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Types, Causes and Teachers' Responses

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SPELLING ERRORS OF ARAB STUDENTS: TYPES, CAUSES, AND
TEACHERS' RESPONSES

A THESIS IN TEACHING ENGLISH TO SPEAKERS OF OTHER LANGUAGES

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SPELLING ERRORS OF ARAB STUDENTS: TYPES, CAUSES, AND

TEACHERS' RESPONSES

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ABSTRACT

It has been noted that many learners of English, including Arab learners in UAE public schools exhibit difficulties with English spelling. These difficulties have been attributed to a number of causes, such as the irregularity of the orthographic system of English and mother tongue interference. These spelling difficulties cause learners to commit many spelling errors that distort their written production, affecting negatively their overall writing proficiency. In addition to the negative effect of poor spelling on writing proficiency, it has been argued that many poor spellers have problems with reading. Therefore, overall research has emphasized the importance of spelling for developing competent second language users.

The purpose of this study was to investigate how big the spelling problem is among Arab learners of English in UAE public schools, identify the commonest types and likeliest causes of their spelling errors, and measure how much progress they achieve in spelling proficiency as they move to higher grades. An additional purpose of the study was to investigate teachers' perceptions of the spelling problems of Arab learners of English, attitudes towards teaching spelling, and practices in spelling. To answer these inquiries, students' spelling errors were collected and analyzed from compositions written by over 537 male students from four different educational levels, Grades 9, 10, 11, and 12. Frequency of spelling errors for each grade was calculated and compared to the other grades. Then, errors were categorized according to their types and likely causes for each grade. Variations in performance between the four levels were noted and analyzed. Teachers' perceptions, attitudes and practices

were investigated using questionnaires and interviews. Results show that the frequency of spelling errors in students' written production is high and that students show insignificant progress as they graduate from high school. The spelling problems in UAE public schools at these levels appear to be resistant to instruction in that students in the different levels have similar spelling problems. Additionally, the teacher survey and interview results demonstrate that little attention is given to this problem. Spelling activities are very rare in textbooks, the participating teachers do not receive any training on how to teach spelling, they do not devote adequate time to teaching spelling, and some teachers have misconceptions about the nature of spelling problems, their causes and effective ways of responding to them.

CONTENTS

FIGURES

TABLES

ABBREVIATIONS

ALEs - Arab learners of English.

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CHAPTER 1

OVERVIEW OF THE STUDY

Introduction

Acquiring a foreign or a second language is, as Brown (2000) indicates, a challenging process that requires a lot of effort. Like any other learners of English, Arab learners are expected to face many difficulties while learning English. These difficulties cause them to commit various types of linguistic errors, semantic, syntactic, and phonological. Corder (1981) considers these language errors a natural byproduct of learning. He among other researchers, such as Hildreth (1962) and Brown (2000), views these errors as an important indicator of the progress of learning. Hence, he encourages systematic analysis of learners' errors in order to know their needs and, in turn, design curricula, teaching methods and remedial plans accordingly.

One of the most common errors that plague Arab students' written work is spelling errors. Many students keep repeating the same spelling errors, which causes a major obstacle for them through all their educational stages and after they leave school, joining higher education or fields of work. This poor spelling problem handicaps students in several ways. Hildreth (1962) notes that "spelling is a sort of draft horse of written expression [,without which] the load of work in writing cannot be done easily" (p. 2). He adds that spelling with confidence eases the task of expressing thoughts in writing. Thus, good spellers are free to concentrate on the ideas they wish to express without having to be conscious of the mechanics of the writing task. As such, developing students spelling helps students focus on the writing task without being distracted by the fear of committing spelling mistakes. Additionally, their final written product will be clearer, as it will be free from excessive spelling errors. Smedley (1983) believes that spelling errors negatively affect the clarity of the written message, and consequently interferes with communication between the writer and the reader.

In addition to the negative influence of spelling on writing, it seems that there is a close relationship between spelling and reading. Some researchers argue that bad spellers are usually bad readers (Koda, 2005; Randall, 2007; Fender, 2008). Those researchers believe that the causes that lie behind bad spelling and bad reading are to a greater or a lesser extent the same, and consequently developing learners' spelling abilities will have positive effects on their reading proficiency. Anecdotal as it might

1

be, from my experience and discussions with colleague English teachers, it has been noted that most Arab learners of English (hereafter ALEs) find reading in English very difficult. Most of my students, for example, pay excessive attention to reading English words, which causes them to read very slowly and stumble a lot. In turn, they experience obvious difficulty in fully understanding what they are reading. We can imagine how negatively this reading problem would affect students' performance in reading comprehension tests and their overall reading proficiency.

Besides the undesirable influences of bad spelling on developing students' literacy skills, bad spelling also gives a bad impression to superiors or colleagues in the field of work of the bad speller. Bad spellers may look inadequately educated or careless. Hildreth (1962) observes that "correct spelling is an evidence of good manners. It is a courtesy to spell correctly so that reading is easier, just as it is courteous to speak distinctly so as to be easily understood" (p. 2).

Here, in the UAE, spelling, though ignored to a great extent in language classes in public schools, occupies an important position in the assessment of language proficiency. To the best of my knowledge, all UAE public schools use paper-based exams to test their students. In these exams students have to respond to all questions in writing. Students are usually penalized for the spelling errors they make, especially in the case of errors that obscure meaning. After students graduate from school, this problem also affects their performance in high-stake exams, such as the IELTS, that they have to sit in order to be admitted into many local universities and colleges. Moreover, at university level, students will need to spell words correctly.

Unfortunately, spelling seems to cause a lot of confusion for all learners of English, including Arab learners. Hildreth notes that despite language instruction, "the commonest words are persistently misspelled" (p. 3). Agreeing with Hildreth, Bahloul (2007) indicates that English spelling is a problem for all learners, including native speakers. However, research also points out that learners from different backgrounds are expected to have different spelling problems (Thompson-Panos & Thomas-Ruzic, 1983; Bahloul, 2007; Fender 2008). Therefore, getting insight into the differences that exist between Arabic and English may be useful to get a clear picture of the spelling problems of ALEs. It is a fact that Arabic and English are linguistically distant. Swan and Smith (2001) point out that "all aspects of writing in English cause major problems for Arabic speakers" (p. 199). The languages are distinct in almost all

linguistic features. For example, Arabic is written from right to left, while English is written from left to right. Moreover, the correspondence between the written form and the spoken form in Arabic is much more regular than that in English. To exemplify, the letter *a* in the words *man* and *make* has two different pronunciations. Another example is "silent letters." In Arabic, silent letters are very rare, while they are found abundantly in English. Another reason that may cause Arab learners to have spelling errors is Arabic interference. For example Arabic does not have the voiceless bilabial stop /p/ of English, which seems to cause a sort of confusion to many ALEs who tend to pronounce it as /b/ and spell it as *b*.

Significance of Current Study

Clearly, English spelling is a problem for most learners of English. Nevertheless, the linguistic differences that exist between Arabic and English seem to complicate English spelling even more for many ALEs. Consequently, it is expected that ALEs sometimes make different spelling errors from other learners from other language backgrounds, and thus require different instructional procedures. Thus, it is important to have a close look at the specific problems that ALEs have in general and in the UAE in particular, and not depend entirely on other studies done in different contexts and on students from other language backgrounds. Thompson-Panos & Thomas-Ruzic (1983) point out that a better understanding of the language background of ALE can aid teachers in better addressing their special needs, and responding to these needs through appropriate activities.

In the UAE, there is a dearth of research that investigates spelling problems, the efficacy of current methods of spelling instruction, how teachers perceive spelling problems, and how they currently handle spelling instruction. The current study is needed to fill this gap in order to gain new insights into the spelling problems that face UAE students and possible teaching strategies that could help overcome spelling problems.

Research Questions of Current study

The current study is aimed at investigating the following questions:

1. How big is the spelling problem in UAE public schools?

2. What are the main types and causes of spelling problems in UAE public schools?

3. How do spelling problems change throughout school grades 9-12?

4. What are teacher's perceptions of the spelling problems of their students?

5. What are teacher's attitudes to and current practices in English spelling instruction?

Context and Participants

The study was conducted in a male public school in Fujairah, the UAE, in which there are four levels: Grades 9, 10, 11, and 12. The participants of this study consisted of two groups: male public school students and male English language teachers.

Current Study Design

Three instruments and research methods were used for collecting data: students' compositions, teacher questionnaires, and teacher interviews. Students from each level were asked to write a composition of 150 words about a topic that was thematically related to what they had studied in their textbooks. The frequency of spelling errors in these compositions was noted and compared across the four grades. Additionally, the spelling errors identified were categorized according to type and likely cause and compared across the four grades. Surveys and interviews were used to investigate teachers' perceptions of the spelling problems of ALEs, attitudes towards teaching spelling, and practices in spelling instruction.

Overview of Chapters

Chapter 1 has presented an overview of the study, a statement of the problem, its significance, the research questions, the design, and the participants of the study. Chapter 2 contains a review of research and related literature regarding the importance of spelling, the types and causes of spelling problems, the likely influence of spelling on other skills, and an overview of possible strategies for spelling pedagogy. Chapter 3 presents the methodology and procedures which were used to gather data for the study. Chapter 4 presents and analyzes the data. Chapter 5 contains a summary of the study's findings, a conclusion, a discussion of the limitations of the study, recommendations for further research, and implications.

CHAPTER 2

REVIEW OF THE LITERATURE

This chapter reviews the literature related to this study. It is divided into eight subsections: the role of error analysis in curriculum design, likely causes of spelling problems, linguistic differences between Arabic and English, the relation between reading and spelling, raising learners' awareness of spelling rules, effectiveness of spelling instruction, studies about spelling errors in non-Arabic contexts, and studies about spelling errors in Arabic contexts.

The Role of Error Analysis in Curriculum Design

The acquisition of a foreign or a second language is, as Brown (2000) notes, a demanding process that involves trying to "reach beyond the confines of [the] first language and into a new language" (p. 1). During this challenging course, learners will inevitably face problems that will cause them produce various types of linguistic errors. These errors, as described by Corder (1981), are part of the process of acquiring a language, and are, as he continues, an important indicator that provides evidence of what point the learner is in at his language development and how far towards the goals the learner has progressed. As such, Corder encourages systematic analysis of learners' errors in order to know learners' needs and, in turn, design syllabuses accordingly rather than imposing upon learners teachers' and decision makers' perceptions of how and what they ought to learn. In addition to designing syllabuses, Corder points out that students' errors also help in developing appropriate remedial actions to overcome any learning problems. Similarly, Brown (2000) indicates that analyzing students' errors provides teachers with tools to predict and address students' problems.

"Familiarity with the types of errors students actually make is [also]," as Burt (1975) indicates, "a valuable guide for determining the sequence and emphasis of instruction in the EFL classroom" (p. 54). That is, it helps, as she explains, in curriculum sequencing, focusing on main errors. Consequently, global errors that can significantly hinder communication can be given more priority than local errors that do not usually hinder communication. Such understanding, as she adds, would produce more "relevant teaching, more confident learners, and more effective communication" (p. 63) Although Burt was concerned in her study with to what extent errors made by speakers can affect the comprehension of listeners, her argument can apply to other aspects of language learning, such as writing and reading.

Writers write a message that readers may or may not understand depending on the types of errors made. In writing, it is expected that students would make different types of errors that may hinder comprehension. One of such errors that plague some students' writing is spelling errors. Smedley (1983) indicates that "poor spelling and punctuation interfere to a greater or a lesser degree with communication between writers and readers" (p. 7). Hence, spelling correctly is not only a luxury. It is a sign of well-developed writing abilities, as spelling errors distort written production and hinder communication between the writer and the reader. Therefore, in order to produce more relevant teaching and eventually more confident learners and effective communication, more understanding of students' spelling errors and their causes need to be achieved.

Hildreth (1962) believes that "knowing what the commonest types of [spelling] errors are will put teachers on the lookout for them" (p. 224). It enables them to direct their attention to these errors and help students overcome them. However, he adds that teachers may find lists of words that are considered to be the commonest errors in spelling, but these lists might not be suitable for all teaching situations, because each teaching context is unique and has its own problems. Therefore, he advises teachers to form their own lists depending on the mistakes that there students make. Likewise, Smedley (1983) points out that any effective teaching of spelling requires considering learners' specific needs. Teachers need to help students overcome their own spelling problems, or as he calls them "spelling demons" (p. 49). Therefore Smedley calls for an analysis of students' errors, which can be helpful in two ways. First, teachers can identify the systematic errors that they can address by exercises for the whole class. Second, individual problems of each student can be identified and addressed. He also believes that teachers need to have an active role in helping students overcome their spelling problems, because leaving students to their own devices is ineffective, as students may resort to ineffective techniques.

Likely Causes of Spelling Problems

Clearly, many researchers perceive a great value in analyzing students' errors, because such an analysis, as Burt (1975) observes, helps in understanding the types and causes of language errors. This, in turn, helps in understanding the process of second language learning in order to help students avoid committing errors. Likewise, Book and Harter (1929) point out that although it is difficult to determine the causes

6

behind spelling errors, they cannot be prevented unless their causes are accurately determined and clearly understood by teachers.

A good body of research discusses the problem of spelling that many learners of English have, and attributes spelling errors to different causes. The following three sections will provide an overview of the main causes of spelling errors found in literature.

Development factors.

One of the main causes of spelling errors is, as Bahloul (2007) and Kharma and Hajjaj (1997) point out, natural developmental factors. Bahloul explains that many of the spelling errors that learners of English commit "stem from the linguistic development stage, which conditions what learners are capable of producing" (p.45). Such errors are out of the hands of learners, as the language stage they are at does not enable them to master certain language features. A study on the spelling errors which ALE commit conducted by Bahloul (2007) exhibited that many of the spelling mistakes made by the learners who took part in the study were very similar to those made by native speakers as part of their developmental stages. For example, many of the errors that Bahloul identified in his study can be observed in baby talk, such as reversing the order of two adjacent phonemes in some words, as in spelling *first* as *frist*. Second language learners are expected to overcome such errors as they move to higher stages in language learning.

Irregularity of the English spelling system.

Bahloul (2007) believes that a main cause of spelling errors, and one that seems to cause most learners of English a big problem in developing their spelling proficiency is the irregularity of the English writing system. This irregularity appears to confuse learners from different language backgrounds, including native speakers. The main cause of this irregularity is that, as Henderson (1981) indicates, there is no one-to-one correspondence between the written word and its pronunciation. Hildreth (1962) also attributes many of the spelling difficulties that most learners of English have to the "inconsistencies in English word structure" (p. 4).

Hildreth discusses four features of English writing system that give it its notorious reputation of being irregular. The first one is that different sounds are given to the same letter or combination of letters, as in *break* versus *cream* and *gem* versus *get*. The second cause is that a single sound can be expressed by different letters or combinations of letters as in *maid*, *made*, *say*, and *weigh*. Bahloul (2007) agrees

7

indicating that "Arab learners, and possibly most other learners, including native speakers find it quite challenging to utter the same letter *a* in eight different ways and spell the high front vowel *i* in 11 different ways" (p. 43). Similarly, Smith (1973) points out that there are 52 main English spelling units in English, which double the size of the English alphabet and complicates the task for language learners. Hence, it is not only the 26 letters of the alphabet that learners need to know to be able to read and spell words correctly, learners also need to get familiar with many more letter combinations that are used to represent the 43 phonemes of English. A third cause, according to Hildreth (1962), is that many English words contain silent letters as in *debt*, *enough*, *light*, *tongue*, and *foreign*. He also adds that the alternate spellings that many English words have, such *theatre-theater* and *color-colour*, also cause some confusion to language learners. For Hildreth, all these irregularities cause learners of English to find English spelling a big burden.

Smith (1973) adds more examples that illustrate the spelling difficulties that face learners of English. For example, he points out that there is nothing that the letters *c*, *q*, and *x* can do that other consonants in the alphabet cannot do. Another example is that the pronunciation of many letters or letter combinations in English is unpredictable so that learners need to remember every instance to be able to pronounce them correctly and in turn to spell them correctly. To exemplify, he includes the following words in which the pronunciation of the letters *th* is unpredictable. This combination of letters is pronounced /ð/ in *this*, *that*, *those*, *them*, and *these*, while it is pronounced /θ/ in *thank*, *thatch*, *thong*, and *theme*. A similar example is taken from Henderson (1982). She notes that the letters *ph* function as a single unit as in *digraph*, but as two in the word *uphill*.

Obviously, the irregularities of English, as well as developmental factors seem to cause most learners of English to have spelling problems. However, there is still another main cause of spelling errors that brings to light the uniqueness of each learning situation and makes different learners from different backgrounds produce their own types of errors, which is mother tongue influence.

Mother tongue interference.

To many researchers, the differences that exist between the mother tongue and the target language act as a hindrance to the process of learning a language. For example, Corder (1993) argues that those speakers whose mother tongue has more

8

similarities to the target language are likely to find it easier to acquire than other speakers whose mother tongue is more "distant linguistically" (p. 21). Brown (2000) and Saville-Troike (2006) refer to the influence that the mother tongue may have on L2 acquisition as *transfer*. This transfer or carryover of knowledge, as Brown points out, can be either positive or negative. It is a positive transfer when the previous knowledge facilitates learning, whereas it is considered a negative transfer, or interference, when some of the previous knowledge is applied incorrectly and hinders learning. These views argue that when learners start learning a foreign language, they are not a tabula rasa, as they already know at least their own mother tongue, and perhaps also an L2. Learners are expected to be influenced by their mother tongue and resort to it to help them learn the new language, because people always, as Brown (2000) indicates, use any previous knowledge, including the first language, to solve any new problems.

Swan and Smith (2001) believe that the native language can influence the acquisition of L2 in two ways. On the one hand, learners are likely to have problems acquiring L2 in particular areas where the mother tongue has no equivalents for some of the linguistic features found in the target language. For example, many Arab learners, as they note, have difficulties pronouncing and spelling *p* and *v* because they do not exist in Arabic. On the other hand, where equivalents are found, learning is likely to be facilitated. For example, learners with a similar writing system to English, like Spanish, find it easier to acquire the writing system of English than other learners, like Arabic and Japanese, who use extremely different writing systems.

Apparently, learners who speak different languages are expected to have different problems caused by the influence of their mother tongues. This view lends support to Hildreth (1962), Burt (1975), and Corder (1981) who argue that students' errors need to be analyzed and used as a guide when developing syllabuses, because each group of learners is expected to produce different types of errors and need different teaching procedures accordingly. Thus, in order to get more insight into the specific needs of ALEs, the linguistic discrepancies that exist between English and Arabic that might cause ALEs problems in learning English in general and in developing their spelling proficiency in particular are discussed in some detail in the following section.

Linguistic Differences between Arabic and English

Kharma and Hajjaj (1997) discuss a number of the linguistic distinctions that exist between Arabic and English that make the acquisition of English for Arab learners quite challenging. One of these distinctions is the differences in the orthographic systems. They note that "the greatest difficulty [for ALEs] arises from the difference between the seemingly irregular spelling system of English compared with the greater regularity of the predominantly phonetic script of Arabic" (p. 56). As discussed earlier, the English writing system is quite irregular which causes most learners of English, including native speakers some confusion. In contrast, Arabic has a highly regular writing system that is mostly phonetic. Thus, Arab learners, as a result of their L1 background, will be looking for sound-symbol correspondence in English words, which is, as Ediger (2001) indicates, not available in most common words in English. For example, as Kharma and Hajjaj note, silent and doubled letters are some of the language irregularities that are not found in Arabic, and thus confuse Arab learners.

Likewise, Swan and Smith (2001) observe that "all aspects of writing in English cause major problems for Arabic speakers" (p. 199). They discuss some of the major differences between the two languages that cause Arab learners a lot of difficulties. For example, Arabic is a cursive system that rarely recognizes words written in isolated forms of letters. To illustrate, the Arabic equivalent word of the English word *study* is يدرس, which is formed of the separate Arabic letters (س ا ر د ي). However, it would be highly unusual to see this word, or most Arab words, written using separate letters. Another important difference they mention is that Arabic is a writing system that runs from right to left, which makes Arab learners misread and sometimes misspell words that contain letters with mirror shapes such as *p* and *q* and *d* and *b*. They also add that the right to left writing system makes learners misread letters within words by right to left eye movement. For example, learners might misread *form* for *from.*

Bahloul (2007) adds another reason why many ALEs find English spelling very difficult. He explains that the written form in Arabic does not realize vowels as much as English does. He notes that Arabic only has three written long vowels, while the other vowels are short ones that are sometimes shown as symbols placed over or under some letters. These short vowels appear in the spoken form of Arabic, but are not usually realized in the written form. As such, most Arabic words are written only

using consonants and the three long vowels that have written forms. Bahloul adds that a great number of Arabic words can be written without the use of any written vowels. The short vowels are, as Bahloul continues, easily filled in by skilled Arabic readers using contextual clues. Thus, many ALEs may transfer their knowledge of writing in Arabic to English, and consequently make a lot of spelling mistakes, especially with words that have irregular use of vowels. For example, the results of a study that he conducted on ALE showed that some students wrote many English words with a random use of vowels or without the short vowels at all.

To further complicate the problem for Arab learners, lots of research has shown that the phonological differences between Arabic and English also might cause some pronunciation difficulties for ALEs that might also extend to hindering the acquisition of spelling. For instance, Odlin (1989) attributes some of the spelling errors which Arab learners might make to the differences in the phonological systems between Arabic and English. He indicates that some Arab learners tend to write English words in the same way as they pronounce them. For example, the results of three studies on spelling errors that were done in Jordan by Ramadan (1986), Al-Bakri (1998), and Al-Karaki (2005) highlighted the influence that Jordanian Arabic has on Jordanian learners of English. Results showed that because Jordanian Arabic does not have a phonemic distinction between /p/ and /b/ as in English, many of the Jordanian learners of English who participated in this study tended to misspell many of the words that have the letters *p* and *b*. To exemplify, instead of writing *playing*, many learners wrote *blaying*.

There are many varieties of Arabic. Arabs from different countries usually have different dialects and even in the same country differences in pronunciation can be noticed. In the UAE, students from different Arab countries study in public schools, such as Emiratis, Egyptians, Syrians, Palestinians, Sudanese, Tunisians, and Somalis. From my experience, the effect of pronunciation on spelling can be noticed in those students' written work. Examples of the effect of different Arabic backgrounds on pronunciation and spelling can be taken from a study conducted by Broselow (1993). He carried out a study that brought to light some of the phonological differences between Arabic and English that may account for some of the spelling errors that some ALEs make. In his study, Broselow investigated the issue of "epenthesis," which refers to the insertion of a vowel sound to break consonant clusters. He conducted his study on ALEs in two Arab countries, Iraq and

11

Egypt, where the Arabic varieties rarely have consonant clusters. The results of his study show that the members of the same dialect have systematic pronunciation of consonant clusters. He exemplified that while Egyptians tended to insert the short vowel sound /ɪ/ between the first and the second consonants of an initial two-consonant cluster, Iraqi speakers inserted this vowel before the initial consonant. For example, some Egyptian learners pronounced the word *splash* as /sɪplaš/ and spelled it accordingly as, for example, *seplash*, while some Iraqi speakers pronounced it as /ɪsplaš/, and spelled it as, for example, *esplash*. Broselow (1993) concluded from his study that "certain systematic errors can be directly attributed to language learners' transfer of native phonological rules" (p. 84). Thus, the different native backgrounds between the Egyptian and the Iraqi varieties of Arabic reflected different mistakes consistent with their language rules. Thus, it is expected that ALEs of different varieties of Arabic will have specific problems that require special treatment.

To sum up, in addition to the problems that the irregularity of English writing system causes and the natural problems inflicted by the developmental stages, ALEs also seem to be likely to have additional types of problems caused by the influence of their mother tongue. Being speakers of a highly phonetic language that is also linguistically very different from English in print and pronunciation, Arab learners of English seem to have many different problems in learning English, in particular spelling, from other learners from other backgrounds.

In addition to the obvious learning difficulties that ALE have in learning English spelling, and consequently developing their writing proficiency, it seems that that ALEs are not in much a better situation when it comes to learning how to read. To many researchers, ALEs are expected to have difficulties in developing their reading proficiency as a result of the linguistic differences that exist between English and their mother tongue. The following section will discuss the relation between spelling and reading, and how spelling problems might have a negative effect on the reading proficiency of ALEs.

Reading and Spelling

Apparently, the linguistic differences that exist between Arabic and English cause many ALEs to commit a lot of spelling errors, which in turn affect their overall writing proficiency. From my own observations of my students' performance, most usually do much better in speaking tests than on written ones. Their writing is rarely free from spelling errors. Some of these errors make their writing very difficult to

read, which consequently affects their grades and writing proficiency development. Nevertheless, in addition to this negative influence on writing proficiency, many researchers also seem to believe that the linguistic differences that exist between Arabic and English seem to confuse Arab students and cause them to read slower than they should, which affects their overall comprehension and reading proficiency. Thus, they face different reading problems from the problems that other learners from other language backgrounds face. For example, Odlin (1989) points out that "the more similar the writing systems of two languages are, the less time learners will need to develop basic encoding and decoding skills" (p. 125). Similarly, Bernhardt (1991) points out that languages with similar orthographic systems share similar reading experience that make reading easy.

Swan and Smith (2001) believe that the spelling problems that ALEs of English have because of the linguistic differences between Arabic and English makes many Arab learners face difficulties in developing their reading and writing skills compared to other learners from non-Arabic backgrounds whose languages share more similarities with English. As such, they believe that Arab learners "should not be expected to cope with reading and writing at the same level or pace as European students who are at the same level of proficiency in oral English" (p. 199). Likewise, Fender (2008) points out that even though Arab learners achieve good results in speaking and listening tests compared to other learners of English whose native languages are less distant linguistically from English, they exhibit more difficulties in developing reading and writing skills.

One of the major effects of coming from different language backgrounds on reading proficiency is pointed out by Randal (2007). He argues that different orthographies use different word recognition strategies. This causes learners of English to have varied reading abilities caused partly by their mother tongue reading strategies. For example, Hayes-Harb (2006) conducted a study that highlighted some of the different reading strategies between Arabic and English which affect negatively ALEs reading comprehension. He compared the reading processes of native Arabic speakers to the reading processes of native English speakers and non-Arabic ESL learners. His study provided evidence that ALEs found the use of English vowels very confusing compared to the other control groups, which hindered their reading fluency. He explained that written vowels in Arabic have a less prominent role than that in English. This is transferred to English letter and word processing, resulting in reading

comprehension difficulties. Another reason for this comprehension difficulty is that, as he continues, in Arabic, in contrast to English, the reader can usually predict the meaning of a word based on its consonant structure alone and can usually fill in vowels based on semantic and syntactic context. To exemplify, he points out that the words *pint, point,* and *paint* all have the consonant structure p-n-t, but the words differ in meanings significantly.

Obviously, affected by their mother tongue reading strategies, many ALEs seem to have problems with word recognition, which Koda (2005) defines as the "processes of extracting lexical information from graphic displays of words" (p.29). Bernhardt (1991) argues that readers need to develop automatic word recognitions skills; otherwise they will become slow readers. Likewise, Ediger (2001) believes that automatic recognition skills are essential for fluent readers. She explains that the process of word recognition is an unconscious ability that requires little mental processing. Thus, when this process becomes slow, it puts heavy strains on memory and consequently reduces comprehension. Similarly, Koda believes that slow word recognition causes slow reading, and consequently lack of comprehension. He explains that slow or inaccurate word recognition causes readers to exert more effort on decoding the written script, which leaves little cognitive space for comprehension.

Bernhardt (1991) believes that readers reading in a distinct language from their mother tongue do not usually have "sensitivity to orthographic regularities" (p.76). This, as he continues, requires them to learn orthographic regularities to get used to the new writing system. Thus, letter combinations and word structures in the target language need to be studied carefully by learners in order to increase their sensitivity to the new orthographic system and eventually develop their reading proficiency. Likewise, Ediger (2001) believes that readers need first to understand the "symbolic role of characters or letters" (p.156) in order to develop their literacy skills. Olshtine (2001) also emphasizes the role of the mechanics of reading and writing such letter recognition and discrimination, and basic spelling rules in producing proficient readers and writers. According to those views, learners need to become more familiar with the orthographic system of the target language, mainly if it is linguistically different from their mother tongues, as it is the case with ALEs, in order to be able to read more efficiently.

Koda (2005), among other researchers, adds another reason that may cause problems for readers in other languages. He argues that reading involves converting

written symbols into sounds and relating those sounds to the sound repertoire of words stored in our brains. Thus, if learners fail to sound the words they read correctly, they will fail to recall the words from their memories and consequently fail to understand what they are reading. Anecdotal as it might be, I constantly experience such situations with my students. For example, many of my students fail to answer some of the written questions in exams or class room activities, because they fail to read some of the words correctly. Nevertheless, when I read them the questions they are stuck at, many of them immediately get the correct answer. Ediger (2001) highlights the importance of starting teaching reading by training students to match the letters of English and common spelling patterns with their sounds with the idea that if students become able to recognize spelling patterns and sound them correctly, they will be able to read more fluently, and thus develop their reading proficiency. However, Bernhardt (1991) notes that sounding or subvocalization is affected by text difficulty. The less difficult the text, the less sounding is needed.

Although Smith (1973) admits that the beliefs that readers first decode written symbols into sounds then into meaning is "conspicuous among contemporary model-makers" (p. 70), he argues against them. He believes that readers extract meaning directly from the written script without the need for the phonetic medium. He argues that "sound, if it is produced at all, comes only after the comprehension of meaning in reading" (p. 70). Smith argues that sounding the words will not lead the reader to meaning. Reading requires syntactic and semantic knowledge of the language for comprehension to take place. He presents a number of arguments to prove his belief. One of his arguments is that even if words are subvocalized, they will not sound right, as written texts are structured in a different way from spoken language. Another example that he uses is that when we read we can differentiate between the words that are spelled the same but have different meanings. For example readers can understand whether the word *read* is in its present or past form from the context although they look the same. So, if meaning is not present, the sounding of the words will not help the reader. He adds that sounding the words will have readers read word for word which will hinder reading and comprehension.

Although, Smith argues against the three theories that explain how reading takes place, "whole-word identification, letter-by-letter identification, and the identification of letter clusters" (p. 123) and proposes one of his own that he calls the feature- analytic theory, he notes that "no theory is so prestigious that it cannot be

subjected to the scrutiny of open-minded disbelief" (p. 123), including his own. He adds that refuting one theory does not mean that the other theories are better. He adds that despite the shortcomings of these theories it is not possible to conclusively to prove them wrong. He also makes it clear that he is not after a classroom revolution that encourages teachers to abandon their current practices and years of experience. He asserts that his theory and recommendations need to be tested in the classroom to prove their effectiveness.

Although Koda (2005) is an advocate of the sounding hypothesis, he believes that sounding on its own will not help learners understand what they read. He notes that success in reading requires three abilities: the ability to extract the linguistic information embedded in the letters and words, getting meaning from the ideas in the text, and the integration with prior knowledge. The lack of any of these abilities causes comprehension problems. He adds that although these abilities function together while reading, each of them is distinct and can be developed separately. He adds that word level and context-level processing are highly interactive, and success at both levels is mutually enhancing. Similarly, Henderson (1981) indicates that both routes are important for successful reading. Gebhard (1996) also notes that "reading includes discovering meaning in print and script, within a social context, through bottom-up and top-down processing, and use of strategies and skills" (p. 194).

Ediger (2001) and Hayes-Harb (2006) explain that there are two approaches for teaching reading. The first one is a top-down approach that focuses on familiarizing students with the discourse structure and cultural knowledge of the target language reading texts. This approach, as Ediger continues, emphasizes the construction of meaning from the whole text and relating the reading text to readers' background knowledge, leaving language skills to develop by time. The other approach is a bottom-up approach that focuses on developing low-level skills, such as letter and word identification. Hayes-Harb also notes that most research has attributed the difficulties that learners of a second language face in reading to higher level aspects and to a great extent ignored the lower level aspects. He believes higher level processes often depend on lower level processes, and deficient lower level processing can inhibit reading comprehension. Ediger points out that each approach has its pros and cons. As such, she recommends the use of a balance of the two approaches, as she believes that a balanced approach that combines the two approaches would be more useful for students.

16

Similarly, Randall (2007) believes that the irregularity of the English writing system necessitates the use of a dual approach for teaching reading. He refers to this approach as the dual route, in which students are taught to recognize words in two ways: the lexical and sub-lexical approaches. In the sub-lexical approach students assemble words from their individual letters and graphemes and assign a sound to each one. The lexical approach involves recognizing the word as a complete unit. Randal believes that both ways are important because, as he indicates, even native speakers of English that have problems with either route are not fully efficient readers.

Some research has provided evidence that fluent readers need the low-level skills when reading. A study carried out by Santa (1976 - 1977) showed that spelling units are important for reading in the native language. In her study, she tested whether children recognize and benefit from spelling patterns when reading in their native language. The study was conducted on achieving and non-achieving second graders and achieving fifth graders. She aimed to understand to what extent children's ability to perceive these patterns and clusters develops as they become more efficient readers. In the study the participants were presented simultaneously a word, a colon, and a set of probe letters (e.g. BLAST: BL, BLAST: A). Participants had to decide whether or not the probe letters were contained within the word. The results showed the second grade achievers did better than the non-achievers, and the fifth graders did significantly better than the second graders. The non-achieving second graders seemed to rely more on the single letter, but as children become better readers, consonant clusters gain more importance as a perceptual unit. Although, as Santa points out, the results cannot be generalized as they only dealt with words in isolation, not within context, and thus did not test the importance of meaning, the study provides evidence of the importance of word recognition units for efficient readers and that this importance increases as learners' progress. Thus, developing students' ability to recognize these patterns will help them develop their spelling ability and reading proficiency.

In another experiment by Santa (1976 - 1977) that aimed at testing the importance of meaning, she typed words with different spacings: *c hild, ch ild, chi ld, chil d*. The aim was to test to what extent children's perception of the words that have disrupted spelling patterns (as in *c hild*) gets affected compared with words that were typed with spaces preserving spelling pattern boundaries (as in *ch ild*). The results of

17

children were also compared with the results of adults. Results indicated that dividing the initial cluster affected processing of words and participants needed more time to perceive them than whole words or words that preserved the logical cluster boundaries. This shows that efficient readers make use of larger recognition units.

Santa's (1976 – 1977) study shows that spelling units are important for reading speed, which in turn assists comprehension. Although it is true that native speakers might not need special instruction to help them recognize these spelling patterns to read in their mother tongue, non-native speakers may need help in developing their low-level skills because, as Koda (2005) points out, the nature of reading in L2 is different. For example, he points out that L1 learners start reading with a basic linguistic foundation that they acquired through oral communication that facilitates their task, unlike L2 learners. Additionally, L2 learners start learning the L2 with world knowledge, as they start old enough. As such, he argues that L2 reading research must be different from L1 reading research. Thus, raising students' awareness of the low level skills and letter combinations might pay off for non-native learners in developing both their spelling and reading performance, not to mention improving their writing production, which is a natural byproduct of the improvement of spelling.

All in all, reading is regarded as the most important skill for second language learners, because, as Ediger (2001) points out, it is "a valuable source of language input, particularly for students in learning environments, in which fluent speakers of English are generally not available to provide other types of language input" (p. 153). Therefore, it is essential to help L2 learners develop their reading proficiency, which would provide them with comprehensible language input that would enhance their second language acquisition. So, if, as it appears from the literature reviewed above, there is a strong relation between spelling and literacy skills and ALEs find that the irregularity of the English writing system causes them reading difficulties, it might be useful to help ALEs develop their low-level skills, including spelling. The following sections will discuss in some detail the literature that discusses the importance and effectiveness of explicit spelling instruction.

Raising Learners' Awareness of Spelling Rules

Though, as we have seen, the English writing system appears to be irregular and causes confusion for learners, many researchers argue that it is not totally irregular and that it can be learned. Hildreth (1962) believes that although the non-

phonetic nature of English causes most of the spelling problems, English is not wholly non-phonetic. He states that about eighty-five per cent of the words contain regularly sounded elements that consistently recur in English, such as *de*, *an*, *er*, *dis*, *con*, and *tion and* these regular patterns can be taught to students. Similarly, Ediger (2001), Olshtain (2001) and Shemesh & Waller (2000) among other researchers believe that English spelling is rule governed and can be taught. Therefore they recommend devoting part of English language classes to teaching some of the rules that govern English spelling which would help students not only develop their spelling performance, but would also have a positive effect on learners' writing and reading abilities.

Templeton and Morris (1999) also argue that there are frequent patterns in English spelling that provide a level of consistency that functions within and between syllables. These patterns complement the alphabetic level in providing information about how sounds are spelled. Learners come to know that there are letters that seem to be silent in words but have a function that affects the pronunciation, such as the effect of the *e* in English words, as in the example that they use, *scrap* compared to *scrape*, in which the 'silent' *e* changes the nucleus of the syllable from /æ/ to /eɪ /.

They add that an awareness of these patterns helps students in both reading and spelling, because when students come across an unknown word in reading they can apply their knowledge of patterns to access the sound of the word. Additionally, when students are writing and are uncertain of the spelling of a word, they can resort to the sounds they hear to spell the word. Hanna, Hanna, Hodges, and Rudorf (1966) (cited in Templeton and Morris, 1999) point out that when students learn how patterns work, the possibilities for correct spelling increase considerably because they have more information that they can make use of to generate correct spelling.

Chomsky (1973) and Templeton & Morris (1999) explain one of the reasons why English orthographic system seems to be arbitrary, while it is actually not. They argue that one of its main features that makes it appear so arbitrary is that it ignores the phonetic variations of the language. To exemplify, Chomsky illustrates that the vowel sounds in the words *nation* and *national* are pronounced differently although they are spelled the same, as they both stem from the same lexical item and have a similar meaning. "It is simply that," as she adds "the orthography bears an indirect rather than a direct relation to … pronunciation" (p. 102). This feature of English

orthography, as she explains, makes it appear arbitrary and there is no grapheme-phoneme correspondence. However, this feature is actually a blessing of English orthography, as meaning not obscured to the learner by different spellings in the different word classes.

Chomsky adds other examples of such variations. She indicates that stress and intonation affect the pronunciation of words, but do not affect the spelling of words. For example, the reduction of vowels into a schwa in unstressed syllables is not reflected in spelling, though it is clear in spoken forms of the language. To exemplify, the word *permit* is stressed differently according to whether it is a verb or a noun. She explains that "the lexical spellings represent the meaning-bearing items directly, without introducing phonetic detail irrelevant to their identification" (p.99). This eases the job of the reader, as he gets the meaning directly without worrying about the phonetic variations. The reader will be reading faster as he will understand that words that look the same usually have a shared meaning. The spelling system leads the reader to the meaning of the word directly. This keeps the orthographic representation of words stable no matter how much changes occur in pronunciation of words. Mature readers, as she continues, will not be looking for grapheme-phoneme correspondence, but for correspondence of the written symbol to the meaning of the word. Children learning to read will be affected at early stages by the grapheme-phoneme correspondence, but soon they become able to connect the written symbols to their meanings, disregarding the phonetic variations. However, she adds if this does not happen, readers will face difficulties in reading. Thus, teachers need to find ways to encourage this transition to help learners become efficient readers. The task is usually easy for native speakers as they have internalized the phonetic rules of their language, but it is usually harder for nonnative speakers.

Chomsky's (1973) argument shows that there is a sort of consistency in word formation in English that can help learners develop their reading proficiency without being hindered by the phonetic variations. However, as discussed earlier, Hayes-Harb (2006) pointed out that many English words, such as *pint, point,* and *paint*, look similar, but differ in meanings significantly. Some students might be confused by such words, and thus mistake them for regularly derived ones. As such, building on Hildreth's (1962) suggestion of teaching the regularly sounded elements that consistently recur in English, it might be useful to teach students the standard patterns that are recurrently used to change the part of speech of words. This might help

students notice them, and by time automatically recognize them without affecting their reading fluency.

Clearly, many researchers believe that English writing system is causing some confusion to learners of English, but they also believe that it can be learned. Therefore, they suggest many ways to help learners get familiar with it. For instance, Bloodgood (1991) believes that memory is not a sufficient tool to make spelling meaningful and lasting. She indicates that students need to have spelling activities that can ease their task. She recommends that students be given a spelling test to define their spelling abilities and analyze their errors. Then students can be grouped according to their abilities and their needs. "Once the teacher identifies a student's level of spelling," as she adds, "activities can be planned to clarify a specific word feature and give practice until the feature under investigation becomes automatic [, and students] can then carefully investigate the next feature" (p. 206). Some of the word-study activities that she suggests are comparing and contrasting words and practicing homophones. These activities, especially if they are mixed with games and contests, can turn the activity into an enjoyable and meaningful lesson. She also suggests making the teaching of spelling meaningful for students and strengthening the relation between reading and writing by using the words that students encounter in reading for spelling practice, then using them in writing tasks.

Hildreth (1962) also believes that learners can be taught to build generalizations from known words to new ones, as many syllables or combination of letters have a standard spelling in a majority of words. He exemplifies that if a person knows the spelling of *sending*, he would find spelling *selling* easy. Additionally, he adds that the structure of derivatives follows certain established patterns that can be generalized. However, learners need to understand that there is a big chance that they might be wrong. He adds that learners usually exhibit different abilities in spelling proficiency. However, this does not mean that bad spellers cannot improve (though in rare cases this might be true). Systematic and structured teaching of spelling can be useful for most learners.

Olshtain (2001) recommends that teachers develop and use activities that would help learners recognize the sound-letter relationships and introduce them to spelling rules. For instance, she believes that teachers need to train students from the very start to recognize fixed patterns in English like that the letter *c* is pronounced /k/ except when it is followed by the letters *e* and *i*. Another strategy is to draw students'

attention to the environment where vowels appear. For instance, a CVC syllable is the environment of a short vowel, while the CVC +e is the environment of a long vowel. She indicates that it is true that these rules may appear confusing, but she believes that "by practicing the proper pronunciation of sounds in relation to given spelling patterns, [teachers] can provide learners with a good basis for pronunciation as well as the skills of reading and writing" (p. 210). She points out that such activities are especially important for students coming from completely different backgrounds, such as Arabic, who might need special exercises to address their specific needs. Likewise, Shemesh and Waller (2000) introduce a program for teaching spelling which aims at giving students opportunities to use spelling patterns following a structured scheme of work through using meaningful activities like games and puzzle solving exercises that maintain students' motivation.

However, it seems that not all researchers believe in the value of introducing such spelling rules. For example, Smith (1973) believes that the task of introducing phonic rules is too complicated to help students to read. He points out that the rules are too many with too many exceptions that would complicate the task for readers, especially beginners, and overload their short term memory causing them to read slowly and not get much sense of what they are reading. Nevertheless, he notes that although he does not favor teaching the so many rules in English spelling, he believes that these rules can work as a type of guidance. Likewise, although Hildreth (1962) believes in the value of giving students spelling instruction and devoting time in language classes to teaching spelling, he indicates that learning spelling rules is of limited value. He believes that it is more meaningful to have learners discover the rule themselves through repeated experience of words that conform to a certain rule. Pupils then can apply the rule to other words. For him, rules need to be applicable to a sufficient number of words and have few exceptions. Similarly, Smedley (1983) indicates that when a teacher finds that a number of his students are having similar spelling problems that can be solved by teaching them a spelling rule, it becomes worthwhile to spend some of the class time studying and practicing such rules. However, he adds he prefers that students workout the rules themselves rather than being taught by the teacher.

To sum up, although there is no consensus among researchers regarding the effectiveness of introducing spelling rules in order to help students develop their spelling proficiency, it is clear that most researchers do not deny the importance of

spelling instruction. Hildreth (1962) argues that the value of "direct drill and practice" (p. 15) cannot be denied. He explains that in order for children to advance, they need direct intervention from the teacher "in such matters as checking their written work, learning how to study words learning about word structure, word analysis, and word building" (p. 15). Additionally, he points out that systematic practice is needed to teaching difficult words. Additionally, Smith (1973), who perceives little value in introducing spelling rules, points out that "no theory is so prestigious nor any logic so formidable that it cannot be subjected to scrutiny of open-minded disbelief" (p. 123). This indicates that teachers need to have an active role in analyzing and understanding their teaching contexts, and choosing the techniques that best suit their students' needs.The following section will introduce a number of initiatives that advocate direct spelling intervention.

Efficacy of Spelling Instruction

Many researchers have investigated the effectiveness of spelling instruction for developing students' spelling proficiency. Many of these studies showed that spelling instruction has rewarding results. For example, in a study conducted on university students, Guiler (1931) described the results of a program that the School of Education of Miami University developed for diagnosing spelling problems and providing remedial instruction. He explained that the program mainly helped learners discover their weaknesses, analyze them, and provide them with techniques to overcome them. Results showed significant improvement in students spelling abilities.

In another study conducted in the USA by Robinson and Hesse (1981), the effectiveness of a program designed to teaching principles for spelling that is called *Corrective Spelling Through Morphographs* was evaluated. The program, which adopts direct spelling instruction, is developed to enable the students to acquire a workable, generalizable set of rules and apply the morphographic analysis to words. The investigation showed that the program succeeded in achieving its goals.

Morris, Blanton, Blanton, and Perney (1995) investigated the nature and effectiveness of spelling instruction on native speakers of English in third grade and five grade classes in the USA. In those classes, teachers used traditional spelling books that contained a teacher's guide and students' textbook. One of the methods that the books used was grouping words according to patterns. Results showed that spelling instruction was fruitful for high achieving students, while it was of less value

for low achievers, because the course was too demanding for them. So, they think that this group of students needs a simplified version of these books.

These studies provide enough evidence that spelling instruction can be helpful for students. Hence, it seems worthwhile to give more importance to spelling instruction, especially as some research has shown that developing spelling proficiency can have positive effects on writing and reading abilities.

Spelling Instruction Techniques

As discussed earlier, many researchers (Hildreth, 1962; Burt, 1975; Smedley, 1983) argue that different learning contexts might need different instruction techniques, and thus teachers need to analyze the spelling errors of their students and design special exercises to respond to their systematic errors. However, literature is replete with suggestions on teaching spelling that teachers can consider when designing spelling activities. For example, Smedley (1983) suggests that teachers encourage individuals to keep personal spelling books to record their spelling demons, in order to practice them individually. He also advises teachers to build in their students the habit of proofreading their work before handing it. More specific suggestions are proposed by Hildreth (1962). Following is an overview of some of these suggestions.

1. Learners need to understand the meaning of the words that they are learning. They need to be interested in learning them. Therefore, prolonged lists of words that they have to learn would not be effective.

2. Reading is the main source for teaching spelling. In addition to silent reading that provides learners with good exposure to words and their meanings, he believes that loud reading is of a great asset to learners in learning spelling. He indicates that when learners read aloud they pay more attention to the structure of words, while in silent reading the foreparts of words are believed to be of more importance than the end parts, which are usually the main area of spelling errors.

3. Hildreth recommends dividing words into phonetic words and sight words. Phonetic words have a correspondence between their written form and pronunciation, such as *dog*, *degree*, and *triangle*. These words are easier to learn if students pronounce them correctly. However, sight words are the words that contain silent letters or irregular use of vowels, such as *sight* and *enough*. These words require learners to rely heavily on their visual

memory to remember them. He advises teachers to teach students to study the word they are trying to learn. If its letters correspond with its pronunciation, it does not need much practice. However, if there is irregular spelling in the word, they have to try to remember the strange spelling.

Hildreth (1962) also suggests a number of activities to help students overcome spelling difficulties:

a. Underline silent letters in such words as *weigh*, *side*, and *staff*.

b. Note misspellings of students. Write on board the correct spelling and beneath it a misspelled word so the student can compare and see where he/she went wrong.

c. Give students practice in observing related words. Ask students to add words they know.

d. Mark hard spots.

e. Upper grades can benefit from reasoning and generalizing. Especially suffixations and derivation.

f. Practice listening to the sounds in words and breaking them into familiar sounds.

g. Learning to syllabicate is one aspect of sounding.

h. Design games and contests to practice spelling.

i. Practice rules of word building that can be generalized as in *family – families*.

As it was pointed out earlier by many researchers, it is important to analyze and understand students' spelling errors in order to be able to develop appropriate activities to address them. There have been a number of endeavors in Arabic and non-Arabic contexts to do so. The following two sections will illustrate some of these studies.

Studies about Spelling Errors in non-Arabic Contexts

One of the studies that attempted to analyze spelling errors was conducted by Book and Harter on all public school students in Bloomington, Indiana, in the USA in1929. They conducted a study on 2nd, 3rd, 4th, 5th, 6th, and 8th graders, in which they analyzed a total of 3096 test papers in spelling (dictation). In addition to that, 608 compositions were obtained from freshman and sophomore students in the high school, and 1492 themes from freshman students at Indiana University. A total of

18,840 mistakes in spelling were observed. They divided classes of errors made according to their causes to two categories. The first cause is inadequate mental control over the process of writing words, which caused learners to misspell words the correct spelling of which they knew. These mistakes were about evenly distributed throughout the several grades, except that they were much more frequent in the second grade and were found much less frequently among college freshmen. These errors include:

1) Omission of a letter or letters (*conversation* as *coversation*).

2) Anticipating a letter which came later on in the word (*conversation* as *convertsation*).

3) Transposition of letters, reversing the order of two letters (*conversation* as *convertsation*).

4) Repeating or adding a wrong letter to a word (*foundation*" as *founddation*).

5) Carelessness, as in writing *n* for *m* or *o* for *a*,

6) Doubling the wrong letter (*spell* as *speel*).

7) Interference of associations, i.e. being affected by the spelling of a word that has just been written in dictation tests, as in spelling the word *rope* as *roap,* because it was preceded by the word *soap*.

8) Forgetting part of a word or all of it and substituting another part of a word or another word that sounds the same or means about the same thing.

9) Substituting a letter for another in the spelling of a word (*dog* as *dod*).

Book and Harter (1929) note that the other types of error were caused by the fact that some pupils had not observed the words correctly and so had not really learned how to spell them. Thus, they tended to spell words as they pronounce them, which caused a lot of spelling mistakes. This group of spelling mistakes included the following categories as classified by the authors:

1) Spelling words as they are pronounced (*Wednesday* as *Wensday*).

2) Misspelling words because they have been mispronounced by the teacher or because the learner, due to his colloquial speech, mispronounces them (*chimney* as *chimley*).

3) Reversing pairs of letters in common words, as in reversing *ie* and *ei* in *believe* and *receive.*

4) Using double letters for single letters (*untill* as *until*).

5) Substituting a letter for another that has common visual features to it (*goiny* as *going*).

6) Homonyms (*bare* as *bear*).

7) In spelling tests, some spellings were caused by partial or total ignorance of words which they were asked to spell. So students either got part of the word correct or wrote it totally wrong (geography as geograthathy).

8) Not hearing or perceiving the word incorrectly in a spelling test.

Book & Harter (1929) indicate that all the mistakes caused by the first nine types of errors described above may be prevented by making the learners want to learn how to spell and by establishing in them the habit of testing the accuracy of all their spelling responses and correcting all their written work before handing it in. This would make them notice more accurately the form of the word not only when studying it for a spelling test, but when seen in print.

However as for the second group of mistakes they state that they were caused by "Phonetic Spelling" and "Ignorance of Words." These errors can be prevented by requiring the learners to make more accurate observations of the words to be learned while they are studying them, and by forming the habit of never guessing at the spelling of any word which they attempt to write. Difficult words should receive special attention. A better visual analysis of the words to be learned should be made by the learner and special attention given to associating the proper pronunciation of the word with its meaning and with its exact visual form.

In another similar study that analyzed spelling errors of non-native speakers, Ringbom (1977) analyzed a number of different spelling errors in English made by Finnish and Swedish students. It needs to be noted here that Finnish has more correspondence between sounds and symbols (near-phonemic) than Swedish. This allowed the researchers to conceive the effect of how distant a language is from the target language on spelling proficiency. The errors that the researcher collected were classified according to the following two categories. The first category included the misspelled words that do not match their pronunciation. This category included two subcategories:

- Producing a non-existent word (*jatting* for *chatting*) or omitting a sounded letter (*conrol* for *control*).

- Confusing different words or different forms of the same word (*has* for *had*) or transposition of letters (*quiet* for *quite*).

The second category included words that were wrongly spelled though the misspelling matched the pronunciation of the word. Again, two subcategories came under this one.

- Words that broke English spelling rules (*sais* for *says*) or the omitted silent letters (*stayd* for *stayed*).
- Misspellings that were caused by confusing homophones (*where* for *were*), overgeneralization of existing English patterns (*receave* for *receive*), and substitution of a letter which may stand for the phoneme of the intended word (*deside* for *decide*).

Results also showed that at early stages Finnish learners make more errors than Swedish ones because of their mother tongue interference which is highly phonetic. However, this changed at advanced stages, as learners became more aware of the differences between their mother tongue and the English and more familiar with the target language.

Studies about Spelling Errors in Arabic Contexts

Ramadan (1986) conducted a study on two hundred students, one hundred Grade 12 male and female students and one hundred Grade Nine male and female students. He collected spelling errors from their written compositions. He divided the errors that he identified according to their types into three main categories: Morphemic, Intra-morphemic, and Splits. The Morphemic errors were divided into five types:

1) Inflection errors, not performing necessary changes when adding an inflection to a word, as in not dropping the final *e* when adding the *ing* inflection in some words (driving for *driving*).

2) Omissions errors, in which a letter is omitted (*time* for *times*).

3) Phonetic errors, in which a word is written as it is pronounced (*watcht* for *watched*).

4) Residue, not dropping a letter that needs to be dropped (*bite* for *bit*).

5) Derivation errors, in which a derived word is spelled incorrectly or rules are not applied (*snobish* for *snobbish*).

The second group of errors, Intra-morphemic errors, was divided into four types:

1) Articulation errors (sandwishes for sandwiches).

2) Syllable omission or reduction.

3) Lexical errors, which includes errors caused by homophones (*there* for *their*) and quasi-homophones (*wondered* for *wandered*).

4) Ambiguous correspondence errors as in *faimly* and *bouth*.

The third category, Splits, contained two subcategories:

1) Compounds, includes words that are written as two while they are one word (*break fast* for *breakfast*).

2) Pseudo-compound, breaking a word into two because it appears from its pronunciation as being composed of twowords (*be sides* for *besides*).

Findings also revealed that errors decrease as students move to higher stages in their education. Another finding that the study revealed is that most mistakes were found in vowel phonemes and silent letters. Ramadan (1986) also considered error position in words. According to his analysis, most errors concentrated in the middle of words, whereas the fewest errors were at the beginning of words.

In a similar study, Al- Bakri (1998) investigated spelling errors of English majors in the Yarmouk University in Jordan. She identified eight types of errors:

1) Substitution (substituting a letter or more for another).

2) Insertion (adding an extra letter).

3) Omission (deleting a letter).

4) Inversion (two adjacent letters are reversed).

5) Segmentation (one word written as two).

6) Pronunciation (affected by pronunciation).

7) Unclassified errors (a waste basket category of illegible words or words which have no explanation).

8) Miscellaneous (mixed sorts of errors that have various qualities as in writing *hes* instead of *he's*.

In a similar study, Al- Karaki (2005) explored the spelling errors produced by male and female students in the 8th and 11th grades in the city of Al-Karak in Jordan in order to identify causes and types of errors. She emphasized the importance of identifying the causes of errors in addition to their types. As for the types of errors, she identified six types: 1) Addition, 2) Omission, 3) Substitution of one letter for

another (blay for play) or word for another like in homophones, 4) Segmentation, 5) Disordering, and 6) Miscellaneous (that could not be classified under any of the categories or words that were unreadable). The study revealed that most errors concentrated in omission, substitution, and addition. As for effect of students' level, it was found that older students committed fewer spelling errors.

Al- Karaki attributed the spelling errors that she identified into six causes. However, she did not include a clear analysis of these causes. She only mentioned, based on her review of literature, a number of likely causes of errors supported by examples from her corpus without reporting the percentage of each cause against the other causes. Additionally, she did not report which of the causes that she listed accounted for most errors. According to Al-Karaki, the main causes of spelling errors of ALE are:

1) Pronunciation errors (caused by the non-phonetic nature of English, such as writing words that have the "schwa" and "homophones."

2) Errors caused by the differences between the sound systems of English and Arabic (some Arab students spell words as they pronounce them, especially the sounds that are not found in Arabic, such as *p* and *v*.

3) Errors which might be attributed to analogy or generalizing a rule (*womans* for *women* and *analize* for *analyze* affected by words like *realize*).

4) Errors caused by the inconsistent and arbitrary nature of English word derivation (*describe*/*description*, *wife*/*wives*, and *receive*/*reception*).

5) Errors attributed to the incomplete application of English spelling rules, or the lack of knowledge of the exceptions of spelling rules.

6) Errors that can be attributed to performance factors like tiredness, carelessness, and boredom.

Al- Karaki (2005) states that there was a sort of overlap among these causes of errors. As such, it was difficult sometimes to identify a single cause for some errors. For example, the omission of *e* in words like *definitly* could be attributed to carelessness, lack of knowledge of spelling rules, or the non phonetic nature of English since the *e* is not pronounced.

Bahloul (2007) examined the spelling errors of male ALEs in Saudi Arabia. The learners were males in their 20's, studying at an institute in Riyadh. He collected spelling errors from students' learning achievement and assessments. Bahloul indicated that above 20 per cent of the target words in the study were misspelled. He

attributed the errors that he collected to three main causes: intralingual, developmental, and interlingual. As defined by Bahloul, interalingual errors are caused by the spelling system of the target language. Developmental errors are a result of learners' developmental stages. Intralingual errors are caused by the interference of the mother tongue. Each of these causes was responsible for a number of errors. Therefore under each heading there were a number of subcategories of errors. The intralingual errors comprised three types of errors:

1) Monographicization, in which words containing clusters of graphemes with only a single one pronounced are simplified in their written form (*foren* for *foreign*).

2) Graphemic Unification, in which the letter *c* and *g* are spelled as *s* and *j* accordingly (*shoise* for *choice* and *calleje* for *college*).

3) Phoneme/ Grapheme Matching, in which vowels are spelled as they are pronounced (*ather* for *other*).

The second group of errors that Bahloul's investigation revealed under the cause of Learner- Langauge errors or developmental errors consisted of five types:

1) Metathesis, in which the positions of two letters are reversed (*frist* for *first)*.

2) Cluster Simplification, in which two adjacent consonants in a word are simplified by omitting one of them (*ilan* for *island*).

3) Epenthesis, in which a final consonant is added to a word depending on the phonetic features of the preceding phoneme (*mine* for *mined*).

 4) Syllable Simplification and Syllable Truncation, in which a whole syllable or part of a syllable in two syllable words is omitted (*ecslant* for *excellent*).

5) Assimilation, in which a grapheme is changed affected by the pronunciation of the preceding or following sound as in changing the *t* in *great* into *d* affected by the voiced environment that precedes it.

The final cause of errors that Bahloul's corpus revealed, interlanguage errors, comprised four types of errors:

1) Consonantal replacement, in which the learner replaces a letter with its available counterpart. For example, since Arabic does not have the voiceless bilabial stop /p/ or, naturally, a written form for it, learners tend to replace it with the voiced bilabial stop /b/, which is available in Arabic. Thus, many learners wrote *groups* as *groubs.*

2) Vocalic Transfer, in which learners tend to use vowels abundantly affected by their abundance in Arabic and the big differences that exist in vowel use between Arabic and English. Therefore ALE in his study tended to replace all English front high and mid vowels with the high front vowel /i/, all back high and mid vowels with the high back vowel /u/, and all midfront high and mid vowels with the midcentral vowel /a/. For example, they write *mach* instead of *much*.

3) Nativization, in which learners write a word that is borrowed from English in the same way as they pronounce it locally as in spelling *America* as *Amreca*.

4) Epenthesis, in which a cluster of consonants is broken by a vowel since consonant clusters are very rare in Arabic (*tempiting* for *tempting*).

To summarize, research has shown that English spelling presents a big challenge for all learners of English, which causes many learners to commit a lot of spelling errors. In addition, research has illustrated that spelling errors have negative effects on students' writing proficiency. The spelling errors that occur in students' written work distort it, affecting its comprehensibility. Additionally, many researchers believe that there is a relation between students' spelling proficiency and their reading ability. They argue that if students develop their spelling ability and become more able to connect sounds to their written forms, their reading proficiency will develop.

As for the causes of spelling problems, research has shown that spelling errors are caused by many factors, like the irregularity of the English spelling and ignorance of spelling rules and their exceptions. However, research also has revealed that many spelling errors are caused by mother tongue interference. That is, learners coming from different mother tongue backgrounds may commit different spelling errors. Consequently, different learners might need different teaching techniques. As such, many researchers have emphasized the importance of developing spelling activities that would develop students' general spelling proficiency and on the other hand, developing special spelling activities that consider the language backgrounds of learners, in order to address their specific spelling problems, which consequently will produce more efficient readers and writers

To summarize, ALEs are likely to have particular problems because of their language background, which might require special instructional techniques. Additionally, some reviewed literature has demonstrated that ALE's spelling

problems do not disappear in the early stages of language learning but continue until later stages of their language education. Moreover, from my experience as an English teacher of Arab students in UAE public schools in Fujairah, I have noticed major spelling problems in students' performance in the final years of high school that affect the comprehensibility of their written work. Nonetheless, due to the lack of research in the UAE in general and in Fujairah in particular that investigates UAE students spelling problems and teachers perceptions and current practices, research into this spelling problem is needed so as to identify the specific spelling problems of UAE public school students and get tangible statistics on how big is the spelling problem. Additionally, research is also needed to investigate teachers' awareness and understanding of the role of spelling in language learning, their perceptions of which types of error are the most frequent, and what are the causes of these errors. Such investigations will provide useful information for curriculum planners, materials writers, and teacher trainers in the UAE about students and teachers' current needs and teachers' abilities and current practices. Such information will be highly valuable for designing special activities for students and training programs for teachers that respond to their specific needs.

Chapter 3

Methodology

The purpose of this study was to investigate how big the spelling problem is among ALEs in UAE public schools, identify the main types and causes of ALE spelling errors, and measure how much progress ALEs achieve in spelling proficiency as they move to higher grades, in order to get insight into their specific instructional needs and the efficiency of current teaching curricula and practices. An additional purpose of the study was to investigate teachers' perceptions of the spelling problems of ALEs, attitudes towards teaching spelling, and current practices in spelling instruction.

Context

This study was conducted in a UAE male public school in Fujairah. In UAE public schools, students start learning English from Grade 1 up to Grade 12. English is taught on a daily basis, with each lesson lasting for forty-five minutes. The medium of instruction for the other school subjects, as in most UAE public schools, is Arabic. That is, students do not need to use English except in English classes. Additionally, students do not always need English to communicate out of school. Mandated text books are used in all levels. These text books are commercial ones that are slightly adapted to the UAE context. The textbooks consist of a Student Book and a Practice Book. Teachers are also provided with teacher manuals that contain recommendations of how to conduct each lesson.

Participants

The participats of this study consisted of two groups: male English language teachers and male public school students from four grades: Grades 9, 10, 11, and 12. What follows is a description of each group:

Students.

All of the students in the school, over 537 students, were part of the study. They were all Arab students, 494 UAE nationals and 43 students from other Arab nationalitie, like Jordanians, Egyptians, Syrians, Sudanese, and Tunisians. Table 1 demonstrates the distribution of the subjects of the study.

Table 1:

Distribution of study subjects

Grade	UAE Nationals	Other Arab Nationalities	Age
9	139	14	14-15
10	126	9	15-16
11	122	9	16-17
12	107	11	17-18
Total	494	43	------

Teachers.

The teachers' group in this study comprised all the English teachers in the school where the study was conducted. They were seven experienced teachers, with a minimum of 10 years' experience. They taught English for grades 9, 10, 11, and 12. All of them were male Arab teachers who came from four Arab countries: Jordan, Palestine, Egypt, and Morocco. All of the participating teachers held a B.A in English literature. Additionally, all of them had attended training programs on teaching English. This particular group of teachers was chosen because the aim was to investigate the attitudes, perceptions and current practices of the teachers who taught the group of students from whom data were collected.

Instruments

Three instruments and research methods were used for collecting data: Students' compositions, teacher questionnaires and teacher interviews.

Students' compositions.

Students' compositions were used to collect spelling errors. In order to collect a representative sample of students' spelling errors, all students in Grades 9, 10, 11, and 12 were asked to respond in writing to four different writing prompts, in which they were asked to write compositions of 150 words in length about a specific topic (see Appendix A). Students from each level wrote in class about the same topic for half and hour. All topics of the prompts were thematically related to what students had studied in their textbooks. Topics were chosen with the help of three teachers who

taught the same grades. It was agreed that the topics were related to the curriculum and that students had studied and practiced enough vocabulary and ideas to enable them to write about the topics. Therefore, students wrote about topics they were in theory familiar with and had acquired the ideas and vocabulary they needed to write the texts. In this case, the variables of unfamiliar topic and unfamiliar vocabulary that may affect the type of spelling errors that students make were to a great extent controlled. Students were allowed half an hour for writing the compositions, which is the regular amount of time that students usually get to write compositions in assessment exams. Students were not allowed to use dictionaries or refer to their textbooks. Data were collected in the second half of term two.

Students were informed that their compositions would be graded. This was to make students take the task seriously, and consequently reduce the variability of different degrees of attention to spelling caused by possible different understandings of the importance of the task. However, after responding to the writing prompts, students were told that their texts would be used for error analysis and that their identity would remain anonymous. No students objected to having their compositions analyzed. Consequently, all written compositions were considered.

The number of students in the school was 537. However, only 522 students were present on the day of data collection. Additionally, 32 exam papers were discarded, as they were found useless for the purpose of the study: 21 of them were found blank or containing only a few unconnected words. The rest of the discarded papers contained unclear or unconnected sentences. Thus, a total of 490 suitable compositions were collected from the four grades. In order to get an equivalent number of essays from each level, essays from each grade were randomly selected by gathering and shuffling and selecting the first 100 essays from the total corpus of each grade's essays. The rest were disregarded. For the purpose of having a uniformly-sized sample of spelling errors from all levels, only the first three spelling errors from each essay were noted. This helped in getting a good cross section from the sample of the study, and avoided the idiosyncracies of individuals distorting the overall picture of spelling proficiency across 100 students in each grade. It was decided to consider only the first three errors because a pilot sample of students' compositions had showed that there were at least three spelling errors in each composition.

Mistakes versus errors

According to Corder (1981), mistakes are errors of performance like a slip of a tongue that learners can correct by themselves. However, errors reflect problems in the underlying knowledge. This study was interested in the errors that students make and cannot correct on their own, because they lack the competence to do so. Therefore, it was important to follow a consistent procedure in differentiating errors from mistakes and eliminating all mistakes from the analysis. Thus, whenever a misspelled word was found, the rest of the composition was checked to see if it was consistently misspelled. If so, it was counted as an error. However, if it was found that the word was written correctly elsewhere in the composition, the mis-spelling was analyzed as a mistake and disregarded.

Error analysis procedures.

In order to identify the spelling errors, each piece of writing was read twice by the researcher. Misspelled words were marked with a red check for identification purposes, and the number of words up to the third error was counted. Then, a random sample of 20 compositions was given to a colleague teacher to review them in order to make sure that the spelling errors and the total number of words was identified correctly. A total of 1200 spelling errors were collected for analysis, 300 errors from each grade. Once the error corpus was collected, it was used for three purposes.

- The frequency of errors in each grade was calculated, in order to measure how big the problem is.
- Rates of errors in terms of type and cause were calculated for each grade.
- The development of spelling proficiency through the four grades was measured by comparing the figures for the four grades in terms of frequency of errors and proportion of errors in each category of types and causes.

Seriousness of the problem.

The seriousness of the problem was measured by calculating the frequency of errors in students' compositions. This was achieved by counting the words in each composition up to the third error that was identified. Then, the total number of these words for each grade in all compositions was divided by the 300 spelling errors that

37

were identified. This provided quantitative data on how serious the spelling problem is for each grade and on how spelling develops over the grades.

Categorization of errors.

In order to show what the predominant types and likely causes of spelling errors in each grade and also to show how, if at all, students' spelling proficiency changed or progressed across the four grades, identified errors were classified according to type and likely cause.

Categorization by type.

In light of the literature reviewed (Book and Harter, 1929; Ringbom, 1977; Ramadan, 1986; Al- Bakri, 1998; Bahloul 2007), the spelling errors that were identified in students' compositions were analyzed and categorized into five types. A sixth category was created for unrecognizable words. Below is an explanation of each category.

1. Substitution, includes errors caused by substituting a letter or more for another, as substituting the *o* for the *a* in *small* (*smoll*).

2. Omission, includes errors caused omitting one letter or more, as omitting the *e* in the word *friend(frind)*

3. Addition, refers to adding an extra letter or letters to a word, as adding a final *e* to the word *capital* (*capitale*).

4. Disordering, refers to disordering some letters in a word, such as writing *sea* as *sae*.

5. Segmentation, refers to writing one word as two, as segmenting the word *breakfast* (*break fast*).

6. Unrecognizable, includes words that were unrecognized because they were unreadable, such as *babiuto*. This category was considered as a wastebasket for such words. It was not considered as a type of errors, and thus was not considered in the calculation of the percentages of errors.

Categorization by cause.

In order to get more insight into spelling problems, it might be useful to consider as well the likely causes behind spelling errors in order to develop suitable activities that can help overcome or at least reduce them. As such, in light of the identified errors and the reviewed literature (Book and Harter, 1929; Ramadan, 1986; Al- Bakri, 1998; Al-Karaki, 2005; Bahloul 2007), the errors identified in the corpus were analyzed and attributed to one of four causes described below.

It needs to be pointed out here that though the classification of errors identified in the corpus into their likely causes was done cautiously in light of related literature (e.g. Ringbom, 1977; Ramadan, 1986; Odlin, 1989; Broselow, 1993; Al-Bakri, 1998; Kharma & Hajjaj, 1997; Ediger, 2001; Swan &Smith, 2001; Bahloul, 2007; Fender, 2008), it depended on my own analytical judgment. Thus, error in this classification is possible.

The first category of errors is "Irregularity of English." This category contains the errors that are mostly caused by the non-phonetic nature of English orthographic system. Unlike English, Arabic has a highly phonetic orthographic system, as words are mostly written as they are pronounced. Therefore, this difference is expected to cause ALEs some spelling problems. One example is that English has a large number of words that have silent letters (see Kharma & Hajjaj, 1997). Thus, many learners might omit silent letters. Another example is that all vowel graphemes in English have more than one pronunciation (see Hildreth, 1962). For example, the vowel grapheme *a* is pronounce differently in the words *have*, *bake*, and *ball*. Therefore, many ALEs might write words as they pronounce them or use wrong vowel graphemes. Homophones, words that have different meanings and different spellings but sound the same, also are expected to cause learners some confusion (see Ringbom, 1977).

The second cause of errors is "Mother tongue interference" This category includes the errors which result from the differences between the written and sound systems of English and Arabic. English has some sounds that are not found in Arabic, such as /p/ as in *park*, /v/ as in *very*, and /č/ as in *much* (see Bahloul, 2007). Many ALEs replace these sounds with their closest written equivalents that are found in Arabic, which are the *b*, *f*, and *sh* respectively. For example, some learners would write *shange* for *change*. "Consonant clusters" is another problem that comes under this category (see Broselow, 1993). In Arabic, these clusters are very rare. Therefore, some ALEs break these clusters by inserting a vowel sound in the words, as writing *seplash* for *splash*. Another problem is the problem of graphemes that look the same but are written in different directions, *d/b* and *p/q,* (see Swan & Smith, 2001). The right to left directionality of Arabic is expected to cause many Arab learners to confuse these letters and spell, for examples, *about* as *adout*. The deletion of short vowels, as in writing *seven* as *svn* is a further problem that come under this category, presumably because such vowels are not represented in written Arabic (see Bahloul, 2007 & Fender 2008).

"Lack of knowledge of spelling rules and their exceptions" is the third cause of errors. This category contains the words that were misspelled because students seemed to lack the ability to apply some of the basic spelling rules of English, such as forming the plural of the words that end with the letter *y*, doubling the last consonant in words that end with a CVC combination of letters, or dropping the final *e* when adding inflections (see Hildreth 1962). Additionally, many researchers also indicate that it is possible and useful to teach students some general spelling rules that can apply to a big number of words and have a limited number of exceptions, such as the effect of the final *e* on the length of the preceding vowel (e.g. Hildreth, 1962, Shemesh & Waller, 2000, Ediger, 2001, and Olshtain, 2001).

The final cause of errors is "Performance." This category contains the errors that students seem to commit as a result of haste or fatigue, such as writing *m* instead of *n* (see Book and Harter 1929). Errors were categorized as performance errors on the basis that the letter(s) causing the error did not appear to be plausible as misinterpretations or misrepresentations of English phonemes or graphemes, but rather as evidence of lack of fine motor control. Examples of such errors are writing *beoause* in stead of *because* and *i'w* in stead of *i'm*. According to the distinction that was discussed earlier between errors and mistakes, performance errors are most probably mistakes, and not errors. However, it was decided to include them as one of the causes of spelling errors because they account for many of the errors that can prevented if students, as Smedley (1983) recommends, are encouraged to proofread their work before handing it in.

In order to be consistent in classifying the errors into likely causes, in light of reviewed literature, a number of criteria were created to judge words and attribute them to a particular cause. First, it was checked whether or not an identified error was spelt correctly elsewhere in essay. If so, it was categorized as 'Mistake' and disregarded. Second, an error was checked if it fitted into the category of "Mother Tongue Interference." If not, it was checked if it fitted into "Lack of Knowledge of Spelling Rules." If not, the error in question was assigned to the category of "Irregularity of English." For example, one of the errors was writing *sea* as *see*. This word was categorized as caused by the irregularity of English because this type of error neither fitted in the category of "Mother Tongue Interference" nor in the category of "Lack of Knowledge of Spelling Rules" according to the criteria used. Following is a description of the criteria created for classifying errors under the

categories of "Mother Tongue Interference" and "Lack of Knowledge of Spelling Rules."

Criteria for "Mother Tongue Interference."

Based on the literature reviewed (Ramadan, 1986; Odlin, 1989; Broselow, 1993; Kharma and Hajjaj, 1997; Al- Bakri, 1998; Swan and Smith, 2001; Al-Karaki, 2005; Bahloul, 2007), a misspelled word was considered to fit into the category of Mother tongue interference if it had any of the following characteristics (N.B All examples provided are taken from the error corpus):

a. Substituting the *b* for a *p* or vice versa, as in *beople* for *people* or *Arapian* for *Arabian*.

b. Substituting *f* for a *v* or vice versa, as in *cofer* for *cover*.

c. Substituting *b* for a *d* or vice versa, as in *anb* for *and* and *adout* for *adout*.

d. Substituting *sh* for a *ch* or vice versa, as in *shanged* for *changed*.

e. Spelling a word as it is pronounced, as writing *smoll* for *small*.

f. Omitting short vowels, as writing *svn* for *seven*.

g. Inserting a vowel to break a consonant cluster, as in writing *feriend* for *friend*.

Criteria for "Lack of Knowledge of Spelling Rules"

Based on the literature reviewed (e.g. Hildreth, 1962; Templeton and Morris, 1999; Shemesh & Waller, 2000; Ediger, 2001; Olshtain, 2001), a misspelled word was considered to fit into the category of Lack of knowledge of spelling rules and their exceptions if it was considered one of the words that fall within a spelling rule that can be applied to a wide range of words and that has few exceptions. The following are the spelling rules which were used as criteria for classifying words under this category (N.B All examples provided were taken from corpus):

a. Some suffixes have standard pronunciation, though their letter combination does not reflect their pronunciation. These suffixes are *tion* (education), *sion* (conclusion), *sure* (exposure), and *ture* (future). An example of an identified error under this category was spelling *conclusion* as *conclusin*.

b. Spelling the inflection –*ed* after the unvoiced graphemes *s*, *sh*, *ch*, *f*, *p*, and *k*. In this environment, the –*ed* is pronounced as /t/ which may confuse some learners. One of the errors that were identified because of this problem was writing *stopt* instead of *stopped*.

c. The effect of the final grapheme *e* on lengthening a preceding vowel. One of the errors caused by this problem was writing *lik* instead of *like*.

d. The effect of the grapheme combination *ck* in shortening a preceding vowel as in *back* versus *bake*, such as writing *bak* instead of *back*.

e. Dropping the final *e* when adding the *ing* to verbs as in not dropping the final *e* in the word *drive* and spelling it as *driveing*.

f. The spelling of one syllable words that end in a stressed *CVC* combination of letters when adding *ing*, *ed*, *er* or *est* to them. The final consonant in such words gets doubled in one syllable words. Additionally, it is doubled in two syllable words if the last syllable is stressed. One of the errors that were identified in students' compositions was spelling *stopped* as *stoped.*

g. Spelling the –*er* at the end of words, as in *driver*, *faster*. An example of such errors was spelling *father* as *fathr*.

h. The spelling of the *y* versus *ay* at the end of words, as in *may* versus *my* and *happy*. One of the errors was spelling *country* as *countray*.

i. The doubling of consonants after short vowels, as in *happy*. An example was spelling *happy* as *hapy*.

j. Adding the grapheme *u* after the grapheme *q* in most words as in mosque. Spelling mosque as mosq was one of the errors identified in the corpus.

k. Forming the plural of words ending with *s*, *sh*, *ch*, *x*, *z*, *f, fe* and *y*, as in *beaches.* An example of such errors was spelling *cities* as *citys*.

l. The spelling of *c* and *g* when followed by *e*, *i*, or *y* versus when they are followed by other graphemes, as *city* versus *car*. Two of the errors were writing *cities* as *caties* and writing *college* as *colleg*.

m. Spelling the letter combination *ea* in words as *ea* but never *ae* if it has the pronunciation of the long vowel /i/ as in *eat*. One of the errors was *aest* instead of *east*.

n. Spelling the letter combination *ful* at the end of words, as in *beautiful*. One of the errors was *carefull* instead of *careful*.

o. The spelling of words that have the letter *a* followed by double *l* or *w*. In most cases the letter *a* is pronounced as *o*, which confuses many learners. One of the errors was spelling *small* as *smoll*.

Multi-category errors.

It needs to be noted here that many of the misspelled words could be placed into more than one category. For example, the word *small* was spelled as *smol* by many students. This misspelled word could be placed in the substitution category as the letter *a* was substituted by the letter *o*. However, it can also be placed in the omission category, as the final letter was omitted. Therefore, this error was placed in the two categories. This practice was applied to classifying words by type and likely cause. Consequently, the total numbers of errors that were considered for each grade for both classifications, according to types and likely causes, increased (see Tables 3 and 4 for the total numbers of the errors analyzed).

Questionnaires

In order to investigate teachers' perceptions of the spelling problems of Arab learners of English, attitudes towards teaching spelling, and practices in spelling instruction to see how these are related to students' current performance in English spelling, participating teachers were asked to respond to a questionnaire composed of four sections (see Appendices B to E). The survey items were developed from the research questions and from some significant ideas identified in the related literature. In section one, teachers were asked to provide some background information, such as years of experience and the level they teach. In section two, they were asked to indicate the extent to which they agreed with 21 statements concerning attitudes towards and practices in spelling instruction on a 5-point scale (Strongly Agree; Agree; Do not Know Disagree; and Strongly Disagree). The purpose for having a 5-point scale was to give teachers as options as possible in order to avoid just ticking the "Do not Know" section. However, in the analysis stage the results of the categories "Strongly Agree and Agree" were combined into one section. The same procedure was followed with regard the categories "Disagree and Strongly Disagree." In section 3, participants chose from 11 statements the ones that described their usual practices in spelling instruction. Section 4 included open-ended questions that provided teachers with the opportunity to express freely their opinions about the topic and

make their own suggestions. A statement was included on the questionnaires to ask for interested volunteers to be interviewed at a scheduled time at their convenience after filling out the questionnaire.

Interviews

In order to expand on some of the teachers' responses in the survey and clarify any vague comments, it was decided to hold interviews with the teachers who responded to the questionnaire. Four interested teachers were interviewed after the surveys were administered. A number of questions were prepared for the purpose of expanding on teachers' responses from the surveys and attaining more in-depth information and a better understanding of teachers' perceptions of the problem of spelling and attitudes towards practices in spelling instruction (see Appendix F).

CHAPTER 4

DATA ANALYSIS AND FINDINGS

This chapter is devoted for outlining and discussing the findings of the study. This study aimed at investigating how big the spelling problem is among ALEs in UAE public schools, identifying the commonest types and likeliest causes of ALE spelling errors, and measuring how much progress ALEs achieve in spelling proficiency as they move to higher grades, in order to get insight into their specific instructional needs and the efficiency of current teaching curricula and practices. Additionally, the study investigated teachers' perceptions of the spelling problems of ALE, attitudes to teaching spelling, and practices in spelling instruction to see how these are related to students' current performance in English spelling.

Data Analysis of Spelling Errors

This part of discussion is devoted to analyzing the data related to the first three research questions: How big is the spelling problem in UAE public schools? What are the main types and causes of spelling problems in UAE public schools? How do spelling problems change throughout the school grades (9-12)?

Seriousness of the spelling problem.

In order to get insight into the seriousness of this spelling problem, the frequency of spelling errors in students' compositions was calculated (see Table 2).

Table 2

Number of words at third error and frequency of errors according to grade

Grade	Number of Words at Third Error	Frequency of error
G. 9	3659	12.19
G. 10	3280	10.9
G. 11	3518	11.72
G. 12	3636	12.12
Average	-	11.74

Table 2 illustrates that the frequency of spelling errors in students' compositions for all grades averaged out at 1 spelling error nearly every 12 words.

Additionally, results demonstrate that the frequency of spelling errors decreases insignificantly as students move to higher grades.

Categorization of Errors.

Spelling errors from students' compositions were analyzed and categorized according to their types and likely causes. Consequently, it was possible to compare the types, causes, and percentages of errors committed by the four grades of study in each category. This helped in finding out whether or not errors were more concentrated in certain categories than others, and how spelling problems change throughout school grades.

Types of spelling errors.

In light of the literature reviewed (Book and Harter, 1929; Ringbom, 1977; Ramadan, 1986; Al- Bakri, 1998; Bahloul 2007), the spelling errors that were identified in students' compositions were analyzed and categorized into five types. A sixth category was created for unrecognizable words. This category was not considered as a type of error, and was not considered in the calculation of percentages.

- Substitution, substituting one letter or more for other letters in a word (adout for about).
- Omission, omitting a letter or more in a word (Arabin for Arabian).
- Addition, adding a letter or more to a word (capitale for capital).
- Disordering, reversing the order of adjacent letters in a word (aest for east).
- Segmentation errors, writing one word as two (power ful for powerful).
- Unrecognizable words, words that were unreadable (tish).

Table 3 and Figure 1below summarize the findings related to the numbers and percentages of the identified spelling errors classified according to their types for all grades (see Appendix G for a complete list of the identified errors classified according to type).

The findings of the study revealed that there were striking similarities in the types and percentages of spelling errors committed by students in the different grades (see). For all grades, spelling errors were highly concentrated in substitution errors

with a percentage of just under 50%. Omission errors also constituted a significant portion of the errors for all grades around 33% for all levels.

Table 3

Numbers and percentages of spelling errors according to type across grades

Grade	Substitution	Omission	Addition	Disordering	Segmentation	Unrecognizable	Total no. of errors analyzed
G. 9	165 (48.5%)	117 (34.4%)	37 (10.8%)	21 (6.1%)	0 (0%)	15 (4.4%)	355
G. 10	194 (48.7%)	132 (33.1%)	50 (12.5%)	20 (5%)	2 (.5%)	5 (1.2%)	405
G. 11	186 (47.3%)	132 (33.5%)	58 (14.7%)	17 (4.3%)	0 (0%)	6 (1.5%)	399
G.12	182 (47.1%)	124 (32.1%)	55 (14.2%)	17 (4.4%)	8 (2%)	12 (3.1%)	398

As for the other types of errors, they occurred much less often than the previous two types. Addition errors were the third commonest type of errors for all grades ranging from just over 10% to just over 14%. Disordering errors were the fourth commonest type of errors for all grades with a percentage ranging from around 4% to 6%. Figures show that the least common type of errors for all grades was segmentation errors ranging from 0% to 2%.

Figure 1: Percentages of spelling errors according to their types across grades

Likely causes of spelling errors.

In light of the literature reviewed (Book and Harter, 1929; Ramadan, 1986; Al- Bakri, 1998; Al-Karaki, 2005; Bahloul 2007), the errors identified in the corpus were analyzed and attributed to one of four causes. Below is an overview of the four categories with some examples from the corpus.

- Irregularity of English, contains errors caused by the non-phonetic nature of English. Some examples are:
  - Omission of silent letters (*rites* for *writes).*
  - Writing words as they are pronounced (*laiv* for live).
  - Wrong vowel graphemes (*capetal* for capital).
  - Disordering vowel graphemes (*bueatifall* for beautiful).
  - Confusing homophones (*were* for *wear*).
- Mother Tongue Interference, includes the errors which resulted from the differences between the written and sound systems of English and Arabic. Some examples are: (for a complete list of those rules, which were used as criteria for classifying words under this category see Methodology section).
  - Replacing the sounds that are not found in Arabic, such as /p/, /v/, and /č/ with their closest written equivalents that are found in Arabic (*clup* for *club*, *cofers* for *covers*, and *shange* for *change*).
  - Breaking consonant clusters (*weset* for *west*).
  - Reversing the direction of some graphemes as caused by the right to left directionality of Arabic (*dig* for *big*).
  - The deletion of short vowels (*vist* for *visit*).
- Lack of Knowledge of Spelling Rules and their Exceptions, contains the words that were misspelled because students seemed to lack the ability to apply some of the basic spelling rules of English. Some examples are: (for a complete list of those rules that were used as criteria for classifying words under this category see Methodology section).
  - Forming the plural of the words that end with the letter *y* (*citys* for *cities*).
  - Doubling the last consonant in words that end with a *CVC* combination of letters (*fater* for *fatter*).

o Dropping the final *e* in some words when adding inflections (*smokeing* for *smoking*).

o General spelling rules that can apply to a big number of words and have a limited number of exceptions. For example, writing city as *cty*, because of lack of the knowledge that the grapheme *c* is only pronounced as /s/ when followed by the graphemes *e*, *i*, and *y*.

- Performance, contains the errors that students seemed to have committed as a result of haste or fatigue (*if* for of).

Table 4 below summarizes the findings of the study in relation to the numbers and percentages of the misspelled words according to their likely causes (see Appendix H for a complete list of the identified errors classified according to their likely causes).

Table 4

Numbers and percentages of misspelled words according to likely causes

Grade	Irregularity Of English	Mother Tongue Interference	Lack of Knowledge of Rules	Performance	Total no. of errors analyzed
9	191 55.8%	84 24.5%	61 17.8%	6 1.7%	342
10	213 59.8%	55 15.4%	75 21%	13 3.6%	356
11	243 67.8%	40 11.1%	67 18.7%	8 2.2%	358
12	256 68.7%	59 15.7%	45 12%	13 3.4%	373

Results show that there were significant similarities among students in the different grades with regard to the percentages of the likely causes of their spelling errors (see Figure 2). Generally, spelling errors caused by the irregularity of English seemed to cause most errors among the population of the study across the four grades. This category accounted for a much higher percentage of errors than all other categories. Proportions ranging from 55.8% to 68.7% of the identified spelling errors were attributed to the irregularity of English orthographic system.

Mother tongue interference was the second most important cause of errors for Grades 9 and 12, causing 24.5% and 15.7% of errors respectively. However, this cause of errors was the third most important for Grades 10 and 11, causing 21% and 18.7% of errors respectively.

Apparen lack of knowledge rules was the third most important cause behind spelling errors of ALEs for students in Grade 9, causing 17.8%, and Grade 12, causing 12%. This cause of errors, nevertheless, was the second most important cause of errors for Grade 10 and Grade 11, accounting for 15.4% and 18.7% of errors for those grades respectively. As for the last cause of errors, performance errors, it represented very low proportions ranging from 1.7% to 3.4% of the total number of errors for all grades.

Figure 2: Percentages of spelling errors according to likely cause across grades

Progress of students' spelling abilities throughout school Grades (9-12).

This section is devoted to answering research question three: How do spelling problems change throughout the school grades (9-12)? Percentages of the frequency of errors, types, and likely causes and for all grades were compared to investigate how much progress students achieve as they move to higher grades. Overall, these figures appear to show that students achieve little progress or no progress at all.

Progress with regard to frequency of spelling errors.

Table 2 above illustrates that the number and frequency of spelling errors decreases insignificantly as students move to higher grades. Grade 12 students had a frequency of one spelling error every 12.12 words, which was very close to the

frequency of errors of Grade 9 students who committed one error every 12.19 words. Thus, Grade 12 students who had three years more exposure to English than Grade 9 students achieved practically no progress in spelling.

Progress with regard to types of errors.

As for the identified types of spelling errors, corpus analysis illustrated that students achieve mostly very little progress as they move to higher grades (see Figure 1 above). As for substitution errors, corpus showed that, apart from a few fluctuations, proportions of errors in this category decreased slightly as students reached to Grade 12. Percentages in this category were 48.5%, 48.7%, 47. 3%, and 47.1% for Grades 9, 10, 11, and 12 respectively. Results for omission and disordering errors were very similar to those of substitution errors. However, students at higher stages committed more errors than their counterparts at lower stages with regard to addition errors. Grade 9, 10, 11, and 12 students had 10.8%, 12.5%, 14.7, and 14.2 respectively of the total number of errors under the category of addition errors. As for the last type of errors, segmentation errors, percentages under this category were very low. Results showed that Grades 9 and 11 had no segmentation errors, while Grades 10 and 12 had 0.5% and 2% of their errors in this category.

Progress with regard to likely causes of errors.

As for students' progress with regard to the causes of errors, results varied, as errors decreased in some categories, but increased in others. With regard to errors caused by the irregularity of English, results revealed that students' performance deteriorated markedly as they moved to higher grades. While Grade 9 students' errors were 55.8% because of the irregularity of English, the other higher grades, surprisingly, had more errors in this category amounting to 59%, 67.8%, and 68.7% of the total number of errors for Grades 10, 11, and 12 respectively. In order to get more insight into these surprising findings, the length of words for Grades 9 and 12 was investigated and compared. Jensen (1962) pointed out the longer the words, the more difficult they are to spell for students. Hence, it was aimed to investigate whether Grade 12 students had to use longer words than Grade 9 students, and thus committed more spelling errors. In order to do this, the option of "word count" in MS word was used. It showed that the 300 errors for Grade 9 were composed of 1772 characters, while the figure for Grade 12 was 1623. In other words the average character length of words containing errors of was 5.9 for Grade 9 and 5.4 for Grade 12. This indicates the level of difficulty of words, considering length of word as a criterion of difficulty,

is not the cause behind Grade 12's errors. Additionally, it was clarified in the methodology section that the topics that all students had to write were thematically related to what they had studied. Thus, the words that students at all levels had to use were familiar to them.

As for mother tongue interference, results were more expected. Grade 9 students were more affected by their mother tongue than older students. For example, while Grade 9 students committed 24.5% of errors because of the influence of Arabic, Grade 12 students committed 15.7% of their spelling errors because of this cause of errors. Although Grade 12 students had fewer errors than Grade 9 in this category, they had more errors than Grade 10 and 11 students, who committed just 15.4% and 11.1% respectively of their errors because of mother tongue influence. This means that students' progress is not stable and that they graduate from Grade 12, after12 years studying English, with many spelling problems caused by mother tongue interference.

Students' mastery of spelling rules also seemed to progress as students reach Grade 12. While it caused 17.8% of students' errors in grade 9, the figure for Grade 12 was 12%. Nevertheless, Grades 10 and 11 students appeared to be less competent than Grade 9, as lack of knowledge of spelling rules caused them to commit 21% and 18.7% of the total number of their spelling errors.

With regard to performance errors, it appeared that Grade 9 students were more careful than their older counterparts as they committed fewer performance errors than them. Figures for this category were 1.7%, 3.6, %2.2, and %.3.4 % for Grades 9, 10, 11, and 12 respectively.

These results put a big question mark on the efficiency of the current teaching practices in responding to students needs with regard to spelling problems. This data suggests that students leave schools to join universities or different fields of work with many spelling problems. This drives a number of inquiries as to why students have such a big spelling problem, whose fault it is, and how this problem can be encountered. In order to answer these inquiries, the English teachers at the school where the error corpus was collected were surveyed and five of them were interviewed. The findings and analysis of these surveys and findings are presented in the following section.

Analysis of Surveys and Interviews with Teachers

This part of discussion is devoted to analyzing the data related to the third and fourth research questions: What are teacher's perceptions of the spelling problems of their students? And what are teacher's attitudes to and current practices in English spelling instruction? Data in this category were collected using four tools:

- A questionnaire with Likert items about attitudes.
- A questionnaire with Likert items about spelling instruction practices.
- A questionnaire with open items about spelling instruction practices and teacher training.
- An interview with six questions (see Appendices B - F).

Appendices (I - M) show the complete results of the surveys completed by the teachers.

The teachers surveyed were seven male English teachers who had five to 25 years of experience in teaching English in UAE schools. The participating teachers responded to 32 statements and four open-ended questions. Then, five of those teachers were interviewed (the ones who agreed to be interviewed). These interviews were held in English, and took around 10 minutes each. In each interview six questions were asked to all of the five teachers about the importance of spelling and spelling instruction. More questions that aimed at clarifying some of the responses to the surveys and other questions that were triggered by teachers' responses in the interviews were also asked.

In the following sections, data collected from the surveys and interviews combined with related findings from corpus analysis are presented, demonstrating significant commonalities and differences among responses.

Teachers' perceptions of the seriousness of spelling problems.

The analysis of the error corpus illustrates clearly that ALEs commit many spelling errors. The average frequency of spelling errors for all grades was 1 spelling error nearly every 12 words (see Table 2 above). In addition to this high frequency of spelling errors, many of the misspelled words were so unrecognizable as to hinder comprehension. For example, the following selection was taken from a student's composition in Grade 11 (see Appendix N for more examples). The composition was written in response to a prompt that asked students to write an account of an incident

that happened to them in the past. The topic of this composition was thematically related to what students had studied in their textbooks.

> i was wolk to my home. I was staned behaun street sdely something shake me and I fool dawn after moment I stand up. I saw someone rid a motor bick. I was angree too much.

The selection illustrates the effort that a reader needs to exert in order to decode what is written. In addition to the grammar problems that this student has, spelling errors cause confusion to the reader. Although the misspelled words appear in a context, it is difficult to understand all the words. Thus, one could imagine the problem if these misspelled words appeared in isolation. These types of spelling errors explain teachers' responses to statements 1, 2, 4, 12, 14 and 16 that demonstrate their perceptions of the importance of spelling to students' overall language proficiency, school achievement, and literacy skills from teachers' perspectives. (see Figure 3).

> *Effects of spelling problems on language proficiency and school achievement.*

All teachers agreed with statement 1, "Arab learners make too many spelling errors" and statement 2, "Students lose marks because of their poor spelling" (see Figure 3). Additionally, in one of the interviews, a teacher commented "Sometimes, it is impossible for me to understand parts of what some of my students write because of their bad handwriting and spelling." These responses correspond clearly with error corpus analysis in that students commit many spelling errors. According to teachers, this spelling problem affects both students' school achievement and overall language proficiency.

Figure 3: The importance of spelling from teachers' perspective

More significantly, all of the seven teachers seemed to believe that some students avoid using some words, because they are not sure of their spellings. This appears from their responses to statement 4 that states "Some students avoid using some words when they write, because they do not know how to spell them." This is also clear in one of the teachers' responses in one of the interviews: "Some of my students ask me to spell some words for them in composition exams. If I refuse, they refrain from using those words, even if the words seem to be very expressive." This response shows how grave the problem of spelling is. In addition to its negative effect on the readability of students' writing and students' school achievements, spelling errors also put strains on their ideas, as some students tend to feel apprehensive of expressing some of their ideas fearing to commit spelling errors.

Apparently, due to the grave effects that spelling problems have on their students' language proficiency and school achievement, all teachers agreed with statement 12, "Spelling is important and needs more attention." The importance of spelling is also clearly manifested in teachers' responses to Statement14, "English spelling is the least of my worries. I focus on more important aspects of English." Only one teacher agreed with the statement while the rest of the teachers appeared to believe the opposite. Their responses indicate that they believe that spelling is as important as other aspects of the language. It is a perspective that agrees with what many researchers call for which is that in order to help students become efficient users of a language, it is needed to help them attain proficiency in all language skills and sub-skills (e.g. Hildreth, 1962 and Smedley, 1983). Another significant finding is the surveyed teachers' disagreement with statement 16, "It is difficult to teach spelling, so I do not pay attention to it." Their refusal of what this statement suggests demonstrates how important spelling seems from the teachers' perspective.

The relationship between spelling and literacy skills.

In correspondence with the research that argues that there is a close relationship between spelling and literacy skills (e.g. Koda, 2005), teachers' responses to statements 7, 8, 9, and 17 demonstrate that they believe in the existence of this relationship (see Figure 4). Six teachers agreed with statement 17, "There is a relationship between spelling and students' reading and writing abilities." As discussed earlier, corpus analysis revealed that the irregularity of English orthographic system causes most of students' spelling errors, as it was responsible for 55.8%, 59.8, 67.8, and 68.7 of the total number of errors for Grades 9, 10, 11, and 12

55

respectively. Correspondingly, the surveyed teachers, agreeing with some researchers (Swan and Smith, Koda, 2005; Fender, 2008), believe that the irregularity of English spellingalso influences students' reading proficiency negatively. With only two teachers disagreeing, four teachers agreed with statement 7, "The irregularity of English spelling system causes students to read with difficulty." One of the teachers explained when he was interviewed that "those students who read well are usually good spellers." Therefore, it was understandable why all teachers appear to believe that developing students' spelling abilities has positive effects on their reading and writing proficiency. This appears from their unanimous agreement with statements 8, "Developing students' spelling can enhance students' writing abilities," and 9, "Developing students' spelling can enhance students' reading ability."

Figure 4: The relationship between spelling and reading and writing

In response to an interview question on how developing spelling proficiency affects reading proficiency positively, one of the teachers explained that, there are some letter combinations in English that have regular pronunciation. So, if students learn these letter combinations, they will be able to spell and read them quickly. Otherwise, they will read slowly and have spelling problems. This suggests that at least some teachers find value in practicing regular letter combinations that have irregular pronunciation in order to improve their reading abilities. The corpus did indeed contain many errors with such word endings, such as writing *personalty* for *personality* and *conclousin* for *conclusion*. These corpus findings in addition to this teacher's suggestion lend support to Hildreth's (1962) view of the usefulness of training students to recognize the letter combinations that have regular sounded

elements, such as *de*, *er*, *dis*, and *tion*. Additionally, these findings agree with Santa's (1976 – 1977) findings that spelling units are important for reading speed.

Teachers' perceptions of the likely causes of spelling problems.

Teachers' responses to statements 6, 15, 19 and 20 illustrate their perceptions of the main causes of spelling problems (see Figure 5). It seems that most teachers blame the spelling problems that their students have on students' carelessness. This appears clearly from their responses to statement 15, to which five of the seven surveyed teachers agreed. Similarly, two teachers wrote in the open-ended question section that students' carelessness is one of the main factors that affect teachers' spelling instruction. This point was clarified in the interviews, as a teacher explained that most students' errors are a result of the fact that many students do not pay attention to the spelling of words and do not bother to study them. He added that some students write the same word once correctly and another time wrongly in the same paragraph. This means that those students do not proofread, which shows that they are careless. However, corpus analysis revealed that only a few of the errors that students committed were caused by students' lack of proofreading, such as writing *I'w* for *I'm* and *swin* for *swim*. These errors were classified under the category of performance errors.

Figure 5: Causes of spelling errors according to teachers' responses to section two of the survey

This problem that some teachers pointed out regarding some students' carelessness prompted an inquiry about what makes some students careless from their perspective. One teacher answered that he believes that there are two reasons. First, many students do not feel that spelling is important, because it is ignored in the curriculum. Second, many other students are careless by nature, which is reflected in

57

their bad performance in the other aspects of English. The teacher also pointed out a dangerous effect of holding the belief that students' spelling problems are mainly a result of their carelessness. He noted that "when students show carelessness towards learning spelling, this causes frustration to teachers and makes them ignore teaching spelling."

As for teachers' perceptions of the other causes of spelling errors, many teachers, agreeing with the findings of the corpus analysis, seem to consider the irregularity of English and the linguistic differences between Arabic and English two important causes of spelling errors. This appears from their responses to statements 6, "General English spelling irregularities are the main cause of students' spelling errors" (*Agree = 3; Don't know =3; Disagree = 1*), and statement 19, "The main cause of students' spelling errors is the linguistic differences between Arabic and English" (*Agree = 3; Don't know =2; Disagree =2*) However, while corpus analysis revealed that English irregularities by far cause more spelling errors than the linguistic differences between Arabic and English, teachers' responses show that they believe that those two causes of errors are approximately of the same importance. A popular cause of spelling errors from teachers' perspectives is students' poor reading and writing abilities, as it appears from their responses to statement 20. Four of the seven teachers agreed with statement emphasizing the relationship between spelling and reading and writing.

Teachers' perceptions of students spelling progress over years of instruction.

Corpus results illustrated that students show insignificant progress in their spelling abilities as they move to higher grades (see Table 2 above). These corpus results correspond with teachers' responses to statements 13, 18, and 21, which indicate their belief that students do not achieve much progress (see Figure 6). This appears from their responses to statement 18, "Students' spelling improves significantly as students move to higher grades." Only two teachers appear to believe that students achieve progress, while three teachers indicate that students achieve insignificant progress. In response to an interview question about the degree of improvement that students achieve in spelling proficiency as they move to higher grades, a teacher answered "very little, because students make similar errors at all levels." Another said that "there might be some improvement, but students keep committing so many spelling errors until they leave school." Responses to statement 21, "English should only be taught at early stages" also demonstrate how important

spelling is from those seven teachers' perspective. All teachers except for one seem to believe that spelling instruction ought to take place at all stages, not only at early stages. Teachers' perceptions are borne out by the corpus data, which showed that spelling problems clearly do not diminish over time.

Teachers' responses to statement 13, "Students' spelling problems disappear over time without the need for teacher intervention" indicate that most teachers seem to believe that students cannot develop their spelling proficiency without direct teacher help. Those teachers seem to be convinced that teachers need to have an active role in developing their students' spelling ability. These findings lend support to the literature that has highlighted the role of spelling instruction in developing students' spelling proficiency (e.g. Hildreth, 1962; Smedley, 1983; Bloodgood, 1991; Olshtine, 2001)

Figure 6: Students' spelling improvement over time according to surveyed teachers

Current spelling instruction status and practices.

Overall, findings showed that there is a mismatch between the seriousness of the spelling problem and the efforts paid to respond to students' spelling problems and needs, in order to develop their spelling proficiency.

Teacher training.

Teachers' responses to statement 10, "I would like to teach spelling, but I do not know the best way to do it" show that some teachers are not sure of their ability to teach spelling appropriately. Three teachers seemed to agree with this statement, two other teachers disagreed, and the remaining teachers were neutral. This indicates that only around 25% of teachers are confident that they are able to teach spelling. This would suggest that most teachers need guidance in spelling instruction.

Teachers' responses to the open-ended questions section also emphasize the need for teacher training concerning spelling instruction. All of the seven teachers indicated in their responses to question three that none of them had any training in spelling instruction. One of the teachers wrote that the lack of given courses and workshops that deal with spelling affect spelling instruction negatively. Another teacher emphasized the need for workshops that focus on teaching spelling in his response to question 4 in the open-ended questions.

Some of the teachers' comments in the interviews also highlighted the lack of teacher training regarding spelling teaching techniques. One of the teachers commented in one of the interviews, "Although we are required to penalize students for spelling errors, we have never been trained how to teach spelling. Our training usually focuses on teaching most aspects of English except for spelling." Another teacher added "We attend many workshops yearly. However, none of which focuses on spelling." Moreover, as he continued, "even in the workshops that focus on writing skill, we never discuss the teaching of spelling. We are only told that quarter of the overall mark needs to go for spelling and punctuation."

Teachers' knowledge of the nature of English orthographic system.

The analysis of students' spelling errors that were identified in the compositions showed that students have a problem with spelling rules. Students in all grades made errors because of their ignorance of spelling rules (24.5%, 15.4%, 11.1%, and 12% of the total number of the analyzed errors for Grades 9, 10, 11, and 12 respectively). Spelling errors that are caused by lack of knowledge of rules can, according to many researchers, be decreased significantly by direct spelling instruction (e.g. Hildreth, 1962; Chomsky, 1973; Santa, 1976 – 1977; Robinson & Hesse, 1981; Shemesh & Waller, 2000; Olshtain, 2001; Ediger, 2001). Those researchers believe that the English spelling system is not totally arbitrary and that it has many orthographic regularities that can be taught. Thus, they recommend teaching the spelling rules and patterns that can apply to a big number of words and have few exceptions. However, it seems that not all teachers are aware that English has clear rules that can be taught. This appears clearly from teachers' responses to statement 5, "The English spelling system does not have clear rules." Four out of the seven teachers appeared to agree with this statement, while three disagreed.

The interviews were specifically useful in shedding more light on this issue of rule knowledge. All of the teachers demonstrated that their knowledge of spelling

rules is mostly of the basic ones, such as the rules that govern adding the past tense inflection *ed* to verbs and the rules that govern adding the plural inflection *s* to nouns. All of the interviewed teachers indicated that they did not know any other rules, as they had not come across any rules for spelling during their university study and they were not offered any teacher training in this field. Nonetheless, a comment by one of the teachers about spelling rules demonstrated that some teachers do not teach spelling at all. He commented, "Frankly, I rarely teach any spelling rules. I leave it for the students to learn the spelling of words. I have more important things to worry about."However, another of the teachers seems to believe in the value of teaching spelling rules, as he suggested teaching a spelling rule daily in the last part of the survey. In the interview, he was asked about the spelling rules that he suggests to teach. He mentioned the rules that govern pluralizing nouns, such as changing the *y* into *ies* in nouns that end in *y*, such as the word *family*.

Teachers' current spelling instruction strategies.

For the purpose of investigating teachers' current spelling instruction strategies, section 3 of the survey included 10 statements, each of which described a strategy used for teaching spelling. (see Appendix D). All of the 10 strategies were identified from literature (e.g. Guiler, 1931; Hildreth, 1962; Bloodgood, 1991; Kharma & Hajjaj, 1997; Shemesh & Waller, 2000; Olshtain, 2001; Ediger, 2001; Bahloul, 2007; Fender 2008). After analyzing teachers' responses to this section, these strategies were grouped into three groups according to their popularity among the surveyed teachers: most common strategies, least common strategies, and those in between.

Most common spelling instruction strategies

The most common spelling instruction strategies appear from teachers' responses to statements 3, "I draw students' attention to common spelling patterns that can be generalized to a big number of words, such as the effect of *e* on the vowel in words. (e.g. rat vs rate; tub vs tube)" (*Always = 2; Often = 3; Sometimes = 2; Never = 0*), statement 4, "I draw students' attention to irregular spelling and silent letters" (*Always = 2; Often = 4; Sometimes = 1; Never = 0*), and statement 6, "I ask students to memorize words as complete wholes" (*Always =1; Often = 3; Sometimes = 3; Never = 0*) (see Figure 7). The responses to statement 4 suggest that teachers agree with the literature reviewed (e.g. Hildreth, 1927; Bahloul, 2007; Fender, 2008) that indicated clearly that irregularity of English is a major cause of students' spelling

61

difficulties. However, although teachers seem to recognize that the irregularity of English is responsible for a big percentage of their students spelling problems, it seems that their individual efforts are not paying off to respond to this problem, as error corpus analysis showed that the irregularity of English causes most of their students' spelling errors.

Another strategy that agrees with what is argued for in literature is the usefulness of introducing and practicing spelling patterns that can be generalized to a big number of words. Five of the seven teachers indicated in their response to statement 3 that they always or often draw their students' attention to such patterns in English words. Nevertheless, corpus findings showed that a large percentage of students' errors were caused by students' ignorance of spelling rules. Additionally, interviews and teachers responses to some of the open-ended questions demonstrated that many teachers are not fully aware of many spelling rules and patterns and that they need more training.

Figure 7: Most common spelling instruction strategies among teachers

Least common spelling instruction strategies

As we have seen, error corpus analysis revealed that mother tongue interference and ignorance of the common spelling rules and patterns caused a large percentage of students' spelling errors. However, teachers' responses to statements 7, "I make students practice minimal pairs (e.g. *take, bake, sake, fake*) (*Always =1; Often = 1; Sometimes = 4; Never = 1*), and 9, "I raise students' awareness of the differences between the written systems of Arabic and English" (*Always =1; Often = 0; Sometimes= 6; Never = 0*) demonstrates that the strategies that aim raising students' awareness of the linguistic differences beween Arabic and English and the

spelling rules and patterns that apply to a big number of words are the least used strategies (see Figure 8). Those findings do not reflect the importance of those two strategies as argued by many researchers (e.g. Shemesh & Waller, 2000, Ediger, 2001, and Olshtain, 2001).

Figure 8: Least common spelling instruction strategies

Other spelling instruction strategies

Figure 9 below illustrates the remaining 5 strategies that the survey investigated. All these strategies were discussed in literature as being useful in improving students spelling proficiency. However, it seems that none of these strategies seem to be very popular among the surveyed teachers. For example, statement 8, "I focus on letters that are not found in Arabic, such as P, and V" (Always =0; Sometimes = 3; Never = 2; Don't know = 2) represents one of the strategies that aims at responding to students errors that are caused by mother tongue influence. Many researchers (e.g. Swan and Smith, 2001) pointed out that students find it difficult to learn the language aspects that are found in the target language, but are missing in their mother tongue. Thus, it would appear that this strategy is not receiving adequate attention from teachers.

Figure 9: Other spelling instruction strategies

In addition to the spelling instruction strategies that were in the survey, three teachers added their own strategies that they use for teaching spelling in their response to question 1 in section 4 of the survey (see Appendix E), which required teachers to mention any alternative methods that they use to address spelling other than the ones mentioned in the survey. The techniques that the teachers added are also found in the literature reviewed.

Similar to Hildreth's (1962) suggestion of focusing on the spelling and pronunciation of the letter combinations that have regular pronunciation, one teacher added "Whenever I have enough time, I concentrate on using and pronouncing prefixes and suffixes correctly, and I ask students to form similar words at home." The second teacher added, also recommended by Bloodgood (1991), "I usually adopt the homophone techniques, as *to/two*, *way/weigh* …etc. I think this is a good way to overcome some spelling difficulties." Actually, homophones seem to be confusing for students from different language backgrounds, including Arabic. Many studies, including the current one, have found out that students commonly commit errors because of homophones (Ringbom, 1977; Ramadan, 1986; Al-Karaki, 2005).

The third suggestion, agreeing with Bloodgood (1991), highlighted the importance of adding meaning to learning spelling. One teacher wrote, "I dictate students some of the words that they would need in writing." Bloodgood notes that this technique makes students feel that they are learning useful words, not a bunch of unrelated words that they might never use. The same teacher also recommended pointing to students the differences that exist between the pronunciation of some words and their spellings. Additionally, he recommended providing students with examples of the spelling errors they make.

Although teachers' responses that were identified show that they are aware of many useful strategies for teaching spelling, the corpus results suggest that teachers are in practice unable to help their students overcome their spelling problemsThis makes one wonder how much of class time is usually devoted for spelling instruction and whether students get adequate spelling practice.

Class time devoted for spelling instruction.

As for the time allotted to teaching spelling, the surveyed teachers' responses demonstrated that it is not much. Despite the fact that it appeared from their responses to section two of the survey that they consider spelling errors a grave problem that

affects the general ability of their students, it can be noticed that spelling instruction does not often take place in their classrooms.

The inadequacy of time devoted for spelling instruction appears clearly from teachers' responses to statement 10 in section 3 that states "I devote part of my lessons to teaching spelling" (see Figure 10).

Figure 10: Class time devoted for spelling instruction

Five of the seven teachers indicated that they only sometimes devote part of their lessons to spelling instruction. As for the other two teachers, one of them indicated that he often does, while the other teacher never teaches spelling.Additionally, reviewing the number of times each of the survey sections: Always, Often, Sometimes, and Never were checked, shows that the Sometimes section received most of the choices for all spelling instruction strategies (see Figure 11).

Figure 11: Frequency of spelling instruction

The "Always" section was only chosen just under 12 per cent of the total responses, which brings it to third place before the "Never" section, which was

chosen for just over 10 per cent of the total responses. By far, the "Sometimes" section came in first place, getting 50 per cent of the responses, way ahead of the "Often" section, which got just over 32 percent of the total responses.

Teachers' responses illustrated clearly that the time devoted for spelling instruction is hardly adequate, taking into consideration how grave the problem of spelling is and how important it is according to teachers' own views identified from their response to the surveys.

The following section will perhaps shed some light on the apparent contradiction between teachers' beliefs and practices.

Efficiency of textbooks.

The importance that teachers attached to spelling and its direct influence on students' overall language proficiency prompts some inquiries about the status of spelling in the textbooks used and the extent to which teachers believe that spelling is given the importance that it deserves. An answer to these inquiries is in teachers' responses to statement 11, "Textbooks should include more activities for teaching spelling."All of the seven teachers agreed with this statement, demonstrating that they believe that the spelling activities found in textbooks are insufficient.

Two teachers pointed out another problem with textbooks that affect spelling instruction negatively. They explained in the interviews that in addition to the lack of spelling activities in textbooks, textbooks are condensed and they leave little time for spelling instruction. One of them pointed out that "teachers need to have spelling activities in textbooks." "This would," he added, "allow teachers to teach spelling and not fall behind in covering the requirements of textbooks. Two other teachers commented that they usually spend the majority of the lesson time in teaching and practicing, for example, the past tense, leaving little time, if any, to pointing out some of the spelling rules related to this tense. These comments explain why one of the teachers added a comment in the last part of the survey suggesting having changes in textbooks that would suit the needs of students. Additionally, these points clarify to a certain extent the inquiries raised in the previous section regarding why teachers do not spend enough time teaching spelling despite the fact that they believe it is a major problem for their students and that it is important. This means that teachers require curriculum and material writers to add more activities that respond to students spelling problems, in order to enable teachers devote enough time to spelling instruction.

Factors that affect teachers' spelling instruction practices

In addition to the lack of spelling activities in textbooks and the lack of time that teachers have for spelling instruction, question 2 in the open-ended questions from section 4 sheds light on other factors that affect spelling instruction (see Appendix E). This question required teachers to choose from a list the factor(s) that affect(s) their current practices in spelling instruction and responding to students' spelling errors (see Figure 12). Although the main focus of the teaching and learning process is students, it seems that the students' expectations are ignored. None of the teachers seems to believe that considering students expectations is important. This view ignores what many researchers call for. For examples, Graves (2000) notes that it is important to consider students' need when designing curricula so as to make appropriate decisions about what to teach and how to teach it in order to meet their needs.

Figure 12: Factors that affect spelling instruction

Abiding by the guidelines of the Ministry of Education appears to be the most important factor that affects teachers' spelling instruction for four of the seven teachers. Additionally, one of the teachers added in the last part of the survey that "the English teacher in the UAE government schools is an executor who is appointed to carry out the instructions and follow the guidelines of the Ministry of Education." These views lend support to one of the results of a study conducted by Morris, Blanton, Blanton, and Perney (1995) that investigated the nature and effectiveness of spelling instruction in six classrooms. Results showed that teachers follow textbooks and teacher guides to a great extent. However, they also noticed that when teachers do not follow the textbook or the teacher guide "their activity choices do not always

serve sound instructional purposes" (p. 160). Thus, it seems that many teachers do not take the initiative in developing their own activities for teaching spelling. Those teachers only teach what is in textbooks. Additionally, as was identified from teachers' answers and the results from Morris, Blanton, Blanton, and Perney's study, teachers might not be able to develop appropriate spelling activities. Thus, there is an urgent need to incorporate more spelling activities into textbooks.

Another important factor that can be noted is that some teachers seem to be affected by the way they learned English as students. The question here is as to what extent those old methods are suitable for students' needs regarding spelling problems. Additionally, as it appears from Figure 12, many teachers also indicated that they tailor their own methods to suit the types of errors that students make and their proficiency level. Nevertheless, it has, by now, become clear that there is a big chance that teachers might not make the best choices when developing their own activities.

CHAPTER 5

CONCLUSIONS AND IMPLICATIONS

This chapter discusses the main findings of the study and the conclusions that can be drawn from them. First, a summary of the study's findings of corpus analysis of students' spelling errors and analysis of teachers' responses to survey and interview questions is provided, comparing results where possible with previous findings by other researchers. Then, the main conclusions that were drawn are outlined. After that, limitations of this study and directions for further research are discussed. Finally, implications for decision makers, supervisors, and teachers are suggested.

Error Corpus Analysis.

Seriousness of the problem.

Data analysis showed that students' performance with regard to the frequency of spelling errors in the compositions was similar across the four grades. For example, Grade 12 students had a frequency of one spelling error every 12.12 words, which was very close to the frequency of errors of Grade 9 students who committed one error every 12.19 words. Unfortunately, not many studies that investigated the frequency of errors were found in literature. Only Al-Bakri (1998) indicated that in her corpus the frequency of errors among university students was four times as high as the frequency of errors in the current research, amounting to 4 misspelled words nearly every 10 words. However, she did not compare the frequency of errors for different levels.

Types of errors.

Generally, spelling errors for all grades were highly concentrated in *Substitution* and *Omission* errors which constituted around 83% of the total number of errors.

To a certain extent, the results of the current research correspond with the results of a number of similar studies in terms of the types of errors and their prominence. The following section outlines the results of these studies, highlighting similarities and differences.

Error Types in the Literature.

A number of studies have been conducted to analyze spelling errors in Arabic and non-Arabic contexts. These studies classified errors into different types. Although many similarities existed between these studies, differences were also present. For example, different studies had different names for the same type of error. To

exemplify, omission errors were present in all studies. However, they had different names in some studies. For example, Bahloul (2007) created a category called Monographicization, which contained the words in which clusters of graphemes were simplified in the written form. Such errors are categorized as omission errors in the current research.

Another difference in the method of classification between different studies is that some of the problems that were considered as types of errors in some studies were viewed as causes of errors in other studies. The current study has made a distinction between the the types of errors and their causes, whereas many other studies did not make such a distinction and classified all the errors identified as types of errors. For example, Book and Harter (1929), Ramadan (1986), and Al- Bakri (1998) considered writing a word as it is pronounced a type of errors, whereas Al-Karaki (2005) considered this problem as a cause of errors. In the current research, this problem is categorized as a cause of errors within the category of the *Irregularity of English*.

Another difference is that different studies came up with different numbers of categories. For example, Book and Harter (1929) identified18 types of spelling errors, while Bahloul identified 12 and Al-Bakri identified 8. In the current study, only six 6 categories were identified. One of the reasons behind these differences is the variation in the methods used for data collection and classification. For example, Book and Harter analyzed essays, exam papers, and dictation test papers. This resulted in creating categories for the errors that appear in dictation tests. One of such categories was creadted for the misspelled words that some students did not hear well when being dictated and consequently spelled them wrongly. As for differences in classification methods, Book and Harter, for example, considered adding a letter to a word that was anticipated because it appears later in the word, adding an extra letter, and doubling the wrong letter as three different categories. In the current study, all those three types are categorized as *Addition* errors.

A last problem that appears between some studies is that some studies did not include clear results concerning the proportions of some categories. For instance, Book and Harter (1929) mentioned the proportions for most categories. However, in some instances, they commented "only few errors were identified." Ringbom (1977) was interested in highlighting the difference in performance between the two groups of learners that he was studying without mentioning overall proportions for the

categories that he created. However, from his analysis, substitution, omission, addition, and disordering were main categories. Similarly, Bahloul (2007) did not include any percentages. He only listed the types of errors that were identified.

Because of the differences in classification and number of categories that are present between the current study and other studies, it was not always possible compare results. Sometimes, it was decided to combine the proportions of two or more categories that match the characteristics of a category in the current study in order to compare the results and arrive to conclusions regarding the prominent types of errors. For example, in Ramadan (1986) *Omission* errors appeared under the categories of *Inflection* and *Derivation* errors. Thus, it was needed to combine the proportions of *Omission* errors in those two categories. Following is an overview of the most prominent types of errors in other studies.

In Book and Harter (1929), *Omission* errors comprised 21% of the total number of errors, taking into consideration that this percentage does not include the proportion of omission errors which were also found in the category of *Non-doubling* letters, because no percentage of errors was mentioned for this category. Similarly, excluding one category for which there was no percentage indicated, *Addition* errors comprised 19.3% of the errors. *Disordering* errors comprised 7% of the identified errors. As for *Substitution* errors, no proportions were indicated.

Ramadan (1986) divided spelling errors into three main categories: Morphemic, Intra-morphemic, and Splits. Each of these categories was divided into subcategories. The subcategories had many types in common with the types identified in the current study with similar prominence. *Omission* constituted an average of 29.5%. *Addition* errors comprised 4.4%. *Segmentation* errors (called Splits in Ramadan's study) comprised 6% of the identified errors. As for *Substitution* and *Disordering* errors they were also found in Ramadan's findings. However, it was difficult to calculate their percentages as they were part of the categories of *Articulation*, *Ambiguous correspondence*, and *Phonetic* errors. These categories also had some addition and omission errors in them.

Al- Bakri (1998) identified eight types of errors, 4 of which, according to the researcher, comprised significant portions of the errors: *Substitution* (19.98%), *Insertion* (17.84%), *Omission* (16.75), and *Inversion* (16.69). The other less significant types of errors were *Segmentation* (13.87), *Pronunciation* (5.23), *Unclassified* (5.84), and *Miscellaneous* (5.23). These results are, except for the

category of *Pronunciation*, very similar to the results of the current study in terms of the identified types and significance of each type.

Al-Karaki (2005) identified six types of errors that are similar to the categories identified in the current study. Additionally, salient similarities were identified regarding the most prominent types of errors. However, while in Al-Karaki's research *Omission* errors occupied first place at 34.1% and *Substitution* errors came in second place at 24.2%, the current study revealed that *Substitution* errors are more prominent than *Omission* errors

To sum up, disregarding the different terminology and classification methods that different studies used (discussed above), similar to the current study, Substitution, Omission, Addition, Disordering, and Segmentation errors were the commonest types of errors in all the studies reviewed. Additionally, similar to the current study, Substitution, Omission, and Addition errors were the most prominent types of errors in most studies reviwed.

Causes of errors.

The current study attributes spelling errors to four causes, which are Irregularity of English, Mother Tongue Interference, Lack of Knowledge of Rules and their Exceptions, and Performance Errors. Irregularity of English accounted for the majority of errors ranging from 58.8% to 68.7% of errors across all grades. Mother Tongue Interference and Lack of Knowledge of Rules and their Exceptions, though of much less significance, came in second place, ranging from 11.1% to 24.5% for the four grades. Despite differences in classification and terminology, the findings of the current study lend support to many studies and views regarding the main causes of spelling errors. Following is an overview of causes of errors in literature and the results of similar research, highlighting similarities and differences.

Error Causes in the Literature.

Generally, the findings of the current research, regarding the causes of errors identified, support the views of many researchers. As indicated above, the currnt research identified 4 main causes of spelling errors. All of the casues identified are discussed in literature as being main causes of spelling problems of English learners in general, and ALEs in particular. The *Irregularity of English* is considered a source of confusion for all learners of English, including native speakers because of the non-phonetic nature of English (Hildreth, 1962; Kharma & Hajjaj, 1997; Bahloul, 2007). Many researchers regard *Mother Tongue interference* as cause of errors, because

research has shown that learners from different language backgrounds have different spelling problems (Odlin; 1989, Broselow, 1993; Swan and Smith, 2001; Fender, 2008). As for the third cause of errors in the current study, *Lack of Knowledge of Rules and their Exceptions*, many researchers attribute many of the spelling errors that some students commit to lack of command of spelling rules and regular spelling patterns. For them, such errors can be overcome by explicit spelling instruction of these rules and patterns (Hildreth, 1962; Ringbom, 1977; Shemesh & Waller, 2000). The final category of errors, *Performance*, was also regarded by many researchers as a cause of errors that can be overcome if the habit of proofreading is built into students (Book and Harter, 1929; Smedley, 1983; Al- Karaki, 2005).

A number of studies analyzed spelling errors according to cause. However, like the case with the types of errors, differences existed between different studies in the methods used for classifying the errors and in the number of causes identified. More importantly, percentages were absent from most studies, which made comparing results not feasible.

Book and Harter (1929) classified the 18 types of spelling errors that they identified into two main categories. The first cause is that some students had inadequate mental control over the process of writing words, which caused them to misspell words the correct spelling of which they knew. The second cause is that some pupils had not observed the words correctly and so had not really learned how to spell them, which had students spell some words as they are pronounced, which caused a lot of spelling errors. While writing a word as it is pronounced was considered a type of errors in their study, it was observed as a cause of errors in other studies, such as Al-Karaki (2005). In the current study, errors caused by spelling words as they are pronounced are attributed to the irregularity of English and thus are classified in the category of *Irregularity of English*. In their study, Book and Harter noted that around 25% of errors identified were caused by the tendency to spell by sound.

Ringbom (1977) also observed pronunciation errors as a type of errors responsible for a high percentage of spelling errors. Ringbom also considered Overgeneralization a main casue of errors. Errors caused by overgeneralization were categorized into the category of the *Irregularity of English* in the current study.

Ramadan (1986) included in his classification of the types of errors a category for errors that were committed because students broke spelling rules or regular

spelling patterns. 18% of spelling errors of Grade 12 students and 19% of Grade 9 students were caused by this problem. This category of errors is considered as a cause of errors in the current study.

Al-Bakri (1998) and Bahloul (2007) attributed the errors that they collected to three main causes: intralingual, developmental, and interlingual. The intralingual errors are considered within irregularity of English and interlingual errors as Mother tongue interference. However, neither Al-Bakri 1998 nor Bahloul (2007) gives percentages. Similarly, Al- Karaki (2005) attributed the spelling errors that she identified into six causes. However, she did not include a clear analysis of these causes. She only mentioned, based on her review of literature, a number of likely causes of errors supported by examples from her corpus without reporting the percentage of each. According to Al-Karaki, the main causes of spelling errors of ALE are pronunciation, differences between the sound systems of English and Arabic, overgeneralization, arbitrary nature of English word derivation, incomplete application of English spelling rules, or the lack of knowledge of the exceptions of spelling rules, and performance errors. The current study considered pronunciation, overgeneralization, and derivation problems under the irregularity of English.

To sum up, lending support to the views of many researchers and the findings of many studies, the findings of the current study demonstrated that the Irregularity of English, Mother tongue interference, and the Lack of knowledge of spelling rules are the most prominent causes of spelling errors. However, some differences existed between the classification of the current study and some other studies in the literature reviewed. For example, pronunciation was viewed as a type of errors in some studies, whereas it is viewed as part of the irregularity of English in the current study. Consequently, all errors that resulted from pronunciation problems or mismatch between the written form and the spoken one are categorized in the category of the *Irregularity of English.* Similarly, lack of spelling rules was considered by Ramadan (1986) as a type of errors, whereas it is considered as a cause of errors in the current study,

Progress of students' spelling proficiency.

Opposite to what is logically expected, results showed that students' spelling performance does not progress significantly over the years of instruction. This means that Grade 12 students graduate from high school with similar spelling problems to those of Grade 9.

Progress with regard to frequency of errors

As for frequency of errors in students' compositions, data analysis showed that the error frequency did not decrease. However, other studies in literature that were conducted on non-native speakers in other countries show that students spelling errors decrease as they move to higher grades. For example, a study carried out by Ringbom (1977) show that Finnish learners of English despite the interference of the highly phonetic writing system of their mother tongue, achieve progress at advanced stages, as learners become more aware of the differences between their mother tongue and English. In Arabic contexts, Ramadan (1986) and Al- Karaki (2005) analyzed spelling errors of Jordanian students and found out that errors decrease as students move to higher grades.

Progress with regard to types of errors.

A close look at the types of errors identified in this study shows that there are striking similarities in the types and percentages of spelling errors committed by students in the different grades. For example, substitution errors comprised just over 48% of Grade9 spelling errors. This percentage is very close to the figure of Grade 12 which is 47%. In other words, very little progress is noticed. More significantly, addition errors for Grade 12 comprised a higher percentage than that of Grade 9, at 14.7 and 10.8% respectively.

Progress with regard to likely causes of errors.

As for students' progress with regard to the causes of errors, overall errors decreased in some categories, but increased in others. For example, errors caused by the irregularity of English increased markedly as students moved to higher grades. While Grade 9 students committed 55.8% of their errors because of the irregularity of English, Grades 10, 11, and 12, surprisingly, had more errors in this category, amounting to 59%, 67.8%, and 68.7% respectively. In the category of Knowledge of Spelling rules, students' performance seems to progress as students reach Grade 12. While it caused 17.8% of students' errors in grade 9, the figure for Grade 12 was 12%. Nevertheless, Grades 10 and 11 students appeared to be less competent than Grade 9, as lack of knowledge of spelling rules caused them to commit 21% and 18.7% of the total number of their spelling errors respectively. These results show that students do not show significant progress with regard to the causes of errors, as the causes of errors remain at similar percentages.

Surveys and Interviews Analysis

One major importance of this study lies in the fact that it investigated teachers'
perceptions of the spelling problems of Arab learners of English, attitudes towards
teaching spelling, and practices in spelling instruction. Additionally, the study helped
in finding some of the impediments that teachers face in teaching spelling during
language classes in the UAE. Following are the main findings of the study, regarding
teachers' perceptions and attitudes:

Seriousness of problem.

All teachers indicated that spelling errors are a grave problem that affects
negatively students' performance, the readability of their written product, and
consequently their school achievement. Moreover, all teachers indicated that some
students avoid using some words, because they are not sure of their spellings, which
puts strains on their language flow, affecting their overall language proficiency.
Additionally, most teachers appeared to believe that the irregularity of the English
spelling system causes students to read with difficulty, affecting their reading
proficiency. Consequently, they believe that familiarizing students with English print
will have positive effects on their spelling and reading proficiency.

Likely causes of students' spelling problems.

According to most teachers, the main cause of students' spelling errors is
students' carelessness. The second two main causes of spelling errors according to
teachers are the irregularity of English and the linguistic differences between Arabic
and English.

Students' progress.

Most teachers seemed to believe that students show insignificant progress
regarding their spelling proficiency as they move to higher grades. They noted that
students keep committing the same spelling errors until they graduate from high
school.

Current spelling instruction status and practices.

Teachers pointed out two important issues that affect spelling instruction.
First, teachers indicated that they had never received any training in spelling
instruction. This resulted in the fact that teachers appeared to have inadequate
knowledge of the nature of English spelling and the main causes of their students'
spelling problems. Second, according to teachers, the textbooks used are condensed
and lack adequate spelling activities. This problem leaves teachers with little time to

76

devote to spelling instruction in spite of the fact that they pointed out that they believe that students need teachers help to overcome their spelling difficulties. Additionally, analysis demonstrated that the main factor, according to most teachers, that affects their spelling instruction is the guidelines of the Ministry of Education and the activities found in textbooks. Teachers follow these guidelines and textbooks, ignoring the actual spelling needs of their students.

Conclusions

The analysis of the error corpus and teacher surveys and interviews indicate clearly that there is a major problem with regard to students' spelling proficiency, teachers' knowledge of the nature of spelling problems and their causes, and current spelling instruction status and practices.

Students' spelling performance across the four grades appeared to be highly similar. The frequency of errors was very high for all grades, mounting to an average of 1 spelling error nearly every 12 words. Additionally, some of the spelling errors hindered comprehension. Moreover, the commonest types and likeliest causes of spelling errors were strikingly similar among the four levels. These results indicate that years of instruction do not have any positive effect on students' spelling performance. Grade 12 students reach graduation year suffering from the same spelling problems that Grade 9 students have. Thus, a great concern arises about the efficacy of current spelling instruction practices.

A close look at teachers' responses to the surveys and in the interviews reveals a number of concerns. Agreeing with many researchers (e.g. Hildreth, 1967; Bahloul, 2007; Fender, 2008), many teachers indicated in their responses that they consider the irregularity of English one of the main causes of their students' spelling problems. Indeed, corpus analysis revealed that English irregularities do, by far, cause most spelling errors. However, although teachers know the main cause for spelling problems, they are not able to respond to it. This illustrates clearly that teachers need more guidance. Nevertheless, it seems that, based on teachers' responses to the surveys and in the interviews, teachers are hardly getting any guidance. On the one hand, textbooks, according to teachers, suffer from a severe shortage of spelling activities. On the other hand, teachers had not received any professional training on spelling instruction. Besides those two problems, some teachers also indicated that they follow their text books literally. Thus, rarely do they take the initiative to develop their own spelling activities and, as many of them noted, the textbooks that they use

are so condensed that they spend most of the lesson time in covering the material in the textbooks, which leaves them with very little time for spelling instruction. Therefore, it should not be a surprise that English spelling is causing so much confusion to students, as they rarely get any help to overcome it. Teachers need more guidance and more direct activities developed by specialists to assist them.

Another major concern stems from the beliefs that some teachers have about the causes of their students' spelling problems. Some teachers seem to believe that students' carelessness is the main cause of spelling errors. Of course, this might be true about some students, but building on what was presented earlier on the inadequacy of spelling activities and the lack of teachers' training, there are more important causes that need to be addressed first. Additionally, surrendering to such a belief seems to frustrate both teachers and students. Many teachers perceive no value in teaching spelling because they believe that their efforts will not pay off because of students' carelessness. It seems likely that in these circumstances students will feel that they are being blamed for something that is out of their hands and that they are not receiving much help to overcome it.

To sum up, students in UAE public schools seem to have an overwhelming spelling problem that affects their overall language proficiency and school achievement. Furthermore, it appears that little is done to overcome this problem. Teachers indicated that they need assistance in helping students overcome spelling problems. They need more spelling activities to be incorporated into textbooks and training programs that focus on spelling instruction.

Limitations and Directions for Further Research

I believe my study would have been more powerful if some other factors could have been taken into consideration. In light of the identified limitations of the study and its findings, it is possible to make some suggestions for further research.

One of the study limitations was that because students had complete control over topic, they may have avoided using words the spelling of which they were uncertain. Consequently, the number and type of errors might be limited compared with number and type of errors collected by different methods forcing students to spell possibly unfamiliar words. Different results may be revealed if students had to write different topics or if the errors were collected using a different method. Consequently, I recommend that future similar studies consider different methods for

collecting spelling errors, such as dictation or cloze procedures, so as to come up with more comprehensive results.

Another limitation is that owing to the fact that the study only included male participants; the possibility of examining the data from a gender difference perspective was hindered. As such, a study is recommended to investigate gender differences. Actually, the reviewed literature contained diverse findings regarding the effect of gender on spelling abilities. For example, Allred (1990) investigated gender differences in spelling achievement for students in Grades 1 through 6. Results showed that girls spell better than boys. However, he indicates that other studies showed opposite results which might indicate that cultural variables might have a role. Two such studies that showed no effect of gender on spelling proficiency were conducted in Jordan by Ramadan (1986) and Al- Karaki (2005). Unfortunately, due to practical limitations, it was not possible to include participants of both genders in this study and it would be useful to have such a study in the UAE.

A third limitation of the study is that although the study had students from four different grades, the number of participants was limited and they were only from one school from one region. As such, the generalizability of the study might be limited. Hence, it is recommended to include more participants from different regions in order to come up with more generalizable results across the UAE.

Another limitation is that I depended on my own inferences to classify cause of error for the categories "Lack of Knowledge of Spelling Rules" and "Performance". One possible method of confirming or disconfirming my inferences would have been to conduct follow-up individual tests with a sample of students. This would have given more strength to my general analysis of likely cause of error.

A follow-up study could build on this study and conduct an experiment that investigates whether introducing spelling rules and special activities that raise students' awareness of the differences between Arabic and English could help develop students' spelling proficiency. It might also be useful to investigate the spelling proficiency of private school students who use different textbooks.
Implications

Generally, the study has clearly shown that ALEs in public schools have a real spelling problem. In contrast with the findings of some studies on spelling errors that were conducted in other countries on non-native speakers from Arabic and non Arabic backgrounds (e.g. Ringbom,1977; Ramadan, 1986; Al-Karaki, 2005), the current

study revealed that students spelling errors in UAE public schools do not decrease as they move to higher grades. Although it is difficult to find comparable research on extent of spelling errors in other populations of learners, the fact that there is no improvement over four years of instruction, plus the widely held teacher perception that spelling is a problem and the fault is student motivation is direct evidence of a problem. This result could provide curriculum designers, supervisors, and teachers with evidence of an urgent need to address this problem. Some suggestions are offered in the next sections for stakeholders to help improve ALE spelling proficiency.

Implications for curriculum designers.

Although the focus of this thesis has been spelling, the findings clearly have implications for the broader skills of literacy, i.e. reading and writing. Whether or not spelling is regarded as foundational to acquiring literacy – the subject of the whole language vs. phonics debate in literacy education, the ability to spell is usually taken to be a a product of literacy. As Barron (1985, p. 384) concludes, for example, in a survey of the link between spelling and literacy "although spelling and sound diverge in English orthography, successful acquisition of the skills of literacy involves the ability to be flexible in using both the visual and phonological characteristics of written language." In other words, poor spellers are usually also poor readers. The findings that spelling is poor and does not appear to improve over four years of instruction suggest that there may be a large problem with ESL literacy education in UAE schools. One implication of this study and the future studies in spelling proficiency recommended here, then, might be that the overall efficacy of ESL literacy instruction in UAE schools needs to be assessed.

Turning to spelling as a discrete skill, curriculum designers are usually held responsible for the textbooks used in schools. In their responses to the surveys and in the interviews, teachers complained that current textbooks do not respond to students' needs regarding spelling. Such a lack of spelling activities creates two problems. First, the textbooks are not helping students to develop their spelling proficiency. Second, the textbooks are, as noted by a teacher in one of the interviews, creating negative attitudes towards spelling from students' side. Many of them appear to perceive spelling as an unimportant aspect of the language, and thus do not address it. On top of that, teachers indicated that curricula are condensed and leave little room for them to teach spelling. Thus, curriculum designers are advised to conduct needs' analysis

research in order to assess students' real current level in spelling and their main spelling problems. Additionally, they ought to review the literature on spelling, much of which highlights the importance of devoting enough time for teaching spelling, considering students' backgrounds, and using spelling rules.

In light of the analysis of students' needs and the review of literature, re-evaluation of the textbooks in use is recommended to investigate their effectiveness in responding to students' current spelling needs. Graves (2000) indicates that course evaluation can help evaluate how effective the course is or was in helping students learn something, and that it can help curriculum decision makers retain effective aspects of a course and change ineffective ones so as to improve it.

Most teachers indicated that they need training programs to train them on how to teach spelling and develop appropriate activities. Many teachers may not be able to develop their own activities to teach spelling and therefore, training programs that focus on spelling instruction need to be developed to equip teachers with the skills they need to respond to their students' needs.

Implications for supervisors.

Supervisors usually play a significant role in the teachers' career. They can have a very effective role in terms of raising teachers' awareness of the importance of developing students' spelling and the best way to do it. For example, they can hold workshops and collective lesson observations that might develop teachers' skills in teaching spelling. In addition, supervisors are usually the only mediators between the Ministry of Education and teachers. Teachers noted clearly that they believe that spelling is important and that their students have a big problem with spelling. Additionally, teachers complained that textbooks lack spelling activities and that they neither have enough expertise nor enough time to respond to spelling problems. Thus, supervisors can convey teachers' views to decision makers and ask for change.

Implications for teachers.

Teachers declared clearly in their responses that they believe that spelling is a problem for their students and needs more attention. Additionally, they indicated that students' spelling proficiency cannot develop without teachers' direct intervention. Therefore, I recommend that teachers raise their voice to decision makers through their school principles and supervisors. As such, it is important for teachers of the same school to meet and discuss their students' real needs and cooperate in taking practical steps to respond to them. For example, in the school where the study was

conducted, students did not show much of a progress over the four grades. This requires teachers in this school to investigate the problem collaboratively and come up with practical solutions or at least appropriate recommendations to material designers. They can conduct a sort of needs analysis or classroom research to provide evidence of the failure of current teaching approaches and the need for change.

Teachers also need to expand their knowledge of the nature of spelling and spelling instruction by, for example, reading online journals, published articles, and other related recent research. It is not enough to ask for change from outside. They need to start with themselves. It is important that teachers become knowledgeable on this subject in order to be able to offer the professional help they can to their students. Literature is replete with suggestions on how to develop students' spelling abilities. Kharma & Hajjaj (1997), Bahloul (2007), and Fender (2008) emphasize the importance of devoting part of each lesson for spelling activities that would enhance students' spelling proficiency. These spelling activities can be useful students, according to many researchers (e.g. Hildreth, 1962; Chomsky, 1973; Santa, 1976 – 1977; Robinson and Hesse, 1981; Shemesh & Waller, 2000; Olshtain 2001; and Ediger, 2001), and need to include the teaching the spelling rules that can apply to a big number of words and have few exceptions. Corpus analysis showed that more than 30% of students spelling errors across all grades were caused by Mother tongue interference and Lack of knowledge of rules (9, 44.2%; 10, 40.2%; 11, 32.2%; and 12, 31.3). Thus, if students could be helped to overcome spelling errors that are caused by those two areas, their spelling errors would decrease markedly.

Hildreth (1962) suggests a number of activities to help students overcome spelling difficulties, such as underlining silent letters in such words as weigh, side and staff, noting misspellings of students and writing on board the correct spelling for students to compare and see where he, she or they went wrong. Smedley (1983) recommends that teachers design special exercises for the systematic errors of the whole class and ask individuals to keep personal spelling books to record their spelling demons.

To conclude, I dare say that teachers can play a great role in responding to their students' needs. They are the soldiers in the field. They are the best equipped to know what their students need and how to help them. However, teachers need more support, materials and training, to respond to students' needs effectively.

Final Thoughts

      Any change, even if towards the better, needs a lot of time and effort. Although the results of this research suggest that the way spelling is viewed and taught needs to be changed, still much effort needs to be deployed in order to have all stakeholders persuaded of the necessity of change. The Ministry of Education needs to be persuaded to research the seriousness and nature of spelling problems in UAE schools, in order to consider, for example, redesigning curricula and retraining teachers. The efforts of curriculum designers, supervisors, and teachers need to be combined to achieve such a change.

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APPENDIX A

Writing Prompts

Grade 9:
Write a short essay of no less than 150 words about the dangers in your school and solutions. Make sure to include different subtopics in your paragraphs. Pay attention to grammar, vocabulary, punctuation, and spelling.

Grade 10:
Think of a famous player you admire. Then write a detailed descriptive essay about that person. You should write no less than 150 words. Make sure to include different subtopics in your paragraphs. Pay attention to grammar, vocabulary, punctuation, and spelling.

Grade 11:
Write a persuasive essay about overusing computer games. Make sure you:
• include an introduction that states your opinion.
• give at least three reasons to support your opinion
• provide facts and details to support each reason.
• include a descriptive title
• include a conclusion that tells the reader what to do.
You should write no less than 150 words. Pay attention to grammar, vocabulary, punctuation, and spelling.

Grade 12:
Should schools ban junk food? Write an argumentative essay discussing the points of view
that are for or against selling junk food in schools. You should have an introduction, body
paragraph(s), and a conclusion.
You should write no less than 150 words. Pay attention to grammar, vocabulary, punctuation, and spelling.

APPENDIX B

Bio-data Survey

1. Teaching Years:
   ☐ 0-5 ☐ 6-15 ☐ 16-25 ☐ 26+

Number of teaching years in the UAE: _____

2. Classes you currently teach:
   _____
   _____

Students' proficiency level:
☐ Lower intermediate ☐ Intermediate
☐ Upper intermediate ☐ Advanced

Other ……………………………………………………………………………

3. Your average class size:
   ☐ Less than 12 ☐ 12-20 ☐ 21-28 ☐ 28-35 ☐ 35+

APPENDIX C

Likert item questionnaire on attitudes

Section 2:

For each statement below please tick the option that most accurately reflects your personal opinion.

SA = Strongly Agree, A = Agree, DK Do not know D = Disagree, SD = Strongly Disagree

	Statements	SA	A	DK	D	SD
1.	Arab students make too many spelling errors.					
2.	Students lose marks because of their poor spelling.					
3.	Poor spelling makes parts of some students' writing almost impossible to read.					
4.	Some students avoid using some words when they write, because they do not know how to spell them.					
5.	The English spelling system does not have clear rules.					
6.	General English spelling irregularities are the main cause of students' spelling errors.					
7.	The irregularity of the English spelling system causes students to read with difficulty.					
8.	Developing students' spelling can enhance students' writing abilities.					
9.	Developing students' spelling can enhance students' reading abilities.					
10.	I would like to teach spelling, but I do not know the best way to do it.					
11.	Textbooks should include more activities for teaching spelling.					
12.	Spelling is important and needs more attention.					
13.	Students' spelling problems disappear over time without the need for teacher intervention.					
14	English spelling is the least of my worries. I focus on more important aspects of English.					
15.	Students' carelessness is the main cause of spelling errors.					
16.	It is difficult to teach spelling, so I do not pay much attention to it.					
17.	There is a relationship between spelling and students' reading and writing abilities.					
18.	Students' spelling improves significantly as students move to higher grades.					
19.	The main cause of students' spelling errors is the linguistic differences between Arabic and English.					
20.	Students' poor reading and writing proficiency are the cause of students' poor spelling.					
21.	Spelling should only be taught at early stages.					

APPENDIX D

Likert item questionnaire on practices

<u>Section 3:</u>
Please choose from the items below the option that most accurately reflects your current practice in spelling instruction. If you use other strategies, please explain them on the lines below.

Statement	Always	Often	Sometimes	Never
1. I make students copy new words they learn in their notebooks.				
2. I review the spellings of new words constantly.				
3. I draw students' attention to common spelling patterns that can be generalized to a big number of words, such as the effect of "e" on the vowel in words. (e.g. rat vs rate; tub vs tube).				
4. I draw students' attention to irregular spelling and silent letters.				
5. I ask students to memorize words by letters or syllables.				
6. I ask students to memorize words as complete wholes.				
7. I make students practice minimal pairs (e.g. take, bake, sake, fake).				
8. I focus on letters that are not found in Arabic, such as P, V.				
9. I raise students' awareness of the differences between the written systems of Arabic and English.				
10. I devote part of my lessons to teaching spelling.				
11. I make students practice the spelling of the words they misspell by copying them a few times.				

APPENDIX E

Open item questionnaire

<u>Section 4:</u>

1. In the space below, please mention any alternative methods you use to address spelling.
_____
_____

2. Please check the factor(s) that affect(s) your current practices in spelling instruction and responding to students' spelling errors.

☐ The way I learnt English
☐ Students' levels of English proficiency
☐ Students' expectations
☐ Meeting the Ministry of Education assessment policies
☐ Types of errors committed by students
☐ Other(s): (Please specify)

_____
_____

3. Have you ever received any training regarding teaching spelling and responding to spelling errors?
☐ Yes   ☐ No

If Yes, What kind of training have you received? Was the training helpful?
_____
_____

4. Please write any additional comments you would like to make regarding the teaching spelling?
_____
_____
Please fill the information below if you are willing to be interviewed about addressing spelling and responding to English spelling. The interview should take 15-20 minutes.

Name: _____ Mobile: _____

APPENDIX F

Guided interview questions

1. Do you think spelling is important for students? Why?
2. How often do you teach spelling?
3. Do textbooks have enough exercises for teaching spelling?
4. Are you aware of any specific problems that Arab learners of English might have in learning English spelling.
5. Do you know any spelling rules that can help you in teaching English spelling?
6. Have you received any training in teaching spelling before or after graduation?

APPENDIX G

Errors categorized according to type

N.B. 1: The categories "Unrecognizable Words" and "Mixed Problems" are excluded from the overall number of the misspelled words considered for the calculation of percentages

N.B. 2: Each of the following errors occurred once unless followed by frequency number.

Grade 9

Substitution	Omission	Addition	Disordering	Segmentation	Unrecognizable Words	Mixed Problems
adout (about)x 2	ailands (islands)	a lost of (a lot of)	aest (east)		arnt	ailands (island)
anb (and) x2	Arabin (Arabian)	ailands (islands)	Aisa (Asia)		ashare	Aradain (Arabian)
Arad (Arab)x 3	Arabin (Arabian)	bildeing (building)x2	Aradain (Arabian)		babiuto	Arebyn (Arabian)
Aradain (Arabian)x 2	Arebyn(Arabian)	bileiding (building)	bueatifall (beautiful)		boanot	bardrs (borders)x3
Arapian (Arabian)	bardrs (borders)x3	boorder (border)	citeis (cities)		countery	bildeing (building)
Arebia (Arebia)	batful (beautiful)	borbere (border)	cuontry (country)		doebel	bileiding (building)
Arebyn (Arabian)	beachs (beaches)	bordder (border)	eqautor (equator)		maajaratee	borbere (border)
ather (other)	beches (beaches)	buled (build)	freind (friend)		maonmntd	bueatifall (beautiful)
bag (big)	bildeing (building)	caities (cities)	laek (lake)x2		noead	buled (build)
bardrs (borders) x4	bildeing (building)	capitall (capital)	middel (middle)x3		peremant	cabatl (capital)x3
beeches (beaches)	bldng (building)	capitale(capital)	middiel (middle)x3		peroment	cantry (country)x5
beninsula (peninsula)	borderd (bordered)x2	capital(capital)	mountian (mountain)x2		rieegn	cobtal (capital)
bileiding (building)	bordrs (borders)	capitael(capital)	sae (sea)		roujan	cold (called)
bon't (don't) x2	buled (build)	conteenent (continent)	thier (their)x2		saeb	conteenent (continent)
borber (border)	cabatl (capital)	contery (country)			seaeb	content (continent)
borbere (border)	cabtal (capital)	continte (continent)				contery (coutry)
borbers (border)	cantry (country)x5	countinant (continent)				continte (continent)
bueatifall (beautiful)	capetl (capital)	countray (country)				countinant (continent)
butfll (beautiful)	capitl (capital)x2	eett (eat)				desmper (december)
cabatl (capital)	cites (cities)x3	eimartes (emirates)				dsart (desert)
cabetal (capital)	cobtal (capital)	eqator (equator)				eett (eat)
cabital (capital) x7	cold (called)	ferend (friend)				eimartes (emirates)
cabitel (capital)	content (continent)	gullf (gulf)				emarats (emirates)
cabtal (capital)	contery (country)x2	locaeted (located)				emarts (emirates)
cansar (cancer) x2	continte (continent)	middiel (middle)				eqater (equator)
cansist (consist)	contnent (continent)	middil (middle)				ferend (friend)
cantry (country)x5	contry (country)x3	middile (middle)				kadtal (capital)
capitel (capital)	costlin (coastline)	mountenss (mountains)				maontan (mountain)
cety (city)	costline (coastline)	mountine (mountain)x2				mawntan (mountain)
cinter (center)	cties (cities)	ocene (ocean)				middiel (middle)x2
citiys (cities)	cty (city)	okuopaid (occupied)				middil (middle)

101

citys (cities)x5	cty (city)	peapol (people)				mounten (mountain)x2
coantry (country)	desmper (december)	rivere (river)				mountenss (mountain)
cobtal (capital)	driv (drive)x2	uonited (united)				mountine (mountain)
cofer (cover)	drivr (driver)	vaic (vice)				ocene (ocean)
cofers (covers)x2	dsart (desert)x2					okuopaid (occupied)
cold (called)	dsert (desert)					peapol (people)
colled (called)x2	eimartes (emirates)					rait(right)
contanant (continent)	emarts (emirates)					revr (river)
conteenent (continent)	eqater (equator)					rign (region)
content (continent)	eqator (equator)x4					smol (small)x5
continant (continent)x2	est (east)					their (there)
contry (country)	ferend (friend)					vaic (vice)
countinant (continent)	frend (friend)					wither (weather)
countre (country)	hav(high)					
desart (desert)	hav (high)					
desmper (december)	iland (island)					
dezart (desert)	kadtal (capital)					
dig (big)	lak (lake)					
dorbers (borders)x2	lik (like)					
dordered (bordered)x2	maontan (mountain)					
	mawntan (mountain)					
eest (east)x3	middl (middle)					
eett (eat)	mddle(middle)					
eimartes (emirates)	mountains (mountains)					
emarats (emirates)x2	mountan (mountain)x5					
enst (east)	mounten (mountains)x2					
eqater (equator)	mountenss (mountains)					
eqwater (equator)	mountin (mountain)					
eust (east)x2	mountine (mountain)					
fantactic (fantastic)	mountins (mountains)					
golf (gulf)x2	noth (north)					
kabital (capital)	occupid (occupied)					
kadtal (capital)	ocene (ocean)					
lacted (located)	okuopaid (occupied)					
lesten (listen)	peapol (people)					
lokated (located)	permant (permanent)					
maddle (middle)	rait (right)					
majaraty	regon (region)					

(majority)						
mani (many)	revr (river)					
maontan (mountain)	rign (region)					
mawntan (mountain)	rver (river)					
mein (main)	situatd (situated)					
mibbl (middle)	sitated (situated)					
mibble (middle)x3	smol (small)x5					
middla (middle)	sped (speed)					
miny (many)	ther (there)					
moddle (middle)	unted (united)					
mounten (mountain)	vaic (vice)					
mounten (mountain)	were (where)					
mountenss (mountains)	wether (weather)					
mountine (mountain)	wither (weather)x2					
ochen (ocean)						
okuopaid (occupied)						
olmost (almost)						
onether (another)						
parmenent (permanent)						
peoble (people)						
permrnant (permanent)						
porder (border)						
porders (border)						
rait (right)						
regian (region)x2						
rever (river)						
revers (river)x4						
revr (river)						
rifer (river)						
rign (region)						
rivrs (river)						
saven (seven)						
see (sea)						
shangd (changed)						
shanged (changed)						
smol (small)x3						
smoll (small)x3						
svn (seven)						
swath (south)						
thara (there)						
their (there)						
therd (third)						
therd (third)						
thes (this)						
unevercity (university)						
univercity (university)						

university (university)						
vere (very)						
viset (visit)						
wast (west)						
wast (west)						
whare (where)						
wither (wether)						
wither (whether)						
165	117	37	21	0	15	59
39.8%	28.2%	8.9%	5%	0%	3.6%	14.2%

Grade 10

Substitution	Omission	Addition	Disordering	Segmentation	Unrecognizable Words	Mixed Problems
Afreca (africa)	animl (animal)	amainzing (amazing)	balk (black)	bawar full (powerful)	countement	aminzing (amazing)
alwoys (always)x3	ar (are)	animale (animal)	biuld (build)	power ful (powerful)	cr	animells (animals)
amarica (america)	balk (black)	animall (animal)	cear (care)		desaber	baire (bear)
aminzing (amazing)	beacos (because)	animells (animals)	ctiy (city)x2		tish	balk (black)
animells (animals)	bebole (people)	baire (bear)	eghit (eight)		waeit	bawar full (powerful)
apout (about)	becase (because)x2	bawar full (powerful)	gungel (jungle)			bawar full (powerful)
Aredien (Arabian)	because (because)x2	beacos (because)	heat (hate)			beacos (because)
around (around)	becois (because)	bebole (people)	maek (make)			bebole (people)
at's (it's)	becose (because)x3	bigg (big)x2	maet (meat)x2			becois (because)
awey (away)	berlful (beautiful)		meduime (medium)			becose (because)x3
bag (big)	between (between)x2	biotefool (beautiful)	mountian (mountain)			berlful (beautiful)
baire (bear)	beutfol (beautiful)x3	butifull (beautiful)	oen (one)			bertful (beautiful)
bard (bird)	bewtfal (beautiful)	cockroashe (cockroach)	peopel (people)			beutfol (beautiful)
bat (but)	biger (bigger)	collead (called)	prisedent (president)			bewtfal (beautiful)
bawar full (powerful)	biotefool (beautiful)	colore (color)	rozar (razor)			bewtfol (beautiful)
bazart (desert)	bit(bite)	countenent (continenet)	tabel (table)			bewtfol (beautiful)
beacos (because)	bkos (because)	countriy (country)	teak (take)			biotefool (beautiful)
bebole (people)	blak (black)	deanjaras (dangerous)	wiet(white)			bkos (because)
becouse (because)x5	buteful (beautiful)	disgususting (disgusting)				buteful (beautiful)
becois (because)	butifull (beautiful)	eate (eat)				butifull (beautiful)
becose (because)x3	cantry(country)	eemirats (emirates)				cantry (country)
berd (bird)	carot (carrot)	evrery (every)				cheken (chicken)
berlful (beautiful)	cheken (chichen)	faivarate (favorite)				citys (cities)x2
bertful (beautiful)	citys (cities)x2	farme (farm)				cockroashe (cockroach)
best (pest)	cockroches (cockroaches)	femalle (female)				contries (coutries)
beutfol (beautiful)	cockroch (cockroach)	ferest (first)				countenent (continent)
beutfull (beautiful)x2	cockroches cockroaches)x2	hait (hate)				dangeres (dangerous)

104

bewtfal ((beautiful)	contries (countries)	hawas (house)			deanjaras (dangerous)
bewtfol (beautiful)x2	contry (country)x3	hourses (horses)			deferent (different)
bhoto (photo)	dangeres (dangerous)	kyoot (cute)			dengeros (dangerous)
biotefool (beautiful)	dangerus (dangerous)	laion (lion)			dengras (dangerous)
bkos (because)	dangers (dangerous)x3	laion (lion)			dongrous (dangerous)
bogs (dogs)	dangerus (dangerous)	lital (little)			eemirats (emirates)
boor (poor)	dangrous (dangerous)x3	maouis (mouse)			emarat (emirate)
bordars (borders)	deanjaras (dangerous)	may(my)			emirets (emirates)
brawn (brown)	deferent (different)	meduime (medium)			faivarate (favorite)
broblams (problems)	dengeros (dangerous)	nere (near)			ferest (first)
buteful (beautiful)	dengras (dangerous)	powerfull (powerful)			free(very)
butifull (beautiful)	diferent (different)	raceing (racing)			gungel (jungle)
calar (color)	different (different)	rappeits (rabbit)			hait (hate)
called (called)	differnt (different)	shairp (sharp)			hawas (house)
cantry (country)	diseses (disease)	smoal (small)			het (hate)
celled (called)x2	dongrous ((dangerous)	smool (small)			kyoot(cute)
centri (country)	dsrt (desert)	spped (speed)			laik (like)
cheep (sheep)	eemirats (emirates)	taiger (tiger)			laion (lion)x2
cheken (chicken)	emarat (emirates)	taik (take)			lital (little)
cite (city)	emirets (emirates)	warlld (world)			maouis (mouse)
citys (citys)x2	evr (every)	weset (west)			meduime (medium)
clows (claws)	faivarate (favorite)	won (one)			nere (near)
coantry (country)	favourit (favorite)x2	yaelo (yallow)			petwen (between)x2
cockroashe (cockroach)	feard (feared)				rappeits (rabbit)
colar (color)	ferest (first)				smoal (small)
collead (called)	fishs (fishes)				smol (small)x2
colled (called)x2	forst (first)				
contries (countries)	free (very)				smool (small)
contry (country)	frend (friend)				spped (speed)
cood (good)	garbag (garbage)				taik (take)
countenent (continent)	gats (goats)				ward (world)
cowntry (country)	giv (give0				with (white)
dai (die)	gungel (jungle)				won (one)
dangeres (dangerous)	hait (hate)				wuntr (winter)
dangeross (dangerous)	hapy (happy)				yaelo (yellow)
deanjaras (dangerous)	hawas (house)				
deferent (different)	het (hate)				
dengeraus	hom (home)				

(dangerous)					
dengeros(dangerous)	hous (house)x2				
dengras (dangerous)	intresting (interesting)x2				
dig (big)x4	kyoot (cute)				
disgasting (disgusting)	laik (like)				
dongrous (dangerous)	laion (lion)x2				
eeg (egg)	larg (large)				
emarat (emirate)	lik (like)x4				
emirets (emirate)	lital (little)				
ensect (insect)	mamals (mammals)				
examble (example)	mamml (mammals)				
faivarate (favorite)	maouis (mouse)				
ferest (first)	meduime (medium)				
flae (fly)	monky (monkey)				
free (very)	nere (near0				
gangel (jungle)	peple (people)				
gungel (jungle)	personalty (personality)				
hait (hate)	petwen (between)x2				
hangry (hungry)	rappeits (rabbit)				
haw (how)	runing (running)x2				
hawas (house)	shpes (shape)				
het (hate)	sinc (since)				
heve (have)x2	smoal (small)				
hobbe(happy)	smol (small)2				
hoppe (happy)x2	smool (small)				
if (of)	spped (speed)				
indangerd (endangered)	studnts (students)				
jozz (jaws)	taik (take)				
kalar (color)	tomto (tomato)				
kyoot (cute)	typs (types)				
laik (like)	vagtabls (vegetables)				
laion (lion)x2	vist (visit)x4				
lave (love)	ward (world)				
lieve (live)	wiet (white)				
malk (milk)	with (white)				
mammel (mammal)x3	won (one)				
mane (many)	word (world)				
maouis (mouse)	wuntr (winter)				
meddle (middle)	yaelo (yallow)				
meet (meat)x6					
meets (meat)					
most (must)					
oll (all)					
pad (bad)					
pape (baby)					
pard (bird)					
penensula (peninsula)					
peoble (people)x2					

pest (best)						
petwen (between)x2						
proplem (problem)x2						
rapets (rabbit)						
rappeits (rabbits)						
sab (sad)						
sea (see)						
sevan (seven)						
shoose (choose)						
sleeb (sleep)x2						
smoal (small)						
smol (small)						
smoll (small)x2						
smool (small)						
spped (speed)						
taik (take)						
thay (they)						
thim (them)						
thes (this0						
vare (very)x2						
vary(very)x3						
viset (visit)						
ward (world)						
warld (world)						
weth (with)						
won (one)						
worlb (world)x2						
wuntr (winter)						
yaelo (yellow)						
yallow (yellow)x3						
afreca (africa)						
always (always)x3						
194	132	50	20	2	5	65
41.4%	28.2%	10.6%	4.2%	.4%	1%	13.8%

Grade 11

Substitution	Omission	Addition	Disordering	Segment ation	Unrecognizable Words	Mixed Problems
abowt (about)	abot(about)	addectted(addicted)	abuot(about)		moupe	addectted (addicted)
acsedant (accident)	afternoon (afternoon)	angery(angry)	becuas (because)		dicagre	andrstand (understand)
acsidant (accident)	aftr(after)	aumblence(ambulance)	fimaly (family)		mysttenous	arbik(arabic)
addectted (addicted)	al(all)	beatch(beach)	firend (friend)x2		pesh	aumblence (ambulance)
adout (about)	andrstand(understand)	beatoh(beatch)	firnds (friends)		sagart	beatoh(beatch)
afread (afraid)	anther(another)	betsh(beach)	friend (friend)x2			becose (because)x3
ageen (again)	aple(apple)	bicke(bike)	healthy (healthy)			betsh(beach)
andrstand (understand)	Arbik(arabic)	braivr(driver)	heat(hate)			braivr(driver)
anemals (animals)x2	arrivd(arrived)	carfoley (carefully)	mousq (mosque)			buteful (beautiful)
Arbik (arabic)	bac(back)x2	ciete(city)	munite (minute)			carfoley (carefully)
ather (other)	becase(because)	cloude(cloud)	polies (police)			ciete(city)
aumblence (ambulance)	because (because)x3	control(control)	teins(tennis)			coling(calling)

axadent (accident	becose (because)x3	coold(called)	theifs (thieves)		coold(called)
axudent (accident)	becuas(because)	cray(cry)x2	thire(their)		dangras (dangerous)x3
bady (body)	betsh(beach)	crowed(crowd)			dengaras (dangerous)
bark (park)x4	braivr(driver)	eate(eat)			dengarus (dangerous)
beatoh (beatch)	bt (but)	fatbool(football)			fatbool(football)
bebe (baby)	buteful(beautiful)	footbool(football)x2			folt(fault)
becouse (because)x3	carfoley (carefully)	fotbool(football)			fomly(family)
becose (because)x3	carfully (carefully)	hapeen(happen)			fool(fall)
beoause (because)	chldren(children)	hear(here)x4			fotbool(football)
beoble (people)	coling(calling)	laiv(life)			frad(afraid)
betsh(beach)	com(come)	leeg(leg)			frand(friend)
bo(do)	cours(course)	many(money)			grid(grade)
braivr(driver)	damag(damage)	maol(mall)			grob(group)
brathar(brother)	dangras (dangerous)x3	milke(milk)			hapeen(happen)
brather (brother)	dengaras (dangerous)	moal(mall)x3			hapeu(happen)
broplems (problems)	dengarus (dangerous)	mool(mall)			hear(here)x4
buc(bus)	desrt(desert)	niese(nice)			heat(hate)
budy(body)	evry(every)	oclook(o'clock)			iucideut(incident)
buteful(beautiful)	famly(family)x2	oklook(o'clock)			kel(kill)
carfoley (carefully)	fatbool(football)	olld(old)			laiv(life)
ciete (city)	fater(father)	pearson(person)			lisen(lesson)
cless(class)	firnds(friends)	pepol(people)			listen(lesson)
cless(class)	folt(fault)	repliaed(replied)			many(money)
clob(club)	fomly(family)	rodes(roads)			maol(mall)x4
clup(club)	fool(fall)	saite(site)			moask(mosque)
coling(calling)	fotbool(football)	shooping(shopping)			mol(mall)
coold(cold)	frad(afraid)	smokeing (smoking)x3			mool(mall)
cricis(crisis)	frand(friend)	swimm (swim)			mousq(mosque)
curry(carry)	frend(friend)x2	toke(talk)x2			oclook(o'clock)
dangarous(dangerous)	frind(friend)x3	tooke(talk)			oklook(o'clock)
dangras (dangerous)x3	government (government)	towe(two)			pepol(people)
dengaras (dangerous)	grid(grade)	trres(trees)			polies(police)
dengarus (dangerous)	grob(group)	verey(very)x2			rait(right)
dengeras (dangerous)	hapeu(group)	waif(wife)			rodes(roads)
drever(driver)	hapy(happy)	whit(wait)			sam(some)
dut (but)	hear(here)x4				shooping (shopping)
effect (affect)	helthy (healthy)x4				siense(science)x2
en(in)x2	important (important)				slebing(sleeping)
examble (example)	iucideut (incident)				snbay(sunday)
famile(family)	kel(kill)				ste(stay)
fatbool(football)	laiv(lie)				teins(tennis)
finieh(finish)	lern(learn)				toke(talk)x2
folt(fault)	lisen(lesson)x2				took(talk)
fomly(family)	livng(living)				towe(two)
fool(fall)	maol(mall)				trres(trees)
footbool (football)x2	moal(mall)x3				waif(wife)
fotbool(football)	moask(mosque)				wain(when)
frad(afraid)	mol(mall)				wetshen(watching)
frand(friend)	mool(mall)				whit(wait)
freand(friend)	motions				

	(emotions)					
gread(grat)	mousq(mosque)					
grid(grade)	never(never)					
grob(group)	nevr(never)					
groser(grocer)	oclook(o'clock)					
handboll (handball)	officer(officer)					
hapeen(happen)	oklook(o'clock)					
hapeu(happen)	on(one)x2					
hear(here)x4	peple(people)					
heat(hate)	pepol(people)					
held(help)	pleas(pleases)					
hem(him)	ply(play)					
hirting(hurting)	rait(right)					
hosbatel (hospital)	restarant (restaurant)					
hosbetal (hospital)	rit(write)					
humen(human)	rodes(roads)					
hurt(heart)	sam(some)					
imbortant (important)	se(sea)					
iucideut (incident)	shoping (shopping)x2					
i'w(i'm)	shot(shout)					
kel(kill)	siense(science)x2					
laiv(life)	slebing(sleeping)					
lisen(lesson)	smok(smoke)					
listen(lesson)	snbay(sunday)					
manee(money)	ste(stay)					
many(money)	stoped(stopped)					
maol(mall)	stoping(stopping)					
marked(market)	swimming (swimming)x2					
mast(must)	teins(tennis)					
mather (mother)x2	ther(there)					
min(man)	toke(talk)x2					
moal(mall)x3	tomoro (tomorrow)					
moask(mosque)	took(talk)					
mobyl(mobile)	trres(trees)					
mol(mall)	vist(visit)					
mony(many)	visting(visiting)					
mool(mall)	waif(wife)					
mathers(mothers)	wain(when)					
my(me)	waring(wearing)					
nat(not)	wen(when)x2					
naw(now)	wetshen (watching)					
nuw(new)	whil(while)					
offectd(affected)	wite(with)					
oklook(oclock)	wot (what)					
olmost(almost)						
parson(person)						
pepol(people)						
policeman (policeman)						
polies(police)						
proplem (problem)						
rait(right)						
reat (write)						
rele(really)						
riseng(rising)						
sam(some)						
sam(some)						
seck(sick)						
set(sit)						
shildren (children)						
shooping						

(shopping)						
siense(science)x2						
silf(self)						
slebing(sleeping)						
smoll(small)						
snbay(sunday)						
sun(son)						
soo(saw)						
sow(saw)x2						
ste(stay)						
stoped(stopped)						
stueet(street)						
swin(swim)						
teins(tennis)						
thay(they)						
theifs(thieves)						
there(their)						
thes(this)x3						
thin(then)						
think(thank)						
toke(talk)x2						
toled(told)						
tolk(talk)						
took(talk)						
towords(towards)						
trres(trees)						
vere(very)						
waif(wife)						
wain(when)						
wait(wait)						
want(went)						
want(went)						
weak(week)x2						
well(will)x2						
weth(with)						
wetshen (watching)						
whe(why)						
where(were)						
whit(wait)						
wint(wint)						
wite(with)						
186	132	58	17	0	6	73
39.4%	27.9%	12.2%	3.6%	0%	1.2%	15.4%

Grade 12

Substitution	Omission	Addition	Disordering	Segmentation	Unrecognizable Words	Mixed Problems
advantegies (advantages)	advantegies (advantages)	advantegies (advantages)	baecuse(because)	brak fast(breakfast)	cood	advantegies (advantages)
advoce(advice)	advis(advise)	agrreb (agreed)	beacus(because)	braek fast (breakfast)	dekoarial	afekt(affect)
afekt(affect)x2	afect(affect)	aill(all)	because(because)	break fast (breakfast)	delig	agrreb(agrred)
afredeh(everyday)	afekt(affect)	beaza(pizza)	becoes(because)	hot dogs(hotdogs)	fau	beacus(because)
agrreb(agreed)	affct(affect)	because (because)	braek fast(breakfast)	hot dogs(hotdogs)	hoosp	beaza(because)
all an all(all in all)	baning (banning)	beeter(better)	conclousin (conclusion)	over waet (overweight)	its	becoes(because)x2
anather(another)x2	beacus (because)	biad(bad)	dengours (dangerous)	over wight(hotdogs)	ruten	becos(because)x2
anderstand (understand)	beautiful (beautiful)	bissy(busy)	exsampel (example)	some times (sometimes)	scamd	becous(because)
appla(apple)	beaza(because)	bye(by)	fainlly(finally)		schi	beeter(better)
assue(issue)	becase(because)	daihatbiz (diabetes)	filalny(finally)		sike/sick	bekos(because)
ather(other)x6	becomes	dait(diet)	hlath(health)		tan	bices(because)

	(because)					
bady(body)x2	becos(because)	defeictly (difficulty)	maek(make)x2		tiuatrd	bissy(busy)
barger(burger)	becos(because)	deinjres (dangerous)	namouros (numerous)			brak fast(breakfast)
bat(but)x4	becous (because)	diseass (disease)	peolp(people)			brgar(burger)
bay(buy)	bekos(because)	eassay(easy)	restuarent (restaurant)			brobem(problem)
beaza(pizza)	belive(believe)	essay (easy)x2	veiw(view)			coses(causes)
because (because)x6	belive(believe)	exambale (example)x2				daihatbiz(diabetes)
becoes(because)	bices(because)					dait(diet)
becos(because)x2	bissy(busy)	exemepl (example)				dangars (dangerous)
becous(because)	brgar(burger)	faist(first)				dangerous (dangerous)
beeter(better)	brak fast (breakfast)	faster (faster)				danjrs(dangerous)
bekos(because)	brobem (problem)	ferset(first)				decous(because)
bices(because)	coses(causes)	fiarst(first)				decous(because)
bissy(busy)	cuses(causes)	firest(first)				defeictly (difficulty)
bizza(pizza)	daihatbiz (diabetes)	foor(for)				deinjres (dangerous)
bizze(pizza)	dait(diet)	healthe (health)				delechas (delicious)
bod(bad)	dangars (dangerous)	helthe (health)				dengars (dangerous)
bont(don't)	dangerous (dangerous)	matsh (much)				dengours (dangerous)
borgor(burger)	dangrs (dangerous)	moush (much)				dengras (dangerous)x5
brgar(burger)	danjrs (dangerous)	mutch(much)				deses(disease)
brobem (problem)x2	decous (because)	namouros (numerous)				desieses(diseases)
bud(bad)	decous (because)	ore(or)				dinjrs(dangerous)
come(some)	defeictly (difficulty)	overwite (overweight)				dipates (diabetes)
conseder(consider)	deinjres (dangerous)	papol (people)				diseass(diabetes)
coses(cause)	delechas (delicious)	papol (people)				drgar(burger)
daihatbiz(diabetes)	dengars (dangerous)	people (people)				exambale (example)
dait(diet)	dengours (dangerous)	people (people)				exemepl(example)
dangars (dangerous)	dengras (dangerous)	peopol (people)				ferset(first)
dangerous (dangerous)	dengras (dangerous)x3	pepol (people)x3				fob(food)
dangerous (dangerous)	dengres (dangerous)	piepol (people)				footbol(football)
danjrs(dangerous)	deses(disease)	prooplam (problem)				helthe(health)
decous(because)x2	desieses (disease)	shogar (sugar)x2				hlath(health)
defeictly (difficulty)	dinjrs (dangerous)	shoger (sugar)x2				isey(easy)
deinjres (dangerous)	dipates (diabetes)	shogr(sugar)				moush(much)
delechas (delicious)	discssing (discussing)	shouldno't (shouldn't)				namouros (numerous)
delicious (delicious)	diseass(disease)	stoodint (student)				over waet (overweight)x2
dengars (dangerous)	disese (disease)x3	sttoped (stopped)				over wight(overweight)
dengours	don(don't)	student				overwite

(dangerous)		(student)				(overweight)
dengras (dangerous)x4	drgar(burger)	teaste(taste)				peopol(people)
dengres (dangerous)	evry(every)x2	withe(with)				pepol(people)x2
depate(debate)	finaly(finally)	wourld (would)				piepol(people)
deses(disease)	fob(food)					prooplam (problem)
desieses(diseases)	following (following)					putiful(beautiful)
diccus(discuss)	footbol (football)					restorant (restaurant)
dinjrs(dangerous)	giv(give)					restornt (restaurant)
dipates(diabetes)	god(good)					rezens(reasons)
diseass(diseases)	gree(agree)x2					rezons(reasons)
drgar(burger)						sam(some)x6
dangerous (dangerous)	hart(heart)x5					sed(said)
durger(burger)	hav(high)					sem(some)
essay(easy)	helth(health)x2					shogar(sugar)x2
essay(easy)						shoger(sugar)x2
evry(every)	helthe(healthy)					shogr(sugar)
exambale (example)	helthy (healthy)x3					som(some)
examble(example)	hlath(health)					soud(should)
exbensef (expensive)	ho(who)					stoodint(student)
exemepl(example)	isey(easy)					sttoped(stopped)
farst(first)	lik(like)					teaste(taste)
feri(very)	maks(makes)					toak(talk)
ferset(first)	over waet (overweight)					waegt(weight)
fob(food)	over wight (overweight)					writ(right)
footbol(football)	overwite (overweight)					
isey(easy)	people(people)					
jank(junk)x2	people(people)					
leed(lead)	peopol(people)					
matsh(match)						
meel(meal)	pepol(people)x2					
meke(make)	piepol(people)					
mene(many)	pin(pain)					
meny(many)	pople(people)					
most(must)	pitiful (beautiful)					
moush(much)	reson(reason)x4					
mush(much)	restorant (restaurant)					
namouros (numerous)	restornt (restaurant)					
nat(not)	rezens(reasons)					
net(not)	rezons(reasons)					
obinian(opinion)	sam(some)x6					
openion(opinion)	scool(school)					
over waet (overweight)	sed(said)					
overwite (overweight)	sem(some)					
pade(body)	shold(should)					
pan(ban)	som(some)x2					
panama (banana)	soud(should)					
panned(banned)	sttoped (stopped)					
papol(people)	studnt(student)					
peoply(people)	suggest (suggest)					
pepol(people)	sugstion					

	(suggestion)					
pezza(pizza)	ther(there)x2					
piepol(people)	toak(talk)					
prooplam (problems)	waegt(weight)					
proplems (problems)	wher(where)					
put(but)	whos(whose)					
putiful(beautiful)	writ(right)x2					
restorant (restaurant)						
restornt (restaurant)						
rezens(reasons)x2						
sagar(sugar)						
sam(some)x6						
same(some)x2						
saw(say)x2						
sea(say)						
sed(said)						
see (say)						
sem(some)						
sey(say)						
shogar(sugar)						
shoger(sugar)						
shogr(sugar)						
shold(should)						
shugar(sugar)						
shuger(sugar)						
sicandly(secondly)						
socand(second)						
soger(sugar)						
som(some)						
soud(should)						
stomak(stomach)						
stoodint(student)						
studints(student)						
suger(sugar)						
swiet(sweet)						
taday(today)						
teaste(taste)						
thay(they)						
thenk(think)						
there(their)						
thet(that)						
think(thing)						
toak(talk)						
vary(very)x2						
vegetadles (vegetables)						
viow(view)						
waegt(weight)						
warld(world)						
weak(week)						
writ(right)						
write(right)x2						
yas(yes)x2						
182	124	55	17	8	12	86
37.6%	25.6%	11.3%	3.5%	1.6%	2.4%	17.7%

113

APPENDIX H

Errors categorized according to their likely causes

N.B. 1: The category of "Irregularity of English" is divided into two columns for convenience.
N.B. 2: The category "Mixed Problems" is excluded from the overall number of the misspelled words considered for the calculation of percentages
N.B. 3: Each of the following errors occurred once unless followed by frequency number.

Grade 9

Irregularity of English	Irregularity of English	Mother tongue Interference	Lack of Knowledge of Rules	Performance	Mixed Problems
aest (east)x2	majaraty(majority)	adout(about)x2	aest(east)	a lost of (a lot of)	aest(east)
ailands(islands)x2	mani(many)	anb(and)x2	beachs(beaches)	gullf(gulf)	arebyn(arabyn)
aisa(asia)	maonmntd(mountain)	arabin(arabian)x2	borderd (bordered)x2	locaeted (located)	batful(beautiful)
arebia(arabia)	maontan(mountain)	arad(arab)x3	bueatifall(beautiful)	middiel (middle)	bueatifall(beautiful)
arebyn(arabyn)	mawntan(mountain)	aradain(arabian)x2	caities(cities)	middile (middle)	butfll(beautiful)
ashare(?)	mein(main)	arapian(arabian)	capitale(capital)x3	mountenss (mountains)	cabatl(capital)x2
ather(other)	mibbl(middle)	arebyn(arabian)	citeis(cities)		cabetal(capital)
babiuto(?)	middel(middle)x2	bardrs(borders)x4	cites(cities)x3		cabitel(capital)x2
bag(big)	middiel(middle)	batful(beautiful)	citis(cities)		cobtal(capital)
batful(beautiful)	middil(middle)	beninsula (peninsula)	citiys(cities)x6		contery(country)
beches(beaches)	middl(middle)x2	beoble(people)	costlin(coastline)		costlin(coastline)
beeches(beaches)	middla(middle)	bldng(building)	countray(country)		countery (country)
bildeing (building)x2	miny(many)	bont(don't)x2	cties(cities)		desmper (december)
bileiding(building)	mountains(mountain)	borber(border)	cty(city)x2		driv(drive)x2
boanot(?)	mountan (mountain)x7	borbered(bordered)	driv(drive)x2		dsart(desert)
boorder(border)	mounten (mountain)x2	borbers(borders)	drivr(driver)		eest(east)x3
bordder(border)	mountian (mountain)x2	bordred(border)	eest(east)x3		eett(eat)
bueatifall (beautiful)	mountin(mountain)	bordrs(borders)	eett(eat)		emarts(emirates)
buled(build)	mountine(mountain)	bueatifall(beautiful)	eqater(equator)		eqautor(equator)
butfll(beautiful)	mountins(mountains)	butfll(beautiful)	eqator(equator)x4		eust(east)x2
cabatl(capital)x2	noead(?)	cabatl(capital)	eqautor(equator)		ferend(friend)
cabetal(capital)	noth(north)	cabatl(capital)	eqautor(equator)		kabital(capital)
cabitel(capital)x2	occupid(occupied)	cabetal(capital)	eqwater(equator)		kadtal (capital)
cansar(cancer)	ocene(ocean)	cabital(capital)x7	eust(east)x2		laek(lake)
canser(cancer)	ochen(ocean)	cabitel(capital)	fantactic(fantastic)		lak(lake)
cansist(consist)	okuopaid(occupied)	cabtal(capital)	friend(friend)		mani(many)
cantry(country)x6	olmost(almost)	capetl(capital)	lacted(located)		mibbl(middle)
capetal(capital)	onether(another)	capitl(capital)x2	laek(lake)x2		mountian (mountain)x2
cety(city)	parmenent (permanent)	cobtal(capital)	lak(lake)		mountine (mountain)
cinter(center)	peapol	cofer(cover)	lik(like)		revr(river)
coantry(country)	peremant(permanent)	cofers(covers)x2	mani (many)		rieegn(region)
cobtal(capital)	permant(permanent)	contery(country)	mountian (mountain)x2		sae(sea)
cold/called	permrnant (permanent)	contnent(continent)	mountine (mountain)		shangd(changed)
colled(called)	peroment(permanent)	country(country)	regon(region)		smoll(small)x3
colled(called)	rait(right)	desmper(december)	rign (region)		university (university)
contanant (continent)	regian(region)	dig(big)	shangd(changed)		vaic(vice)
conteenent (continent)	regian(region)	dorbers(borders)x2	situatd(situated)x2		
content(continent)	rever(river)	dordered(bordered)			
contery(country)	revers(rivers)x4	dsart(desert)			

continant (continent)x2	revr(river)	dsert(desert)			
continte(continent)	rieegn(region)	emarts(emirates)			
contry(country)x6	rivere(river)	ferend(friend)			
costlin(coastline)	roujan(?)	kabital(capital)			
costline(coastline)	sae(sea)	kadtal (capital)			
countery(country)	saeb(?)	mani(many)			
countinant (continent)	saven(seven)	mibbl(middle)			
countre(country)	seaeb(?)	mibble(middle)x3			
cuontry(country)	see(sea)	moddle(middle)			
desart(desert)	shangd(changed)	porder(border)x2			
desmper (december)	smol(small)x5	revr(river)			
dezart(desert)	smoll(small)x3	rieegn(region)			
doebel(?)	sped(speed)	rifer(river)			
driv(drive)x2	swath(south)	rivrs(rivers)			
dsart(desert)	thara(there)	rver(river)			
eest(east)x3	their(there)x2	sae(sea)			
eett(eat)	ther(there)	shangd(changed)			
eimartes(emirates)	therd(third)	shanged(changed)			
emarats(emirates)	thes(this)	smoll(small)x3			
emarts(emirates)	unevercity (university)				
enst(east)	university (university)				
eqautor(equator)	university (university)				
est(east)	unted(united)				
eust(east)x2	vaic(vice)				
ferend(friend)	vere(very)				
frend(friend)x3	viset(visit)				
golf(gulf)x2	wast(west)				
hav(have)x2	wast(west)				
iland(island)	were(where)				
kabital(capital)	wether(weather)				
kadtal (capital)	whare(where)				
laek(lake)	wither(weather)				
lak(lake)					
lesten(listen)					
located(located)					
maddle(middle)					
	191	84	61	6	46
	49.2%	21.6%	15.7%	1.5%	11.8%

Grade 10

Irregularity of English	Irregularity of English	Mother tongue Interference	Lack of Knowledge of Rules	Performance	Mixed Problems
Afreca(Africa)	faivarate (favourite)	mamml(mammal)	animale(animal)	Aredien (arabian)	mamml (mammal)
alwoys(always)x3	farme(farm)	animl(animal)	animall(animal)	at's(it's)	animale(animal)
mamml(mamal)	favourit (favourite)x2	apout(about)	balk(black)x2	bazart (desert)	animall(animal)
amarica(america)	female(female)	aredien(arabian)	bawar full(powerful)	bebole (people)	aredien(arabian)
aminzing(amazing)	frend(friend)	bawar full(powerful)	biger(bigger)	broblams (problems)	balk(black)
animale(animal)	gats(goats)	bazart(desert)	bigg(big)x2	cear (care)	bawar full(powerful)
animall(animal)	giv(give)	bebole(people)	bit(bite)	cood (good)	bazart(desert)
animells(animal)	hait(hate)	best(pest)	blak(black)	cr(?)	bebole(people)
ar(are)	hangry(hungry)	bhoto(photo)	butifull(beautiful)	disgususting(digusting)	bkos(because)
Aredien(Arabian)	hapy(happy)	bkos(because)	calld(called)	disgususting(digusting)	broblams (problems)
around(around)	haw(how)	bogs(dogs)	carot(carrot)	evrery (every)	cear (care)

awey(away)	hawas(house)	boor(poor)	cear (care)	if(of)	dangers (dangerous)
bag(big)	heat(hate)	borbers(borders)	celled(called)x2	with(white)	farme(farm)
baire(bear)	het (hate)	broblams(problem)	centri (country)		hait(hate)
balk(black)	heve(have)x2	cear (care)	citys(cities)x2		hapy(happy)
bard(bird)	hobbe(hobby)	dangers (dangerous)x2	cockroashe(cockroaches)		heat(hate)
bat(but)	hom(home)	dig(big)x4	collead(called)		het (hate)
bawar full(powerful)	hoppe(hobby)x2	dngers(dangerous)	colore(colour)		hobbe(hobby)
bazart(desert)	hourses(horses)	dsrt(desert)	ctiy(city)x2		hom(home)
beacos(because)	hous(house)x2	evr(ever)	dai(die)		hoppe(hobby)x2
bebole(people)	intresting (interesting)x2	examble(example)	dangerous (dangerous)x3		laik(like)
becase(because)x2	jozz(jaws)	ferest(first)	dengras(dangerous)		lik(like)x4
	kalar	forst(forest)	dongrous (dangerous)		maek(make)
becouse(because)x6	kyoot(cute)	free(very)	eeg(egg)		maet(meat)
becois(because)	laik(like)	hobbe(hobby)	farme (farm)		maet
becose(because)x3	laion(lion)x2	pad(bad)	feard(feared)		mammals
berd(bird)	lave(love)	pape(baby)	fishs(fishes)		mane
berlful(beautiful)	lieve(live)	pard(bird)	flae(fly)		mountian
bertful(beautiful)	lik(like)x4	peoble(people)x2	gangel(jungle)		oll
between	lital (little)		garbag(garbage)		pape(baby
between	maek(make)	personalty(personality)	gungel(jungle)		personalty
beutfol(beautiful)	maet(meat)x2	pest(best)	hait(hate)		powerfull
beutfull(beautiful)x2	malk(milk)	petwen(between)x2	hapy(happy)		rapets
	mammals (mammals)		heat(hate)		shpes(shape)
bewtfal(beautiful)	mammal (mammal)x3	proplem(problem)	het (hate)		smoal(small)
bewtfol(beautiful)x2	mane(many)	rapets(rabbits)	hom(home)		smol(small)x2
biotefool(beautiful)	maouis(mouse)	rappeits(rabbits)	hoppe(hobby)x2		smoll(small)x2
biuld(build)	meddle(middle)	sab(sad)	indangerd (endangered)		smool(small)
bkos(because)	meduime (medium)	shoose(choose)	laik(like)		taik(take)
brawn(brown)	meet(meat)x7	shpes(shape)	larg(large)		teak(take)
broblams(problem)	monky(monkey)	sleeb(sleep)x2	lik(like)x4		
buteful(beautiful)	most(must)	studnts(students)	maek(make)		
butifull(beautiful)	mountian (mountain)	tomto(tomato)	maet(meat)x2		
calar(colour)	my(may)	vist(visit)x4	mamals(mammals)		
cantry(country)	nere(near)	weset(west)	mane(many)		
carot(carrot)	oen(one)	worlb(world)	mountian (mountain)		
cheep(cheap)	oll(all)		oll(all)		
cheken(chicken)	pape(baby)		powerfull(powerful)		
cite(city)	peninsula (peninsula)		raceing(racing)		
clows(claws)	people(people)		rapets(rabbits)		
coantry(country)	peple(people)		runing(running)x2		
cockroaches (cockroaches)	personalty (personality)		shpes(shape)		
cockroch(cockroach)	power ful(powerful)		sinc(since)		
cockroaches (cockroaches)	powerfull (powerful)		smoal(small)		
cockroaches (cockroaches)	prisedent (president)		smol(small)x2		
colar(colour)	rozar(razor)		smoll(small)x2		
colled(called)x2	sea(sea)		smool(small)		
colore(colour)	sevan(seven)		taik(take)		
contries(countries)	shairp(sharp)		teak(take)		
contry(country)x4	smoal(small)		typs(types)		
countement (continent)	smol(small)x2				
countenent(continent)	smoll(small)x2				
countriy(country)	smool(small)				
cowntry(country)	spped(speed)				
dai(die)	table(table)				
dangeres(dangerous)	taiger(tiger)				

dangeross(dangerous)	taik(take)				
dangerous (dangerous)	teak(take)				
dangers(dangerous)	thay(they)				
dangerus(dangerous)	them(them)				
deanjaras(dangerous)	thes(this)				
deferent(different)	tish(?)				
dengeraus (dangerous)	typs(types)				
dengeros(dangerous)	vare(vary)x2				
desaber(december)	vary(very)x3				
diferent(different)	viset(visit)				
different(different)	waeit(white)				
different(different)	ward(world)				
diseses(disease)	warld(world)				
disgasting (disgusting)	weth(with)				
eate(eat)	wiet(white)				
eeg(egg)	won(one)				
eemirats(emirates)	word(world)				
eghit(eight)	wuntr(winter)				
emarat(emirate)	yaelo(yellow)				
emirets(emirate)	yallow(yellow)x3				
ensect(insect)					
	213	55	75	13	46
	52.9%	13.6%	18.6%	3.2%	11.4%

Grade 11

Irregularity of English	Irregularity of English	Mother tongue Interference	Lack of Knowledge of Rules	Performance	Mixed Problems
abot(about)	lisen(lesson)x2	adout(about)	abuot(about)	beatoh (beatch)	abuot (about)
abowt(about)	manee(money)	aftr(after)	addectted(addicted)	beoause (because)	addectted (addicted)
abuot(about)	many(money)	andrstand (understand)	afternon(afternoon)	goin (going)	afternoon (afternoon)
acsedant(accident)	maol(mall)	angery(angry)	ageen(again)	hapeu (happen)	ageen(again)
acsidant(accident)	mast(must)	aple(apple)	al(all)	iucideut (incident)	al(all)
addectted(addicted)	mather(mother)x2	arbik(arabic)	arrivd(arrived)	i'w(i'm)	andrstand (understand)
afread(afraid)	milke(milk)	bark(park)x4	bac(back)	swin(swim)	angery(angry)
afternon(afternoon)	min(man)	beoble(people)	bak(back)	wetshen (watching)	aple(apple)
ageen(again)	moal(mall)x3	bo(do)	bicke(bike)		bac(back)
al(all)	moask(mosque)	braivr(driver)	buc(bus)		braivr(driver)
andrstand(understand)	moby(maybe)	broplems (problems)	carfoley(carefully)		carfoley (carefully)
angery(angry)	mol(mall)	bt (but)	coold(called)		clob(club)
animals(animals)x2	mony(money)	clup(club)	damag(damage)		coold(cold)
	mool(mall)	desrt(desert)	dangras (dangerous)x3		firend(friend)x2
anther(another)	mathers(mothers)	dut(but)	dengaras(dangerous)		firnds(friends)
aple(apple)	motions(emotions)	examble (example)	dengarus(dangerous)		fomly(family)
arbik(arabic)	moupe(?)	famly (family)x2	fater(fatter)		fool(fall)
ather(other)	munite(minute)	firend (friend)x2	fool(fall)		footbool (football)x2
aumblence(ambulance)	my(me)	firnds(friends)	footbool(football)x2		fotbool(football)
axadent(accident)	mysttenous(?)	fomly(family)	fotbool(football)		grob(group)
axudent(accident)	nat(not)	grob(group)	friend(friend)		handboll (handball)
bac(back)	naw(now)	held(help)	friend(friend)		hapeen(happen)
bady(body)	never(never)	hosbatel (hospital)	friends(friends)		hapy
beatch(beach)	niese(nice)	hosbetal (hospital)	handboll(handball)		heat(hate)
bebe(baby)	nuw(new)	imbortant (important)	hapeen(happen)		hosbatel (hospital)

118

becase(because)	oclook(o'clock)	livng(living)	hapy		kel(kill)
becouse(because)x6	offectd(affected)	nevr(never)	heat(hate		laiv(live)
becose(because)x3	officer(officer)	olb(old)	kel(kill)		leeg(leg)
becuas(because)	oklook(o'clock)	proplem (problem)	laiv(life)		mol(mall)
betsh(beach)	olmost(almost)	shildren (children)	leeg(leg)		mool(mall)
braivr(driver)	on(one)	slebing (sleeping)	marked(market)		offectd(affected)
brathar(brother)	on(one)	snbay(sunday)	mol(mall)		ply(play)
brather(brother)	parson(person)	vist(visit)	mool(mall)		rit(write)
budy(body)	pearson(person)		mousq(mosque)		smok(smoke)
buteful(beautiful)	peple(people)		offectd(affected)		smoll(small)
carfoley(carefully)	pepol(people)		ply(play)		teins(tennis)
carfully(carefully)	pesh(?)		riseng(rising)		theifs(thieves)
children (children)	piliceman(policeman)		rit(write)		thire(their)
ciete(city)	pleas(please)		shooping(shopping)		toke(talk)
cless(class)x2	ply(play)		shoping(shopping)x2		toke(talk)
clob(club)	polies(police)		smok(smoke)		toled(told)
cloude(cloud)	rait(right)		smokeing(smoking)		took(talk)
coling(calling)	reat (write)		smokeing (smoking)x2		verey(very)x3
com(come)	rele(really)		smoll(small)		
controul(control)	repliaed(replied)		stoped(stopped)x2		
coold(called)	restarant(restaurant)		stoping(stopping)		
cours(course)	rit(write)		swimm(swim)		
cray(cry)x2	rodes(roads)		swimming (swimming)x2		
cricis(crisis)	sagart(?)		teins9tennis)		
crowed(crowd)	sam(some)x2		theifs(thieves)		
curry(carry)	sate(?)		thire(their)		
dangerous(dangerous)	se(see)		toke(talk)x2		
dengeras(dangerous)	seck(sick)		toled(told)		
dicagre(dangerous)	set(sit)		took(talk)		
drever(driver)	shot(shout)		verey(very)x3		
eate(eat)	siense(sience)x2		wetshen(watching)		
effect (affect)	silf(self)				
en(in)x2	smok(smoke)				
evry(every)	smoll(small)				
famile(family)	son(sun)				
fatbool(football)	soo(saw)				
fimaly(family)	sow(saw)x2				
finieh(finish)	ste(stay)				
firend(friend)x2	stueet (street)				
firnds(friends)	teins(tennis)				
folt(fault)	thay(they)				
fomly(family)	theifs (thieves)				
fool(fall)	ther(there)				
footbool	there(their)				
footbool(football)	thes(this)x3				
fotbool(football)	thin(then)				
frad(afraid)	think(thank)				
frand(friend)	thire(their)				
freand(friend)	toke(talk)x2				
frend(friend)x2	toled(told)				
frind(friend)x4	tolk(talk)				
government (government)	tomoro(tomorrow)				
grid(grade)	took(talk)				
grob(group)	towe(two)				
groser(grocer)	towords(towards)				
handboll(handball)	trres(trees)				
hapeen(happen)	vere(very)				
hapy(happy)	verey(very)x3				
healthy	waif(wife)				
hear(here)x4	wain(when)				
heat(hate)	wait(wait)				
helthy(healthy)x4	want(went)x2				
hem(him)	waring(wearing)				
hirting(hurting)	weak(week)x2				
hosbatel(hospital)	well(will)x2				
humen(human)	wen(when)x2				

hurt(hurt)	weth(with)				
important(important)	whe(why)				
kel(kill)	where(were)				
laiv(life)	whil(while)				
leeg(leg)	whit(wait)				
lern(learn)	wint(went)				
	wont(want)				
	243	40	67	8	47
	60%	9.8%	16.6%	1.9%	11.6%

Grade 12

Irregularity of English	Irregularity of English	Mother tongue Interference	Lack of Knowledge of Rules	Performance	Mixed Problems
advantegies (advantages)	hot dogs(hotdogs)	afredeh(everyday)	advantegies (advantage)	advoce (advice)	advantegies (advantage)
advis(advise)	hot dogs(hotdogs)	agrreb(agreed)	afect(affect)	aill(all)	advis(advice)
advoce(advice)	isey(easy)	beaza(pizza)	afekt(affect)x2	all an all (all in all)	advoce(advice)
afect(affect)	jank(junk)x2	bizza(pizza)	bay(buy)	appla (apple)	afect(affect)
afekt(affect)x2	leed(lead)	bont(don't)	beacus(because)	ats(its)	afekt(affect)x2
affict(affect)	lik(like)	brgar(burger)	beeter(better)	bod(bad)	afredeh(everyday)
afredeh(everyday)	maek(make)x2	brobem(problem)	brgar(burgar)	brobem (problem)	agrreb(agreed)
agrreb(ageed)	maks(makes)	broblems(problem)	conclousin (conclusion)	don(don't)	aill(all)
aill(all)	matsh(much)	dangars (dangerous)x2	cuses(causes)	faist(first)	all an all(all in all)
all an all(all in all)	meel(meal)	dangrs (dangerous)x3	dangars (dangerous)	gonna (going to)	appla(apple)
anather(another)	meke(make)	danjrs (dangerous)x2	dangerous (dangerous)	panama (banana)	bay(buy)
anather(another)	mene(many)	decous(because)	dangrs (dangerous)	peoply (people)	beacus(because)
anderstand (understand)	meny(many)	dengars(dangerous)	dengars (dangerous)x3	soud (should)	beeter(better)
appla(apple)	most(must)	dengours (dangerous)	dengours (dangerous)		bod(bad)
assue(issue)	moush(much)	dengras(dangerous)	dengres (dangerous)		brgar(burger)
ather(other)x6	mutch(much)	depate(debate)x2	diccus(discuss)		brobem(problem)
ats(its)	namouros(numerous)	dipates(debate)x2	finaly(finally)		cuses(causes)
bady(body)x2	nat(not)	discssing (discussing)	fob(food)		dangars (dangerous)x2
baecuse(because)	net(not)	drgar(burgar)	god(good)		dangrs(dangerous)x2
barger(burger)	obinian(opinion)	durger(burger)	lik(like)		danjrs(dangerous)
bat(but)x4	openion(opinion)	exambale(example)	maek(make)		decous(because)x2
bay(buy)	ore(or)	exambale(example)	maek(make)		dengars (dangerous)x4
beacus(because)	over waet(overweight)	examble(example)	maks(makes)		dengours(dangerous)
beautiful(beautiful)	over wight(overweight)	exbensef (expensive)	meke(make)		dengres(dangerous)
becase(because)	overwite(overweight)	fainlly(finally)	mene(many)		dipates(diabetes)
becouse(because)x8	pade(body)	feri(very)	overwite (overweight)		drgar(burger)
becoes(because)	papol(people)	ferset(first)	pade(body)		exbensef(expensive)
becos(because)x2	peolp(people)x3	firest(first)	pin(pain)		fainlly(finally)
becous(because)	peoplue(people)	fob(food)	ression(reason)		feri(very)
beeter(better)	peopol(people)	follwing(following)	sagar(sugar)		ferset(first)
bekos(because)	pepol(people)x2	gree(agree)x2	same(some)x3		finaly(finally)
belive(believe)x2	pezza(pizza)	hlath(health)	see (say)		god(good)
biad(bad)	piepol(people)	matsh(much)	shouldno't		lik(like)

			(shpouldn't)		
bices(because)	pin(pain)	moush(much)	sike(sick)		maek(make)x2
bissy(busy)	pople(people)	mush(much)	soger(sugar)		maks(makes)
bizze(pizza)	prooplam(problem)	obinian(opinion)	sttoped(stopped)		matsh(much)
bod(bad)	putiful(beautiful)	pade(body)	sugstion (suggestion)		meke(make)
borgor(burger)	reisen(reason)	pan(ban)	teaste(taste)		mene(many)
braek fast(breakfast)	reson(reason)	panama(banana)	toak(talk)		moush(much)
brak fast(breakfast)	resons(reasons)x3	panned(banned)	veiw(view)		obinian(opinion)
break fast(breakfast)	ression(reason)	prooplam(problem)			overwite(overweight)
brgar(buger)	restorant(restaurant)	proplems(problems)			pade(body)
bud(bad)	restornt(restaurant)	put(but)			pin(pain)
bye(buy)	restuarent (restaurant)	putiful(beautiful)			prooplam(problem)
conseder(consider)	rezens(reason)	restornt(restaurant)			putiful(beautiful)
cood(?)	rezons(reasons)	restornt(restaurant)			ression(reason)
coses(cause)	ruten(?)	shogr(sugar)			restornt(restaurant)
cuses(causes)	sam(some)x6	soger(sugar)			same(some)x3
daihatbiz(diabetes)	same(some)x3	studnt(student)			see (say)
dait(diet)	saw(say)x2	vegetadles (vegetable)			shogr(sugar)
dangars (dangerous)x2	scamd(?)				sike(sick)
dangars(dangerous)	schi(?)				soger(sugar)
dangerous (dangerous)	schol(school)				soud(should)
dangrs (dangerous)x2	sea(say)				teaste(taste)
danjrs(dangerous)	sed(said)				
decous(because)x2	see (say)				
defeictly(difficulty)	sem(some)				
deinjres(dangerous)	sey(say)				
dekoarial(?)	shogar				
delechas(delicious)	shoger(sugar)				
delicious(delicious)	shogr(sugar)				
delig(?)	shold(should)				
dengars(dangerous)	shold(should)				
dengours (dangerous)	shugar(sugar)				
dengras (dangerous)x3	shuger(sugar)				
dengres(dangerous)	sicandly(secondly)				
deses(disease)	sike(sick)				
desieses(diseases)	socand(second)				
dinjrs(dangerous)	soger(sugar)				
dipates(diabetes)	som(some)x2				
diseass(disease)	some times(sometimes)				
disese(disease)x2	soud(should)				
diseses(disease)	stomak(stomach)				
drgar(burger)	stoodint(student)				
dangerous (dangerous)	studant(student)				
eassay(easy)	studants(students)				
essay(easy)x2	suger(sugar)				
evry(every)x3	sugest(suggest)				
exbensef (expensive)	swiet(sweet)				
exemepl(example)	taday(today)				
exsampel(example)	tan(ten)				
fainlly(finally)	teaste(taste)				
farst(first)	thay(they)				
fasster(faster)	thenk(think)				
fau(?)	ther(there)x3				
feri(very)	thet(that)				
ferset(first)	think(thank)				
fiarst(first)	tiuatrd(tired)				
filalny(finally)	toak(talk)				
finaly(finally)	vary(very)x2				
foor(four)	viow(view)				

footbol(football)	waegt(weight)				
giv(give)	warld(world)				
god(good)	weak(week)				
hart(heart)x2	wher(where)				
hav(have)	whos(whose)				
healthe(health)	whosis(whose)				
helth(health)x2	weth(with)				
helthe(health)	wourld(world)				
helthy(healthy)x3	writ(right)				
ho(wh0)	write(right)x2				
hoosp(?)	yas(yes)				
	257	59	45	13	64
	58.6%	13.4%	10.2%	2.9%	14.6%

APPENDIX I

Results for Bio-data survey

Teachers: Public School Teachers
Number of Respondents: 7 teachers
Gender: Males
Teaching Experience: 4- 25
Classes: 9-12
Students' proficiency level: Lower intermediate to Upper intermediate

APPENDIX J

Results for attitudes questionnaire

For each statement below please tick the option that most accurately reflects your personal opinion.

SA = Strongly Agree, A = Agree, DK Do not know D = Disagree, SD = Strongly Disagree

	Statements	SA	A	DK	D	SD
1.	Arab students make too many spelling errors.		7			
2.	Students lose marks because of their poor spelling.	2	5			
3.	Poor spelling makes parts of some students' writing almost impossible to read.	2	3	1	1	
4.	Some students avoid using some words when they write, because they do not know how to spell them.	3	4			
5.	The English spelling system does not have clear rules.		4		2	1
6.	General English spelling irregularities are the main cause of students' spelling errors.	1	2	3	1	
7.	The irregularity of the English spelling system causes students to read with difficulty.		4	1	2	
8.	Developing students' spelling can enhance students' writing abilities.	5	2			
9.	Developing students' spelling can enhance students' reading abilities.	3	4			
10.	I would like to teach spelling, but I do not know the best way to do it.	1	2	2	2	
11.	Textbooks should include more activities for teaching spelling.	4	3			
12.	Spelling is important and needs more attention.	2	5			
13.	Students' spelling problems disappear over time without the need for teacher intervention.		1		3	3
14.	English spelling is the least of my worries. I focus on more important aspects of English.		1		5	1
15.	Students' carelessness is the main cause of spelling errors.	1	4		2	
16.	It is difficult to teach spelling, so I do not pay much attention to it.			1	5	1
17.	There is a relationship between spelling and students' reading and writing abilities.	1	5	1		

18.	Students' spelling improves significantly as students move to higher grades.	1	1	2	3	
19.	The main cause of students' spelling errors is the linguistic differences between Arabic and English.		3	2	1	1
20.	Students' poor reading and writing proficiency are the cause of students' poor spelling.	3	1		3	
21.	Spelling should only be taught at early stages.		1	2	4	

APPENDIX K

Results for practices questionnaire

Please choose from the items below the option that most accurately reflects your current practice in spelling instruction. If you use other strategies, please explain them on the lines below.

Statement	Always	Often	Sometimes	Never
1. I make students copy new words they learn in their notebooks.	2	1	4	
2. I review the spellings of new words constantly.		3	3	1
3. I draw students' attention to common spelling patterns that can be generalized to a big number of words, such as the effect of "e" on the vowel in words. (e.g. rat vs rate; tub vs tube).	2	3	2	
4. I draw students' attention to irregular spelling and silent letters.	2	4	1	
5. I ask students to memorize words by letters or syllables.		3	3	1
6. I ask students to memorize words as complete wholes.	1	3	3	
7. I make students practice minimal pairs (e.g. take, bake, sake, fake).	1	1	4	1
8. I focus on letters that are not found in Arabic, such as P, V.		3	2	2
9. I raise students' awareness of the differences between the written systems of Arabic and English.	1		6	
10. I devote part of my lessons to teaching spelling.		1	5	1
11. I make students practice the spelling of the words they misspell by copying them a few times.		3	2	2

APPENDIX L

Answers to open item questionnaire

Question 1:

In the space below, please mention any alternative methods you use to address spelling (Only five teachers responded to this question).

1. I concentrate on using and pronouncing the prefixes correctly, and asking them to make and form words at home.

2. I usually adopt the homophone techniques, as to/two, way/weigh …etc. I think this is a good way to overcome some spelling difficulties.

3. Frankly speaking, I do not have any alternative method to teach spelling. I often rely on the materials presented the textbook.

4. I think it would be better for teachers to focus on teaching spelling at the early stages by asking students to copy paragraphs or short chunks several times.

5. I dictate students some of the words that they would need in paragraphs I ask them to write later on. Additionally, students are asked to distinguish between sounds and spelling.

Question 2:

Please check the factor(s) that affect(s) your current practices in spelling instruction and responding to students' spelling errors.

(Note: Next to each item, the number of teaches who chosen it is added).

☐ The way I learnt English/ 3 teachers

☐ Students' levels of English proficiency/ 3 teachers

☐ Students' expectations/0 teachers

☐ Meeting the Ministry of Education assessment policies/ 4 teachers

☐ Types of errors committed by students/ 3 teachers

☐ Other(s): (Please specify)/ (only two teachers added their own comments to this section).

   1. The lack of time during the class. The lack of given course and workshops that deal with this issue.

   2. Students' carelessness.

Question 3:

Have you ever received any training regarding teaching spelling and responding to spelling errors?

☐ Yes/ none of the teachers   ☐ No/ 7 teachers

Question 4:

Please write any additional comments you would like to make regarding the teaching spelling. Only three teachers added their comments to this section.

1. The English teacher in the UAE government schools is an executor who is appointed to carry out the instructions and follow the guidelines of the Ministry of Education.

2. a. We need more workshops.

   b. Giving them a spelling rule everyday with examples. Changing the books to be suitable to what I want to teach.

3. I think that daily reading and writing focusing on some difficult words and memorizing them will help students to do well in spelling.

APPENDIX M

Answers to guided interview questions

Interview 1:

1. Do you think spelling is important for students? Why?

"Of course, it is important. Otherwise, how can we communicate in writing? It is an important part of the writing skill. Sometimes, it is impossible for me to understand parts of what some of my students write because of their bad handwriting and spelling."

2. How often do you teach spelling?

"Frankly, rarely; it is not that I do not want to teach it, but it is sometimes difficult to find enough time for it. I prefer to cover the items in the textbook and train students on exams. Additionally, students do not want to exert effort on learning spelling. They are just careless. When students show carelessness towards learning spelling, this causes frustration to teachers and makes them ignore teaching spelling."

Follow up question: Why do you think they are careless?

"I do not know. May be because it is difficult. Many students are careless by nature."

3. Do textbooks have enough exercises for teaching spelling?

"There are few exercises here and there, but I do not think that there are enough exercises."

Follow up question: Do you feel that students spelling proficiency improve as they move to higher grades?

"There might be some improvement, but students keep committing so many spelling errors until they leave school."

4. Are you aware of any specific problems that Arab learners of English might have in learning English spelling?

"Well, I think silent letters are a big problem. They have also a problem with vowels. Students tend to confuse vowels."

5. Do you know any spelling rules that can help you in teaching English spelling?

"Yes, sure. There are rules that govern how we can make the plural of nouns and double last letters."

Follow up question: How often do you teach these rules?

"Frankly, I do not have a certain time for that. Whenever I notice a spelling problem and have time, I draw students' attention to such rules."

Follow up question: Do you know what the purpose of adding an *e* at the end of some words is? "No, I think it is one of English irregularities."

6. Have you received any training in teaching spelling before or after graduation?

"No. Not even in university. I feel sometimes that they should include the teaching of spelling in some training programs. We never have training programs on spelling instruction, although we are required to penalize students for spelling errors. Our training usually focuses on teaching most aspects of English except for spelling."

Interview 2:

1. Do you think spelling is important for students? Why?

"Sure. If the spelling is bad, understanding what students write becomes hard. Also, some of my students ask me to spell some words for them in composition exams. If I refuse, they refrain from using those words, even if the words seem to be very expressive."

2. How often do you teach spelling?

"When I notice a problem, I draw students' attention to it. The problem is that I do not have much time. The textbooks that we use are overloaded"

3. Do textbooks have enough exercises for teaching spelling?

"Not at all. There are some activities, but I do not think they are enough. Otherwise, students would not have so many spelling problems."

4. Are you aware of any specific problems that Arab learners of English might have in learning English spelling.

"The irregularity of English is the main reason. English has unclear rules for spelling. If it has clear rules like in Arabic, the task for us and students will become much easier. However, there are some rules that can be helpful to students."

5. In the survey you suggested teaching a spelling rule daily? Can you explain what you mean?(Instead of "Do you know any spelling rules that can help you in teaching English spelling?")

The rules that govern pluralizing nouns, such as changing the *y* into *ies* in nouns that end in *y*, such as the word *family*. Also the suffixes of nouns like *tion*, *sure*, *ture*, because they have the same pronunciation and spelling. So when students hear the sound of these letters, they will be able to spell them and vice versa. This will help them read quickly. I feel that those students who read well are usually good spellers."

Follow up questions: Do you know any other rules? For example, do you know the effect of the double *p* in the word happy?

" Not, really. I mostly know the general spelling rules."

Follow up question: How much improvement do students achieve in spelling proficiency as they move to higher grades?

"Very little, because students make similar errors at all levels."

Follow up question: What do you think the reason is?

"Simply, we do not teach spelling."

6. Have you received any training in teaching spelling before or after graduation?

"No."

Interview 3:

1. Do you think spelling is important for students? Why?

"Yes. Without spelling, our writing will be unreadable. Additionally, spelling errors make students lose marks."

Follow up question: How does spelling affect students' grades?

"First, part of the grade in exams goes for spelling and punctuation. Also, if spelling affects the readability of what students write, surely the will get no marks for what they have written."

2. How often do you teach spelling?

"Frankly, I rarely teach any spelling rules. I leave it for the students to learn the spelling of words. I have more important things to worry about." I do not have enough time during lessons. Additionally, if I decide to teach spelling, I will need to make my own activities. It is difficult to do so."

3. Do textbooks have enough exercises for teaching spelling?

"No. Spelling activities are absent from textbooks and I do not understand why, since students have a lot of spelling problems."

4. Are you aware of any specific problems that Arab learners of English might have in learning English spelling?

"Everthing. Silent letters, doubled letters, the letters that we do not have in Arabic, and vowels."

Follow up question: What are the letters that do not exist in Arabic and what problem do vowels inflict?

"The *p* and *v*. Many students have problems pronouncing and writing them. As for vowels, students confuse vowels. They write *e* in place of *i* and so on."

5. Do you know any spelling rules that can help you in teaching English spelling?

"Mostly, the rules that govern adding the past tense inflection "ed" to verbs and the rules that govern adding the plural inflection "s" to nouns, and so on."
6. Have you received any training in teaching spelling before or after graduation?
"I have never been offered any teacher training in this field."

Interview 4:
1. Do you think spelling is important for students? Why?
"Yes. It makes what they write easy to read and understand. Also, if they spell in a bad way, they will lose marks."
2. How often do you teach spelling?
"I usually spend the majority of the lesson time teaching the material in textbooks. If I teach a new tense like the simple past I point out some of the spelling rules related to this tense if time is adequate."
3. Do textbooks have enough exercises for teaching spelling?
"No, I do not think so."
4. Are you aware of any specific problems that Arab learners of English might have in learning English spelling.
"Yes, *silent letters* and *doubled letters*. Also, vowels cause a lot of confusion. Students also do not apply the spelling rules, such as doubling the last consonant in some words and pluralizing nouns that end in *y*."
5. Do you know any spelling rules that can help you in teaching English spelling? Other than the rules that you mentioned?
 "I can't recall any other rules right now."
Teacher added: "Anyway, I think even if we provide students with rules, they will not learn them because most of them are careless. This affects their overall proficiency. For example, students write the same word once correctly and another time wrongly in the same paragraph."
Follow up question: Why do you think that some students careless?
"I think there are two reasons. First, many students do not feel that spelling is important, because it is ignored in the curriculum. Second, many other students are careless by nature, which is reflected in their bad performance in the other aspects of English."
6. Have you received any training in teaching spelling before or after graduation?
 "We attend many workshops yearly. However, none of which focuses on spelling. Moreover, even in the workshops that focus on writing skill, we never discuss the teaching of spelling. We are only told that quarter of the overall mark needs to go for spelling and punctuation."

APPENDIX N

Sample students' essays

Grade 9:

Write a short essay of no less than 150 words about the UAE.

You may write about:

Location   Borders   Physical features   History   Rulers.

Pay attention to grammar, vocabulary, punctuation, and spelling.

The UAE aconutry of Asia. incatbatl AbuDuBi
in The UAE isLacated in colled The NorTh
of The Arabin GUlF. The UAE is located East
of oman in The UAE There are No Permanemt
rivers. There is amountan in theUAE coll Jobal
hafeet mounten. in the UAE Islads, Mountain
in The fuJare The UAE is The Islands of WY have:
AB AB ABomsa and Tomb ALKoBra
and Tomb ALsara The UAE History and 2 th desmper
th 1971 ALwea Zayd Ban sLaia raes ALDoLa sabon
my Borders in The PhYsi al foodurs Iam is
frond or in Abomose.

Grade 10:

You should write no less than 150 words about an animal you like or dislike.

These ideas may help you:

1. Its color and size.   2. Habitat (place of living).

3. Food   4. Why you like it or dislike it.

Pay attention to grammar, vocabulary, punctuation, and spelling.

I am talk in about The lion. The lion is the
animl in the jungle
most dengerous. I'd lik this animal. The color is
yellow. The size is big. he eats meats or small
animal. It attack apeople. It kills small animl
lik goats, buffalos, giraffes, etc. It is amamml
be lives in Africa, Asia, Australia and South America.
It's a very sharp teeth. The man I'd like this
animal because it is called the King of
the jungle. This animal is very fast
and It has strong see a butiful color.
The personalty of this animal is very strong.
I'd like this animale.

Grade 11:

Write an autobiographical account of an important event or incident in your life. Be sure to explain why the event or incident was important, Say what happened: include as much detail as you can tell about your thoughts and feelings.

You should write no less than 150 words. Pay attention to grammar, vocabulary, punctuation, and spelling.

I'll never forget when I was 10 years. when I was in Egyipt with my Family and Firnds and the weather Full of harmony, cooperation. loving and the trees and Flowers in every where the sun threw his rays on the Farmer and the houses and I'll never when I play Football with my Frind and swiming the Day was not very Fun and more intresting. when We in "month Ramdan" the all Family setting to break Fast and I go with my Firnds to pray in the mousq and after we pray went to the river to playing and loving and the look of the sea was very nice whe the light moon on every when. that Days, I'll never Forget it

Grade 12:

Should schools ban junk food? Write an argumentative essay discussing the points of view that are for or against selling junk food in schools. You should have an introduction, body paragraph(s), and a conclusion.

You should write no less than 150 words. Pay attention to grammar, vocabulary, punctuation, and spelling.

More people in the world eat junk foods. Junk foods now days are a main meel. ~~XXXX XXXX~~ Some schools banned the Junk food.

Some students say that schools should not ban the Junk food because: First, Junk foods are tasty. Also, it's Faster than the healthy food. Moreover, it's cheaper than the healthy food. other students belive that banning Junk food is the true thing because. First, Junk foods make fat. Also, it have more oils. Moreover, it causes diceases.

All in all, we can say that banning Junk food is true or not. But we should take by arguments.

140

VITA

Mohannad Al Jayousi was born on August 16, 1972, in Amman, Jordan. He was educated in local public schools and graduated from Firas Al Ajlony High School in 1989. He graduated from the University of Jordan in Amman in 1994. His degree was Bachlor of Field Teacher/ English.

Mohannad worked as English teacher in Jordan from 1994 to 1997. Then, he moved to United Arab Emirates in 1997, where he worked as English teacher. He began a master's program in TESOL at the American University of Sharjah. He was awarded the Master of TESOL in 2011.