ice between the researcher and the young learner. This talk also indirectly signals to the children that they are free to express their ideas.

To ensure confidentiality of data, the researcher removed the names of the subjects, and they were assigned codes instead. Moreover, the names of the participants will never be used in publications. Audio recordings of interviews were never used without participants' permission. The researcher uploaded the audio-recordings into her laptop which was securely protected with a strong password. Each interview received a code to ensure anonymity.

It is important to note that one of the ethical considerations while conducting research is to include a statement about the potential benefits of that research (Cohen et al. 2011; Fraenkel et al. 2011). The researcher pinpointed the main implications for the educational professionals and how this research can contribute to the quality of English books authoring, selection and evaluation. In addition, the researcher sent a box containing books set for each participating school to be added to their library collection of books. For the cycle one school, the books aimed at developing decoding skills and sight words recognition. For the cycle two school, the books aim at developing fluency and reading comprehension skills.

3.6 Summary

In conclusion, the current research is placed under pragmatism which allowed for the research design to borrow from both positivism and interpretivist paradigms. As such, a mixed methods design was employed in order to investigate the factors that contribute to the complexity of texts whether these factors are related to texts, readers or they were the result of the interplay between the texts and readers' factors during reading. Therefore, there were two phases in this

research: the texts only phase and the texts and readers phase. Qualitative as well as quantitative data collection and data analysis tools were adopted in the two phases. Table (3.3) summarises the instruments, methods, participants and data analysis methods for each question in the study.

Research Questions	Instrument	Qualitative/ Quantitative	Sample/ Participants	Data Analysis
One	Readability formula	Quantitative	70 English books available in schools	Descriptive Statistics
	Document Analysis	Qualitative	50 English books available in schools	Qualitative Content Analysis
	Interviews	Qualitative	32 students	Qualitative Content Analysis
Two	Interviews	Qualitative	32 students	Qualitative Content Analysis
Three	Fluency Test	Quantitative	32 students	Descriptive statistics
	Miscue Analysis	Quantitative & Qualitative	32 students' reading miscues	Descriptive Analysis & Qualitative Content Analysis
	Interview	Qualitative	32 students	Qualitative Content Analysis

Validity and reliability of these data collection and data analysis methods were also addressed. The chapter was concluded with a description of the ethical considerations.

Table 3.3: Instruments, methods, participants and data analysis procedure

Chapter 4

Findings

4. 1 Chapter Overview

This chapter presents the findings of the study that are obtained through quantitative and qualitative data collection and analysis methods. The qualitative data include data collected from miscue analysis, interviews and qualitative analysis of texts. The quantitative data include data collected from readability formula (Lexile) and WCPM test.

Data analysis addressed the following aims, question and sub-questions:

Aims of the research

1. To explore the factors that contribute to the complexity of texts read by young learners of English in Oman.
2. To develop a preliminary model for the complexity of texts read by young EFL learners .

Research Questions

1. What are the text -related factors that influence the complexity of texts read by young learners of English in Oman?

2. What are the reader -related factors that influence the complexity of texts read by young learners of English in Oman?

3. How does the interplay between reader- related factors and text- related factors while reading influence text complexity?

4. What are the implications of these factors towards a renewed model on the complexity of texts read by young EFL learners?

The findings in this chapter are organized according to the phases of the research in the following manner. First, text -related findings are presented from both quantitative (Lexile scores) as well as qualitative data collection methods (documents analysis). Next, findings from the reader and text phase are outlined in the following order: 1) findings from the fluency test, 2) findings from the miscue analysis, and finally 3) findings from the interviews.

4.2 Findings from the Texts Phase

This section outlines the findings obtained from the readability formula (Lexile) and the qualitative analysis of texts.

4.2.1 Findings from Readability Formula (Lexile)

Lexile was used in the context of this research in estimating the individual readability index for a sample of 70 reading texts available in government schools in Oman. The readability index served this research's purpose, which was to explore the factors that contribute to the complexity of English texts used with young learners in Oman. When using Lexile, each text is characterized by a number of machine – measurable text features, such as average sentence length and average word frequency, which are in turn used to infer the location of that text on a quantitative text complexity scale. The text complexity scale can be interpreted as the level of reading ability needed to comprehend that text.

Seventy books were analyzed using Lexile (see Appendix 2 for the Lexile score for each book). Forty -five books were from cycle one and twenty -five books were from cycle two. All the books in the sample were literary books except for two books which were expository. The expository books were from cycle two sample. The Lexile scores for both cycles ranged from

120BR to 1040 Lexile. Table 4. 1 presents the mean Lexile score in addition to the highest and lowest Lexile scores for each cycle.

	Number of books analyzed	Mean Lexile Score	Standard Deviation	Highest Lexile Score	Lowest Lexile Score
Cycle One	45	324.4	233.47	1060L	120BR
Cycle Two	25	470	139.67	800L	270L

Table 4.1: The Lexile mean score for cycle one and cycle two texts

Table 4.1 shows that the highest complexity score from the analyzed books sample was 1060, and it was for a book from cycle one. In comparison, the lowest Lexile score was 120BR, and it was also from cycle one. The discrepancy between the two scores along with the standard deviation score indicated how spread out the Lexile scores were for cycle one books compared to cycle two in which the standard deviation was less by almost one hundred scores.

The table further indicates that the mean Lexile score for cycle one books was 324.4 while the mean Lexile score for cycle two books was 470. To find out if there was a significant difference between the two cycles, independent sample t- test was conducted. The findings of the test are displayed in Table 4.2.

Lexile Scores	N	DF	M	SD	T value
Cycle One	45	68	324.44	233.47	-2. 84
Cycle Two	25		470	139.67	

Table 4.2 Independent samples t- test results for cycle one and cycle two Lexile scores

***P < .05 (2- tailed)**

As the data in Table 4.2 indicate, there is a significant difference between the mean Lexile score for cycle one books and cycle two books in favor of cycle two books.

As mentioned earlier, Lexile provides more detailed information regarding the source of complexity in books with Lexile scores that are equivalent or less than 650. There were 65 books from the sample of 70 which were less than 650 Lexile. These books were analyzed for decoding demand, semantic indicator, syntactic indicator and for their structure indicator. They were scaled into the following: very low, low, medium, high and very high demand. Two books from cycle one and three books from cycle two were more than 650L so they were not analyzed for these indicators.

To find out the sources of complexity in these 65 texts, the researcher conducted the independent samples t- test for the books sample in each indicator. Table 4.3 displays the results of the analysis for the decoding indicator.

	N	Mean	Std. Deviation	t- value	DF
Cycle 1	43	2.8	1.3	-1.74*	63
Cycle 2	22	3.4	1.05		

Table 4.3: Independent Samples t- test scores for the text complexity decoding indicator
***P>.05 (2 –tailed)**

The decoding indicator evaluates the complexity of texts by looking at letters in words and evaluating their patterns. As the data in Table (4.3) indicate, cycle two texts demanded more decoding skills for reading than cycle one texts. However, the difference in decoding demand between the books from the two cycles is not significant (t= -1.74, P>.05).

The syntactic indicator, in contrast, evaluates the complexity within sentences and

between sentences. As Table 4.4 indicates, cycle two books are significantly more complex in their syntax than cycle one books (t= -2.54, P<.05).

	N	Mean	Std. Deviation	t- value	DF
Cycle 1	43	2.6	1.31	-2.54*	63
Cycle 2	22	3.4	.95		

Table 4.4: Independent Samples t- test scores for the text complexity Syntactic indicator *P<.05 (2 –tailed)

The semantic indicator assesses the complexity of texts by evaluating the challenge of words meaning in these texts. This challenge might be attributed to word rareness, word abstractness or even to the age of acquiring these words. Table 4.5 depicts the results for the semantic indicator. As the data in the table suggests, the semantic indicator is average in cycle two and less than average in cycle one books. However, this difference between the two cycles is not significant.

	N	Mean	Std. Deviation	t- value	DF
Cycle 1	43	2.51	1.12	-1.62*	63
Cycle 2	22	3	1.19		

Table 4.5: Independent Samples t- test scores for the text complexity Semantic indicator *P>.05 (2 –tailed)

The structure indicator, in contrast to the previous three indicators, looks at the text as a whole by evaluating the degree of repetition or patterning. According to the results of the Independent Samples t- test, there was a significant difference between the structure indicator in

cycle one texts and cycle two texts in favor of cycle two texts which were structurally more complex (t= -3.06, P<.05).

	N	Mean	Std. Deviation	t- value	DF
Cycle 1	43	3.02	1.1	-3.06*	63
Cycle 2	22	3.77	.43		

Table 4.6: Independent Samples t- test scores for the text complexity structure indicator *P<.05 (2 –tailed)

	Complexity Indicator			
	Decoding	Syntactic	semantic	Structure
Cycle One N= 43	2.8	2.6	2.51	3.02
Cycle Two N= 22	3.4	3.4	3	3.77

Table 4.7: Comparison between the mean score for each text complexity indicator in cycles 1 & 2

When the four indicators were compared, it appeared that the structure indicator received the highest complexity score in both cycles (Table 4.7). In cycle one, decoding was the second complexity indicator. In contrast, decoding and syntax were the second sources of complexity in cycle two. Therefore, it might be stated that according to readability analysis of text complexity in cycle one and cycle two books, the main source of text complexity was structure.

4. 2.2 Findings from Qualitative Analysis of Texts

The books in this research were analyzed qualitatively by a group of 20 educational professionals in order to examine other factors of texts that cannot be analyzed using readability formulas and which influence the overall complexity of texts. Fifty texts were analyzed for levels of meaning or purpose, text structure, language clarity and conventions and knowledge demands. They were all literary texts except for only two informational books which were both from cycle two sample. Thirty books were from cycle one schools while twenty books were from cycle two schools. In the qualitative text analysis form, there was also a section discussing the reader and task, and it was described under the reader factors.

The analysis process started initially with classifying the books as learning to read books and reading to learn books. The learning- to- read books were those books that aims primarily at developing word- decoding skills and sight words recognition in addition to reading fluency skills. Reading to learn, in contrast, aims at developing comprehension skills. There were only 9 learning- to- read books and they were all from the cycle one's sample. The remaining 41 books were reading- to-learn books aiming at developing comprehension skills. After the initial classifications of books, they were analyzed according to the four qualitative categories of texts. Findings related to the four qualitative categories of texts are stated in the following sections.

4.2.2.1 Levels of Meaning or Purpose

When analyzing texts qualitatively, a literary text with a single level of meaning usually poses less challenges for the readers than a text with more levels of meaning. In the case of informational texts, a text with a single clearly- stated purpose is easier than a text with more unstated or implied purposes. From the thirty cycle –one books, seventeen books had one level

of meaning while thirteen books had more than one level. In comparison, the eighteen literary books from cycle two included twelve books with more than one level of meaning while six books have only one level of meaning. The two cycle two- informational books have clearly stated purpose for reading. Table 4.8 illustrates the findings related to the levels of meaning in literary texts

Levels of Meaning	Cycle One	Cycle Two
One Level	17	6
More than one level	13	12
Total	30	18

Table (4.8): The Levels of Meaning Analysis in Cycle One &Cycle Two Books Sample

When literary books have one level of meaning, the focus becomes solely on the surface level or the literal meaning of the text. However, when a text has more than one level of meaning, learners are expected to attend to these deeper meanings in addition to the literal meaning of the text. For example, when another level of meaning such as satires is included, the author's literal message is intentionally at odds with his or her underlying message and a good reader should be aware of it. Therefore, the deeper meanings of texts should be considered in the selection and the authoring of texts. For example, a deep meaning implied in one of the books sample entitled "The adventures of Ali Baba" was that it was possible to steal a small amount but if you became greedy and you wanted to steel more, you might face troubles. Another deeper meaning implied in a book entitled "The Real Princess" was that a real princess is someone who can feel a golden pea through a mattress and 10 feather beds! Although it could be true, this meaning ignores the inner beauty of people and focuses on the marginal meanings.

4.2.2.2 Text Structures

Text structure focuses on genre, text features, organization and narration (Fisher & Frey 2013). Accordingly, the qualitative analysis of texts should investigate these three areas. In the case of genre, the majority of books in the sample were fiction books (N= 48 fiction, N= 2 non-fiction). This discrepancy between the number of fiction and non-fiction books reflects the number of books available in schools from each genre. It may also reflect the students' preference when it comes to genre because the only two non-fiction books were both selected by participants.

Organization is another assessed factor under the umbrella of text structure. Texts organized chronically, for example, are easier and less complex than texts with other organizational patterns (Fisher & Frey 2012). Moreover, informational and narrative texts follow some organizational conventions as narratives follow the plot structure while informational texts follow the problem solution, the cause and effect and others.

Text features or the look of the text are also considered while analyzing text structure. There are three major text features categories: print, graphic and organizational features. The print feature is the actual text and it includes the bold font or the headings. The graphic feature, in contrast, refers to features such as a diagram or a map. Organizational features refer to text features that organize the way the structure is presented such as the table of contents or the index (Kelley & Clausen- Grace 2015).

As far as organization is concerned, the analysis of the sample books revealed that almost all the books follow a simple organizational structure. In narratives, this structure is either chronological or according to the sequence of events. In decodable narratives and narratives with high frequency words, a simple organization is followed since the focus is on learning- to -read

skills, not on comprehension. The two informational books in the sample also followed a simple and easy to follow descriptive structure.

The text features were also analyzed in the evaluation form. Forty -five out of the fifty books have clear and supportive pictures. There were only five cases when the pictures are either not enough, unattractive or not clear. As for the font, there were 38 books with clear easy to read font. The remaining 12 books were either with small font or a difficult to read font. There were also books with font written on dark background or a font written in a wavy style which made them difficult for students to read. There was also a case when a book has some letters (such as the letter g) written in a font that students can not recognize. Next, narration was analyzed in the forty -eight narrative books. While the majority of books were third person – omniscient, there were also some first person narrations. However, the narration style was constant throughout the books. There was only one book from cycle two sample in which the point of view shifts through the story.

4.2.2.3 Language Features

The focus of this dimension is on the language used in the book. For example, the use of rare words, figurative language and idioms adds to the complexity of texts. In informational books, the use of extensive academic language makes a text more complex to read than another text with less academic words.

The language features dimension was organized in relation to the grade levels. In other words, evaluators considered the complexity of the language when compared to the level of the language presented in the syllabus. According to the educational professionals' analysis, this includes comments on the length of the text's sentences and the complexity of its vocabulary.

For cycle one, seventeen books from the sample had difficult vocabulary or rare words and the remaining thirteen books had vocabulary matching the level of students in that cycle. In contrast, nine out of the twenty books from cycle two sample had many difficult words for students in that cycle. In the case of vocabulary that were matching the level of the students, the evaluators mentioned that there were many high frequency words and many sight words. There were also some comments regarding foreign names, such as Armitage and Daisy and foreign towns mentioned in many books such as Brighton and Bristol and that they were confusing for students.

4.2.2.4 Knowledge Demands

In general, there are four types of knowledge demands; prior knowledge, background knowledge, cultural knowledge, and vocabulary knowledge (Fisher & Frey 2013). The analysis of books revealed that vocabulary knowledge was the most noted knowledge demand by evaluators followed by prior knowledge. In the case of vocabulary knowledge, there were comments about the meaning of the titles and which may affect the students' choice of books. Examples of these titles from both cycles are: Goose on the Loose, Guliver's Travels in Lilliput, Chewy Huggie, Daisy has the hiccups, Mrs. Armitage on Wheels, A Yeti in town, the Wizard of Oz in addition to others. In the case of prior knowledge, there were narratives that required knowledge of some scientific facts. For example, in the book from cycle one, Fly Eagle Fly, students should be familiarized with the fact that eagles are fierce and strong. Another example is the book 'A journey to the center of earth' in which students need many scientific facts about earth and gravity in order to understand the events in the story.

4.3 Findings from the Texts and Readers Phase

4.3.1 Findings from Reading Fluency Scores

By testing students' fluency level, an overall view of the complexity of the text is obtained. Student performance in fluency is determined through reading rate and reading accuracy. Reading rate is calculated by Words Per Minute (WPM) and reading accuracy is provided using the fluency test *Words Correct Per Minute* (WCPM). While a low fluency score (lower reading rate and lower accuracy) implies a more complex text, a higher fluency score (higher rate and higher accuracy) indicates an easier text (Amendum, Conradi & Hiebert 2017; Spencer et al. 2018).

Thirty- two students were tested on reading fluency using the measures WPM (Words Per Minute) and WCPM (Words Correct Per Minute). The participants were young learners from grades three, four, five and six. They were asked to read books that they selected from the English books available in their schools. They read their books silently before sitting for the fluency test which was conducted individually for each participant.

The following equation was used in order to find out the WCPM for each student
Words Correct Per Minute (WCPM)= Total number of words read by a student (WPM) in a minute – the number of errors made by the same student in that minute.

The researcher was interested in finding if the students made the correct choice of books and whether the books they selected were at their independent reading level. According to Betts (1946), students are reading at their independent level when they can read with at least 99% word-reading accuracy and 90% comprehension. They read at an instructional level when accuracy rates are between 95% and 98% and comprehension rates between 75% and 89%. Texts

read with 91% -94% accuracy and 51% to 74% comprehension are said to be either in the instructional level or in the independent level. When the text is read with 90% or below accuracy and below 50% comprehension, then students are in their frustration level.

In order to determine the word reading accuracy, the number of words read correctly was divided by the total number of words read by the students in one minute and multiplied by 100%. Table (4.9) illustrates the distribution of words read correctly (WCPM) by the 32 participants.

Percentage of words read accurately	99%- 100%	95-98 %	91-94 %	80- 90%	70- 79%	Less than 70%
Number of Students	2	4	3	11	9	3
Percentage	6%	12.5%	9.5%	34.5%	28%	9.5%

Table 4.9: The distribution of WCPM by the 32 participants

As shown in Table 4.9, there were only two participants who were able to read with 99-100% accuracy and those participants accounted for 6% of the sample. In other words, according to Betts criteria, only 6% of students from the sample were able to read the text with a level of accuracy that qualified them to read it independently. On the other hand, 12.5% of participants read texts that were at their instructional level which meant that they needed some sort of scaffolding from the teacher. 9.5 % from the participants were either reading at their instructional level or at their frustration level and the rest of the participants (23 students accounting for 72% from the sample) were reading at their frustration level.

It was also essential to determine the mean WCPM for each grade level and to find if they progress systematically from one grade to another. As data in Table (4.10) indicate, WCPM

results range from 20 in grade three to 127 in grade 6. The mean WCPM score in grade three is 43.1, and it progresses slightly in grade four to 46.1. In comparison, grade five mean WCPM score is 69.8 and grade six mean score is 86. However, as the values of standard deviation indicate, the mean WCPM is widely spread out in grades five and six compared to grades three and four. Hence, the data may suggest that the participants' reading fluency scores are not progressing systematically across the four grades.

Grade	**N**	**Mean**	**Std. Deviation**	**Minimum**	**Maximum**
Three	8	43.1	18.1	20	64
Four	8	46.1	13.7	30	63
Five	8	69.8	31.3	34	112
Six	8	86	25.6	48	127

Table 4.10: The mean WCPM for each grade

The next step was to find out if the progress in reading fluency (accuracy and rate) from cycle one to cycle two is significant. As Table (4.11) demonstrates the difference between the two cycles in reading fluency was significant in favor of cycle two.

	N	Mean	Std. Deviation	t- value	DF
Cycle 1	16	44.6	15.6	4.05*	30
Cycle 2	16	77.9	28.9		

***P < .001 (2- tailed)**

Table (4.11): Independent Samples t –test for WCPM test scores for Cycle 1 & cycle 2

Reading rate can also be an indication of the complexity of texts as it is part of the broader umbrella of fluency. Rate simply measures words read per minute. It involves the automaticity of reading. Hence, the more automatic reading is, the higher the rate will be. Table (4.12) summarizes the reading rate for students from cycles one and two.

	N	Mean	Std. Deviation	t- value	DF
Cycle 1	16	55.2	14.4	3.79*	30
Cycle 2	16	84	26.7		

***P< .001 (2- tailed)**

Table (4.12): The Independent Samples t- test Scores for Reading Rate (WPM) in Cycle 1 & Cycle 2 Sample

As the data in Table (4.12) indicate, there is a significant difference between the reading rate for cycle one students and cycle two students (t= 3.79, P< .001) in favor of cycle two students.

The researcher was also interested in finding out if the reading rate, which influences reading comprehension, differed significantly by gender. The results of the Independent Samples t- test scores for males and females in the sample are depicted in Table (4.13).

Gender	N	Mean	Std. Deviation	t- value	DF
Males	16	59.1	22.9	2.48*	30
Females	16	80.1	24.5		

***P< .05 (2- tailed)**

Table (4.13): Independent Samples t- test Scores for Reading Rate (WPM) for Males and Females from Cycle one and Two

The results in the table show that there is a significant difference between males and females in reading rate in favor of females (t = 2.48, P<.05).

By the end of the fluency test, the researcher asked the participants to read their selected books and to later retell the events or points. That step was important in order to increase the construct validity of the fluency test (see Valencia et al. 2010). After conducting the retelling, the researcher was keen to find out if the participants were able to comprehend the text or no. The question asked to participants was "What was the book// story about?". Each participant's response was scored as one of the following: 1. Full comprehension 2. Partial comprehension 3. No comprehension. There were 10 participants who were, to some extent, successful in retelling the main events in the book and 12 participants who could only tell some of the events and they were confused about some events or parts of the book they read. Ten participants showed either no sign of comprehension or very limited comprehension of the book they selected.

It should be noted, however, that the researcher while assessing the retellings, considered whether the participant was able to retell the main events and to mention the main characters in the book or not and she did not consider other elements, such as the settings. As indicated earlier, retelling should follow a structure and that structure should be explicitly taught to students. In addition, there were many participants, especially from cycle one, who were very dependent on the illustrations in the book to retell and this could have influenced this assessment.

4.3.2 Findings from Miscue Analysis

The aim of miscue analysis in this research was to investigate the strategies that readers use in order to comprehend and construct meaning while reading. Miscue analysis considers the experiences and the linguistic knowledge that readers bring to the reading process and it analyses the reasons behind the unexpected responses while reading. These unexpected responses may include substituting words with others, inserting words that are not in the original text, omitting words, rereading words or phrases, reversing parts of words or phrases, hesitating while reading

words or correcting errors made while reading. Table 4.14 illustrates these unexpected responses with examples from the oral reading of participants in this research.

Miscue Type	**Example in *Italic***	**Script**
Substitution	Barney rides a motor cycle and ~~smiles~~ *(smells)* a lot.	17B
Insertion	But they did not ^ *(know)* have a new rope.	14B
Omission	In the hill, ~~*there*~~ were some dark, dark stairs.	29C
Correction	Look. *Here's* your teacher (participant corrected the word *here's* after mispronouncing it)	9A
Hesitation	My name is *Roboteacher*. (participant hesitates and pauses before the word –roboteacher-).	9A
Repetition	I have this little *sister* Lola (learner repeats the word *sister)*	33D

Table 4.14: Types of miscues with examples from participants' readings

Miscue analysis is particularly a diagnostic reading instrument that allows for a qualitative as well as a quantitative data analysis (Goodman, Watson & Burke 2005). In analyzing data generated from miscues made by readers while reading their selected books, the researcher was not looking for the number of miscues made by each reader through the use of the fluency test (WCPM). The purpose of using the miscue analysis was to qualitatively analyze the strategies that readers use to comprehend and, therefore, understand the reasons behind their miscues. By exploring these reasons, the factors due to the interplay between the reader factors and the text factors while reading were investigated.

For the purpose of this research, the researcher used the miscue analysis to provide information on: 1. occurrences of participants' miscue patterns and percentages, 2. the percentage of high quality miscues and low quality miscues and 3. in the case of substitution miscues, the degree of similarity between the observed response (OR) and the expected response (ER). Based on this information, the readers′ use of the three cueing systems was uncovered and, thus, the readers 'strategies for reading comprehension were highlighted. These strategies might be the factors behind the text difficulty for the reader during the reading process.

In order to analyze the miscues, all the observed responses (OR) that were different from the expected responses (ER) were listed. One of the essential considerations while analyzing English learners' miscues is to evaluate whether the observed responses are truly miscues or they arise from the learner's interlanguage (Keh 2017). According to Goodman (2005), if there is a pronunciation difference in the oral reading of the English learner, that pronunciation is considered part of the learner's interlanguage and not a miscue per se. Thus, the observed responses that were due to phonological interlanguage features (pronunciations mistakes) were all listed separately. In addition, repeated miscues within the same script were considered as one miscue and were analyzed only once.

Keh (2017) attributed the pronunciations differences that an EL may exhibit to the following reasons: 1. the learner may intend to produce the target sound but is not able to, 2. the learner may think he is pronouncing the intended sound correctly because he can not perceive how different it is from the correct pronunciation, or 3. he may substitute a similar sound from his first language for the target sound (Keh 2017). We can notice from the three reasons that the pronunciation differences are beyond the learner's either ability or knowledge and that the learner, in all cases, intends to produce the expected word. For example, a common

pronunciation mistake from the analyzed scripts was words ending with /ed/. Script (12 a), for example, tends to stress the final phoneme, thus pronouncing the word loved as / ˈlʌvɪd ˈ / instead of / ˈlʌvd ˈ /, liked as / laɪkɪd / instead of the correct pronunciation / laɪkt /, and the word looked as / | ˈlʊkɪd | instead of /ˈlʊkt/. Therefore, these three observed responses were not analyzed for grapho-phonic, syntactic and semantic acceptability. Rather, they were considered pronunciations mistakes due to interlanguage interference and were excluded from the miscue analysis. In principle, there were many pronunciation mistakes in the analyzed scripts which were later excluded from the miscue analysis.

Two texts were excluded from the analysis. One text was shorter than 100 words and the second text was without miscues. Hence, there were 30 texts remaining for the analysis. The researcher classified these miscues as real words substitutions and non- word substitutions. In general, there were 236 observed responses (OR) that were different from the expected responses (ER) in which the learners substituted the expected words with either mispronounced words or with words other than expected. The total number of substitution miscues was 221 (79 real words and 142 non- words). The real words were either same words as the expected text words but with omitted morphemes (N=10) or they were totally different words (N= 69). The remaining 15 miscues were omission (8 miscues), reversals (3 miscues) and insertion miscues (4 miscues). There were also some hesitation and correction miscues which were not documented by the researcher since the focus of the analysis was solely on the substitution miscues (real words or non-words). It was believed that data obtained from the substitution miscue analysis might provide valuable data on the factors that contributed to text complexity as a result of the interplay between the reader and the text factors.

Miscue Type	Substitution			Omission	Reversal	Insertion
	Real Word		Non-Word			
	Same Word	Different Word				
Frequency	10	69	142	8	3	4
Total (236)	221			15		

Table (4.15): Types of miscues produced by the students

As Table (4.15) indicates, the substitution type of miscue was the most frequently produced type by participants (221 substitution miscues compared to 15 omissions, reversal and insertion miscues). The table also indicates that non- word substitutions outnumbered the real word substitutions (142 non- word substitutions compared to 79 real word substitutions). The dominance of non- word substitution indicates that the majority of readers, when encountering an unfamiliar word, tend to name the word according to their phonic knowledge rather than their vocabulary knowledge. While they sometimes succeed to produce real words, they often fail and produce non- words.

4.3.2.1 Real Word Substitution Miscues

As mentioned earlier, the total number of real word substitution miscues was 79. Cycle one students made 58 miscues while cycle two students made 21 miscues. It was hypothesized by the researcher that the analysis of real –words- substitution miscues will offer an insight into the reader's use of the three cueing systems: graphophonic, syntactic and semantic. Therefore, each miscue was explored individually to identify the reader's use of each of these cueing

systems. First, the use of the grapho- phonic system was investigated. Second, the reader's reliance on the syntactic system was examined. The miscue was also checked for semantic acceptability and whether it changed the meaning of the sentence significantly. At the end, it was essential to find out if the reader was able to construct meaning or no as a result of the miscue. To meet that end, the change of meaning within the context of the whole text was examined.

An example to illustrate the process of analyzing the miscues is from Script 26C entitled The Bike Race. The sentence "I don't like him, said one *of* Tom's friends" was read as "I don't like him, said one *for* Tom's friends". First, the researcher analyzed the miscue *for* for grapho-phonic similarity with the expected response *from***.** There was some partial graphical and phonic similarity between the two words. The produced sentence was then examined for syntactic and semantic acceptability and it was syntactically and semantically acceptable. Next, the researcher checked whether the produced sentence changed the meaning within the text and found that there was some partial change. Finally, by taking all of these aspects into consideration, the miscue was considered a high quality miscue and it was a sign of the reader's strength. The following sections address these analyses in detail.

First: Grapho-phonic Similarity

Grapho-phonic similarity addresses if each substitution miscue looks like (graphic characteristics) or sounds like (phonic characteristics) the expected text word. Hence, graphic similarity refers to how the expected word looks in print in contrast to the miscue that the participant has made and it is judged by comparing the sequence and shape of the miscue and the expected word. Graphic similarity is divided into three types for comparison purposes; high graphic similarity, some graphic similarity and no graphic similarity. According to Goodman et al. (2005), if two words have high graphic similarity, it indicates that two or more parts from

these words look alike and appear in the same location. If only one part of the expected word looks like one part of the miscue and is in the same location, it means that the two words have some graphic similarity. If no graphic similarity exists between the two words, they are then marked as no – graphic similarity. Table (4.16) illustrates the three types of graphic similarity with examples from the students' substitution miscues.

	Graphic Similarity	**Examples**	**Script**
1	High graphic similarity	**Text**: People thought heavy objects *fell* faster. Student's Reading: feel	7B
2	Some graphic similarity	**Text**: One day, I come home from *school* with the best thing I have ever made. Student's Reading: shop	33D
3	No graphic similarity	**Text**: One day, a hare said to *his* friends. Student's Reading: the	35D

Table (4.16): Types of graphic similarity with examples from the students' substitution miscues

Phonic similarity, in contrast, indicates whether the miscue sounds like the expected word or not. As such, phonic similarity addresses the word's pronunciation, and not the printed form. Following the same pattern as graphic similarity, phonic similarity between the expected word and the miscue is divided into three types; high phonic similarity, some phonic similarity and no phonic similarity (Goodman et al. 2005). Two words with high phonic similarity indicates that they have two or more parts which sound alike and are heard in the same location. Some phonic similarity indicates that one part in the two words sounds alike and is heard in the same location. A word with no graphic similarity will be also with no phonic similarity. A word with some

graphic similarity may not be similar phonically. For example, although the miscue **shop** is similar graphically to the text word **school**, the two words do not sound alike at all. Table (4.17) illustrates the three types of phonic similarity with examples from the students' substitution miscues.

	Phonic Similarity	**Examples**	**Script**
1	High Phonic similarity	**Text:** The children have a *mean* stepmother. Student's Reading: *man*	36D
2	Some Phonic similarity	**Text:** His uncle is a very learned man: a *scholar* and a scientist. Student's Reading: a *social*	15B
3	No Phonic similarity	**Text:** It took me ten days, *three* hours and forty minutes to make the outside. Student's Reading: *there*	33D

Table (4.17): Types of phonic similarity with examples from students' substitution miscues

Graphic Substitution Type	Number of miscues	Percentage
Substitutions with high graphic similarity	31	45%
Substitutions with partial graphic similarity	28	40.5%
Substitutions with no graphic similarity	10	14.4%

Table (4.18): The Percentage of substitutions with high, some and no graphic similarity

Table (4.18) shows the mean usage of graphic miscues among participants in the sample. To show the mean use of at least some graphic similarity, the substitutions of some graphic similarity and high graphic similarity were added. It was found that the participants from both

cycles made 59 miscues with some degree of graphic similarity from the overall 69 miscues. In other words, 85.5 % of the miscues made by participants had some degree of graphic similarity to the expected text words. This high percentage of graphic similarity between the expected text words and the miscues suggests that the participants relied on how the word graphically look in print when they encounter unfamiliar words.

Phonic Substitution Type	Number	Percentage
Substitutions with high phonic similarity	30	43%
Substitutions with partial phonic similarity	26	38%
Substitutions with no phonic similarity	13	19%

Table (4.19): The Percentage of substitutions with high, some and no phonic similarity

The same procedure was applied to phonic similarity in order to find out if the miscues shared at least some phonic similarities with the expected printed words. Therefore, the substitutions with high phonic similarities and some phonic similarities were added. It was found that 56 miscues out of the 69 miscues shared at least some degree of phonic similarity with the expected words. As such, 81% of the miscues sounded in some way like the expected words. Again, this high percentage reflects the reliance of participants on the phonic system when trying to identify unfamiliar words (Table: 4.19).

Considering the fact that cycle one students and cycle two students differed significantly in the number of real word substitutions (Cycle one 48 and cycle two 21), the researcher was keen to examine the difference between the two cycles in terms of their reliance on the grapho-phonic system. By adding the substitutions of high graphic similarity to the substitutions of some

graphic similarity, the researcher was able to determine if the learners relied at least on some degree of graphic similarity. For cycle one learners, there were about 40 miscues out of the 48 real word substitution miscues that shared some degree of graphic similarity. In other words, 83% of the miscues made by cycle one students shared some degree of graphic similarity with the original expected text words. As far as cycle two students are concerned, there were 19 out of the 21 substitution miscues that shared at least some degree of graphic similarity and they accounted for 90% from the overall miscues. Actually, these results suggest that learners from cycle one and cycle two were concerned about how the words look in print while trying to read unfamiliar words (Table 4.20).

Substitution Type	Cycle One		Cycle Two		Total Number of each miscue type
	Number of Miscues	Percentage of miscue type	Number of Miscues	Percentage of miscue type	
Substitutions with high graphic similarity	**20**	**41.5%**	**11**	**52%**	**31**
Substitutions with partial graphic similarity	**20**	**41.5%**	**8**	**38%**	**28**
Substitutions with no graphic similarity	**8**	**17%**	**2**	**10%**	**10**
Substitutions with high phonic similarity	**21**	**44%**	**9**	**43%**	**30**
Substitutions with partial phonic similarity	**15**	**31%**	**11**	**52%**	**26**
Substitutions with no phonic similarity	**12**	**25%**	**1**	**5%**	**13**

Table (4.20): A comparison between cycle 1 and cycle 2 use of Grapho- phonic substitution miscues

When analyzing the miscues to find out if learners were concerned with the least phonic similarity, it was found that 75% of cycle one miscues shared at least some degree of phonic similarity with the expected text words and 95% of cycle two miscues shared at least some

degree of phonic similarity with the text words. These high percentages again signify the learners' reliance on the phonic system when trying to read unfamiliar words (Table 4.20).

Second: Syntactic Acceptability, Semantic Acceptability and Meaning Change

Syntactic acceptability refers to the degree a reader produces acceptable grammatical structure with the presence of the miscue. If a reader produces a syntactically acceptable structure, semantic acceptability is then checked (Goodman et al. 2005). Semantic acceptability, in contrast, is concerned with the meaningfulness of the text. If the miscue is syntactically acceptable within the sentence, it can be coded as semantically acceptable, partially acceptable or unacceptable depending on the success of the reader in producing a meaningful sentence. After determining the semantic and syntactic acceptability of the miscues, it is essential to examine whether the miscues have changed the author's text (change of meaning). It is should be noted that if the produced sentence is semantically and syntactically unacceptable, then meaning change is not checked.

Table (4.21) illustrates these elements of miscues with examples from the sample miscues

	Examples from students' reading	Syntactic	Semantic	Meaning Change	Script
1	Text: The Wright brothers built the first *airplane* that had a motor. Student's Reading: *aeroplane*	Acceptable	Acceptable	No	4A
2	Text: Behind the door, there was a dark dark *hall*. Student's Reading: *hill*	Acceptable	Acceptable	Partial	29C
3	Text: I can't shut my *suitcase*, said Sarah. Student's Reading: *stick*	Acceptable	Not Acceptable	Yes	18C
4	Text: Can we *take* our bikes with us? Student's Reading: *took*	Not Acceptable	Not Acceptable	Not checked	26C
5	Text: Once *upon* a time there lived a rich man called Ameer. Student's Reading: *open*	Not Acceptable	Not Acceptable	Not checked	1A

Table (4.21): Examples illustrating syntactic acceptability, semantic acceptability and meaning change

In the first example in Table (4.21), student 4A has substituted the text word *airplane* with the word aeroplane. Although the two words differ in pronunciation, they have the same meaning with airplane in American English and aeroplane in British English. In this case, the miscue is semantically and syntactically acceptable. In addition, it does not change the meaning of the text. In the second example, student 29C substituted the word hall with the word hill. The miscue is syntactically acceptable as both words are singular nouns. The miscue is also semantically acceptable since the meaning of the miscue hill within the sentence is acceptable. However, the miscue changes the meaning of the whole text as the sentences following this sentence actually describe what is in a hall and not a hill.

In the third example, student 18C substituted the word *suitcase* with the miscue *stick*. The miscue is syntactically acceptable as the word stick is a singular noun as the text word. However, the miscue does not fit the sentence semantically as it does not make sense within the sentence. In addition, the miscue changes the meaning of the whole text significantly. The fourth example illustrates how student 26C made a miscue which was not acceptable syntactically and thus was not acceptable semantically. Therefore, the miscue was not checked for meaning change. In the last example, student 1A substituted the word *upon* with the word *open*, thus making the sentence unacceptable syntactically and semantically.

Following the same pattern of analysis, all the 69 miscues were analyzed for syntactic and semantic acceptability and for meaning change. Table (4.21) illustrates the results of the analysis.

Miscue Analysis	**Number of sentences**	**Percentage**
Syntactically Acceptable miscues	32	46%
Semantically Acceptable miscues	26	37.7%
Total number of miscued sentences	69	

Table (4.22): The percentage of syntactically acceptable and semantically acceptable produced sentences

Data in Table (4.22) suggest that the majority of the miscues made by the students in this research were syntactically and semantically unacceptable. This indicates that, as a result of their miscues, the majority of the produced sentences were unacceptable in terms of grammatical structures and meaningfulness. In other words, many learners were unable to produce a text that sounded like language.

For the syntactically and semantically acceptable miscues, the next question to be addressed is whether these miscues change the author's text (Goodman et al. 2005). There were only 23 produced sentences that maintained both syntactic and semantic acceptability. These twenty- three miscues were examined to find out if they made sense within the context of the entire text. As a result, two patterns have emerged from the analysis: strength grammatical-relations and partial strength grammatical relations. Strength grammatical relation pattern includes miscues that were syntactically and semantically acceptable and they made sense within the context of the whole text. In contrast, partial strength grammatical relation pattern included miscues that were syntactically and semantically acceptable but they changed the meaning of the whole text. An example of a strength grammatical relation pattern is found in the script 4A.

Text: The Wright brothers built the first *airplane* that had a motor.

Student Reading: *aeroplane*

The miscue made a syntactically and a semantically acceptable sentence and did not change the meaning within the whole text. As such, student 4A was able to produce a sentence that sounded like language and made sense within the whole text. This type of miscue is considered a high quality miscue and it showed that the reader was concerned about the syntactic and the semantic cues. It also showed that the reader was successful in constructing meaning.

The partial strength miscue, in contrast, is illustrated in the script 36D.

Text: They hear their stepmother's *plan*.

Student's Reading: *plane*

In this example, the student was able to produce a sentence that is syntactically and

semantically acceptable but which does not fit within the context of the whole text. Accordingly, it was considered a partial strength miscue as the student was not successful in integrating meaning. In order to find out if the miscue made sense within the whole text, sentences with partial meaning change and sentences with meaning change were added. The analysis of the 23 syntactically and semantically acceptable miscues revealed that only 6 of the miscues were strength grammatical relation miscues, 6 miscues were partial strength the remaining 11 miscues were weak miscues. The results are depicted in table (4.23).

Meaning Change	**Number**	**Grammatical Relation Pattern**
Sentences with no meaning change	6	Strength
Sentences with partial meaning change	6	Partial Strength
Sentences with meaning change	11	Weak

Table (4.23): Analysis of miscues in terms of meaning change and grammatical relation patterns

Apart from these syntactically and semantically acceptable miscues, there were 46 other real words miscues which were either syntactically acceptable but semantically unacceptable or they were both semantically and syntactically unacceptable. These miscues were all considered weak grammatical relation miscues as they are signs of the reader's lack of language sense and his/her inability to construct meaning.

4.3.2.2 Non -Word Substitutions

As mentioned earlier, out of the 221 substitution miscues that students made while reading, there were 142 non-word substitutions which were due to decoding difficulties. During

the reading process, foreign language learners are overloaded with the need to pay attention to both comprehension as well as decoding (Yim 2008). After analyzing these non-words for graphic similarity, it was found that almost all of these non-words look like the expected words (138 non-words with high graphical similarity and 4 non-words with partial graphical similarities). This, in fact, reflects the learners' overreliance on the grapho-phonic system and the challenges they face while trying to construct meaning. It should be noted, however, that it is possible for English learners to lack knowledge of a word's pronunciation and still be able to understand other aspects of that word such as its meaning (Keh 2017). Therefore, as English learners, their mispronunciations are not necessarily a sign of their lack of vocabulary knowledge.

4.3.2.3 Same Words with Omitted Phonemes (Reduced Words)

There were only 10 substitutions featuring the same expected words but with some omitted phonemes. The omitted phonemes were only of two types: plural-s and third person singular-s. According to Jiang (2004), it is normal for English learners to omit morphemes in the early stages of second language development and in some cases, these omissions may persist to later stages.

4.3.3 Interviews

The main purpose behind the use of interviews in this research was to understand the readers' motivations and reasons for their books choice and also to understand the strategies they used to comprehend. As such, there were two main questions in the interview. The first question was concerned with the reasons behind the book selection while the second question was

concerned with the strategies that learners used in order to comprehend. The interviews were conducted in the same day after the reading fluency test.

The researcher used the interview guide approach in which the topics were specified in advance in an outline but the wording and the sequence were decided during the interview (Fraenkel et al. 2015; Cohen et al. 2011). There were 32 one- on- one interviews with each interview lasting for 3 to 6 minutes. Each participant was considered a specific case and the cross case analysis approach was the most appropriate method to analyze the data generated from the interviews. Since there were only two questions in the interview, data were analyzed manually using content analysis.

In content analysis, theoretical aspects are tested by the researcher in order to enhance understanding of the data. Through this method, it becomes possible to summarize words into fewer content related categories (Elo & Kyngas̈ 2008). The content analysis of the interview data includes the coding process, the categorizing process and the theme building process. First, the units of analysis were defined. As indicated by Krippendorff (2013), the units of analysis involve sampling units (units distinguished for selective inclusion in the analysis), coding units (units used for separate description) and context units (textual matter that sets the limits on what to be included in the coding). Accordingly, the sampling units included the 32 interview transcriptions and the coding units included the words, phrases and sentences that answer the research questions. Finally, the context units consist of the sentences or a paragraph that delineated the scope of information needed in the coding units (Krippendorff 2013).

Following the steps mentioned by (Krippendorff 2013), the first step was to assign codes to the data which was quite straightforward in this research. These codes actually create the units

of analysis. The next step was concerned with categorizing the data. Categories are “the main groupings of the constructs or the key features of the text, showing the links between units of analysis” (Cohen et al. 2011, p. 566). Hence, the categorization involves examining the overlapping codes and collapsing them into categories. There were some predetermined categories that the researcher established depending on the research questions. These were: reasons behind a book selection and strategies used to comprehend. By having these categories, the categorization process was directed towards answering the research questions. In addition, there were also some emerging categories that were suggested by the data. The categories were, in fact, at different levels of generality and specificity (see Figure 4. 1).

To establish the reliability of the created categories, inter-rater reliability test was conducted. Two interviews’ transcriptions were given to two other independent raters to categorize. One rater was a PhD holder in education and the second rater was a master holder in education. The consistency of the evaluation between the two raters was established by counting the similarly coded categories. To examine the inter-rater reliability, the simple percent figure was calculated by finding the similarly coded categories. The results indicated that there were 82 % similarity between my categorization and the categorization of the other two raters. Thus, I continued to analyze the rest of the interviews with more confidence while bearing in mind the categorization of the other two raters.

The last step in the interview data analysis was the theme building. Theme building included combining the emerging categories that had the same concept into a theme. For example, the categories related to the books selected such as text length, title page and pictures were all included under the theme book layout. As a result of this theme building process, there

were five emerging themes: book layout, content or topic, reader's characteristics, reader's reading ability and reader's comprehension strategies (Figure 4.1 illustrates the predetermined and the emerging themes).

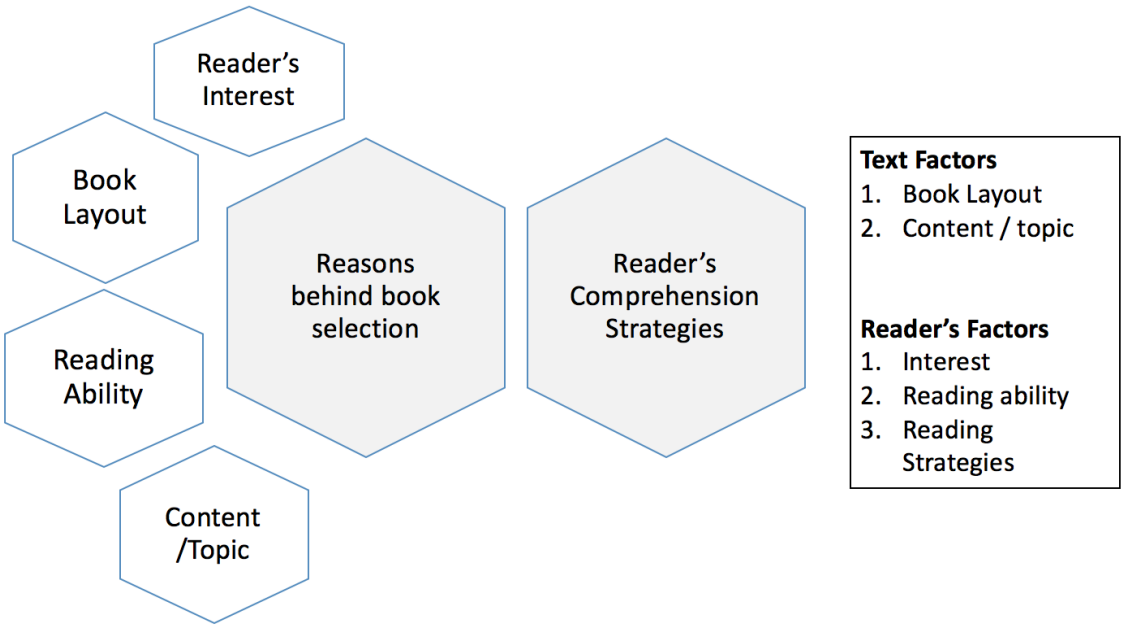

Figure 4.1: Predetermined and emerging themes of the interview data

As demonstrated in Figure 4.1, there were a total of six themes that emerged from the interview data. These themes represented the reader factors and the text factors that influenced the complexity of texts read by the young learners in Oman. The text factors involved book layout and book content. In contrast, the reader's factors involved reader's interest, reading ability and reading strategies. The following sections describe the text factors and the reader's factors with their emerging themes in details.

4.3.3.1 Text Factors from the interviews

In the interview, the term *text factor* refers to the factors that were mentioned by the participants and which influenced their choice of specific books. Findings from the interviews indicated that the text factors involved the book layout and the book content.

4.3.3.1.1 Book Layout

The first text factor was the book layout. The book layout involves aspects related to the look of the book such as the title page, the book size, the text length and the pictures. Figure (4.2) illustrates the aspects that emerged from the interview analysis data. In fact, the findings from the interview data highlight the significance of the book layout in text complexity. Participants indicated that they decided to read a book after looking at the title page or the front page. They also mentioned that having pictures and illustrations in books were an encouraging element that influenced their book choice. They attributed their preference of illustrated books over unillustrated books to the role that illustrations play in comprehension. For example, participant 15B explained, "*I read the title and looked at the pictures and then decided to take the book. I prefer to read books with pictures because they help me to understand the story".*

The participants further noted that they prefer small and medium size books over large size books because they are more convenient to read than large size books. Participant 19C, for instance noted the following, "*I prefer small and medium sized books because they are small and I can take them in my bag".* Participant (27C) also noted that the small size is the size she is used to, "*I'm not used to reading big- sized books. At home, I have small sized books only".* The length of the texts in these books was also criteria in the selection for some participants. Participant 35D, for example, said "*I counted the pages and looked at the pictures before*

deciding what book to take". Another participant (7B) also remarked*, "I don't take books with too much writing because I can't read it all. I want a text that is short so I can finish quickly".* They also reported that a large clear font is better than a smaller font.

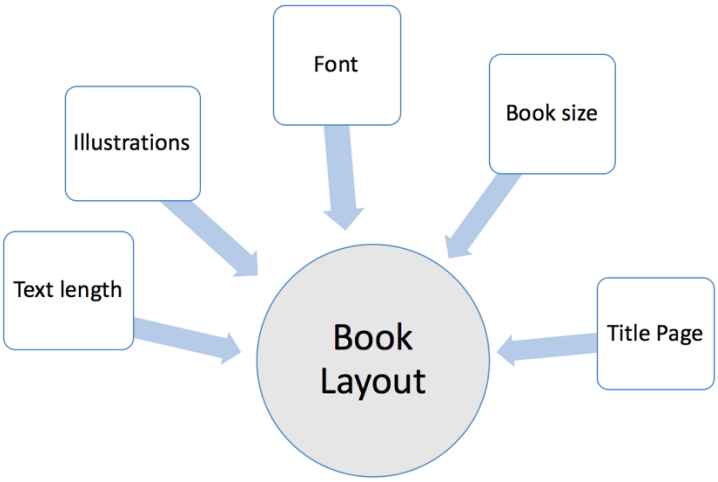

Figure 4.2: Aspects related to book layout that influence Text Complexity

4.3.3.1.2 Book Content

Another important text factor that influenced the participants' choice of books was the content or the topic of the book. In fact, many participants mentioned that they preferred to read adventure and mystery stories (7 cases). Participant 39D, for example, stated *"I selected this story because it is an adventure story".* Some participants mentioned also that they liked to read terror stories (4 cases). There were also participants whose book selection was influenced by some T.V programs and series (5 cases). Participant 33D, for example, stated, *" When I looked at*

the cover and read the title, I selected this story because it is about dinosaurs. I watched a TV program about dinosaurs".

In addition, there were also some students who preferred sport and science fiction (5 cases). Participant 13A was interested in football and it eventually inspired his selection, *"I selected this book because it tells us about the players in a football game".* Participant 15B linked the choice of science to his dream job, he stated, *"The story is about science and I like science. I want to be an astronaut".* Finally, some participants indicated that they preferred to read about historical Muslim characters (2 cases). Participant 6A, for instance, stated, *"I like to read about historic and Islamic characters such as Khalid bin Al Walid"* and Participant 1 A mentioned the following, *"I like to read about famous Arab characters such as Omer bin Alkhattab and the poet Ahmed Shawqi".*

The different topics associated with the book content theme are depicted in Figure (4.3).

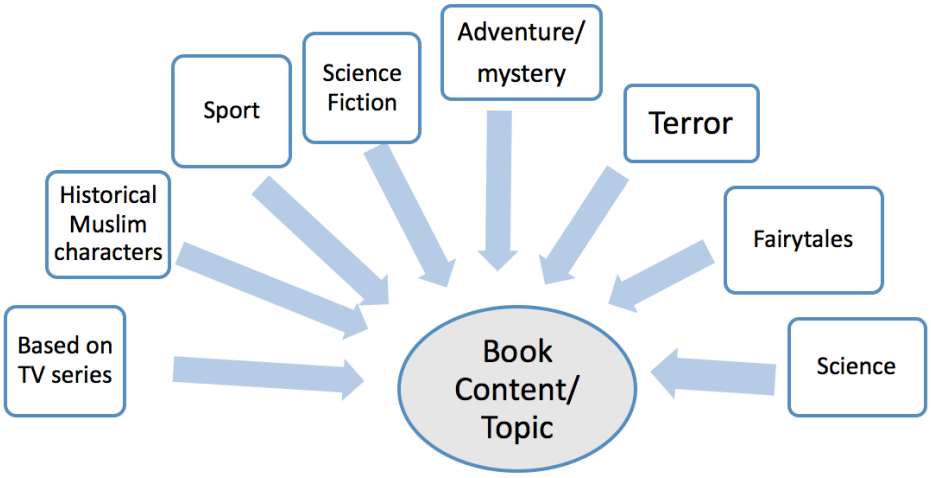

Figure 4.3: Topics associated with the book content theme

4.3.3.2 Readers' Factors from the interviews

The readers′ factors in the context of the current research, referred to the factors that were mentioned by the participants and influenced their comprehension of the selected books. These factors involved a predetermined theme (reading strategies) and emerging themes (reader's interest and reading ability). Findings related to the reader's factors are outlined in the following sections.

4.3.3.2.1 Reader's Interest

Interest is an indication of how excited a reader is to engage in reading (Thomas 2001). Actually, interest in the reading topic has an effect on the reading comprehension performance in a standardized test (Bray and Barron 2004). Because of its facilitative role, interest can increase engagement while reading texts and, therefore, can lead to better comprehension (Durik, Holt & Magliano 2011).

Reader's interest was one of the emerging themes from the interview data. There were some overlapping between the reader's interest theme and the content of the book theme because participants sometimes link their interest in a particular topic to their reasons behind a book selection. To resolve this conflict, if aspects related to the book were mentioned without any reference to the interest of the reader, then these aspects were considered under the content theme. On the other hand, if the reader noted, in general, his liking of a specific topic, it was then included under the reader factors. Reader's interest involves also aspects like the reader's overall interest in reading.

In general, participants showed interest in topics such as sports. They mentioned that they liked to read about football and swimming. Participant 13A, for example, stated, *"I like football. I always watch football matches on TV. I also like terror stories".* Some participants also noted that they liked adventures and travelling from one place to another. There were also some participants who were interested in technology and they mentioned that they would like to read about inventions such as computers, Xbox and PlayStation. Participant 2A, for instance, indicated the following, *"I like inventions such as Xbox. I like also PlayStation. I'd like to read about them".* Another participant (6A) also stated, *"I like to read about computers and technology".*

On the other hand, there were two participants, both from cycle two, who expressed their dislike to reading stories. *"I don't like reading stories. I want to read and finish quickly"* was the response of Participant 31C who did not show any enthusiasm towards reading.

4.3.3.2.2 Reading Ability

In this research, the term reading ability referred to any aspect mentioned by the young reader that was related to his/her reading ability and which affected his comprehension. Responses made by the participants imply that they were, to some extent, unable to determine the level of text complexity that matched their reading level. Their selection of books was based more on the layout of the book rather than the complexity of the language itself. For example, Participant 2A stated clearly that he is not interested in the language, but rather on the pictures, *"I don't care about the language inside the book. I only look at the title and the pictures".* Participant 18C stated that she chose her book because it fits her level and when she was asked to clarify what she meant by that she explained' *"I looked at the book from the inside. The font is not so small. I like it. It is nice".*

In addition, there were some participants who considered the length and the size of the books. For example, for Participant 14B, the length of the story is an essential factor when making a selection. *"I don't like to read very short stories. They don't fit me because there are no much events",* Participant 14B responded. Similarly, Participant 27C noted, *"I don't like to read these small stories (pointing to some decodable stories on the table) because they are very easy for me. I'm in grade four and these are for grade two".*

However, there were two cases, both from cycle two, who read some sentences from the books in order to decide if the books matched their level or not. Participant 19C, for instance,

noted the following, *I look at the words inside the story and if they are small, I take the book*″

Participant 16B also mentioned that she looked inside the book and read some sentences and also looked at the title before making a selection.

4.3.3.2.3 Reader's Strategies

Based on the interview data, the term *reader's strategies* referred to the strategies that the readers mentioned as supportive of their comprehension of the selected books. The strategies may include strategies used for vocabulary comprehension as well as strategies for text comprehension. The majority of participants in the sample indicated that they used pictures in order to guess difficult words. *"If I can't understand something, I look at the pictures to understand*", Participant 13A asserted. There were also a few participants who mentioned that they might google unfamiliar words. *"If I encounter a difficult word, I google it. I may also ask someone else. Pictures are also very helpful in understanding the story*" Participant 1A stated. Some participants noted that they used the glossary in the book, if available, to understand the meaning of words. Two participants only mentioned that they read the sentences before and after the difficult word and tried to guess the meaning from context. Participant 16B was one example. *"If I face a difficult word, I read the sentences before and after that word and try to guess the meaning. Or I look up the word in google",* she stated.

When it comes to text comprehension, some participants preferred to read stories that they had either watched on TV or read previously in Arabic so they could comprehend. Participant 8B, for example, stated *"When I know a story in Arabic, it helps me to understand the same story in English……I prefer to have meanings of words in Arabic and English"*. They also looked at the pictures in order to understand the story events. Participant 6B, for instance, stated, *"I choose books with one picture and one sentence in each page, so I can understand the story"*.

4.4 Summary

In chapter four, the main findings from the two phases of this research were outlined. First, findings related to the readability level of the sample books were described. The results showed that the Lexile scores for both cycles ranged from 120BR to 1040 Lexile and that the structure indicator of the text was the main source of complexity in both cycles. Second, findings related to the qualitative dimensions of texts such as levels of meaning, text structure, knowledge demands and language features were presented. Third, findings from the fluency test and the miscue analysis were outlined. Finally, the interviews' findings were illustrated.

Chapter 5
Discussion

5.1 Chapter Overview:

The aim of this chapter is to synthesize the findings of this research and to discuss their meanings and implications. A comparison of the findings of this research and previous literature is presented.

Aims of the research

- *To explore the factors that contribute to the complexity of texts read by young learners of English in Oman.*
- *To develop a preliminary model for the complexity of texts read by EFL young learners.*

Research Questions

1. What are the text -related factors that influence the complexity of texts read by young learners of English in Oman?
2. What are the reader -related factors that influence the complexity of texts read by young learners of English in Oman?
3. How does the interplay between reader- related factors and text- related factors while reading influence text complexity?
4. What are the implications of these factors towards a renewed model on the complexity of texts read by EFL young learners?

As such, the discussion is organized as follows; 1. Text factors 2. Reader factors 3. Interplay between text and reader factors while reading and, 4. Implications on a renewed model of the Complexity of texts read by EFL young learners.

5.2 Text Factors

Text factors are considered essential in our understanding of text complexity. This section offers a discussion of the factors that influence the complexity of texts within both a positivist and interpretivist paradigms. From a positivist perspective, the text factors that influence the complexity of texts read by young learners in Oman were investigated by examining the text aspects quantitatively using readability formula and qualitatively using evaluations from educational professionals. From an interpretivist perspective, the participants were interviewed regarding the text features that were behind their choice of books. Taken together, the following results were obtained from these tools regarding the text factors that influence the complexity of texts read by English young learners in Oman.

The first text- related factor that contributes to the complexity of texts read by English young learners in Oman is the unsystematic progression of books in the sample. It was found that the books from the two cycles do not progress systematically from one level to another and from one cycle to another. This unsystematic progression was established from the Lexile readability values which ranged from 120BR to 1040 in cycle one alone. The value of the standard deviation indicated also how spread out these values were. In cycle two, in contrast, the lowest Lexile score was 270 and the highest was 800. In addition, the fact that these books were from many different publishers coupled with the fact that they were the result of different projects being implemented in schools actually highlighted the reasons behind this unsystematic progression.

When books are not systematically organized according to complexity following a unified system of complexity, it becomes challenging for learners to make the right selection that matches their level.

The second text –related factor is the limited focus on learning- to- read skills. The qualitative analysis of texts revealed that, from the fifty books sample, there were only 9 books with a focus on learning to read skills. In Oman, there is no formal pre- primary education which means that, for the many students, grade one is the first grade in their educational journey. In Omani public schools, students are taught all the English phonics in addition to the reading and spelling of some simple decodable words in grades one and two. The consolidation of these decoding skills requires well -matched texts that are phonically decodable to reinforce the letter -sound learning and to facilitate the learning to read process (Beverly, Giles & Buck 2009; Mesmer 2009). Grades three and four should ideally offer these consolidation skills through phonically decodable texts and texts with repetitions of high frequency words. However, the limited number of these books in comparison to the books in the reading to learn stage suggests the mismatching between the complexity levels of these books and the learners' reading phase as suggested by Ehri & McCormick (1998), which could be a factor contributing to the complexity in these texts.

The third text -related factor is the high structure indicator of these books. The structure indicator evaluates the degree of repetition and patterning in a text. In that sense, a text with repeated structures lowers the complexity score of that text. The quantitative analysis of the seventy books sample (Forty -five books from cycle one and twenty -five books from cycle two) using Lexile indicated that structure is the main source of text complexity in both cycles. In fact,

in the selection and authoring of early grade texts, structural complexity is often given priority over the other complexity indicators because of the opaqueness of the English orthography (Mesmer et al. 2012). Therefore, the amount of repetition and patterning within the text becomes an essential determiner of text complexity. As such, having structural complexity as the main source of complexity suggests the challenges that EFL learners face while trying to make sense of these texts, which do not provide enough repeated exposures to the phrases and to the sentence structures within them. In contrast, predictable texts with repetitive syntactic structures, thus providing extra cues to readers, have the potential of improving learners' sentence comprehension (Cuningham et al. 2005; Mesmer et al. 2012) and therefore lowering text complexity.

The fourth text- related factor that influences text complexity is the high decoding demand in these books. Decoding requires sufficient phonological knowledge and word recognition skills. Actually, there is a deep research base suggesting the centrality of phonology and word recognition skills in the early learning to read phase (e.g. Al-mamary 2012; Falth, Gustafson & Svensson 2017; NRP 2000; Price-Mohr & Price 2018). Limited phonological knowledge does not only affect reading fluency but is also the main reason behind most of the spelling errors that EFL learners have (Alenazi 2018). According to Lexile, decoding received the second highest score in both cycles. The qualitative analysis of texts showed also that there were many books with many difficult -to –decode words. Furthermore, the WCPM fluency test results might also offer support to this finding since only six participants out of the thirty-two sample were able to decode their texts with 95% and above accuracy.

Actually, phonics knowledge and word recognition skills have some implications on the authoring of early grade texts where words are selected along a regularity continuum. The

sequence and pace of introducing phonics should follow a typical order beginning with consonants and short vowels and then progressing to blends, diagraphs and long vowels (Mesmer et al. 2012). Phonetically controlled texts foster students' decoding skills and enable them to construct probable pronunciations of the words they encounter in print (Cunningham et al. 2005). Since the books available at public schools in Oman are commercial and originate from different publishers, the chance that they follow a well- defined sequence of introducing phonics is very limited. In addition, according to the initial classification of books, there were only 9 books from the thirty- cycle- one sample that aimed at developing learning to read skills, thus, limiting the chance of having that well- defined sequence. Furthermore, the sequence of introducing phonics in the Omani syllabus, though following a systematic sequence, does not wholly resemble any other phonics scheme because it has been designed with considerations of the EFL Omani learner in mind. Therefore, phonetically controlled texts that are designed specifically to reinforce the decoding skills in that scheme should be in place.

The fifth text- related factor is Lexical complexity. Lexical complexity is considered a very significant factor in reading comprehension performance in general (Hiebert 2005; Arya et al. 2011) and in ESL and EFL reading in particular (Hiebert 2005; Sidek & Rahim 2015; Nouri & Zerhouni 2018; Vajjala & Meurers 2012). Although the semantic indicator was the last source of text complexity according to Lexile, the qualitative analysis of the texts has revealed a contradicting result. For Cycle One, seventeen books out of thirty books from the sample had difficult vocabulary or rare words while the remaining thirteen books had vocabulary matching the level of students in that cycle. In contrast, nine out of the twenty books from cycle two sample had many difficult words for students in that cycle.

A possible interpretation for the mismatch between the Lexile analysis and the

professionals' evaluations is that Lexile evaluates words according to their frequency in the language, to their abstractness and to the age of acquiring them. Therefore, the evaluation it provides of the semantic complexity could be imprecise, in the context of this research, because of the following reasons. First, there are other essential word- related aspects that are not considered in Lexile or any other readability formula, such as image-able words and rare words (Mesmer et al. 2012), words concreteness, morphology and meaning (Hiebert et al. 2019), and these factors may be examined only by expert human evaluations. Second, since Lexile considers the factor of words frequency to assess text complexity, it is essential to attend to the frequency measures, the frequency list and the method used to aggregate the information at the text level (Chen & Meurers 2018). The frequency list in Lexile is based on a corpus of texts intended for readers in the U.S. (K-12) schools whereas there is no adopted list in the Omani context (Al-Mahrooqi Al-Maamari & Denman 2016) and, thus, words frequency might not be accurately estimated by this measure.

On the other hand, the educators' evaluations of texts were based on their long experience of teaching and working with young learners learning English and, thus, they more readily provide accurate estimates of their students' familiarity with the vocabulary items in the texts. Elmore (2016) contends that the underlying justification of why word frequency predicts word familiarity and word knowledge is exposure and, therefore, the degree of frequency is better estimated if it can accurately reflect the degree of exposure. Hence, exposure is better estimated using teachers' evaluations especially in an EFL context where the learners' chances for exposure to the English language is limited almost exclusively to the English lessons.

The sixth text -related factor is the book layout. This factor emerged from the interview data analysis. When interviewing students about the reasons behind their book selection, data

related to text factors such as book layout and text topics emerged. In this research, the book layout involves aspects such as text features, text length and book size. In fact, there are three major categories of text features: print, graphic and organizational features (Kelley & Clausen-Grace 2016).

Based on data obtained from interviews, participants took one, two or all of the text features categories into consideration while making a book selection. Some participants indicated that they made a book selection after looking at the front page and reading the title. They also mentioned that images and illustrations in the books influenced their choice. They attributed their preference of illustrated books over unillustrated books to the role that illustrations play in facilitating comprehension. The majority of students (30 students) further noted that they preferred small and medium- size books over large -size books because they were more convenient to read than large- size books. They also reported that a large clear font was better than a smaller font. Some participants (10 participants) mentioned also that they looked at the text length before making a selection. They indicated that they preferred to read books with shorter texts than lengthier books.

The seventh text- related factor is the book content. When interviewed about the reasons behind their selection, many participants responded by referring to the content of the book. Fifteen participants mentioned, for example, that they preferred to read adventure, terror and mystery stories. There were also participants whose book selection was influenced by some programs they watched on TV. In addition, there were many students who preferred to read about sport and science fiction. Finally, some participants indicated that they preferred to read about historical Muslim characters.

In general, the interview data regarding the reasons behind the book selection imply that participants were more concerned with the physical appearance of the book and the book content rather than the complexity of the language that should have received more attention. Though research has highlighted the significance of text features (e.g. Jenan 2011; Risko Walker-Dalhouse 2011) and book content (e.g. Fisher & Fry 2012; Jenan 2011; Pearson & Hiebert 2014) in text complexity, the research base supporting the role of linguistic features is more extensive (e.g. Arya et al. 2011; Fitzergrald et al. 2015**;** Frantz et al. 2015; Hashemin & Mahmoudi 2016; Hiebert et al. 2019; Zhao et al. 2019).

One of the possible reasons behind the participants' limited attention to the linguistic features of texts was that learners were unaware of the criteria of books selection and how they could pick books that matched their reading level. In fact, it could be the case that students in Oman do not read frequently in English and, if they do, they are not often given the opportunity to choose what to read (Al-Seyabi & Al-Rashdi 2016). Therefore, they are not trained on how to select books. Another possible reason is that reading fluency is not taught in the Omani English for Me (EFM) syllabus and, thus, students are not aware of their reading speed and reading accuracy and subsequently are not aware of their reading fluency level. One of the widely- used methods to teach readers to select the books that match their linguistic level, for example, is the five- fingers rule. In this simplified method, a child is asked to read 100 words from a book and to raise one finger for each unfamiliar word. If the child has more than five fingers up, the book then is considered hard and he/she is advised to make another selection and to repeat the same procedure in order to make a selection.

The Five- Fingers rule is, in essence, related to the "Zone of Proximal Development" (ZPD) by Vygotsky (1978). If a reader less than 10 unfamiliar words in a text of 100 words, this

entails that the task of reading and comprehending that text can be achieved without help or without any guidance from a skilled partner or a teacher. Therefore, that text is said to be within the readers' ability and the learners can comprehend it independently. Nonetheless, if a text has 10 or more unfamiliar words in every 100 –words, it entails that readers cannot work through the text by themselves and that they require support and scaffolding from their teachers. In other words, texts within this range are within the reader's ZPD and are appropriate for use in instructional settings.

The professionals' evaluations of text complexity in the books sample was based in relation to the grade levels. In other words, evaluators considered the complexity of the language in the books sample in comparison to the level of the language presented in the syllabus. According to their analysis, this includes comments on the length of the text's sentences and the complexity of its vocabulary. For Cycle One, seventeen books from the sample had difficult vocabulary or rare words and the remaining thirteen books had vocabulary matching the level of students in that cycle. In contrast, nine out of the twenty books from cycle two sample had many difficult words for students in that cycle. In the case of vocabulary items that were matching the level of students, the evaluators mentioned that there were many high frequency words. It should be noted, however, that the books were offered to all the students in the cycle to read. Therefore, evaluators were analyzing the linguistic complexity of these books with the vocabulary taught in the whole cycle as a reference.

The eighth text- related factor that affects text complexity is the levels of meanings within literary texts. In cycle one, from the thirty books sample, seventeen books had one level of meaning while thirteen books had more than one level. It should be noted that cycle one books should pay considerable attention to building learning to read skills. The levels of meaning

within a text implies going beyond the literal meaning of texts and trying to figure out the intentions of the author. This includes the use of allegory, imagery, symbolism in addition to others. The question arising here is whether the young learners in cycle one have developed adequate learning- to- read skills that qualify them to move beyond the literal meaning of the text. Reading fluency is one of these beginning skills that, if mastered, allow readers to automatically read words and thus to develop higher level processes such as comprehension (Young, Mohr & Rasinski 2015). In the case of the young readers in the current research, the fluency level was an issue that influenced text complexity especially in cycle one sample.

5.3 Reader Factors

Of the many important factors that contribute to our understanding of text complexity are those related to the reader. This section offers a discussion of the reader factors that influence the complexity of texts within both a positivist and interpretivist paradigms. From a positivist perspective, the reader factors that influence the complexity of texts read by young learners in Oman were investigated qualitatively using evaluations from educational professionals. From an interpretivist perspective, the participants were interviewed regarding the reasons behind their books choice and the strategies they used for comprehension. As a result, the following reader factors were obtained from these tools.

The first reader- factor is the reader's knowledge of the vocabulary items presented in the text. In general, there are four types of knowledge demands; prior knowledge, background knowledge, cultural knowledge, and vocabulary knowledge (Fisher & Frey 2013). Vocabulary knowledge was the most noted knowledge demand by evaluators followed by prior knowledge. Having vocabulary demand as the most noted demand by evaluators could be attributed to the

mismatch between what the students are learning in the English for Me (EFM) syllabus and what they are reading in the books sample. Since the qualitative evaluations of texts were carried out by educational professionals who had long experience teaching EFM and working with young learners, their notes were most probably based on their knowledge of the syllabus and the level of their students.

In fact, vocabulary knowledge or linguistic schema is considered a very significant factor in reading comprehension (Hashemin & Mahmoudi 2016; Hiebert 2005; Sidek & Rahim 2015; Vajjala & Meurers 2012). When English learners receive equivalent instruction on vocabulary to that of English proficient speakers, they perform comparably well on word tasks (Lesaux & Geva 2006). As an implication of this finding, it is recommended to pre-teach vocabulary and structures to facilitate text comprehension although the teaching of vocabulary benefits learners more (Hashemin & Mahmoudi 2016). Since the texts were used for independent reading, scaffolding learners through the pre-teaching of vocabulary items was not possible. However, scaffolding could be provided through other channels such as repeated encounters of the unfamiliar words in texts (Cunningham et al. 2005) or the use of vocabulary cards with the foreign language – first language word pairs (Nation 1990 as cited in Nation 2016).

In fact, it is argued that ESL learners should know the first 2000 words in order to begin reading ordinary texts (Nation 1990 as cited in Nation 2016) and the first 3000 high frequency words in order to read authentic texts (Nation & Waring 1997). Texts intended for language learners should feature a sufficient number of high frequency words and these words should be encountered repeatedly in a way that supports acquisition (Nation 2015). Repetition of words highlights the use of a very essential principle in language learning which holds that words are

best remembered when encountered in meaningful contexts at least seven times over spaced intervals (Thornbury 2002).

As the texts introduced for young learners in Oman originated from different publishers, it becomes challenging to follow a predetermined sequence of introducing vocabulary items that support the learning of high frequency words across the different books. In addition, the fact that there is no adopted vocabulary list in EFM makes the task of matching the texts to the learners' list of familiar words even more challenging.

The second reader related factor is the reader's prior knowledge. Data on reader's prior knowledge was obtained from the qualitative analysis of texts by educational evaluators in addition to the interview data. It was the second knowledge demand noted by evaluators. A text may have simple vocabulary and short simple sentences but is still complex because of the ideas expressed that require sophistication on the part of the reader (Hervey 2013). According to the qualitative analysis of texts, there were some narratives that required knowledge of some scientific facts about animals and earth. In addition, there were narratives that required knowledge of some geographic facts such as weather in the south and north poles and names of foreign towns and cities in the UK.

As many participants in the sample were still in the stage of learning to read in English, the focus should have been on building fluency skills through repeated vocabulary and language structures. In fact, well- thought- out curriculum and structured reading programs of the kind and the amount of scaffolding or supports for students in each encounter is extremely essential at this stage. These supports should be planned in accordance with students' developmental stage (primary or intermediate) and instructional needs such as reading comprehension or reading fluency (Strong et al. 2018). A text selected for independent reading with no teacher scaffolding

should allow the student to practice the comprehension skills they have been repeatedly taught and this, in turn, consolidates their critical thinking skills outside the teacher's presence (Fisher & Frey 2015). Since there is no match between what students learn in their English classes with the presence of their teacher and what they learn individually, it is probable that these independent reading experiences do not follow any structured reading program.

The third reader- related factor that contributes to the complexity of texts read by young learners of English in Oman is the reader's use of reading strategies. The reader's use of reading strategies is obtained from the interview data. It refers to the strategies that the readers mentioned as supportive of their comprehension of the selected books including strategies used for vocabulary comprehension as well as text comprehension.

In the case of vocabulary learning strategies, the majority of participants in the sample indicated that they used pictures in order to guess difficult words. There were also a few participants who mentioned that they might google unfamiliar words while some participants noted that they used the glossary in the book, if available, to understand the meaning of words. Some participants also mentioned that they tried to guess the meaning from context by reading the sentences before and after the difficult word.

In fact, lexical complexity is considered a very significant factor that influences reading comprehension performance especially in the case of English learners (Hiebert 2005; Sidek & Rahim 2015; Vajjala & Meurers 2012). There is substantial research indicating that English language learners rely heavily on their vocabulary knowledge and that lack of this knowledge is the largest obstacle towards comprehension (e.g. Alqahtani 2105; Nation 2001).

Reutzel and Cooter (2012) listed three essential strategies that help learners understand meanings of new vocabulary items. First, readers can use dictionaries and other reference aids.

Second, they can use structural analysis of word parts. Third, they can use context clues that surround the unfamiliar word (Reutzel & Cooter 2012). The participants' responses to the question regarding their use of vocabulary comprehension strategies suggested that they were largely dependent on the use of pictures as context clues in order to understand meanings of unfamiliar vocabulary. They mentioned also that they use dictionaries and reference aids including online dictionaries. These resources, however, are not often available in the classroom setting in Oman. Classrooms in government schools in Oman are not supplemented with dictionaries. Dictionaries are only available in the Resources Centers in schools and English classrooms rarely use these centers. The structural analysis of words as a vocabulary comprehension strategy was never mentioned by participants in the sample.

The young learners' choice of the vocabulary comprehension strategies reflects, in fact, the strategies they have been taught in their English for Me (EFM) syllabus. Although young learners in grades one and two across Oman have been introduced to synthetic phonics since the academic year 2014/ 2015, the whole language implications are still rooted in the instructional practices recommended by their syllabus (EFM). In fact, there were no real amendments in EFM but there was rather an inclusion of phonics in a separate booklet. Accordingly, while the young learners are taught to apply their phonics skills and decoding in the phonics lessons, they are applying whole language strategies to comprehend texts and vocabulary items in the EFM lessons. For example, learners in grades five and six are taught to use prediction to guess the meanings of unfamiliar words. They are encouraged to use context clues such as pictures or sentences proceeding or following the target word. These are, in fact, all comprehension strategies based on the conceptualization of reading development as the gradual integration of the three cueing systems; semantic, syntactic and grapho-phonic (Hepmenstall 2017).

Following the above conceptualization, comprehension should be based on the semantic cues followed by the syntactic cues and lastly on the grapho-phonic cues. Accordingly, students are not encouraged to decode unfamiliar words or to use structural analysis of words and word roots to guess meanings as these are considered by whole language supporters (e.g. Goodman et al. 2005) signs of a reader's weakness. Recent research, however, challenges this claim and asserts that good readers rely on phonics because they expend less capacity in processing visual information in comparison with beginners and unskilled readers who rely heavily on context by guessing unfamiliar words using context clues (Spear- Swerlling 2007). In addition, as a characteristic of their reading progress, young learners move from reliance on contextual cues to graphemic similarity in their efforts to identify unfamiliar words (Hempenstall 2017).

Regardless of how the reliance on the grapho-phonic cues was justified by whole language supporters or skills-based supporters, this reliance, in the context of the current research, implied the following. First, the participants were depending almost exclusively on print to construct meaning which was an expected outcome of the teaching of phonics. Second, when encountered with an unfamiliar word, the participants tended to try decoding as their first resort and this is evident in the high percentage of grapho-phonic similarity between their observed responses and the expected responses from the texts. Third, because the participants did not reach adequate level of fluency and decoding skills for reading these texts, they were unable to construct meaning and, therefore, they used context clues such as pictures to comprehend. Fourth, it could be assumed that the participants failed to use the syntactic and the semantic cues in constructing meaning because they lacked an adequate level of language proficiency to facilitate their comprehension. Again, the language proficiency element could be attributed to the

fact that the reading materials that they read independently are not aligned with the vocabulary and grammar structures that the learner can already control in speaking (Goodman 1973).

The participants' reliance on the grapho-phonic cues over the syntactic and the semantic cues could be also explained in the light of the Compensatory Model of L2 reading by Bernhardt (2011). According to this model, readers tend to compensate for inadequacies in one area of language learning by drawing more heavily on other areas. Hence, to compensate for their inadequate English language proficiency, the young readers tended to draw more heavily on grapho-phonic cues. It seems that even the phonics knowledge of the participants was also sometimes inadequate and this was evident in the large number of mispronunciations and non-words produced by the participants. Taken together, the deficiencies in semantic, syntactic and grapho-phonic cues in the English language, in the part of some participants, led to their reliance on their first language. For example, some participants relied heavily on their prior knowledge such as knowledge of the story in their first language which was evident in their justifications for their selections.

The use of the three cueing systems independently in an EFL setting requires that these cues are first introduced in an instructional setting before asking learners to use them independently while reading (Goodman 1973). The use of the semantic cues, for example, was probably not activated due to the discrepancy between the vocabulary items in the EFM syllabus and the books learners read independently. Similarly, the use of syntactic cues requires deep knowledge of the English language structures which is actually not stressed in EFM and is not aligned with the learners' independent reading. As these learners were still in their beginning

stages of reading development and since they had low English proficiency level, syntactically complex texts could significantly affect their comprehension (Eslami 2014).

As far as text comprehension is concerned, many participants preferred to read stories that they had either watched on TV or read previously in Arabic because, according to them, it supported their comprehension of texts. Others indicated that they looked at the pictures in order to understand the story events. Actually, a closer look at these strategies indicates that the participants were not aware of many comprehension strategies that may help learners develop reading comprehension. It seems that they often struggle while trying to read something in English and, thus, look for texts that are comprehensible for them (Hempenstall 2017). Hence, they select books that they have previously read in Arabic or they depend heavily on pictures when trying to make sense of the text in front of them.

Another important observation from the participants′ responses regarding the reading comprehension strategies they employ while reading is the absence of "global strategies and problem solving strategies" (Mokhtari & Richard 2002). When asked about the reading strategies that the readers in the sample employed for comprehension, the participants never mentioned any use of global strategies, such as setting a purpose, previewing text characteristics, skimming, activating prior knowledge and predicting which prepare the readers for the reading task. On the other hand, the participants did not also refer explicitly to the problem-solving strategies that they might employ when the text became challenging and which include strategies such as re-reading, slowing down, reading aloud, guessing the meaning of a word, and visualizing information in the text (Mokhtari & Richard 2002). It could be the case that these learners were

not taught explicitly how to use these strategies before and while reading independently. Some participants might also have used some of these strategies but they were unaware that they were supposed to use them because they were not taught to do so and hence, they did not mention them in the interview.

Since the researcher recognizes the multi-dimensionality of reading and considers reading as a multifaceted construct entailing both literal comprehension and higher order types of comprehension, the extent to which participants were utilizing both types of comprehension was examined from the interview data. In fact, higher order types of comprehension are the result of the interplay between the literal comprehension of texts and the higher order comprehension and they entail getting implied meaning (inferential comprehension), assessing what is read (critical comprehension) and reading beyond the text (creative comprehension) (Ghaith & El-Sanyoura 2019). It was evident from the interview data, however, that participants were concerned with the literal meaning of texts and did not read the ideas beyond these texts. The reason could be that these participants were still in the learning to read stage and, thus, they were too ″bogged down″ in decoding the text that they were challenged by the task of literally comprehending it let alone getting the higher order comprehension skills (Reutzel & Cooter 2012).

Training students on higher order types of comprehension is extremely essential. For instance, critical thinking is one type of higher order comprehension and is a skill, according to critical thinking specialist Randy Kasten, that can separate innovators from followers (Kasten 2017). When learners become critical thinkers, they can survive in this era of alternative facts and fake news and they become equipped with the necessary tools to make decisions based on facts (Kasten 2017). As far as EFL context is concerned, critical thinking can reduce the anxiety

associated with foreign language reading (Aghajani & Gholamrezapour 2019) and can significantly develop English learners' performance on reading comprehension (Fahim, Barjesteh & Vaseghi 2012; Hassani, Rahmany & Babaei 2013). This positive effect could be attributed to the role that critical thinking plays in helping learners seek reliable knowledge and in becoming responsible of their learning and their life (Hassani, Rahmany & Babaei 2013).

However, the point at which we should start integrating higher order types of comprehension into reading classes in an EFL setting depends largely on the mastery of learning to read skills. This does not mean that EFL readers before that point do not engage in critical thinking about the ideas presented in the text. In the Arabic language classroom, the young readers discuss the ideas in the texts and critically analyze and evaluate them and this enables them to transfer these skills to the English classroom. However, these thinking skills are not to be taught in the English classroom since the focus initially is on the learning to read skills. A solid foundation of the learning- to -read skills actually facilitates the mapping of incoming information such as sentences onto the reader's mental structure and this, in turn, facilitates comprehension and engagement with the text and which subsequently facilitates critical thinking (Abu Shihab 2011).

The fourth reader- factor that contributes to the complexity of texts read by English young learners is the reader′s interest. In general, interest in the reading topic can increase engagement in reading and, thus, can lead to better comprehension (Durik, Holt & Magliano 2011). Fulmer et al. (2015) indicate that reading interest- based texts is an incentive that maintains both engagement as well as deep processing even in the case of difficult texts. Soemer and Schiefele (2019) contend that difficult texts increase the levels of voluntary and involuntary

mind wandering (thinking of unrelated things to the task assigned) and that this effect is mediated by interest in the topic.

When asked about topics that interested them, participants in this study responded that they prefer to read on topics related to sport, adventures, travel, technology and computer games. It seems that these topics are popular among readers at this age group as is suggested by previous research (e.g. Janan 2011). It should be noted, however, that participants in this research did not show interest towards series of books. For instance, in her research, Janan (2011) indicates that beginner readers in the UK enjoyed reading books by their favorite or a famous author or they prefer reading for certain publishers such as Oxford Reading Press. It could be that the participants in this research do no read frequently in order to build a preference to an author or to a publisher. Another reason could be that the books did not progress systematically to allow for a repeated reading for books written by the same author. Another possible reason is that participants were not taught to notice the author or the publisher of the book while making a selection which was evident in the students′ interviews that lacked any mentions of authors or publishers.

5.4 Factors resulting from the interplay between the reader and the text factors

This section discusses answers to the third question in this research which was concerned with the factors that affected text complexity and emerged as a result of the interplay between the reader factors and the text factors while reading. In order to answer this question, two tools were implemented. First, participants were tested on oral reading fluency and their reading rate and

reading accuracy were calculated using Words Correct Per Minute (WCPM) measure. Second, the variations between the expected readings and the observed readings were analyzed using miscue analysis.

In this research, it was assumed that oral reading fluency as characterized by WCPM may be indicative of the complexity levels in texts. Previous literature has, in fact, generally suggested a negative relationship between text complexity and oral reading fluency (e.g. Amendum et al. 2018; Benjamin & Schwanenflugel 2010; Spencer et al. 2019). As such, it is expected that as the complexity of texts increases, the oral reading fluency of students becomes less as indicative by their reading rate or Words Per Minute (WPM) and reading accuracy or Words Correct Per Minute (WCPM).

WCPM was calculated by subtracting the number of errors made by a participant in one minute from the total number of words read in that minute. It was found that WCPM results ranged from 20 in grade three to 127 in grade 6. The mean WCPM score in grade three was 43.1 and it progressed slightly in grade four to 46.1. In comparison, grade five mean WCPM score was 69.8 and grade six mean score was 86. However, as the values of standard deviation indicated, the mean WCPM was widely spread out in grades five and six compared to grades three and four. Hence, the WCPM data might suggest that the participants' reading fluency scores may not be progressing systematically across the four grades.

Reading fluency rate and reading fluency accuracy are novel terms in the Omani context. There are actually no established reading fluency benchmarks in the Arabic language as well as in the English language. Since there were no reading fluency benchmarks for English learners in Oman, the WCPM values were compared to international benchmarks in reading fluency while

also recognizing that these norms address the reading fluency of readers of English texts in a native language setting. The benchmarks were established by Hasbrouck and Tindal (2006) who created these norms as a result of their extensive study of oral reading fluency. They were updated in the year 2017 to include updated compilation of WCPM data. The benchmarks are usually used to draw conclusions and make decisions about students' reading fluency levels.

According to Hasbrouck and Tindal (2017), an average grade one student in the United States should read 60 WCPM by the end of grade one and he/she should progress to 100 WCPM in grade 2 and to 112 WCPM in grade 3. Grade four students should read at a 133 WCPM rate and grades five and six at 146 WCPM rate. In contrast, the mean WCPM in the current data is 43 for grade three, 46 for grade four, 69 for grade 5 and 86 for grade 6. Therefore, it could be speculated that one of the factors that influenced text complexity and came as a result of the interplay between the reader and the text factors while reading is the low reading fluency level of the readers. Although the researcher in this study fully appreciate that these fluency norms apply only to readers in the United States, these numbers may provide some reference to compare to in the absence of reading fluency benchmarks in the Omani context. Furthermore, the fact that the participants in the sample represent the best students in reading fluency in three schools may further highlight low reading fluency level as a factor that contributes to the complexity of texts read by these young learners.

In general, the WCPM values in the current research may suggest that considerable attention is to be paid to reading fluency development before involving learners into independent reading as sufficient level of reading fluency is a prerequisite to reading comprehension (Mohr, Young & Rasinski 2015; NRP 2000; Reutzel & Cooter 2012). The fact that the students

participating in this research are the best among their peers when it comes to oral reading fluency further highlights the significance of including reading fluency instruction into the EFM syllabus. When it comes to the implications of this finding on instruction, reading fluency lessons that typically address the three components of oral reading fluency; accuracy, automaticity and prosody (Rasinski 2015; Samuels 2007) should be incorporated into EFM.

One reason behind the low reading fluency values could be that the participants were unable to make the right selection of books. This was determined by comparing the WCPM scores with the Betts' criteria for independent, instructional and frustration levels. From the sample of 32 students, there were only two participants who were able to read with 99- 100% accuracy and those participants accounted for 6% of the sample. In other words, following Betts criteria, only 6% of students from the sample were able to read the text with a level of accuracy that qualify them to read it independently. On the other hand, 12.5% of participants read texts that were at their instructional level which meant that they needed support from the teacher. In addition, 9.5 % from the sample were either reading at their instructional level or at their frustration level and the rest of the participants (23 students accounting for 72% of the sample) were reading at their frustration level.

Information from these reading levels should guide instructional decisions such as matching readers to books or assigning students to reading fluency classes. These decisions are usually made by the teacher who should regularly monitor students' progress through informal assessments and periodic benchmarks assessments (Halladay 2012). With the absence of reading fluency assessments and the reading fluency and comprehension benchmarks in the Omani context, the development of an effective independent reading scheme is actually a challenge.

The second tool that was used to determine the factors that operate as a result of the interaction between the reader and the text factors while reading is the miscue analysis. Miscue analysis is considered one of the well- known techniques in assessing oral reading in research and pedagogy. It is also used to describe the strategies employed by readers while reading (Goodman 1996). Goodman (2015) argues that miscue analysis "provides a more complete view of the reading process than any brain scan provides when a reader presses a button in response to a flashed word or non-word" (Goodman 2015, p. 96). In literature, miscue analysis has been used for different purposes including the following; 1. to explore students' beliefs about reading and reading processes (e.g. Wang 2019; Wang & Zheng 2019), 2. to monitor and document students' development and growth in reading (e.g. Bradshaw & Vaughn 2016), 3. to improve reading fluency of learners (e.g. Born & Curtis 2013) and, 4. to compare first and second language reading (e.g. Mikulec 2015; Ramadiro 2012).

The current research, in contrast to the previously- mentioned research, employs the miscue analysis to access participants' reading comprehension and to understand the strategies they employ in order to construct meaning. The texts used for the miscue analysis were selected by participants. Hence, participants had some sort of control over the content, the book's physical layout and the complexity level. They were also able to select books based on their interest and their prior knowledge. It was believed that the complexity of texts that were selected by participants was affected by the integration of all these factors during reading. Therefore, it is argued that the complexity of texts was characterized by the fluency level of students as indicated by WCPM. However, WCPM values did not show how the participants were able to construct meaning. Therefore, further investigations regarding the strategies that participants used in order to construct meaning were conducted. To examine these approaches, the

participants' cueing systems were explored. These cueing systems included grapho-phonic, syntactic and semantic systems.

The results of the miscue analysis revealed that the substitution type of miscue was the most frequently produced type by participants (221 substitution miscues compared to 15 omissions, reversal and insertion miscues). From these substitutions, it appeared that non- word substitutions outnumbered the real word substitutions (142 non- word substitutions compared to 79 real word substitutions). The dominance of non- word substitution indicates that the majority of readers, when encountering an unfamiliar word, tend to name the word according to their phonic knowledge rather than their vocabulary knowledge (Goodman 1996). While they sometimes succeed to produce real words, they often fail and produce non- words. Accordingly, it could be speculated that one of the factors that contributed to text complexity and occurred as a result of the interplay between the reader and the text factors while reading is the participants' reliance on the grapho-phonics system while trying to construct meaning.

This factor was, in fact, verified through the analysis of miscues in order to investigate the reader's use of the three cueing systems: grapho-phonic, syntactic and semantic. It was found that the participants from both cycles made 59 miscues with some degree of graphic similarity from the overall 69 miscues. In other words, 85.5 % of the miscues made by participants had some degree of graphic similarity to the expected text words. This high percentage of graphic similarity suggests that the participants relied largely on how the word look in print when encountering unfamiliar words. It was also found that 56 miscues out of the 69 miscues (81%) shared at least some degree of phonic similarity with the expected words. Accordingly, it could be stated that the majority of the miscues looked or sounded in some way like the expected

words. Hence, it could be speculated that the participants were relying largely on the grapho-phonic system in their attempts to construct meaning.

The 69 miscues were also analyzed for syntactic and semantic acceptability and for meaning change. It was found that the majority of the miscues made by the students in this research were syntactically and semantically unacceptable (only 23 miscues were syntactically and semantically acceptable). This suggests that the participants, when encountered with unfamiliar words and in their effort to construct meaning, produced sentences that were unacceptable in terms of grammar and meaningfulness. In other words, many learners were unable to produce a text that sounded like language. Hence, it could be stated that the participants, despite their interest and prior knowledge in the books they selected, were unable to construct meaning through the use of the semantic and the syntactic cueing systems. Actually, only 6 miscues were strength grammatical miscues and 6 other miscues were partial strength miscues in which participants were able to construct meaning through the use of the three cueing systems.

Subsequently, it might be stated that the readers in this research were unable to use the three cueing systems while reading in an effective manner. They were actually not engaged into their reading and treated it as a mechanical process in which words are translated into sound units (Ramadiro 2012). They struggled in linking the three cueing systems in order to create meaning and relied almost entirely on the grapho-phonic system. While learning a second language, this reliance implies poor literacy skills in the second language in addition to the lack of basic conversational fluency which makes it difficult for learners to experience English language instruction as a meaningful activity (Ramadiro 2012).

The reliance on the grapho-phonic system was also evident in the high number of non-words which grapho-phonically resemble the text words. It might be the case that the learners were overwhelmed with the high number of unfamiliar words in the text and the grapho-phonic system was the only accessible system to them since they were not familiar with the words meanings. The reliance on the grapho-phonic system coupled with the lack of semantic and syntactic knowledge in the English language could imply lack of adequate English language proficiency.

Based on the above findings, it could be proposed that the inadequate level of English language proficiency was one of the factors that contributed to the complexity of texts as a result of the interplay between the text and the reader factors while reading.

5.5 Implications towards a renewed model on text complexity

The text factors, the reader factors and the interaction between them during the reading process have several implications towards a renewed model of text complexity for young EFL learners. These implications address the fourth research question:

What are the implications of these factors towards a renewed model on the complexity of texts read by EFL young learners.

The findings of the current research have demonstrated that the complexity of texts read by young learners in Oman are governed by several factors existing within texts, readers or resulting from the interaction between the texts and readers during the reading process. By embracing recent definitions of reading comprehension that recognize the reader and the text roles in the reading comprehension process, a new characterization of text complexity is created.

Meaning is not only residing in the text. Meaning is also created as a result of the interaction between the reader and the text. While reading, the reader is engaged in a continuous process of "extracting and constructing meaning" (RAND 2002). Therefore, in analyzing the complexity of texts, we should attend to the factors that contribute to this continuous process by considering the factors that occur as a result of the interaction between readers and texts during the reading process in addition to the factors residing within texts and readers. Since the current research is limited to the factors that contribute to text complexity in an independent reading setting context in which the young learners were all reading for the same purpose, the factors that may influence text complexity and are related to variations in contexts and reading tasks are not included in the model. Figure (5.1) illustrates the renewed model of complexity for texts read by young learners of English in Oman.

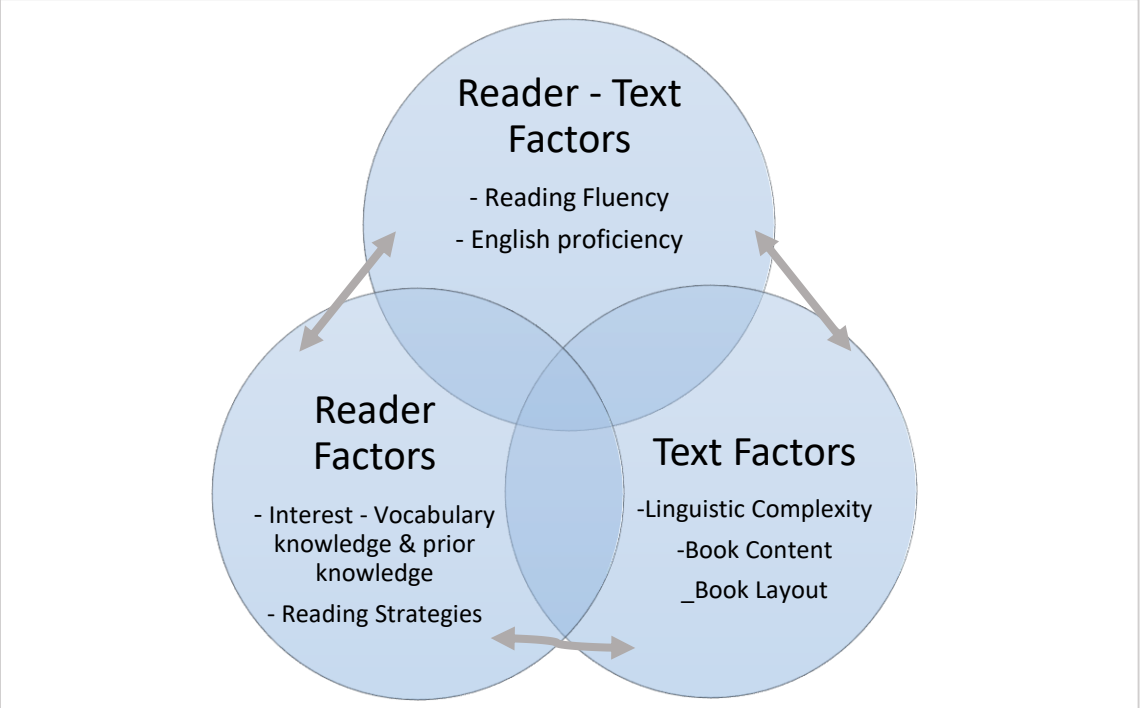

Figure (5.1): Towards a renewed model on Text Complexity for EFL young learners

This model of text complexity proposes that the concept of text complexity is influenced by the text factors, the reader factors and the factors resulting from the interaction between the reader and the text while reading. Together, all these factors can potentially reduce or increase the complexity in texts. Therefore, in estimating the complexity of texts intended for young learners, we should attend to the reader and the text factors in addition to the interaction of these factors during the reading process. Following this conceptualization, text complexity is defined in the current research as a complex process that entails the identification of the factors that facilitate or otherwise hinder comprehensibility of texts and which involves the text factors, the reader factors and the interaction between these factors during reading. This new model of text complexity sheds also some implications on the selection, the evaluation and on the authoring of texts.

5.6 Summary

In chapter five, a discussion of the main findings of this research was outlined. First, the text factors that contributed to the complexity of texts read by young learners of English in Oman were stated. Second, the reader factors that contributed to the complexity of texts read by young learners of English in Oman were listed. Third, the factors that resulted from the interplay between the reader factors and the text factors while reading were outlined. Finally, the implications of these factors towards a renewed model of text complexity were illustrated. A discussion of all these factors with references from literature was offered along with the findings.

Chapter 6
Conclusions, Implications, Limitations and Recommendations

6.1 Introduction

This research has aimed to explore the main factors that influence the concept of text complexity that related to texts, readers and the interplay between texts and readers while reading. Based on these factors, the researcher suggested a preliminary model for the complexity of English texts read by young learners in Oman.

This chapter provides a summary of the key research findings from Lexile readability formula, qualitative evaluations of texts, miscue analysis, interviews and WCPM fluency test. The chapter also lists some implications of the current research for theory and practice. Finally, it acknowledges the limitations of this research, and suggests several recommendations for future research.

6.2 Overview of Key Findings

Chapters 4 and 5 presented in detail the research findings. In order to approach the topic of text complexity, this research was conducted within the positivist and the interpretivist paradigms. By combining both paradigms, the shortcomings of conducting text complexity research solely within the positivist or the interpretivist paradigm were, to some extent, overcome. The researcher, therefore, adopted pragmatism in which researchers use whatever works to answer the research questions whether it is quantitative, qualitative or a mix of both (Fraenkel et al. 2015). The use of pragmatism in the context of this paper justifies employing a mixed – methods approach in which quantitative as well as qualitative methods that belong to

two different paradigms are combined in order to answer the research questions. Specifically, quantitative analysis of texts using Lexile, qualitative analysis of texts by educational professionals, WCPM test, miscue analysis and interviews were employed in order to identify the factors that influence the complexity of texts read by young learners of English in Oman. As a result, the following text-related factors, reader- related factors and text- reader factors were identified.

The first text- related factor that contributes to the complexity of texts read by young learners in Oman is the unsystematic progression of texts from one level to another. Since the texts available for independent reading in schools in Oman originate from different publishers, it is unlikely that transitions from one book to another is due to a positive increase in text complexity quantitative indicators such as vocabulary or structure. Therefore, the task of selecting a book that matches the readers' factors such as reading ability and interest becomes more of a challenge. In addition to the unsystematic progression, there is also a limited focus on learning –to- read books in which the focus should be geared towards developing and consolidating decoding and reading fluency skills.

Other sources of complexity in the texts read by the English young learners in Oman are related to the linguistic complexity of these texts featured by the high structural complexity, the high decoding demand and the high lexical complexity. Structural complexity was identified by Lexile as the main source of complexity in the texts sample. Texts designed for beginning readers should provide enough repeated exposures to the phrases and the sentence structures within the texts and which accordingly should lower the structural text complexity indicator. On the other hand, the decoding demand was also high in these texts. Since students in Oman learn phonics in grades one and two, phonetically controlled texts should follow the introduction of

these phonics. The texts should be in line with the same phonics scheme in order to foster students' decoding skills and to enable them to construct probable pronunciations of the words they encounter in print. Lexical complexity is also another source of linguistic text- related complexity indicated by qualitative evaluations of texts. The degree of lexical complexity, in this context, reflects the degree of familiarity with the vocabulary items in the text.

The book layout including illustrations, font, book size, text length and the front page are also text- related factors that contribute to the complexity of texts. In addition, the book content and the topics it presents are also other important text- related complexity factors. Moreover, the levels of meanings posed in literary texts may present a text- related challenge for readers.

The findings of this research further indicate that readers- related factors such as the reader's existing schema, the reader's use of reading strategies and the reader's interest are also essential and they contribute to the complexity of texts. The findings suggest that vocabulary knowledge is a very essential reader -factor followed by the reader's prior knowledge. The reading strategies that the reader employs in order to comprehend may also influence the complexity of texts. Interest in reading may also facilitate or otherwise hinder comprehension of texts.

Factors related to the interplay between the text and the reader factors also contribute to the complexity of texts read by young learners of English in Oman. One of these factors is the low fluency level of readers which hinders them from constructing meaning of texts because they are expending a lot of effort in decoding and word processes that they cannot focus on comprehension. Another important reader- text factor is the inability of the readers to select books that match their reading level. The third contributing text- reader factor in the complexity

of texts is the inadequate English proficiency which inhibits the readers from using the three cueing systems effectively.

6.3 Contributions of this Research

Despite its limitations, this research has contributed to the field of text complexity in general and to text complexity related to EFL reading comprehension in particular. Some important implications are described below.

6.3.1 Theoretical Contributions

Reading is a multidimensional process and one theoretical framework is not enough to capture this multidimensionality (Alexander 2012). On the other hand, there is no theory, up to date, that captures how readers shift among the reading skills while facing increasingly complex texts (Amendum et al. 2017). Since text complexity has always been linked to reading outcomes (comprehension and reading fluency), I grounded my exploration of the variables that affect comprehensibility of texts on a reading theory (The interactive view of reading by Rumelhart) while also attending to other theories that tackle variables directly or indirectly related to reading comprehension such as readers and contexts. For example, schema theory emphasizes the role of the reader's background knowledge. Automaticity theory is linked to reading fluency, a pre-requisite to reading comprehension. Bruner's cognitive theory, in comparison, calls for a systematic progression of complexity in texts. Since the paper is concerned with young EFL learners at their beginning stages of learning to read, critical period hypothesis and Compensatory Model of L2 reading were adopted as well.

Attending to all these theories has contributed to our understanding of the factors that affect the complexity of texts. In essence, it has highlighted the urgent need for examining the

texts, the readers and the interplay between the readers and the texts during reading before engaging EFL learners into independent reading. Meaning does not exist only within the text as positivist paradigm of thinking suggests. Meaning is constructed by the reader as a result of his interaction with the text and this interaction is influenced by the reader's social context including culture, learning resources and surrounding environment. Therefore, we should consider, in addition to the text factors, the reader factors and how the interactions between the reader and the text may influence the complexity of texts. Attending to the reader's factors suggests following the interpretivist paradigm of thinking which is based on the argument that meaning depends on the reader of the text. Hence, the reader's factors such as interest, reading ability and background knowledge are all examples of variables that affect the complexity of texts.

According to literature, conducting text complexity research within the positivist paradigm alone or within the interpretive paradigm alone has received of a lot of criticism. Consideration of texts is especially relevant to the context of Oman where learners are asked to read texts originating from different foreign publishers. Consideration of readers is also essential in the case of EFL learners who possess a totally different schema from that of English native speakers and whose interlanguage may affect the complexity of texts. The interplay between these readers' factors and the text factors during reading may also influence the complexity of texts and, thus, needs further attention. Therefore, this paper suggests combining the positivist paradigm and the interpretivist paradigm of thinking in order to examine the factors that contribute to the complexity of texts read by young Learners in an EFL setting. Under pragmatism, the researcher was able to combine both paradigms that belong to two conflicting worlds within the same research paper. Pragmatism is based on the belief that researchers use whatever works for their research questions, whether qualitative, quantitative or a mix of both.

Therefore, an important theoretical contribution that this paper offers is to use pragmatism to approach the concept of text complexity since text complexity is not a topic that can be analyzed solely under the positivist or the interpretivist umbrella.

6.3.2 Methodological Contributions

In the present paper, methodological value has been added to text complexity research through the application of different methodological approaches. It is argued that text complexity is better approached with a combination of positivist and interpretivist paradigms. Indeed, in the present paper, texts as well as readers were recognized as central to the reading process and therefore, they received equal attention. The texts were examined quantitatively using a readability formula (Lexile) and qualitatively using professionals' evaluations. In comparison, the readers and their interactions with the texts were examined through WCPM tests, interviews and miscue analysis.

Through the use of Lexile, professionals' judgment, WCPM tests, interviews and miscue analysis, a mixed- methods approach was employed in order to answer the research questions. Quantitative as well as qualitative tools were used concurrently and they received equal status. It is believed that combining all of these research tools facilitated our understanding of the factors that contributed to the complexity of texts. If this research was solely based on analyzing texts, a reduced picture of text complexity that does not consider the reader and his/her interactions with the text would have been achieved. On the other hand, analyzing only readers and their interactions with texts underestimate the significant role of texts in the reading process.

6.4 Research Implications on Policy

This research has several implications for policy makers including those working in the English language curriculum development and curriculum evaluation in MOE, Oman. The renewed model of text complexity suggests the establishment of a reader- text matching system. It has also several implications on the process of text evaluation and text selection for young learners of English in Oman.

6.4.1 Implications on a Reader-text Matching System

This research calls for the establishment of a system for reader- text matching whether in the authoring or the selection of texts for young EFL learners in Oman. To meet that end, policy makers should be aware of the concept of Text Complexity and its implications on the authoring and the selection of English texts for independent reading. Therefore, an understanding of the reader factors and the text factors and their interactions and which influence text complexity should be in order. According to the findings of this research, the reader- text matching entails the systematic progression of texts according to the linguistic features (grapho-phonic, syntactic, and semantic), and according to the content and the layout. It also entails an understanding of the readers' factors such as their interest, their reading ability and their use of reading strategies in the process of the authoring or the selection of books.

In order to establish that reader- text matching system, policy makers should be aware of the above considerations that allow for a systematic transition from one complexity level to another, a transition based on a positive increase in decoding skills, grammatical structures and vocabulary. In order to build that system, a pre-determined phonics scheme, a predefined set of structures and an adopted list of vocabulary should be established and interwoven in the texts that

learners read. The learning of these phonics, structures and vocabulary items should occur first in a classroom setting with the different types of scaffoldings available for the learners. For independent reading, the progression of books should allow the readers to practice the skills after being repeatedly taught in a classroom setting which, in turn, consolidates the readers' critical thinking skills outside the teacher's presence (Fisher & Frey 2015).

Policy makers should also become aware of the role of books' layout and content in addition to the reader's factors. The layout and the content of the books in that system should be designed with the readers' interest, the readers' reading ability and the readers' use of reading strategies in mind. In order to understand all these readers' related factors, different research tools should be employed. Surveys and interviews should be conducted in order to understand the topics that interest students more. Hence, the books' levels progress in accordance with the interest of the specific age groups they target. In addition, the students' reading ability and reading level should be determined. This, in fact, is not possible without a solid periodical reading assessment system that initially tests students' phonics and decoding skills and later captures the students' level in reading outcomes (reading fluency and reading comprehension). The outcomes of this assessment are to be available to teachers while students transit from one grade to another. Taking into consideration the outcomes of this assessment, the books should progress smoothly from one level to another allowing the learners to practice the different skills that well -suit their level in decoding, fluency and comprehension.

Moreover, the reading strategies that the readers use should receive an equal attention by policy makers including vocabulary comprehension strategies as well as text comprehension. Again, these strategies should be planned to include a wide array of comprehension strategies (literal, inferential, critical and creative strategies) in a well- designed scope and sequence. In

instructional settings, these reading strategies should be taught to learners with the appropriate type of scaffolding. Subsequently, the strategies should be distributed into the levelled books in accordance with that sequence in a way that allows students to practice the skills they have already learned in instructional settings.

Finally, teachers' supervisors, teachers and teachers' trainees should be trained on using the reader- text -matching system with all its associated factors in well- designed training courses in order to provide suitable reading materials for their students. Teachers' supervisors, teachers and teachers' trainees should be trained on how to assess text complexity using quantitative as well as qualitative tools. They should become aware of the fact that one text cannot fit all readers even within the same context. Further, professional development opportunities should be designed to empower teachers to become authors of texts for their students especially in the beginning stages of learning to read since they can understand their learners more than any other curriculum developer.

6.4.2 Implications on the evaluation of texts

The proposed model of text complexity has several implications on the selection and evaluation of texts that are intended for young learners of English in Oman. To evaluate texts in terms of complexity, the following steps are to be followed.

1. Analyze texts using both quantitative and qualitative means.

Initially, texts should be examined using one or more readability formulas. The selection of the readability formula should be based on the factors that contribute significantly to the complexity of texts for young learners of English in Oman. The identification of the phase of

reading as learning to read or reading to learn is also very essential in the selection of the readability formula since each phase implies emphasis on different reading skills. For example, in the learning to read phase, it is essential to consolidate decoding and word recognition skills while in the reading to learn phase, it becomes paramount to teach reading comprehension skills. In addition, since the aim of reading comprehension process is to enable learners to use the grapho-phonic, the syntactic and the semantic cues within the text, the readability formula should equally consider all the three cues. Therefore, the analysis of the decoding demand, the semantic demand and the structural demand are to be incorporated and considered in the formula. The analysis of these demands should be aligned with what the readers have already been taught in their English classes.

After conducting the quantitative analysis, the texts should be examined and analyzed by a group of experts. These experts base their judgment of texts on their knowledge of the syllabus (EFM) in addition to their knowledge of their learners. The qualitative analysis should focus on areas that cannot be analyzed quantitatively such as levels of meaning, language features, books content and books features. Again, while analyzing texts qualitatively, it is essential to identify the phase of reading development and to make decisions accordingly.

2. Analyze Readers

The readers' factors can contribute significantly to the complexity of texts. Therefore, while selecting or evaluating texts, we should also analyze our readers. The analysis of readers may involve aspects such as their interest and their prior knowledge in addition to the strategies they employ while reading. In the current research, interviews were used to analyze readers, but there are also other tools such as surveys and observations that could be employed to achieve the same

aim. The analysis of readers should also inform the selection and evaluation of texts. Therefore, after conducting the evaluations of texts, examining readers should follow.

3. Examine texts and readers while reading

The interplay between the text and the reader's factors while reading may also contribute to the complexity of texts. Therefore, after conducting the quantitative and the qualitative analysis and after analyzing readers, the next step is to examine the interplay between the texts and the readers while reading. This step is achieved by getting a sample of young learners to read the books selected from the previous evaluations and investigating whether the young readers are able to construct meaning as a result of the reading process. Depending on the performance of the young readers on fluency and comprehension measures, the books selected from the previous steps are either matched to the current readers, assigned a higher complexity level or otherwise assigned a lower complexity level.

6.4.3 Implications on the authoring of texts

The findings of the present study have demonstrated that text complexity is influenced by many factors related to the text (linguistic complexity, book content and book layout), related to the reader (interest, prior knowledge, vocabulary knowledge and reading strategies) and factors resulting from the interaction between the reader and the text (reading fluency and language proficiency). As such, these findings should lead to an entirely different perspective on the authoring of texts for young learners of English in Oman.

Text authoring should be based on a "staircase of text complexity" (Papola-Ellis 2014) or "a Text Complexity Trajectory" in which complexity of text is systematically increased and

each grade level is a step of growth. The staircase should be in a way that concurrently develops the three cueing systems; grapho-phonic, semantic and syntactic. It should also allow students to begin on different steps depending on their needs and the progression of the complexity in the text factors. Based on the young learners' phases of reading development, these texts should be classified as learning to read or reading to learn. In these phases, books are built on an integrated model of complexity in the word level, the sentence level and in the text level.

In the word level, the three features of words, grapho-phonic, high frequency and meaningfulness should be incorporated into the staircase. To build that organized system, a pre-determined sequence of phonics, an adopted list of high frequency words and a levelled list of vocabulary items should be integrated into the design of the EFM syllabus. The planning of the independent reading scheme should be in accordance with EFM scheme so that the young learners learn the words in an instructional setting before being asked to read them independently.

In the sentence level, the syntactic complexity of the text should also follow a systematic progression starting with simple short sentences and structures in the beginning grades. The structures in the independent reading scheme should be aligned with the structures taught and emphasized in the EFM scheme. As far as complexity at the text level is concerned, texts should be constructed in a way that they provide extra cues to readers to compensate for the young reader's insufficient decoding and word recognition abilities (Cuningham et al. 2005). Having English learners read predictable books with repetitive structures and matching pictures could improve the learner's sentence comprehension ability (Mesmer et al. 2012) and allow a level of early success unmatched by other types of texts (Shanahan 2019).

For each step in the staircase, books content should be varied so that learners can find topics that match their interest including sport, technology or everyday life. The books layout including text features, text length and book size are also essential elements in the design of the text complexity staircase. According to this study, young learners prefer illustrated short texts and small and medium sized books. The integration of all these elements will more likely make the young English learner interested in reading and, therefore, will contribute to the success of the reading experience.

The staircase should also consolidate the learning of reading strategies that aid in the reading comprehension process including global strategies and problem solving strategies. After introducing and sufficiently practicing these strategies in an instructional setting, readers are to be encouraged to use them independently while reading texts that match their reading ability (fluency and comprehension). The staircase should also be within the reader's language proficiency level. This entails that the texts are designed within the boundaries of what the learner can control in speaking. When the reader's proficiency level is adequate to read a specific text, he/she can use the grapho-phonic, the syntactic and semantic cues efficiently to comprehend that text.

6.5 Limitations of the Research

A number of limitations for the current research should be acknowledged. First, the sample size should be reconsidered. Although 32 students participated in the sample, this size is considered limited for statistical generalizations. In addition, the sample included only children from grades three, four, five and six. Therefore, the findings cannot be generalized for all age groups including teenagers and adult readers.

Another limitation is related to the types of analyzed texts in this research. In fact, the database of texts needs to be expanded in several ways. First, the texts sample was confined to the traditional type of texts. The term traditional referred, in this research, to any text printed on paper. Thus, the findings cannot be generalized to other types of texts that have emerged recently such as multimodal texts and postmodern texts which require different sets of skills and strategies. Second, the sample of texts were all literary texts except for two texts which were informational. Subsequently, the findings can be generalized to literary texts only.

The third limitation in this study is related to the data collection methods which included only one readability formula (Lexile) for analyzing the texts quantitatively. The researcher could have also included other readability formulas such as Spache and Coh-Metrics to assess other quantitative aspects of text and which might have influenced the readability results. However, the use of Lexile was justified by the fact that this formula was developed to attend to the factors that influence the complexity of texts intended for beginner readers. Another limitation related to the data collection methods is the use of miscue analysis and the fluency test only to examine the interplay between the readers' and the texts' factors while reading. It could have been more beneficial to use other tools, in addition to the previous two tools, such as retellings and cloze tests to check the readers' comprehension and, thus, to understand the factors that influenced text complexity. The researcher could have also employed retrospective miscue analysis in which the readers are interviewed after their reading regarding the reasons behind their miscues. Moreover, the use of eye- movement -tracking tools could have enriched the discussions of the current research since this tool records eye movement while processing words and, thus, it is used to explain many of the reading behaviors of readers while encountering easy or challenging reading materials.

6.6 Recommendations for Further Research

The findings of the current research invite researchers to further explore the topic of text complexity as a result of the continuous developments in the theories of reading and reading comprehension. By examining the factors that contribute to the complexity of texts read by young learners in a setting like Oman, we are actually tapping on the areas that contribute to the success or the failure of the reading experience for the young learner. This research pinpoints the main factors that affect the complexity of English texts for the young learners in Oman including the text factors as well as the reader factors and the interplay between these factors while reading. Further research may examine which of these factors can significantly influence the complexity of texts by manipulating the factors existing within texts or existing within readers.

The findings of the current research have also pinpointed the reader's factors as an important aspect that may influence the complexity of texts. However, these factors include only the reader's interest, prior knowledge, reading ability and reading strategies. According to literature, there are other reader- related factors that influence text comprehension and, thus, might have an equal impact on text complexity. Therefore, researchers are invited to conduct further research on other reader- related factors such as the reader's age, gender, attitudes and engagement and whether these factors influence text complexity or not.

Previous research on reading comprehension have highlighted the role of the context variables in reading comprehension in addition to the role of the text factors and that of the reader. It has suggested that successful reading comprehension outcomes can vary according to contextual factors including economic resources, the school culture, ethnicity and class membership. The current study investigated text complexity within one demographical area in the capital city of

Oman. Other research may consider the variability in contextual factors by taking samples of readers and texts from different demographical areas within the sultanate of Oman or within the wider Arab World context.

In the classroom context, the context variables include the classroom conditions that set the stage for instruction including the design of activities and the support provided by the teacher, peers and the educational tools (RAND 2002). The current research has examined text complexity when readers are asked to read texts independently with no offered scaffolding. As such, other researchers are invited to examine text complexity under other degrees of scaffoldings or instructional support.

Variability in activity or reading task can also influence text comprehension. Variability in activity is caused by having different purposes for reading which are either self-generated or teacher- imposed. In the current research, the factors that influence text complexity were investigated when the purpose of reading was imposed by the researcher and was the same for all participants. Therefore, this study invites other researchers to investigate the factors that influence text complexity with the variability of activity in mind. Hence, other research may examine the text and the reader factors under different activity conditions, whether imposed by someone else or initiated by the readers.

This research suggested a preliminary model for the complexity of English texts read by young learners in an EFL setting. A similar study may be conducted to explore the factors that influence the complexity of Arabic texts read by young learners in Oman in which Arabic is the first language. Arabic and English follow the alphabetical system of writing and, hence, some similarities are expected between the complexity of both languages. Researchers may also carry

out comparison studies to investigate how text complexity can vary between first, second and foreign language contexts.

The current research examines the factors that contribute to the complexity of texts read by young learners of English in Oman. It has several implications on establishing a text complexity staircase in addition to the authoring and the selection of texts when all of these factors are taken into consideration. Further research may examine the effectiveness of incorporating texts with progressing levels of complexity on reading outcomes, reading frequency and reading engagement.

This research explored the concept of text complexity using five research methods only. Other research could explore the topic by combining other research methods such as eye-movement tracking tools, video recording of readers while reading, think aloud protocols, retellings and retrospective miscue analysis. With the eye- movement -tracking tools, a researcher may record eye movement while reading and, therefore, to explain reading behaviors while encountering easy or difficult reading material. Video- recording of readers while reading texts could also enrich the text complexity discussions since it allows for capturing the reader's behaviors and gestures while reading. In addition, the think- aloud protocol could enrich the discussions regarding the strategies that readers use while reading texts of different levels of complexity.

6.7 Conclusion

In conclusion, the current thesis was an effort to uncover some of the ambiguities related to reading comprehension in an EFL setting. It explored the factors that contributed to the complexity of texts and which facilitated or hindered the reading experience for the young

learner. In essence, this research highlighted some of the challenges that EFL learners encounter in their efforts to comprehend English texts during their beginning years of learning English. Unfortunately, these years which should have paved the way of success in reading English texts would turn into a frustrating experience without a well thought out structured reading program in which the learners' needs, the texts factors and the interplay between them are taken into consideration. While keeping these text complexity factors in mind, we could advance the learners' reading skill to the next level thus allowing our learners to grow mentally with each successful reading experience.

In the context of Oman, the task of establishing a system of text complexity in the design and in the evaluation of texts might be considered a huge task especially in the absence of any English texts authoring efforts fulfilled by Omanis. To establish such a system, efforts should be geared towards initiating the idea of Omani teachers as text authors for their students, thus giving them the chance to create, to experiment and to reflect on their writings. This is not possible, however, without an efficient professional development program that imparts all the needed knowledge and skills required for developing texts in English. When we succeed in developing our teachers to become text writers, we can then start the process of building a text complexity trajectory for learners of English in Oman.

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Appendix 1: Consent Form for young learners

Parent consent form

Dear Madam/ Sir

I am currently registered doctorate of education student in the British University in Dubai (BUID) in the United Arab Emirates. Part of my research is to produce a report on the readability of texts intended for English language young learners. The purpose of this project is to investigate the variables that affect the comprehension of English texts that are designed for young learners. It is vital in this research to test students while reading texts, interview them and to analyze their responses afterwards.

I here request your consent for your child participation in this project, while assuring you of complete confidentiality of any information conveyed and anonymity of school and participants' names, which is in line with the British University in Dubai (BUID) ethical code of conduct. Please see below the requirements of the study, as well as the interview protocol and if you agree for your child's participation, please sign below. I look forward to hearing from you, meantime, please accept my best regards.

Fakhrah Al-Mamary

Educational Researcher in the Curriculum Evaluation Department in the Ministry of Education in Oman.

Doctorate student in the British University in Dubai

1. Requirements for the study:

a. A test of your child's reading of a story of his/her choice (audiotaped)

b. An interview with your child to ask about the reasons behind the story selection and the strategies implemented for comprehension (audiotaped).

c. Analysis of interview

Interview Protocol

6. Parents as well as students will be informed of the days of tests and interviews ahead of time.
7. Participants will be briefed with the study purpose and objectives explaining the following
    a. Anonymity (names will be coded if there is a need to mention them).
    b. Privacy of answers (negative points will not be conveyed to administration).
    c. Right to refrain or withdraw without any negative consequences
8. Permission for recording the test as well as the interview will be requested from guardians.
9. Notes will also be taken during the interviews.
10. All data collected throughout the study will be safely kept in a private locked cupboard until the end of the project and the dissemination of the results. Later hard copies will be disposed using a shredder and all electronic files and recordings will be deleted.

If accepted, please sign below

Name of child:

Name of Guardian:

Date:

Appendix 2: List of Books included in the research

	Title	C1/C2	L	Publisher	Comments
1	The Hare and the tortoise	1	100	Oxford Reading Tree	
2	Goose on the Loose.	1	430	Usborn	
3	The House	1	40	Engage Learning	
4	Going to the Beach	1	250	Macmillan	
5	Kind Emma	1	410	Collins BigCat	
6	Look at Me	1	20	Oxford Reading Tree	
7	Push	1	120	Oxford reading tree	
8	A dark dark tale.	1	230	Red Fox	
9	Hansel and Gretel	1	430	Compass Publishing	
10	Fox on a box	1	360	Usborn	
11	In the Jungle.	2	360	Macmillan	
12	Pop	1	100	Oxford Reading Tree	
13	The Cracow Dragon	1	440	Express Publishing	
14	Dinosaurs and all that rubbish	1	580	Puffin Books	
15	The Real Princess	1	790	Barefoot books	
16	Rosie's Walk	1	230	Red Fox	
17	Look after me	1	100	Oxford Reading Tree	
18	The Bet Shop	1	210	ORT	
19	See You Soon	1	400	Macmillan	
20	The big hill	1	110	Nelson	
21	Helping Others	1	190	Read & shine	
22	Going to School	1	280	Macmillan	
23	See Me Skip	1	70	Oxford Reading Tree	
24	Snail Trail	1	1060		
25	Mouse Moves House	1	350		
26	Unfortunately	1	620	Orchard books	
27	The Wolf and the seven little kids	2	510	Macmillan	
28	A Yeti in Town	2	490	Macmillan	
29	I like Shopping	2	260	Macmillan	
30	The new teacher	2	290		
31	Who did that?.	2	530	Macmillan	
32	A Journey to the center of earth	2	530	Macmillan	
33	Gulliver's travel in Lilliput	2	650	Macmillan	
34	Barney the Policeman.	2	410	Oxford University	
35	Football Spy	2	650	Collins Big Cat	
36	The Boy and the donkey	2	390		
37	Wright Brothers	2	380		
38	Ali baba and the forty thieves	2	720		
39	Marconi	2	490		
40	People who help us	2	470		
41	Celebrating eid alfitter with Amm Fatima.	2	650		
42	Eid Kareem	2	800		
43	Typhoon	2	420	Oxford University Press	
44	The brave baby	2	430	Collins BigCat	
45	Manners	1	160	Read & Shine	
46	Aunt Rose Comes to stay	1	320	Macmillan	
47	Hooray for Fish	1	400	Walker Books	
48	In my classroom	1	120	Nelson Engage Learning	
49	Visit to the zoo	1	350	Read & shine	

50	Jump Stick Jump	1	380	Macmillan	
51	The Play	1	280	Oxford Reading Tree	
52	Billy’s Bucket	1	560	Red Fox	
53	The Real Princess	1	700	Barefoot Books	
54	Lost and Found	1	410-600	Macmillan	
55	Splat the cat	1	510	HapperCollins	
56	Fly Eagle Fly	1	620	Frances Lincolin	
57	The Bike Race	1	320	Macmillan	
58	Whoops but it wasn’t me	1	540	Tiger Aspects	
59	I will not ever never eat a banana	1	480	Orchard Books	
60	Hide & Seek	1	10	Oxford Reading Tree	
61	The good king	2	480	Macmillan	
62	My Home	1	160	Read & shine	
63	Greedy Gretel	1	310	Macmillan	
64	The three bears	2	350		
65	Chewy Hughie	1	350		
66	The Princess and the Pea	2	480	Collins BigCat	
67	How can you sort	2	270	Benchmark education	
68	Cat in a bag	1	20	Oxford reading tree	
69	The car and the donkey cart	2	360	Macmillan	
70	The Little red hen	2	360	Macmillan	

Appendix 3

Text Selection Checklist

Book Title	**Publisher**	**Level Assigned (if Any)**	**Genre**		**Skills Developed**		
			Narrative	Informational	decoding	Sight words	Not Specific

Appendix 4: Reading Fluency Examiner Copy and Student Copy

Curriculum-Based Measurement: ***Oral Reading Fluency Passage: Examiner Copy***

Assessment Date:____/____/_____ Student:_____ Examiner:_____

Words Read Correctly (WRC): _____ Errors: _____ Notes: _____

HANSEL AND GRETEL 3

A wood-cutter has two children. Their names are Hansel and Gretel. The family 17
is poor and hungry. The children have a mean stepmother. She has a plan. 31
She wants to leave the children in the forest. The children are too hungry to 46
sleep. They hear their stepmother's plan. Hansel wants to help. Their parents 58
go to sleep. Hansel goes outside. He finds some small white rocks. The family 72
goes into the forest. Hansel drops the rocks. Their parents leave the children in 86
the forest. The moon gives lots of light. It is easy to see the white rocks. Hansel 103
and Gretel follow the rocks home. The stepmother is angry. She says, "We'll 116
take the children far into the forest tomorrow!" Hansel and Gretel hear the plan 131
again. But now Hansel cannot get rocks. The house is locked! The family goes 145
into the forest. Hansel drops pieces of bread. Birds come and eat the bread. 159
Their parents leave the children again. Hansel and Gretel cannot find the 171
pieces of bread. All the pieces are gone. The children are lost in the forest. 186
Hansel and Gretel are tired. They are hungry. Hansel and Gretel see a white 200
bird. They follow it to a small house it is a candy house. Hansel eats some of 217
the roof. Gretel eats some of a window. Hansel and Gretel hear a noise. An 232
old woman comes out of the house. She wants the children to come in the 247
house. The old woman is a mean witch! The children are scared. The witch 261
locks Hansel in a room. She makes Gretel cook and clean. The witch wants to 276
eat the children. The witch says to Gretel, "come here! See if the oven is hot." 293
Gretel says, "I don't know. Is hot enough?" The witch looks in the oven. 308
Gretel pushes her in it. The witch dies. Gretel saves Hansel! Hansel and Gretel 322
walk for a long time. They see their house! Their father is very happy to see 338
his children. Their stepmother is gone. They are all very happy! 349

HANSEL AND GRETEL

A wood-cutter has two children. Their names are Hansel and Gretel. The family is poor and hungry. The children have a mean stepmother. She has a plan. She wants to leave the children in the forest. The children are too hungry to sleep. They hear their stepmother's plan. Hansel wants to help. Their parents go to sleep. Hansel goes outside. He finds some small white rocks. The family goes into the forest. Hansel drops the rocks. Their parents leave the children in the forest. The moon gives lots of light. It is easy to see the white rocks. Hansel and Gretel follow the rocks home. The stepmother is angry. She says, "We'll take the children far into the forest tomorrow!" Hansel and Gretel hear the plan again. But now Hansel cannot get rocks. The house is locked! The family goes into the forest. Hansel drops pieces of bread. Birds come and eat the bread. Their parents leave the children again. Hansel and Gretel cannot find the pieces of bread. All the pieces are gone. The children are lost in the forest. Hansel and Gretel are tired. They are hungry. Hansel and Gretel see a white bird. They follow it to a small house it is a candy house. Hansel eats some of the roof. Gretel eats some of a window. Hansel and Gretel hear a noise. An old woman comes out of the house. She wants the children to come in the house. The old woman is a mean witch! The children are scared. The witch locks Hansel in a room. She makes Gretel cook and clean. The witch wants to eat the children. The witch says to Gretel, "come here! See if the oven is hot." Gretel says, "I don't know. Is hot enough?" The witch looks in the oven. Gretel pushes her in it. The witch dies. Gretel saves Hansel! Hansel and Gretel walk for a long time. They see their house! Their father is very happy to see his children. Their stepmother is gone. They are all very happy!

Appendix 5:

Reading Fluency Test Recording Form

student code	Text Title	Marker1	Marker2
1a	Eid Kareem		
2a	Marconi		
3b	Celebrating Eid AlFiter		
4a	Wright Brothers		
5b	People Who help us		
6a	The boy and the donkey		
7b	Galileo		
8b	Ali baba and the forty thieves		
9a	The new teacher		
10a	A yeti in town		
11a	I like shopping		
12a	The Wolf and the seven little kids		
13a	Football Spy		
14b	The good king		
15b	A Journey to the center of earth		
16b	Who did that?		
17b	Barney the policeman		
18c	See you soon=		
19c	The Play=		
20c	Fox on a box=		

21c	Fly eagle Fly=		
24c	Kind Emma=		.
25c	See you soon=		
26c	The Bike Race=		
27c	Push=		
28c	Billy's Bucket=		
29c	A dark dark tale=		
30c	Look at me=		
31d	Whoops but it wasn't me		
32d	Dinasours and all that rubbish		
33d	I will not ever never eat a tomato		
34d	Goose on the Loose=		
35d	The Hare and the Tortoise		
36d	Hanzel and Greetel		
37d	Dinosaurs and all that rubbish		
38d	In the Jungle		

*When reporting the mark, indicate the words read incorrectly by the student in addition to the total number of words. Example 4/121.

Appendix 6: Types of Observed Responses

Student	Expected Response	Observed Response	Observed Response Type		
			Miscue	Non- word	Words with Reduced Phonemes

Appendix 7: Miscue Analysis Form

Script	Text Word	Miscue	Grapho/ Phonic						Semantic	Syntactic	Meaning Change		
			Visual			Auditory							
			High	Partial	No	High	Partial	No			No	Partial	Yes

Appendix 8: Miscue Analysis Guide

Miscue Analysis Guide

The researcher in the current study will use data obtained from the miscue analysis in understanding the factors that influeence the complexity of texts read by young learners in Oman. The interpretations of the miscues will help in understanding the reader's quality of reading and the strategies he/she employed for comprehension, and this, in turn, will help in understanding the factors that contribute to the complexity of texts. In principle, analyzing an individual reader's miscues after a recorded reading of a text highlights the reader's knowledge of the language and the reading strategies that they have never been directly taught. The researcher considered only the substitution miscues for analysis. A substitution miscue happens when a reader replaces the expected word from the given text with another word. All the substitution miscues were analyzed for the following: 1. whether the substituted words look like or sound like the text words (Grapho-phonic similarity) 2. whether the substituted word is grammatically acceptable (Syntactic Acceptability) and, 3. whether the substituted word make sense within the whole sentence (Semantic Acceptability).

First: Grapho-phonic Similarity

Grapho-phonic similarity addresses whether each substitution miscue looks like (graphic characteristics) or sounds like (phonic characteristics) the expected text word. Hence, graphic similarity refers to how the expected word looks in print in contrast to the miscue that the participant has made and it is judged by comparing the sequence and shape of the miscue and the expected word. Graphic similarity is divided into three types for comparison purposes; high graphic similarity, some graphic similarity and no graphic similarity. According to Goodman et

al. (2005), if two words have high graphic similarity, it indicates that two or more parts from these words look alike and appear in the same location. If only one part of the expected word looks like one part of the miscue and is in the same location, it means that the two words have some graphic similarity. If no graphic similarity exists between the two words, they are then marked as no – graphic similarity. The following table illustrates the three types of graphic similarity with examples from the students' substitution miscues.

	Graphic Similarity	**Examples**	**Script**
1	High graphic similarity	**Text**: People thought heavy objects *fell* faster. Student's Reading: feel	7B
2	Some graphic similarity	**Text**: One day, I come home from *school* with the best thing I have ever made. Student's Reading: shop	33D
3	No graphic similarity	**Text**: One day, a hare said to *his* friends. Student's Reading: the	35D

Types of graphic similarity with examples from the students' substitution miscues

Phonic similarity, in contrast, indicates whether the miscue sound like the expected word or not. As such, phonic similarity addresses the word's pronunciation and not the printed form. Following the same pattern as graphic similarity, phonic similarity between the expected word and the miscue is divided into three types; high phonic similarity, some phonic similarity and no phonic similarity (Goodman et al. 2005). Having two words with high phonic similarity indicates that they have two or more parts which sound alike and are heard in the same location. Some phonic similarity indicates that one part in the two words sounds alike and is heard in the same

location. A word with no graphic similarity will be also with no phonic similarity. A word with some graphic similarity may not be similar phonically. For example, although the miscue **shop** is similar graphically to the text word **school**, the two words do not sound alike at all. The following table illustrates the three types of phonic similarity with examples from the students' substitution miscues.

	Phonic Similarity	**Examples**	**Script**
1	High Phonic similarity	**Text:** The children have a *mean* stepmother. Student's Reading: *man*	36D
2	Some Phonic similarity	**Text:** His uncle is a very learned man: a *scholar* and a scientist. Student's Reading: a *social*	15B
3	No Phonic similarity	**Text:** It took me ten days, *three* hours and forty minutes to make the outside. Student's Reading: *there*	33D

Types of phonic similarity with examples from students' substitution miscues

Second: Syntactic Acceptability, Semantic Acceptability and Meaning Change

Syntactic acceptability refers to the degree a reader produces acceptable grammatical structure with the presence of the miscue. If a reader produces a syntactically acceptable structure, semantic acceptability is then checked (Goodman et al. 2005). Semantic acceptability, in contrast, is concerned with the meaningfulness of the text. If the miscue is syntactically acceptable within the sentence, it can be coded as semantically acceptable, partially acceptable or unacceptable depending on the success of the reader in producing meaningful sentence. After determining the semantic and syntactic acceptability of the miscues, it is essential to examine whether the miscues have changed the author's text (change of meaning). It is should be noted

that if the produced sentence is semantically and syntactically unacceptable, then meaning change is not checked.

The following table illustrates these elements of miscues with examples from the sample miscues.

	Examples from students' reading	**Syntactic**	**Semantic**	**Meaning Change**	**Script**
1	Text: The Wright brothers built the first *airplane* that had a motor. Student's Reading: *aeroplane*	Acceptable	Acceptable	No	4A
2	Text: Behind the door, there was a dark dark *hall*. Student's Reading: *hill*	Acceptable	Acceptable	Partial	29C
3	Text: I can't shut my *suitcase*, said Sarah. Student's Reading: *stick*	Acceptable	Not Acceptable	Yes	18C
4	Text: Can we *take* our bikes with us? Student's Reading: *took*	Not Acceptable	Acceptable	No	26C
5	Text: Once *upon* a time there lived a rich man called Ameer. Student's Reading: *open*	Not Acceptable	Not Acceptable	Yes	1A

Examples illustrating syntactic acceptability, semantic acceptability and meaning change

In the first example in the table, student 4A has substituted the text word *airplane* with the word aeroplane. Although the two words differ in pronunciation, they have the same meaning with airplane in American English and aeroplane in British English. In this case, the miscue is semantically and syntactically acceptable. In addition, it does not change the meaning of the text.

In the second example, student 29C substituted the word hall with the word hill. The miscue is syntactically acceptable as both words are singular nouns. The miscue is also semantically acceptable since the meaning of the miscue hill within the sentence is acceptable. However, the miscue changes the meaning of the whole text as the sentences following this sentence actually describes what is in that hall and not hill.

In the third example, student 18C substitutes the word *suitcase* with the miscue *stick*. The miscue is syntactically acceptable as the word stick is a singular noun as the text word. However, the miscue does not fit the sentence semantically as it does not make sense within the sentence. In addition, the miscue changes the meaning of the whole text significantly. The fourth example illustrates how student 26C made a miscue which is not acceptable syntactically but makes sense within the sentence. The miscue also does not change the meaning of the text. In the last example, student 1A substituted the word *upon* with the word *open*, thus making the sentence unacceptable syntactically and semantically.

For the syntactically and semantically acceptable miscues, the next question to be addressed is whether these miscues change the author's text (Goodman et al. 2005). There were only 23 produced sentences that maintained both syntactic and semantic acceptability. These twenty- three miscues were examined to find out if they made sense within the context of the entire text. As a result, two patterns have emerged from the analysis: strength grammatical-relations and partial strength grammatical relations. Strength grammatical relation pattern includes miscues that are syntactically and semantically acceptable and they made sense within the context of the whole text. In contrast, partial strength grammatical relation pattern includes miscues that are syntactically and semantically acceptable but they change the meaning of the whole text. An example of a strength grammatical relation pattern is found in the script 4A.

Text: The Wright brothers built the first *airplane* that had a motor.

Student Reading: *aeroplane*

The miscue made a syntactically and semantically acceptable sentence and did not change the meaning within the whole text. As such, student 4A was able to produce a sentence that sounded like language and made sense within the whole text. This type of miscue is considered a high quality miscue and it shows that the student is concerned about the syntactic and the semantic cues. It also shows that he was successful in constructing meaning.

The partial strength miscue, in contrast, is illustrated in the script 36D.

Text: They hear their stepmother's *plan*.

Student's Reading: *plane*

In this example, the student was able to produce a sentence that is syntactically and semantically acceptable but which does not fit within the context of the whole text. Accordingly, it was considered a partial strength miscue as the student was not successful in integrating meaning.

Appendix 9: Interview Guide

Interview Guide

Student:

Grade: **Gender:** **Story:**

1. Reasons behind the selection of that reader?

2. Strategies used for comprehension (vocabulary comprehension and text comprehension)

Appendix 10: Text Complexity Analysis Form (Qualitative)

Book Title	**Author**
Qualitative aspects of text complexity best measured by an attentive human reader, such as levels of meaning or purpose; structure; language conventionality and clarity; and knowledge demands.	
Complexity Measure	**Comments**
Levels of meaning: Symbolism, abstract thought, technical, academic content	
Structure: Simple, well-marked, and conventional structures are easier than implicit and unconventional structures. Simple or complex graphics.	
Language conventionality: colloquialisms, figurative/ idiomatic language, dialects, technical and academic vocabulary	
Background knowledge. Texts with fewer assumptions about reader's life experiences and cultural knowledge are easier than texts with more assumptions.	

Appendix 11: Text Complexity Cross- Case analysis Example

1.	Book Title	Meaning /purpose	Text structure	Lang features	Knowledge demands	Reader / task	Comments
2.	Goose on the Loose 1	One level	Chronological- nice illustrations compatible with text	Difficult vocabs-	Vocabulary - previously learned oo sound	Grades 4 – 5 may be able to figure out the language but the text is too short for them	
3.	Guliver's Travel 2	More than one level	Pictures support understanding but they are few- somehow clear font	Long sentences- difficult vocabs-	Vocabs – Lilliput (Culiver- Lilliput)	Grades 9- 12	
4.	Chewy Huggie 1	One level	Small font- some long sentences- pictures are clear and support events	Simple clear lang- few rare words	Clear- no knowledge demands	Grades 4- 6	

Appendix 12: BUiDs Ethical Approval

الجامعة البريطانية في دبي
The British University in Dubai
www.buid.ac.ae

22 March 2017

To Whom It May Concern

This is to certify that **Mrs Fakhrah Ali Al Mamary** with ID number **2015121086** is a registered full-time student on the **Doctor of Education** programme in **The British University in Dubai** since **September 2015**.

Mrs Al Mamary is currently collecting data for her thesis (Readability of texts intended for English language learners in Oman).

She is required to gather data that will help her in writing the final report. Your permission to conduct her research (interviews and surveys) 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 Mrs Al Mamary's request.

Yours sincerely,

B/o **Amer Alaya**
Head of Student Administration

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Appendix 13: MOE Approval for Access to Schools

Sultanate of Oman
Ministry of Education
Directorate General of Education Muscat Reg .

سلطنة عمان
وزارة التربية والتعليم
المديرية العامة للتربية والتعليم لمحافظة مسقط
دائرة تنمية الموارد البشرية

الرقم : م ع ت م 72
التاريخ : 1439/5/12هـ
الموافق : 2018/2/5م

الأفاضل / مديرو ومديرات المدارس المحترمون

السلام عليكم ورحمة الله وبركاته

الموضوع: تسهيل مهمة الباحثة/ فاخرة بنت علي بن راشد المعمرية

بالإشارة للموضوع أعلاه نود الإفادة بأن الفاضلة/ فاخرة بنت على بن راشد المعمرية، طالبة دراسات عليا (دكتوراه) بالجامعة البريطانية بدبي، تقوم حاليا بإجراء دراسة بعنوان (Complexity of texts read by young learners of English in Oman) ، وترغب المذكورة في تطبيق أدوات الدراسة على عينة من طلاب الصفوف الثالث والرابع والخامس والسادس بمدارس التعليم الأساسي التابعة للمحافظة.

عليه نرجى التكرم بتسهيل مهمة الباحثة وذلك وفق الإجراءات المعمول بها لديكم.

شاكرين لكم حسن تعاونكم

وتفضلوا بقبول فائق التقدير والاحترام

مدير دائرة تنمية الموارد البشرية

سلطنة عمان
المديرية العامة للتربية والتعليم لمحافظة مسقط
دائرة تنمية الموارد البشرية
مركز التدريب
وزارة التربية والتعليم