SOURCES AND PATTERNS OF SPELLING ERRORS IN LANGUAGE-LEARNERS LANGUAGE: AN INVESTIGATION ON PERSIAN LEARNERS OF ENGLISH

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LIST OF SYMBOLS

Consonants

Phonetic Symbol	Example	Pronunciation
/p/	pen	/pen/
/b/	bad	/bæd/
/t/	tea	/tiː/
/d/	did	/dɪd/
/k/	cat	/kæt/
/g/	got	/gɒt/
/tʃ/	chain	/tʃeɪn/
/dʒ/	jam	/dʒæm/
/f/	fall	/fɔːl/
/v/	van	/væn/
/θ/	thin	/θɪn/
/ð/	this	/ðɪs/
/s/	so	/səʊ/
/z/	zoo	/zuː/
/ʃ/	shoe	/ʃuː/
/ʒ/	vision	/ˈvɪʒən/
/h/	hat	/hæt/
/m/	man	/mæn/
/n/	no	/nəʊ/
/ŋ/	sing	/sɪŋ/
/l/	leg	/leg/
/r/	red	/red/
/j/	yes	/jes/
/w/	wet	/wet/

Vowels

Phonetic Symbol	Example	Pronunciation
/i/	happy	/ˈhæpi/
/iː/	see	/siː/
/ɪ/	sit	/sɪt/
/e/	ten	/ten/
/æ/	cat	/kæt/
/ɑː/	father	/ˈfɑːðə/
/ɒ/	got	/gɒt/
/ɔː/	saw	/sɔː/
/ʊ/	put	/pʊt/
/uː/	too	/tuː/
/ʌ/	cup	/kʌp/
/ɜː/	bird	/bɜːd/
/ə/	about	/əˈbaʊt/
/eɪ/	say	/seɪ/
/əʊ/	go	/gəʊ/
/aɪ/	five	/faɪv/
/aʊ/	now	/naʊ/
/ɔɪ/	boy	/bɔɪ/
/ɪə/	near	/nɪə/
/eə/	hair	/heə/
/ʊə/	pure	/pjʊə/

LIST OF ABBREVIATIONS

CA	Contrastive Analysis
EA	Error Analysis
EFL	English as Foreign Language
ESL	English as a Second Language
FL	Foreign Language
IL	Interlanguage
L1	First Language
L2	Second Language
MT	Mother Tongue
NL	Native Language
SLA	Second Language Acquisition
TL	Target Language
CLI	Cross Linguistic Influence
GTM	Grammar-Translation Method
ALM	Audio-Lingual Method
TEFL	Teaching English as a Foreign Language
LAD	Language Acquisition Device

SUMBER DAN POLA KESALAHAN EJAAN DALAM BAHASA PELAJAR-BAHASA: SATU PENELITIAN DALAM KALANGAN PELAJAR PARSI YANG MENGIKUTI KURSUS BAHASA INGGERIS

ABSTRAK

Kajian ini mengkaji sumber dan pola ralat ejaan yang telah dilakukan oleh pelajar Parsi yang mempelajari bahasa Inggeris. Kajian ini mempunyai empat objektif utama. Pertama, menentukan sumber ralat ejaan secara interlingua (bahasa antara). Kemudian, kajian ini cuba untuk menentukan sumber ralat ejaan secara intralingua (bahasa sesama). Seterusnya, kajian ini akan memperihalkan pola ralat secara interlingua. Akhir sekali, kajian ini akan memperihalkan pola ralat secara intralingua.

Kajian ini melibatkan penyertaan empat puluh orang pelajar Parsi yang mengikuti kursus bahasa Inggeris di sebuah sekolah menengah di Daragaz, sebuah bandar di daerah Khorasan Razavi, Iran. Mereka telah dipilih secara rawak daripada sejumlah 200 orang pelajar yang mengikuti kursus bahasa Inggeris pada tahap gred satu. Data kajian diperoleh menggunakan ujian pengimlakan/diktasi kata (word dictation test). Untuk memenuhi objektif yang ditetapkan, kajian metodologi yang diguna untuk pengenalpastian dan penghuraian ralat ejaan adalah berdasarkan kajian Corder (1974).

Analisis ralat ejaan menunjukkan bahawa kewujudan beberapa perbezaan khusus antara sistem bunyi bahasa Inggeris dengan sistem bunyi bahasa Parsi, yang telah mempengaruhi keupayaan mengeja dalam kalangan pelajar Parsi. Mereka berkecenderungan memindahkan bunyi bahasa Parsi ke dalam bahasa Inggeris. Semasa

proses tersebut, mereka menggantikan bunyi bahasa Inggeris yang tidak serupa atau tiada padanan dengan padanan yang terdekat dalam bahasa Parsi. Daripada analisis ralat ejaan, didapati bahawa wujudnya dua sumber ralat interlingua sangat lazim, iaitu: gangguan fonologi L1 dan gangguan struktur suku kata L1. Hasil kajian menunjukkan bahawa bukan semua ralat ejaan disebabkan oleh pengaruh bahasa penutur asli tetapi pada hakikatnya, gangguan L2 memainkan peranan yang signifikan terhadap ralat ejaan yang dilakukan oleh pelajar Parsi. Analisis secara mendalam tentang ralat ejaan yang dilakukan oleh pelajar Parsi menunjukkan bahawa secara intralingua, terdapat tiga sumber ralat iaitu ketakkonsistenan ejaan bahasa Inggeris, pengabaian peraturan ejaan dan kekeliruan tentang homofon.

Hasil kajian ini menunjukkan bahawa terdapat lima pola ralat ejaan secara interlingua dan tujuh pola ralat secara intralingua. Dapatan menunjukkan bahawa bilangan ralat intralingua adalah lebih banyak jika dibandingkan dengan ralat interlingua. Kajian ini turut menyokong pendapat yang menyatakan bahawa pemindahan L1 bukanlah sumber ralat utama untuk mempelajari L2.

Semua dapatan kajian menunjukkan bahawa langkah yang sesuai harus diambil untuk membantu pelajar Parsi meningkatkan kemahiran mengeja semasa mempelajari bahasa Inggeris. Kajian ini boleh dianggapkan sebagai titik permulaan untuk menetapkan garis panduan bagi cadangan teknik yang sesuai digunakan bagi mengajarkan kemahiran mengeja kepada pelajar Parsi yang mempelajari bahasa Inggeris. Dapatan kajian ini sangat signifikan bagi pereka bentuk sukatan pelajaran (silibus) yang perlu menentukan item utama yang perlu dimasukkan dan item berlebihan yang boleh dikeluarkan daripada sukatan pelajaran.

SOURCES AND PATTERNS OF SPELLING ERRORS IN LANGUAGE-LEARNERS LANGUAGE: AN INVESTIGATION ON PERSIAN LEARNERS OF ENGLISH

ABSTRACT

This study investigates the sources and patterns of spelling errors of Persian English language learners. There are four major objectives. First, it attempts to determine sources of interlingual errors in the spelling of Persian English language learners. Next, it endeavors to determine sources of intralingual errors in the spelling of Persian English language learners. Then, this study will establish patterns of interlingual errors in the spelling of Persian English language learners. And finally, it will establish patterns of intralingual errors in the spelling of Persian English language learners.

Forty Persian English language learners participated in this study. They have been randomly selected from the total population of 200 Persian English language learners who are studying in grade one of secondary education cycle in Daragaz, a city in Khorasan Razavi state of Iran. The data was gathered using a word dictation test. To achieve the objectives, the procedures utilized in this study for identification of spelling errors were adopted from Corder (1974).

The analysis of Persian learners' spelling errors reveals that some specific differences between the sound systems of English and Persian have affected the spelling

ability of Persian learners. They tend to transfer Persian language sounds into English, during which process, they substitute the dissimilar and non-matching English sounds with the closest match in Persian sounds. Upon analyzing the spelling errors, two sources of interlingual errors emerge as the most prevalent: L1 phonological interference and L1 syllable structure interference. The study indicates that not all spelling errors can be attributed to native language influence. In fact, L2 interference plays an important role in the spelling errors of Persian English language learners. An in-depth analysis of Persian learners' spelling errors reveals three sources of intralingual errors: overgeneralization, ignorance of spelling rules, and finally homophone confusion. The results of the current study also reveal two main categories for patterns of interlingual spelling errors and six main categories for patterns of intralingual spelling errors. They also indicate that the number of intralingual errors is much bigger than the number of interlingual errors. This study supports the view that L1 transfer does not appear to be the major source of errors in learning L2.

All these suggest that steps need to be taken in order to assist Persian English language learners to improve their English spelling. This study can be used as a beginning point for establishing guidelines to suggest appropriate techniques in the teaching of English spelling to Persian English language learners. These findings are also important to syllabus designers who will decide what important items to include in and what redundant items to exclude from the syllabus.

CHAPTER ONE

INTRODUCTION

1.0 Introduction

This study sets out to investigate sources and patterns of spelling errors in language-learners language of Persian learners of English. Initially, there are a few basic notions and ideas that need to be described and introduced based on which the purpose of the current study is served.

In Iran, the study of English as a Foreign Language (EFL) starts formally in junior high school. Based on the curriculum of teaching English in Iran, students are normally expected to be able to understand and use English language skills at the basic level of language proficiency. Regarding the goal of EFL in Iran, Yarmohammadi (1995) noted that "the ultimate goal of EFL for students in Iran is to master a foreign language and to reach for proficiency in all four language skills, namely listening, speaking, reading and writing" (p. 50).

The issue of the English writing system has been brought up by many researchers in recent years. As Cook (2004) explains, “the English writing system is connected to our lives in many ways, not something that is an ancillary to other aspects of language but vitally important to almost everything we do, from signing our wills to sending a text message” (p. 1). As stated by Ida (2006), "one crucial factor to take into account when

discussing writing is spelling" (p. 5).

Spelling, according to Willett (2003), is critical to the social, cultural and economic wellbeing of our community and should not be considered a separate, distinct part of literacy. In fact, it is a key functional component of writing. The focus on spelling has transitioned from being regarded as an exercise in rote learning to the understanding that spelling demonstrates knowledge of both the language and the orthographical system.

Brann (1997) and Mosely (1993) also state that spelling has a direct impact on the ability to read and write. The ability to be a good speller also makes the student a good reader and writer. In other words, spelling is the key to both good reading and writing of the language. Therefore, effective writing depends on effective spelling, and understanding learners' spelling difficulties can help teachers support the development of learners' writing. According to Croft (1983), the only possible justification for learning to spell is that accurate spelling is necessary for effective writing. If learners find it hard to spell, they will focus more on the mechanics of spelling than on their ideas, and so content will suffer (Graves, 1983). Among different languages in the world, English has particular importance.

According to Cronnell (1979), spelling English as a foreign language is important for at least two reasons: First, a writer may not communicate well if s/he cannot spell; that is, a reader must be able to interpret marks on the page as meaningful words and s/he

cannot do this easily when words are spelled poorly. Second, contemporary societies consider misspelling a serious social error, marking a person as, at best, illiterate, if not outright ignorant. Therefore, there should be spelling lessons for learners of the English language so that they get to spell and communicate correctly. However, English spelling is not as easy as one might assume. In fact, the opposite is true.

One thing that people agree upon is that English spelling is not logical. Ida (2006) states that unquestionably English spelling is a difficult and complex matter and learners around the world have difficulty getting the letters right. As stated by Fay (1971), English spelling is characterized by the inconsistencies of pronunciations, as well as by the discrepancies in the numbers and combinations of letters used to represent English sounds. Titlestad (1999) also clearly illustrates that English spelling is not phonetic, thus creating difficulties for learners and teachers involved in writing and pronunciation classes. Thus, we can conclude that English spelling is full of irregularities comparable to other Latin-based languages. The following figure is an illustration of highly regular and highly irregular Latin-based languages.

▲ Highly regular	5. Finnish
	4. Spanish, Portuguese, Italian, Hungarian, Slovenian
Spelling System	3. German, Dutch, Swedish, Norwegian, Icelandic, Greek
	2. Danish
▼ Highly irregular	1. English

Figure 1.1: The Irregularity of English Compared to other Latin-based Languages (Warwick, 1992, p. 112)

As we can see in the above table, English is the most irregular language and Finnish is the most regular one. In the middle sit languages such as German, Greek.

In fact, when it comes to English spelling difficulty, Persian English language learners are no exceptions. There are, of course, specific reasons for this matter. First, English spelling is highly irregular which makes it hard to learn for Persian learners. Second, there are significant differences between Persian and English writing systems (this will be discussed at length later in Chapter Two). These differences also make English spelling hard to learn for Persian learners. Third, according to many studies (Birjandi, 1994; Khodaverdilou, 1997; Mirhassani, 2003) a majority of Persian learners of English are not able to spell English correctly. Probing into this research reveals that getting enough mastery over English spelling has been a dream for many Persian English language learners at different levels. Finally, there is limited body of research in the acquisition of spelling skills and in spelling errors produced by Persian English Language learners. To fill this gap, this study aims to shed light upon English spelling errors among Persian English language learners, and to investigate their sources and patterns.

1.1 An Overview of the Islamic Republic of Iran

Figure 1.2: Map of Iran (Iran, 2004)

The Islamic Republic of Iran is located in south-western Asia and covers an area of 1,648,000 square kilometers. It is bounded on the north by Azerbaijan, Armenia,

Turkmenistan, and the Caspian Sea, on the east by Pakistan and Afghanistan, on the south by the Persian Gulf and the Gulf of Oman, and on the west by Turkey and Iraq. The capital city is Tehran. Iran has a population of about 72 million, which is distributed among 30 Provinces. Farsi is the official language in Iran, while about 90 percent of its population is Muslims who adhere to the Shi'ah sect. Sunni Muslims constitute approximately 8 percent of the remaining population (Iran, 2004).

1.2 The System of Education in Iran

Education in Iran has its roots in ancient times. In the seventh century B.C., young children apart from learning the fighting skills had social training. After the advent of Islam, education was based on learning the Quran and writing and reading Persian in traditional schools called Maktab (Jahangiri, 1992).

The first modern school, Darul-Fonun or The House of Technology, was established in 1849. Later the French system of education was taken as a model. Gradually, the Americans and British educators established new schools in Iran. In 1940, the government took over all the schools which were run by foreigners. Later, in 1943, education became compulsory for all children aged 6-12, although the program was not successful. Until 1965, the school cycle was composed of six years of secondary school six years of primary school followed by six years of secondary school. Each six year term was divided into two parts: the first three years were general education and the second three years were comprised of either technical and vocational education or academic

education. The graduates of the academic course could then continue their higher education. However, in 1965 the new cycle of education was introduced. The new system was designed to provide a direct choice between continuing studies in either the technical or academic fields. However, the old system was operating alongside the new cycle, until all those students who had already entered the old system had finished their courses (Jahangiri, 1992).

The responsibility for education has been primarily divided between two major ministries: the Ministry of Education and Training, and the Ministry of Culture and Higher Education. The structure of the education system under the Ministry of Education and Training is divided into school education and higher education. According to Ministry of Education and Training (1996), school education in Iran is divided into five stages:

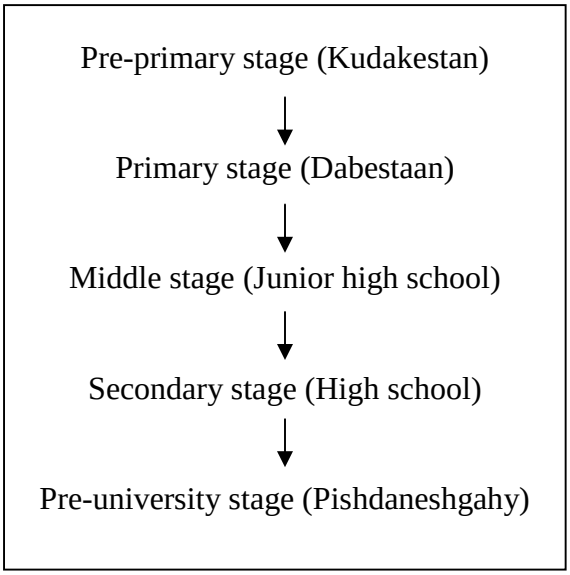

Figure 1.3: Stages of School Education in Iran

Pre-primary stage (Kudakestan) is a one-year program in which five year-old children are prepared for the primary stage. Though the Pre-primary stage is not mandatory for all children, it is required in bilingual areas of the country where Farsi is not the child's mother tongue. Children proceed automatically to primary stage at the age of six.

Primary stage (Dabestaan) is the first stage of formal education, which lasts five years and includes 6-10 year-old children. There is a national exam at the end of the five years, which students have to pass in order to enter into middle stage. Students who fail grade five final exams twice lose the chance of proceeding to middle stage.

Middle stage (Junior high school) which covers 6 to 8 for children aged 11-13. At the end of the middle stage, students take a regional examination under the supervision of provincial boards of education. Those who pass the examination are eligible to proceed to the secondary stage.

Secondary stage (High school) is a three-year program of formal schooling for students, ages 14-16. Students are required to complete 96 units and at the end of this stage, there is a final examination administered nationwide. Upon successful completion of the exam, students are awarded the high school diploma (Diplom-e-Mottavaseteh).

Pre-university stage (Pishdaneshgahy) is a one-year education program required for high school graduates to be eligible to sit for the university entrance examination

known as KONKUR; students are allowed to pursue their study as undergraduates. For higher degrees of masters and doctorial levels, students are supposed to sit for other exams and to pass interviews.

1.3 An Overview of English Language Teaching in Iran

Historically, the first European language introduced into the Iranian educational system as a foreign language was French. The beginning of foreign language study as a school subject in Iran can be marked by the establishment of Darul-Fonun, or the House of Technology in Tehran, in 1849 (Almasi, 2000).

The fact that English replaced French in Iran and became a subject in the school curriculum is a direct result of the British and American imperialism. After the Second World War, the United States of America began to play a more active role in Iran as part of its world defense and international strategy. During the 1960s and the 1970s, there was a great deal of English teaching and learning activities occurring in Iran, partly incorporated with the institutions both in the U.K. or the U.S. the Iran-America Society (whose establishment in Iran dates back to 1950) and the British Council were active in offering General English classes, conducting teacher training summer courses and workshops, and providing consultations to the Ministry of Education and Universities, among many other things (Yarmohammadi, 2005a; Atai, 2005; Tajadini, 2002).

After the Islamic Revolution, all these activities stopped and the American and British teachers left the country. The Supreme Council of Cultural Revolution started its operation in 1980. Soon after, curriculum development committees started functioning. According to Saffarzadeh (1988), who took the responsibility of revising and devising new materials for foreign language teaching in Iran after the Islamic revolution, the English language teaching situation in the previous educational system was criticized because the goals were unclear, there was an absence of logical relationships between pre-university and university instruction and the availability of suitable English textbooks was limited. However, it was clear that English is the most widely-used language in today's world and therefore was important as a subject of foreign language study. Saffarzadeh (1988) declared that objectives of the program are to:

a. Develop the ability to use scientific and technological knowledge that is being accumulated in English books, magazines, and journals to achieve national self-sufficiency in science and technology.
b. Utilize English for cultural exchanges and introducing Islamic-Iranian Culture and Teachings to the world (p. 2).

Yarmohammadi (1995) regarding the goal of EFL in Iran also noted that “the ultimate goal of EFL for students in Iran is to master a foreign language and to reach for proficiency in all four language skills, namely listening, speaking, reading and writing” (p. 50). In light of the recommendations of the council and the committee for curriculum planning of foreign languages, it was suggested that the study of English should extend

students' control of the basic language skills: listening, speaking, reading, and writing (Saffarzadeh, 1988; Tajadini, 2002).

Formal teaching of English starts from junior high school. Two hours a week are allotted for English lessons in grade one while three hours are allotted for learners in grade two and three. The instructional materials include an approved textbook by the Ministry of Education along with some informally prepared workbooks and tapes. The model of English pronunciation used in Iranian education system is British. The textbooks are locally prepared following a combination of audio-lingual, cognitive, and communicative methods of language teaching. Dialogs, pattern practice and words are the major components of the textbooks designed for this level (Birjandi & Soheili, 2004a, 2004b, 2004c). Based on the curriculum and as stated by the Council of Higher Education, students at this level are normally expected to be able to understand and use English language skills at the basic level of language proficiency.

After junior high school, students proceed to high school for another three years and study English for three hours a week in grade one and two hours in grade two and three. Reading comprehension is the major part of the textbooks at this level (Birjandi, Soheili, Nowroozi, & Mahmoodi, 2000; Birjandi, Nowroozi, & Mahmoodi, 2002a, 2002b).

After high school, students start the pre-university level for one year, based on a credit-semester system in which English is taught four hours per week. The pre-

university English textbook has been developed on the basis of the Reading Method. Table 1.1 illustrates EFL instruction in public schools in Iran.

Table 1.1: EFL Instruction in Public Schools in Iran

Age	Levels	Amount of instruction
6-10	Primary School	Optional
11-13	Junior High School	Grade 1 = 2 hours a week Grades 2 & 3 = 3 hours a week
14-16	High School	Grade 1 = 3 hours a week Grades 2 & 3 = 2 hours a week
17	Pre-university	4 hours a week

It should be mentioned that there are some private schools in the country where EFL starts as early as pre-school age. In addition, a large number of private language institutes have been active in Iran for the last half a century or so. Although students attending these institutes have been more successful than public schools in meeting the educational objectives and achieving language ability, not a major proportion can benefit from these private schools or language institutes because either they are not financially in a position to afford the expenses or they have no access to such institutes.

A large number of universities and colleges in Iran also offer some more specialized courses at different levels of BA and MA, and even PhD in English literature, teaching, and in the same way, an equal number of teachers and experts are trained as linguists and translators. The goal of establishing these courses at this level is to train the

required experts in teaching and linguistics as well as the necessary translator needed for international seminars, and other utilitarian purposes. One significant impact of the graduates of these courses is the entry of the experts with high proficiency in teaching jobs and designing English materials.

English teachers in Iran have used a variety of approaches, methods and techniques at different times. Rahimi (1996) demonstrated that Grammar-Translation Method (GTM) was used in 1950's all over the country. Celce-Murcia (1991) listed the following characteristics for the GTM:

a. Grammar rules are presented and studied explicitly.
b. Vocabulary is learnt from bilingual word lists.
c. The mother tongue is used as the medium of instruction.
d. Hardly any attention is paid to speaking and listening skills.

Saadat (1995) stated that in 1960's Audio-Lingual Method (ALM) was put into practice in English language classes in Iran, similar to those of other countries. ALM was reflected in textbooks in the form of dialogues for speaking and listening comprehension, texts for reading comprehension, grammatical patterns for both oral and written tasks, and finally some writing tasks. Celce-Murcia (1991) mentioned the main features of ALM as the following:

a. Speaking and listening competence precedes competence in reading and writing.
b. Use of the mother tongue is discouraged in the classroom.
c. Language skills are outgrowth of habit formation.
d. Great importance has been placed on pronunciation.
e. Little or no grammatical explanation is given, i.e. students learn grammar inductively.

Musavi (2001) claimed that English in Iranian high schools was more grammar-based and teachers put more stress on teaching grammar rather than teaching reading comprehension and communicative skills. He believed that teaching and learning English did not satisfy the specified goals because of the following factors:

a. Students' ignorance of aims and goals of learning a new language and its advantages.
b. Unqualified teachers and lack of teaching facilities.
c. Old methods and styles of teaching.
d. Old, unoriginal and out of date resources.
e. Lack of native speakers who have a good command of English.
f. No television programs or satellite to watch in English.

In short, despite spending a lot of money, time, and energy on EFL, there is no positive public attitude towards EFL achievement in Iran. Some people question the quality of the teaching materials and others cast doubt on the efficiency of teaching

methods. Furthermore, some are critical of the focus of the courses being solely on the English grammar in isolation and others believe that school English courses have not been effective enough to enable learners to perform in communicative settings because a four-hour instruction per week is not sufficient to achieve this goal. In addition, some critics think that teachers do not have enough knowledge or dedication to achieve the objectives of instruction.

1.4 Statement of the Problem

Students need to know how to spell words to communicate their ideas in written language. Many researchers emphasize the importance of spelling in writing (Rogers, 2005; Dietsch, 2000; Ida, 2006; Brann, 1997; Mosely, 1993). In this regard, Gentry (1997) states that, “spelling is a tool for writing. The purpose of learning to spell is so that writing may become easier, more fluent, more expressive, and more easily read and understood by others” (p. 1).

According to Ida (2006), English spelling is without a doubt a complicated matter and learners around the world have trouble getting the letters correct. Cook (1997) also states that even though spelling errors are the most common type of errors in the written work of learners of English, they do not receive the care they need: “the amount of attention given to it in research is minimal” (p. 474).

As mentioned before, according to the high school syllabus for TEFL, the ultimate goal of teaching English in Iran is to enable the learner to communicate effectively in both the oral as well as the written mode of the language (Yarmohammadi, 1995; Saffarzadeh, 1985). However, there is much evidence that the objectives of the syllabus are rarely attainable and Iranian students often have problems with the oral mode as well as with the written form the English language, especially in spelling. There are a variety of factors contributing to this problem among Persian English language.

Firstly, there is a distinct absence of mastery of English spelling. This is attested to Birjandi (1994), Khodaverdilou (1997), Mirhassani (2003), Sadeghi (2005), and Zohrabi (2005) who note that Persian learners of English may have problems in English spelling. In this regard, Birjandi (1994) states that of the four skills that are the goals of teaching English as a foreign language in Iran (listening, speaking, reading, and writing) writing is the skill that is most frequently neglected. It includes several sub-skills, one of which is spelling. Yarmohammadi (2005) also states that Iranian students enter the university with six years of secondary English studies behind them, yet many of them have difficulty constructing English sentences. They come to the university with errors in many areas of grammar and spelling. Yarmohammadi (2005) mentions the following examples:

Grammar: Wrong Verb-form after auxiliaries: He would worked [work].
Preposition: Children are afraid from [of] dogs.
Spelling: wach [watch], bulu [blue], terip [trip], tink [think] (p. 12).

Sadeghi (2005) believes that most of the Iranian students who come to university carry with them problems (grammar, spelling, speaking, and pronunciation) they had when they were at high school. They are basically poor at almost all aspects of language especially spelling. Further evidence of this deficiency in English spelling has been gleaned via CA (Yarmohammadi, 2002; Ziahosseiny, 1994; Keshavarz, 2003; and Fallahi, 1991).

The problem is further exacerbated by the differences in the writing systems of Persian and English, and inconsistency of English spelling (Miremadi, 1990; Mohammadi, 1992; Rollings, 2004; Fennel, 2001; Swan and Smith, 2001; Hudson, 2000; O'Grady et al., 1996). According to Swan and Smith (2001), "although Persian is an Indo-European language, Persian speakers may have great difficulty with spelling English, especially during the early stages of learning, because they are not familiar with the Latin script" (p. 129). Miremadi (1990) also states that some of spelling errors may have their origin in the effect that the system of phonology in the source language has on the target language. He mentions the following examples: "bulu" instead of "blue", and "eschool" instead of "school" (p. 52).

In regard to inconsistency of English spelling, Rollings (2004) states that, the main problem of English spelling is that the way words are spelled does not reflect the way they are pronounced. Mohammadi (1992) further explains that the greatest difficulty encountered by Persian learners may result from the apparently irregular spelling system

of English compared with the greater regularity of the mainly phonetic script of Persian. He mentions the following examples: “larg” instead of “large”, “adres” instead of “address”, and “by” instead of “buy” (p. 105).

It appears that all the problems cited above have affected Persian English language learners’ spelling proficiency. Therefore, they highlight the need to find out the reasons behind numerous spelling errors committed by Persian English language learners, particularly in the early stages of spelling development.

It is worth mentioning that previous studies have analyzed English writing errors of Persian learners in general terms, only and could be referred to as error taxonomy studies. Looking more closely, one can see that the past studies mainly focused on four major categories of errors, namely orthographic, phonological, lexico-semantic, and morpho-syntatic. Nevertheless, the current research has picked up only on one component, i.e. spelling and focused on it for a deeper analysis of errors in English spelling.

As a result, due to several spelling difficulties of Persian English language learners in the early stages of English spelling development, the aim of this study is to shed light upon spelling errors of Persian English language learners by investigating their sources and patterns.

1.5 Objectives of the Study

This study intends to examine the English spelling of Persian English language learners in general and the following objectives in particular:

1. To determine sources of interlingual errors in the spelling of Persian English language learners.
2. To determine sources of intralingual errors in the spelling of Persian English language learners.
3. To establish patterns of interlingual errors in the spelling of Persian English language learners.
4. To establish patterns of intralingual errors in the spelling of Persian English language learners.

1.6 Research Questions

To achieve the above objectives, this study attempts to answer the following questions:

1. What are the sources of interlingual errors in the spelling of Persian English language learners?
2. What are the sources of intralingual errors in the spelling of Persian English language learners?

3. What are the patterns of interlingual errors in the spelling of Persian English language learners?
4. What are the patterns of intralingual errors in the spelling of Persian English language learners?

1.7 Significance of the Study

According to Croft (1983), the ability to spell correctly is an important part of producing effective writing. First, as Graves (1983) notes, if learners find it hard to spell, they will focus more on the mechanics of spelling than on their ideas, and so content will suffer. Second, as Cronnell (1979) states, contemporary society considers misspelling a serious social error, marking a person as illiterate, at best if not outright ignorant.

Presently, there is a lack of information pertaining to the actual causes of spelling errors of Persian English language learners. By studying the learners' spelling errors in their dictation, this study can reveal the actual causes of Persian learners' proficiency in English spelling. Through investigation of second language acquisition in a foreign-learning setting, this study functions as a significant contributor of new insights, particularly with regard to the role of interlingual and intralingual transfer in language acquisition. This fact has been attested to by Taylor (1975) and Jaszczolt (1995), who found that the early stages of language learning are characterized by interlingual transfer, but once learners have begun to acquire parts of the new system, more and more intralingual errors within the second language are manifested. In other words, the present

study not only will help obtain information on common difficulties of Persian English language learners in English spelling but will also reveal and reflect the influence of L1and L2 on the learner's target language performance in English spelling.

The findings of this study may have certain implication on how techniques of teaching English spelling can be improved. They may also have important implication for teaching methodology which is the major concern of English language teachers who have the task of devising appropriate instructional materials and procedures in an effort to increase the effectiveness of the teaching and learning of English as a second language. They will provide pertinent information to Iranian English Language Curriculum Planners, especially with regard to syllabus design, planning and sequencing of spelling items to be taught. They may also be of assistance to text book writers in devising exercises aimed at upgrading L2 learners' proficiency in English spelling.

1.8 Limitations of the Study

This study has certain limitations; first, it is confined to a limited number of Persian English learners in grade one of the secondary education cycle.

Second, the results and findings are limited to the north-eastern part of Iran and thus could not be generalized to all Persian learners of English.

Thirdly and finally, this study also limits its scope only to sources of psycholinguistic errors, i.e. interlingual and intralingual errors and eliminates the other sources such as sociolinguistic, epistemic and discourse. There are four reasons as to why other sources of errors have been eliminated: a. this study is an error analysis, and according to Abbott (1980), "the aim of any error analysis is to provide a psychological explanation" (p. 124), b. according to Ellis (2005), to explain sources of psycholinguistic errors, two major processes are identified, distinguishing interlingual errors and intralingual errors, c. due to time constraints, the researcher will not be able to include all sources of spelling errors, and d. limiting the scope allows the researcher to carry out an in-depth study on interlingual and intralingual spelling errors of Persian English language learners.

1.9 Definition of Important Terms

There are some key terms that will be recurrently used throughout this study. A good grasp on these key terms will help us to understand the discussions and analyses in the following sections.

Spelling: It is "the process of converting oral language to visual form by placing graphic symbols on some writing surface" (Richard, 1984, p. 1).

Graph (eme): A graph is the smallest discrete segment in a stretch of writing or print. In English these are popularly called 'letters', but a moment's thought will show the

inexactness of this term. If we take the letter ‘s’, for example, this can be written in a number of different ways, lower case –‘s’, upper case –‘S’, archaic –‘ſ’. Clearly theses forms are not separate letters, but simply variants ‘letters’ exist both as concepts and as physical forms. In the case of written form we have graphemes, allographs and graphs. Using this terms we can say that the grapheme <s> is realized by three different graphs: ‘s’, ‘S’, and ‘ſ’. These graphs are allographs of <s>. The relations between them are these:

Grapheme – individual letter as concept.

Allograph – physical representation of letter/concept.

Graph – physical substance.

Like phonemes, graphemes are minimal contrastive units. Changing a grapheme in a written word produces a different word whereas merely changing a graph doesn’t (Finch, 2000, pp. 46-47).

Phoneme: The smallest unit of sound capable of distinguishing between two words. Phonemes are contrastive segments. This means that changing the phonemes will produce a change in the meaning of word. So that, for example, exchanging /p/ for /b/ in the word “bin’’, will result in the new word, “pin” (Finch, 2000, p. 60).

Interlanguage: It is a separate linguistic system based on the observable output which results from a learner’s attempted production of TL norm (Selinker, 1977, p. 35).

Error: According to Corder's definition (1967), an error is a deviation in learner language which results from lack of knowledge of the correct rule.

Source of Error: It concerns the psycholinguistic part of language learning and explains the reasons of error making either an interlingual errors of which L1 interference or intralingual errors which results from faulty or partial learning of target language (Richards et al., 1989).

Pattern of Spelling: A sequence of graphemes which regularly represents a particular sequence of phonemes. The sequence of phonemes may be a word or be a segment of a word. For example, the sequential occurrence of the phonemes /d/, /æ/, and /d/ is represented by the spelling-pattern "dad", while the sequential occurrence of the phonemes /æ/ and /d/ is represented by the spelling pattern "ad" (word segment) and by the spelling-pattern add. Scott (2007) puts the spelling patterns into following categories: consonants, silent consonants, consonants clusters, vowels, silent vowels, homophones, and spelling rules.

Intralingual Error: Richards (1974) defines intralingual errors as those which reflect the general characteristics of rule-learning, such as: a. faulty overgeneralization, b. ignorance of rule restrictions, b. incomplete application of rules, c. false concepts hypothesized.

Interlingual Error: Interlingual errors are those errors which are caused by the interference of the learners L1 when producing the TL. According to Lado (1957),

wherever the structures of the NL and those of TL differ there would be interlingual interference.

1.10 Organization of the Study

This study has been divided into 5 chapters; a short account of each chapter is as follows:

Chapter One is an orientation chapter in which the introduction, an overview of the Islamic Republic of Iran and the statement of the problem are presented. It outlines the system of education in Iran and provides an overview of English language teaching in Iran. The objectives of the study, the research questions, and the significance of the study as well as the definition of terms are also presented in this chapter.

Chapter Two contains a review of literature related to the present study. This includes discussions of contrastive analysis, error analysis, and interlanguage. It also presents the theoretical framework of the study.

Chapter Three provides an extensive description of the methodology and design utilized in the study. It also describes the procedure pertaining to sample selection and data collections.

Chapter Four analyzes the collected data and presents the results and findings of the study.

Chapter Five presents a summary of the whole thesis, its conclusions, implications of the study, and recommendations for further research, the study's contributions and concluding remarks.

1.11 Chapter Summary

First, the preceding discussion clearly illustrates that English spelling is one of the most difficult problems for Persian English language learners. Next, the significance of the study was stated in order to justify the need for implementing the research objectives. Finally, for the sake of clarity, a glossary of terms used throughout the study was operationally defined and explained. In the next chapter, the relevant literature and theoretical framework of the study will be presented.

CHAPTER TWO

REVIEW OF RELATED LITERATURE

2.0 Introduction

This chapter provides the literature review and background information pertaining to the research questions mentioned in Chapter One and methodology to be described in Chapter Three. The following sections of this chapter begin with a concise historical review of English spelling changes and an overview of Persian writing system. Then, an overview of comparison between Persian and English sound system is presented. Theoretical backgrounds central to the study - including issues in contrastive analysis, error analysis and interlanguage theory - will be discussed. The chapter, then, continues to discuss the language components of teaching spelling and spelling theory followed by a review of studies on English spelling. The chapter ends with theoretical framework of the current study.

2.1 A Concise Historical Review of English Spelling Changes

A frequently expressed complaint about English spelling is that it does not establish a one-to-one relationship between symbols and phonological segments. The main reason for irregularity of English spelling lies in the very formation of the English language, which has preserved or reintroduced the old historical spelling of the principal contributing languages: Old English, Old French, Latin, and Greek. In other words,

English spelling is a product of its history, both political and linguistic (Aaron, 2007). Some examples of this relationship include the influence of Norman French, the Great Vowel Shift and the etymological respelling during the Renaissance period. These and other factors contribute to the irregular and sometimes incredibly inconsistent and confusing spelling of the English written language.

An excellent survey of the history of English spelling is provided by Scragg (1974) in his book entitled "A history of English spelling". According to him, the history of English spelling began at the end of the 6th century, when Roman and Irish missionaries converted the Anglo-Saxons in the British Isles to Christianity and introduced the Roman alphabet. The Roman alphabet was much like the Modern English alphabet, except that Old English did not use the letters "j, k, v, or w", and used "q and z" rarely. This represents the beginning of the era commonly referred to as the Old English period. "As a whole, Old English spelling as developed in the West Saxon tradition was much nearer a one-to-one relationship with sounds" (Scragg, 1974, p. 11). In the subsequent period, however, this one-to-one relationship between spelling and sounds was gradually lost.

A change with a greater impact on spelling happened after England was conquered by William of Normandy in 1066. For over two centuries following the Norman Conquest, large numbers of French-speaking settlements were established in England. During these centuries, a large number of French words were adopted into English, with the estimates of French words in modern English being as high as 40

percent. Thus, the orthography was made to adapt to two spoken systems, English and French, and spelling became suitable to represent neither language (Scragg, 1974; Sampson, 1985; Rogers, 2005). Furthermore, the vagaries of local dialects were responsible for creating additional disjunction between pronunciation and spelling. Generally speaking, loan-words adopted from one language to another are forced to accord with the sound patterns of the recipient language while retaining the borrowed spelling. For example, the words “heir, honor, honest, and hour” have preserved the letter “h” from French, but have English pronunciation. Other examples of inconsistencies are “mouse and louse”, and their irregular plurals “mice and lice”, which were spelled “mus, mys, lus, and lys” in Old English (Scragg, 1974). Under the Norman influence, many legal documents were written in Latin, which introduced yet another source of divergence between spelling and pronunciation. An example is the bi-consonant “ch.” Under the French influence, it is pronounced /ʃ/ as in “chauffeur” and “machine”, but under the Latin influence, it is pronounced /k/ as in “chorus” and “archive”. The settlements of Vikings in England also contributed to the alienation of spelling from pronunciation. For instance, the sound /sk/ was spelled with “sk” as in “skate” and “sketch”, which are Dutch in origin, but was spelled with “sc” as in “scarce” and “scorn”, for words which are French in origin. With the dawning of the Renaissance, an increased awareness of Latin became evident and scribes were responsible for Latinizing spellings such as “debt, island, and receipt”, which can be traced to Latin words such as “debitum,” “insula,” and “receptum”. Even during the pre-Renaissance Middle English period, these words were spelled “dette,” “yland,” and “receite” (Scragg, 1974; Sampson, 1985).

The most dramatic change in the phonological system affecting spelling is the "Great Vowel Shift", which began in the fifteenth century and lasted until the seventeenth century–over 200 years. A series of changes in the vowels of the English language brought about a significant reorganization of the system. Roughly speaking, the earlier lengthened vowels came to be produced at the highest tongue position became diphthongs. Thus, an item such as "sweet" changed from /swe:t/ to /swi:t/, "spoon" from /spo:n/ to /spu:n/, "ride" changed from /ri:d/ to /raId/, and so forth. This shift in the pronunciation of the vowels was made without a corresponding shift in spelling (Rogers, 2005). The Great Vowel Shift is represented in Figure 2.1.

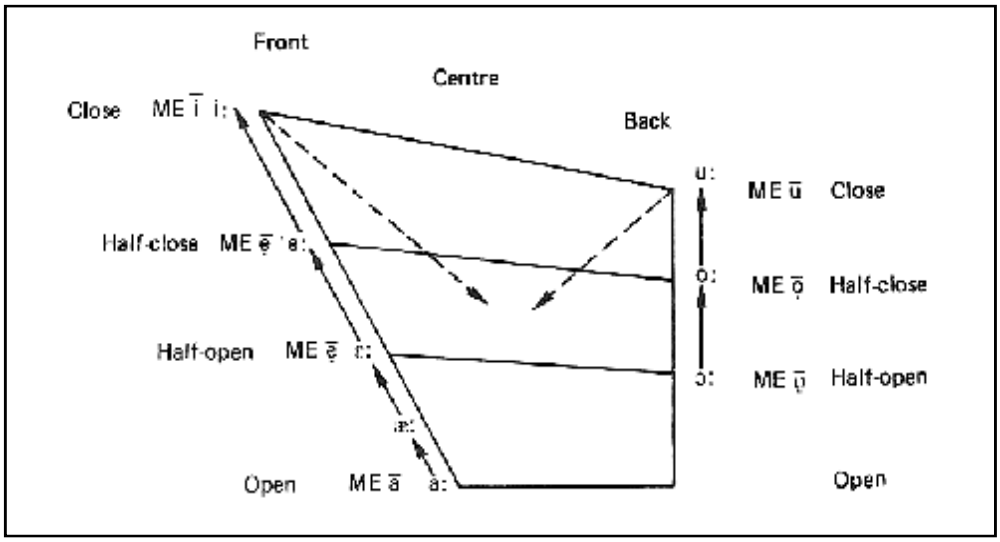

Figure 2.1: Vowel Chart (Barber, 1993, p. 192)

Crystal (1995) states that the great vowel shift of the 15th century was the main reason for the diversity of vowel spellings in such words as name, sweet, ride, way, house.

According to Crystal (1995), the printing process created additional problems for spelling consolidation. Many early printers were Dutch, and they used their own spelling norms and made several convenient abbreviations additions and deletions to account for the space in a line. The effects of this can be seen in words like ghost, which in Old English was spelled gast, but which nowadays has an added <h> after the <g>, just as in the Dutch word gheest.

In the late 16th and early 17th centuries, many new loan words entered English from languages such as French, Latin, Greek, Spanish, Italian and Portuguese. As stated by Crystal (1995), loan words are one of the reasons behind the spelling varieties that exist in English today. According to Venezky (1999), more irregular spellings in English are due to borrowings than to any other cause. Rogers (2005) also states that in addition to a change in the phonology and grammar of the language, English had also borrowed a huge number of French words. These were often related to government and warfare - duke, judge, government, county, general, army, but also very ordinary words- table, very, single, beef. Moreover, Rogers points out that for words borrowed from languages using the Roman alphabet, the original spelling for most words has been kept. For example, from French, there is soufflé, ballet, lingerie; from German there is Kindergarten, Fahrenheit, Umlaut; from Italian spaghetti, concerto, bologna" (ibid, p. 192).

Toward the end of the fifteenth century, yet another trend developed; the practice of spelling words in a manner that would reflect their etymological origin. Enduring

examples of this influence are found in the spelling of the words debt, doubt, receipt, and salmon (formerly spelled dette, doute, receite, and samon), all of which were given a 'silent' consonant to make them look more like the Latin words from which they descended (O'Grady et al., 1996). According to Culpeper (1997), a few etymologically altered versions of words have survived. They can be arranged into two groups: words whose etymological respelling did not influence their pronunciation, and words whose pronunciations as well as orthography have been influenced. Some examples of words that were altered according to their etymology but kept their former pronunciation include debt and doubt, which had formerly been written as dette and doute. The letter <b> was inserted to indicate that the words originated from the Latin “debitum/dubitare”. The same is true for the <p> in the word receipt and the <c> in indict (from Latin “recipere” and “indictio”). The respelled words of the second group are significant as they show a change in their pronunciation. What was formerly written and pronounced as adventure was, after the etymological respelling, written and pronounced adventure. The same happened with assault (formerly assaut), describe (formerly descrive) and verdict (formerly verdit) (Barber, 1993, pp. 180-181).

In short, modern English spelling developed over time. The history of the English language, as mentioned above, provides many reasons for the irregularities of English spelling as: the influence of Norman French, the Great Vowel Shift, printing press, loan words, and the etymological respelling. The result of these changes is a system that is a mixture of different factors contributes to the irregular and sometimes incredibly inconsistent and confusing spelling of the English written language.

2.2 An Overview of Persian Writing System

After the advent of Islam, Arabic orthography replaced the Persian script system (Pahlavi), but with the addition of four letters (Table 2.1) which does not occur in Arabic, as they come from separate language families.

Table 2.1: Persian Letters Which Do Not Occur in Arabic

Sound	Shape	Unicode name
/p/	پ	pe
/č/	چ	che
/ž/	ژ	zhe
/g/	گ	gaf

As such, the Persian alphabet (Table 2.2) includes 32 letters and is read and written from right to left. It does not use capital letters and words are written in cursive connected. Some of the letters can be connected to from both the left and right, and some can only be connected from the right. Therefore, each letter may have two or three different shapes based on its connectivity and its occurrence at the beginning, middle or the end of a word. As compared to Latin scripts, there is no limitation on the width of the letters, which brings a great variability in both form and writing style. Letters can be expanded, curved and angled to fit the width (Zandi, 2000)

Table 2.2: Persian Alphabet

IPA	Name	Position in a word			stand alone	char. no.	Shape no.
		Final	Medial	Initial			
ɒ	alef	ا		ا	ا	1	1
ɑ:	a			آ	آ		
b	be	ب	ـبـ	بـ	ب	2	2
p	pe	پ	ـپـ	پـ	پ	3	
t	te	ت	ـتـ	تـ	ت	4	
s	the	ث	ـثـ	ثـ	ث	5	
dʒ	jim	ج	ـجـ	جـ	ج	6	3
ʧ	che	چ	ـچـ	چـ	چ	7	
h	he	ح	ـحـ	حـ	ح	8	
x	khe	خ	ـخـ	خـ	خ	9	
d	dal	د		د	د	10	4
z	zal	ذ		ذ	ذ	11	
r	re	ر		ر	ر	12	5
z	ze	ز		ز	ز	13	
ʒ	je	ژ		ژ	ژ	14	
s	sin	س	ـسـ	سـ	س	15	6
ʃ	shin	ش	ـشـ	شـ	ش	16	
s	sad	ص	ـصـ	صـ	ص	17	7
z	zad	ض	ـضـ	ضـ	ض	18	
t	teyn	ط		ط	ط	19	8
z	zeyn	ظ		ظ	ظ	20	
ʔ	eyn	ع	ـعـ	عـ	ع	21	9
ɣ	gheyn	غ	ـغـ	غـ	غ	22	
f	fe	ف	ـفـ	فـ	ف	23	10
ɢ	qaf	ق	ـقـ	قـ	ق	24	11
k	kaf	ک	ـکـ	کـ	ک	25	12
g	gaf	گ	ـگـ	گـ	گ	26	
l	lam	ل	ـلـ	لـ	ل	27	13
m	mim	م	ـمـ	مـ	م	28	14
n	nun	ن	ـنـ	نـ	ن	29	15
v	waw	و		و	و	30	16
h	he	ه	ـهـ	هـ	ه	31	17
j	ye	ی	ـیـ	یـ	ی	32	18

Taken from Zandi (2000, p. 69)

As Table 2.2 shows, Persian letters derive from 18 shapes. Letters are distinguished by one (10 cases), two (3 cases) or three dots (5 cases) placed above or below the letter. Some of the sounds in the Arabic alphabet do not exist in the Persian alphabet; as a result, more than one letter may represent more than one sound. For example, there are four letters in Persian for the sound /z/ (ذ ظ ض ز) and three for the sound /s/ (ث ص س). Also, a single sound in Persian may have many symbols that correspond to it, which may also add to the confusion.

Since the phonological system of Arabic differed from the Persian system, the adoption of a new script created some problems in indicating the vowels and then identifying them. In the Arabic writing system the traditionally called “long” vowels /i:/, /u:/ and /α:/ have separate symbols, while “short” vowels /æ/, /e/, /o/ and two Persian diphthongs have no sign, and can be shown either by diacritic marks (e ِ), (o ُ) and (æ َ) - which except in primary school books are hardly ever used - or with some items by taking the same symbols as “long” vowels. This makes the item readable the item readable in two or three pronunciations (Jahangiri, 1992).

Persian and Arabic scripts are also different. There are six script styles, named Shesh Ghalam: Nasta-ligh (Farsi), Kufi, Deewani, Naskh, Req'aa and Thuluth. The most common Persian script is called Nasta-ligh, which is a lighter and much more elegant version of Taligh or hanging script. The basic rules of Nasta-ligh were developed over centuries and were revised in the Safavi (~1500 A.D.) period. Nasta-ligh is different from Naskh which is common in Arabic, due to the shape of letters and the style of writing.

The Persian alphabet is commonly written in an alphabet style know as Nastaliq (Zandi, 2000).

2.3 An Overview of Comparison between Persian and English Syllable Structure and Sound System

Persian and English, though belonging to the same language family (Indo-European), are very different in alphabet, sound system, and syllable structure. The Persian alphabet is based on Arabic, which is a consonantal system and contains thirty two letters; whereas, the English alphabet is based on Latin which contains twenty-six letters.

2.3.1 Comparison between Persian and English Syllable Structures

According to Windfuhr (1979), Persian is characterized as a syllable-timed language. In other words, the syllables are said to occur at approximately regular intervals of time, and the amount of time it takes to say a sentence depends on the number of syllables in the sentence, not on the number of stressed syllables as in stress-timed languages like English. Table 2.3, illustrates this comparison further.

Table 2.3: Comparison between Persian and English Syllable Structure

English Syllables	Examples	Persian Syllables	Examples
v	I	cv	ما /ma/ “we”
vc	am	cvc	توپ /toop/ “ball”
vcc	ant	cvcc	مرد /mard/ “man”
vccc	asks	-	-
cv	key	-	-
cvc	seek	-	-
cvcc	lawns	-	-
cvccc	pants	-	-
ccv	tree	-	-
ccvc	speak	-	-
ccvcc	stamp	-	-
ccvccc	trends	-	-
ccvcccc	trampled	-	-
cccv	spree	-	-
cccvc	scram	-	-
cccvcc	script	-	-
cccvccc	strands	-	-
cccvcccc	scrambles	-	-

Taken from Khanlari (1994, p. 45)

According to Khanlari (1994), Persian syllables cannot be initiated with vowels, as indicated in Table 2.3; on the other hand, vowels can initiate syllables in English. Another interesting observation is that syllable-initial consonant clusters are impossible in Persian; however, some consonant clusters can occur in both syllable-initial and syllable-final positions in English. In addition, syllable-final consonant clusters in Persian normally take no more than two consonants in their structure but, in English, consonant

clusters are not limited to two consonants. For example, in a word like splints /splɪnts/, three consonant clusters together at the beginning and again at the end of the syllable to produce a CCCVCCC syllable. Finally, we can conclude that the syllable structure of Persian can only be presented as: CV (C) (C), whereas the syllable structure of English can be presented as: (C) (C) (C) V (C) (C) (C) (C) which shows that English permits up to three consonant clusters initially and four finally.

As illustrated in Table 2.3, the syllable structure of English includes at least eighteen different types of syllables; whereas, there are only three syllable patterns in Persian. The difference in the number of syllable pattern may cause problems for Persian learners of English in pronunciation and spelling. In fact, Persian language does not allow a word to begin with two consonants. Therefore, Persian learners often have difficulty producing English words with consonant clusters.

2.3.2 Comparison between Persian and English Sound Systems

Persian and English, though belonging to the same language family (Indo-European), are very different in alphabet and sound system. As mentioned before, the modern Persian alphabet is based on Arabic, which is a consonantal system and contains thirty two letters; whereas, the English alphabet is based on Latin, which contains twenty-six letters. According to Yarmohammadi (2005), there are three types of relationship between Persian and English sound system. First, there are sounds common to both languages. Second, there are sounds existent in English, but not in Persian. Third, there

are sounds existent in Persian, but not in English. Table 2.4 illustrates these types of relationship.

Table 2.4: Types of Relationship between Persian and English Sound System

Types of Relationship	English	Persian
1	+	+
2	+	−
3	−	+

Now, let us have a brief discussion on what these types of relationship offer.

1. Common consonants, vowels and diphthongs in Persian and English: There are twenty one consonants, five vowels and four diphthongs common in both Persian and English. In Table 2.5 and Table 2.6, each of them has been exemplified.

Table 2.5: Common Consonants in Persian and English Sound System

Common Consonant	English Example	Persian Example	Common Consonant	English Example	Persian Example
/b/	bag	بام /bam/	/v/	visit	ولی /vali/
/p/	pen	پد ر /pedar/	/s/	see	سلام /salam/
/t/	ten	تبر /tabar/	/z/	zoo	زمین /zamin/
/d/	day	در /dar/	/ʃ/	shop	شب /shab/
/k/	car	کمر /kamar/	/ʒ/	measure	ژیان /zheyan/
/g/	glass	گل /gol/	/h/	he	هفت /haft/
/m/	man	مرد /mard/	/tʃ/	change	چشم /cheshm/
/n/	new	نرم /narm/	/dʒ/	join	جهان /jahan/
/ŋ/	finger	سنگ /sang/	/l/	long	لب /lab/
/f/	fat	فارسی /Farsi/	/r/	room	رنگ /rang/
/j/	yes	یاس /yas/	-	-	-

Table 2.6: Common Vowels and Diphthongs in Persian and English Sound System

Common Vowel	English Example	Persian Example
/æ/	apple	نم /nam/
/ɑ:/	car	دارا /dara/
/u:/	two	روز /ruz/
/i:/	tea	میز /miz/
/e/	bed	کتف /ketf/
/eɪ/	say	نی /ney/
/əʊ/	go	جو /jow/
/ɔɪ/	boy	خوی /khoy/
/aɪ/	five	وای /vay/

As there is no difference between Persian and English consonants presented in Table 2.5 and Table 2.6, they are perceived and articulated without great difficulty by Persian English language learners. In other words, where the first language has feature in common with the target language, L1 knowledge can assist in L2 learning. This relationship in most cases does not cause interference problems.

2. Consonants, vowels and diphthongs restricted to English: There are three consonants, eight vowels and four diphthongs that exist in English, but absent in Persian. In Table 2.7, they are each exemplified.

Table 2.7: Consonants, Vowels and Diphthongs Restricted to English Sound System

Consonants	English Example	Vowels	English Example	Diphthongs	English Example
/w/	well	/i/	happy	/aʊ/	now
/θ/	think	/ɒ/	got	/ɪə/	near
/ð/	they	/ɔ:/	more	/eə/	hair
-	-	/ʊ/	good	/ʊə/	pure
-	-	/ʌ/	sun	-	-
-	-	/ɜ:/	her	-	-
-	-	/ə/	about	-	-

Table 2.7 shows that the consonants /w/, /θ/ and /ð/ are absent in Persian. It should be noted that Persian learners of English have difficulties in articulating these consonants, which are absent in Persian; therefore, English contrasts such as think-sink,

bath-bass, breathe-breeze, they-day, west-vest and ten-then are troublesome. Table 2.7, vowels and diphthongs restricted to English also cause problems for Persian learners of English. Therefore, English contrasts such as sheep-ship, fool-full, cot-cut are troublesome. This means that differences will pose learning difficulties and learning difficulties will produce errors.

3. Consonants and vowels restricted to Persian: There are three consonants and one vowel that exist in Persian, but absent in English. In Table 2.8, they are each exemplified.

Table 2.8: Consonants and Vowels Restricted to Persian Sound System

Consonant	Persian Example	Vowel	Persian Example
/ɢ/	/qalb/قلب	/ɒ/	/mar/مار
/ʔ/	/abr/أبر	-	-
/x/	/xabar/خبر	-	-

The interest for contrastive analysis in this case, consonants and vowels restricted to Persian, is major because it may provide some implications for learning English as a foreign language (Fallahi, 1991). In short, Persian and English syllable structures and sound systems differ in their range of sounds. Therefore, Persian learners of English will have difficulties in learning English spelling, especially during the early stages, largely because of the unfamiliar Latin script and differences of Persian and English syllable structures and sound systems.

2.4 The Interlanguage Theory

With growing interest in EA vis-à-vis CA in the late 60s and early 70s, second-language learners' errors gained unprecedented prominence and became the subject of rigorous investigation in their own right. Alongside this extended domain of EA, a revolutionary concept developed in the study of language-learner language which is commonly referred to as "interlanguage". In 1969, Selinker coined the term "interlanguage" and later in 1972 elaborated it in an influential paper bearing the title interlanguage. The original formulations in Selinker's (1972) seminal paper include that:

1. the learner moves through a series of intermediate stages from the L1 to the L2;
2. the learner's aim is to move from the linguistic system of the IL to the L2 system;
3. the output of the learner is not describable in terms of the linguistic units of the L1 and/or the L2; and
4. 95% of learners never actually achieve the L2 system.

The paper refers to the interlanguage "as a separate linguistic system based on the observable output which results from a learner's attempted production of TL norm" (p. 35). In other words, the interlanguage is viewed as a separate linguistic system, clearly different from both the learner's native language and the target language being leaned, but linked to both NL and TL by interlingual identifications in the perception of the learner. Selinker (1972, pp. 209-231) argued that IL, which he saw to be a separate linguistic

system resulting from the learner's attempted production of the target language norm, was the product of five principal cognitive processes involved in second-language learning:

1. Language transfer: It refers to the idea that items and rules in the learner's interlanguage are directly traceable to the native language. Transfer is impossible to ignore mainly because it represents one of the effects of prior learning that the second-language learner brings uses for the task of learning the new language.

2. Transfer of training: Some interlanguage elements may derive from the way in which the learners were taught. In fact, transfer of training results from pedagogical procedures contained in a text or employed by a teacher.

3. Strategies of second-language learning: This view is based on the perception that learners learning a second language apply strategies. Selinker (1972) states that, "If the fossilized items, rules and subsystems are a result of an identifiable approach by the learner to the material to be learned" (p. 216), then we are dealing with such strategies.

4. Strategies of second language communication: Selinker (1972) states that, "If the items, rules and subsystems are a result of an identifiable approach by the learner to communication with native speakers of the TL" (p. 217), then we are dealing with such strategies.

5. Overgeneralization of second language rules: This process, referred to as ignorance of rule restrictions (Richards, 1971), occurs when the learner has mastered a general rule but does not yet knows all the exceptions of that rule. As a result, second language rules are applied too widely.

The interlanguage theory claims that learner languages are different from both the native and the TL system in one way or another, while at the same time having features in common with both. Cohen and Robbins (1976) state that "according to the Interlanguage theory, the interlanguage system is based on the data the second language learner is exposed to and shares properties with both the mother tongue and the target language" (p. 45). Figure 2.2, borrowed from Krzeszowski (1985, p. 77), illustrates the mutual relations between the source language, the target language, the interlanguage, and the processes, which are involved in the formation of interlanguage.

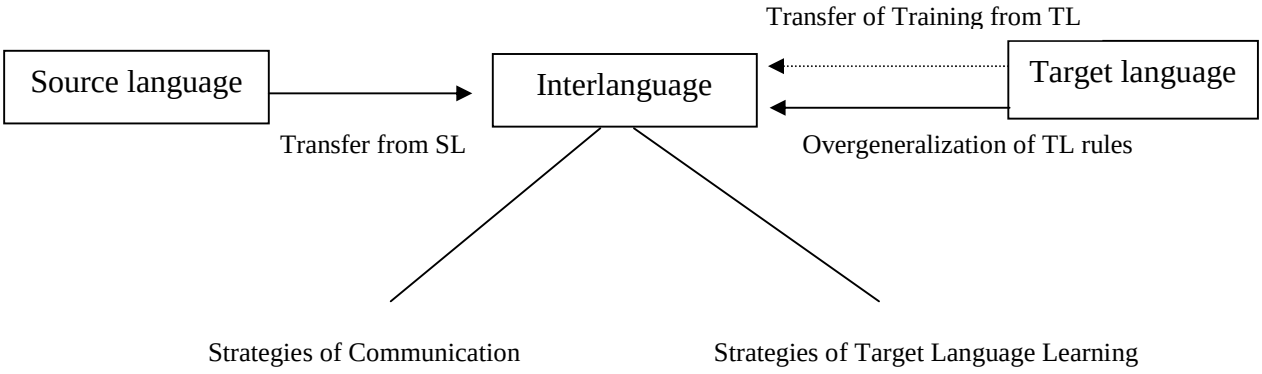

Figure 2.2: Interlanguage (Krzeszowski, 1985, p. 77)

As Figure 2.2 shows, transfer from the source language (SL), transfer of training from the target language (TL), and overgeneralization of target-language rule affect interlanguage directly while strategies of communication and strategies of target language learning affect interlanguage indirectly.

Some important characteristics differentiate interlanguage from the language spoken by native speakers of a language. Subsequent discussions focus on a number of principle features of interlanguage, which were raised by many researchers (Selinker, 1972; Ellis, 1985).

Interlanguage is systematic, i.e. they incorporate a system of linguistic rules which can generate novel utterances different in structure from both the form of utterances in the native language of the learner and from those in the target language. Interlanguage is unstable and dynamic. The learner's language, like all languages, is constantly undergoing change. As the learner approaches the target language norm, he reviews his language and his rule system changes. Interlanguage is variable, i.e. learners vary their performance systematically, though not in the sense of using stylistic variants like native speakers, but rather by regressing at times to previous stages of learning in more informal situations. Interlanguage is permeable, in the sense that rules that constitute the learners knowledge at any one stage are not fixed, but are open to amendment. Interlanguage is fossilized, that is forms in the linguistic performance of a second-language learner that do not conform to TL norms even after years of instruction in and exposure to the standard form of the TL.

In 1993 the central claims of the interlanguage hypothesis remain essentially unchanged, and the intervening years have provided substantial support for them. However, there have been some modifications and expansions since its first detailed proposal in print in 1972. Some of these have been hinted at, and will be expanded upon below.

First, the original interlanguage hypothesis was restricted to apply only to adults learning a second language. However, evidence emerged subsequently that children in language immersion programs, such as the French immersion programs in Canada, also produce interlanguages, and evidence fossilized linguistic systems with substantial influence from native language transfer. The question is whether they are using their language acquisition devices (LADs) to internalize the target language, or whether they are using those psycholinguistic processes described as more characteristic of adults learning second languages.

A second expansion of the IL hypothesis has occurred in response to the growing interest in the influence of universal grammar upon the development of interlanguage. The crucial question here, early on, was this: universal grammar is assumed to be central to the development of natural languages; but is interlanguage a natural language? There have been two positions taken in response to this question. Selinker's initial hypothesis takes the first position: that it is not, at least as the notion natural language has been defined in linguistics. He argues that natural languages are produced by LADs; whereas interlanguages fossilize and evidence native language transfer and they are a product of

latent psychological structures not LADs. So interlanguages do not have to obey language universals. Adjamian (1976), and following him others, took the second position that interlanguages are natural languages and they have to obey language universals.

A third modification has been in the way in which interlanguage development seems to vary in different social contexts, or discourse domain. Research evidence shows that learners can produce a significantly more fluent, grammatical, and transfer-free interlanguage in some social contexts than in others. Teaching assistants may be more fluent and grammatical and fossilization may be more prominent for a given learner in one context than in another.

A fourth issue which has occasioned substantial discussion in the literature centers upon the phenomenon of fossilization itself and whether it is inevitable. Selinker argues that no adult learner can hope to ever speak a second language in such a way that s/he is indistinguishable from native speakers of that language. Selinker argued that the adult learners' phonological system may fossilize, but the morphology, syntax, and lexicon may not, continuing to develop until reaching full identity with the target language.

Finally, research on interlanguage has expanded far beyond its original focus on phonology, morphology, syntax, and lexis, to include the sociolinguistic component of communicative competence. Research on interlanguage includes comparative work on

the way in which learners execute speech acts across three linguistic systems. Cohen (1981), for example, has studied the way learners attempt to apologize, using their interlanguage, target language social context, and compared this to the way native speakers of both the NL and the TL apologize in the same context.

2.4.1 Other Perspectives on Language-Learner Language

Many researchers have different definitions and descriptions of Language-learner language. As a result, different terms are used to refer to Language-learner language. All of these terms refer to language used by the learner as she or he attempts to reach and master the target language.

In contrast to Selinker's cognitive emphasis, Adjamian (1976) argues that the language-learner language should be analyzed linguistically as rule-governed behavior. In this view, the internal organization of language-learner language can be described linguistically just like any natural language. Whereas Selinker’s use of interlanguage stressed the structurally intermediate nature of the learner’s system between the first and the target; Adjamian focuses on the dynamic nature of language-learner language and their permeability. By their nature, language-learner language systems are thought to be incomplete and in a constant state of flux. In this view, the individual’s first language system is seen to be relatively stable, but the language-learner language is not. The structure of the language-learner language may be significantly linked with the first language. For example, when the learner is placed in a situation that cannot be avoided,

he or she may use rules or items from the first language. Similarly, the learner may stretch, distort, or overgeneralize a rule from the target language in an effort to produce the intended meaning. Adjamian believes that both processes reflect the basic permeability of the language-learner language. Selinker and Adjamian views differed, however, in that Selinker hypothesized that interlanguage is the product of different psychological mechanism than native language and hence are not natural language.

According to Tarone (1979), language-learner language is not a single system, but a set of styles that can be used in different social contexts. Tarone maintains that the evidence shows that language-learner language speech production varies systematically with context and dialect task. Tarone assumes that the language-learner language is a natural language, obeying the constraints of the same language universals and subject to analysis by means of standard linguistic techniques. She claims that language production shows systematic variability, similar to that demonstrated to exist in the speech of native speakers. In short, Tarone views language-learner language as operating on the same principles as natural languages and she stressed the notion of variability in use and the pragmatic constrains that determine how language is used in context.

Nemser (1971) refers to language-learner language as “an approximate system”. He defines an approximate system as “the deviant linguistic system actually employed by the learner attempting to utilize the target language” (p. 116). This system emphasizes the developmental nature of the learner's language, since with the addition of new elements the learner's linguistic system is continually being modified and developed. According to

this model, a second language learner goes through different stages (i.e. develops different interlanguages), with each stage gradually reconstructing successive stages and approximating the target language. Figure 2.3 illustrates approximate system.

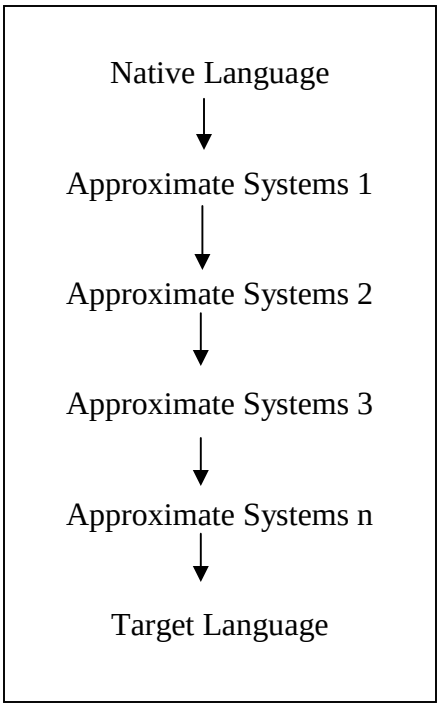

Figure 2.3: Approximate System

Nemser further argues that such approximate systems vary in character in accordance with proficiency level, learning experience, communication function and personal learning characteristics.

In short, the main difference between the approximate systems and interlanguage is that the latter emphasizes the structurally intermediate status of the learner's language system between mother tongue and target language while the former emphasizes the

transitional and dynamic nature of the system. A further point of difference is that Nemser (1971, p. 116) defined the learner's language system as a "deviant" form of the TL, which is not a view which Selinker holds. Selinker (1972) strongly rejects the notion that IL should be compared to the TL and insists that IL is a system in its own right.

Corder (1971) refers to the language-learner language as "an idiosyncratic or transitional dialect" to emphasize the idea that the learner's language is unique to a particular individual and the grammar of this language is particular to that individual alone. Corder maintains that idiosyncratic or transitional dialects are regular, systematic, meaningful, and unstable. Corder (1981) describes the learner's language as follows:

> …the spontaneous speech of the second language learner is a language and has a grammar. Secondly, since a number of sentences of that language are isormorphous with some of the sentences of his target language and have the same interpretation, then some, at least, of the rules needed to account for the learner's language will be the same as those required to account for the target language. Therefore the learner's language is a dialect in the linguistic sense: two languages which share some rules of grammar are dialects (p. 14).

Corder (1981) further explains that the language of the second-language learner is not the only kind of idiosyncratic dialects. He classifies idiosyncratic dialects into four groups: a. the language of poems where parts can be deliberately deviant, b. the speech of an aphasic which categorizes as pathologically deviant, c. the speech of an infant, and d. the speech of learners of a second language (p. 15-17). However, the idiosyncratic dialects of the second-language learner differs from the rest in that it shares features of

not one but two languages, the native language and the target language while maintaining some of its own, i.e. some of the rules and characteristics are idiosyncratic (are particular to the individual). This is illustrated in Figure 2.4.

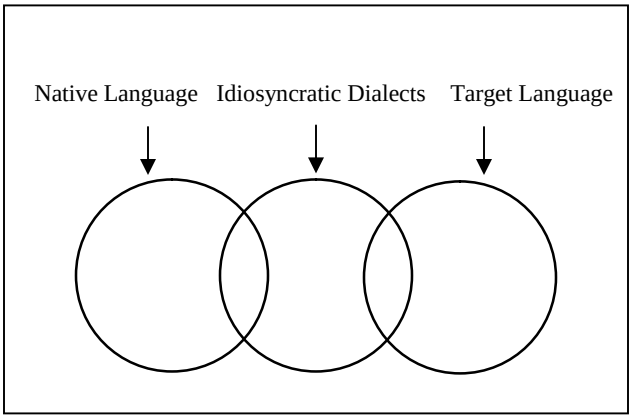

Figure 2.4: Idiosyncratic Dialects (Corder, 1981, p. 16)

According to Corder (1981), idiosyncratic dialect has the following characteristics:

1. The learner's language, especially the rules of the language, are particular to an individual alone,
2. The rules are regular, systematic, meaningful and unstable,
3. The rules may be superficially well-formed using the target language rules; such sentences are called covertly idiosyncratic.
4. The rules may be superficially ill-formed in the target language rules: such sentences are called overtly idiosyncratic.

Richard's (1974) interpretation of Corder's views is that "the speech of learners of a second language is regular, systematic, and meaningful; that is, it has a grammar and is describable in terms of a set of rules which is a subset of the rules of the target social language" (p. 161).

Although the differences between (Corder 1967) transitional competence and Nemser (1971) approximate systems and Selinker's conception of interlanguage are frequently ignored it is Selinker himself (1992), who explicitly draws attention to these differences:

> Another introductory point of importance is that the terms 'interlanguage', 'transitional competence' (Corder 1967) and 'approximate systems' (Nemser 1971) are not synonymous and should not be treated as such. In my view, they reflect different theoretical positions that have practical ramifications. The transitional competence hypothesis emphasizes the in-flux phenomenon of only certain interlanguages. This hypothesis does not pretend to account for those interlanguages which are permanently fossilized or even for the real possibility of those parts of developing interlanguages which may be fossilized relative to particular contexts. The approximate systems hypothesis is different from the other two in its emphasis on the directionality towards the TL. The latter hypothesis is, I believe, fundamentally false in its view that SLA evolves in stages which gradually more closely approximate the TL. It is in fact a denial of the strong possibility of the reality of permanent fossilization (pp. 24–25).

In short, Nemser (1971) uses the term approximate system for language-learner language to show that the learner moves closer and closer towards the TL as he/she processes more and more of the TL system and Corder's (1967) use of transitional competence has a similar focus on movement from L1 to L2. Both the terms approximate

system and transitional competence have been rejected by Selinker because of their connotations of comparison between language-learner language and TL.

As stated above, many researchers give different definitions and descriptions of language-learner language. Corder's concept of "idiosyncratic dialect" (1971), Nemser's "approximate language" (1971) and Selinker's "interlanguage" (1972) have brought new dimensions to the study of second-language learners' errors. According to these notions, the study of a learner's language system involves an analysis of:

a. The learner's NL utterances

b. The learner's IL or idiosyncratic utterances

c. Utterances produced by native speakers of the TL, i.e. the target language norms.

Such a tripartite approach to the study of errors seems essential in order to explain the learner's language system at a given stage of development. As Corder (1967) points out:

> …it is in such an investigation that the study of learner's errors would assume the role it already plays in the study of child language acquisition, since…the key concept in both cases is that the learner is using a definite system of language at every point in his development, although it is not the adult system in the one sense, nor that of the second language in the other (p. 10).

2.5 Language Transfer and Interference

Given the nature of the learner's language, this section discusses the phenomenon of language transfer and interference in relation to the learner's interlanguage. The concept of transfer is based on the idea that items and rules in the learner's interlanguage are directly traceable to the native language. So, the observation that prior learning affects subsequent learning leads to the hypothesis of transfer. In language, this means that the forms and patterns of the native language are imposed on the second language (Gass, 1979). Transfer, as defined by Richards et al. (1992), "involves the carrying over of learned behavior from one situation to another" (p. 386). In other words, transfer involves two successive learning, and it causes the first learning in such a case to affect the second. This effect could be of two basic types: positive or negative. Positive transfer occurs when a native form is both used in the production of an L2 utterance, and is also a part of the L2 norm (Johnson, K. & Johnson, H., 1999). According to Odlin (2001), positive transfer facilities language learning. In other words, when an old habit facilitates the formation of new habit "positive transfer" is said to take place. Johnson, K. & Johnson, H. (1999) also mention that negative transfer occurs when the L1 form used in L2 production is not a part of the L2 norm, and the resultant utterance is erroneous. As Corder (1971) points out, "one explanation of L2 errors is that the learner is carrying over the habits of his mother tongue into the second language" (p. 169). According to Brown (2000) negative transfer can be referred to as interference, in that "previously learned material interferes with subsequent material - a previous item is incorrectly transferred or incorrectly associated with an item to be learned" (p. 95). Brown states that, "it has been

common in second language teaching to stress the rule of interference, that is, the interfering effect of the native language on the target language" (ibid).

It is essential to state here that in the 1950 and 1960 language transfer was viewed as the sole factor that affects the learner's language. However, language transfer is now viewed differently; it is seen as a factor among others that may cause the learner's errors (Torres, 1999). As pointed out by Gass and Selinker (1983):

> We feel, however, that there is overwhelming evidence that language transfer is indeed a real and central phenomenon that must be considered in any full account of the second language acquisition process (p. 7).

Odlin, in Doughty and Long (2003), also states that "there is little question that learner often do not become proficient in target language and that several factors contribute to learner difficulties, one of them being transfer" (p. 457). Transfer processes have been documented to occur at all the levels of linguistic analysis: phonology, morphology, syntax, lexis, and semantics (Johnson, K & Johnson, H, 1999).

It should be pointed out that the present study focuses on negative transfer or interference which may occur within the target language or across the native language and the target language. It is clear that intralingual interference occurs when a learner negatively transfers his previous or existing knowledge of the target language while learning the same language. On the other hand, interlingual interference occurs when he negatively transfers the knowledge of his L1 in the learning of the target language, and it

generally refers to “the systematic influence of the native language in the learner’s attempts to use the target language” (Cowan, 1977, p. 52).

2.6 Contrastive Analysis (CA)

The study of SLA as we know it today is rooted in early CA, which became the dominant approach during the 1950s and 1960s. According to Lado (1957), the purpose of CA is to carefully describe L1 and TL in order to develop effective pedagogical materials. The basic assumption of CA is that learning a second language involves transferring the linguistic forms and meanings of the L1 to the L2 by learning a set of habits. Contrastive analysts predicted that some languages would be easier to learn than others, because where languages differed greatly in structure; the learner would be required to automatize a more complex set of habits. This automatization would take longer than if languages were structurally more similar.

Gass and Selinker (2001) state that CA as formulated by Lado (1957) was based on the following assumption:

a. CA is based on a theory of language which claims that language learning is a habit formation.
b. The major source of errors is the native language.
c. Errors can be predicted by considering the differences between the L1 and L2.

d. The greater the differences, the more errors will occur.
e. What is dissimilar between two languages is what must be learned.
f. Difficulty and ease can be determined by differences between the two languages (p.73).

Studies taking a CA perspective therefore focused primarily on transfer phenomena and especially negative transfer, which occurred when languages differed in structure. As a result of these structural differences, learning a language was not a simple matter of transferring a form directly from L1 to L2. The primary focus of CA studies was therefore on difference and types of difference. Detailed analyses of similarities and differences were carried out by comparing languages in terms of mainly phonology and syntax and, to a lesser extent, semantics (Fries, 1945; James, 1992; Lado, 1957).

Unfortunately, CA in its original formulation proved to be seriously flawed when applied to data from learners across the world in different language learning situations. Most seriously, the strong predictions of difficulty and ease of learning which are intuitively appealing were not always borne out by studies of learner language (Wardhaugh, 1970). In particular, some researchers found that when there was a great degree of difference between languages, learners seemed to be able to produce the form correctly, whereas if there was a small degree of difference learners seemed to find it more difficult to produce the correct form (Kellerman, 1979; Odlin, 2001; Whitman & Jackson, 1972). As a result, some areas of error were not predicted by CA. Furthermore, students tended to avoid difficult areas to reduce the possibility of making errors, and

thus the full range of possible errors was not available for study in this approach (Schachter, 1974).

Another limitation of CA studies lies in the extreme role of transfer posited by early theorists like Lado (1957). Early theorists believed that language transfer was the main process in SLA. However, later studies show that many errors are not simply traceable to the L1 (Nemser, 1971; Dulay & Burt, 1972; Richards, 1985). Several theorists concluded that although there is some role for transfer, learners choose in an active and principled way whether or not to transfer and what to transfer (Gass, 1979; Kellerman, 1979; Selinker, 1997). Contrastive analysis does not account for this active role of the learner, because it is primarily interested in the languages as linguistic systems and products rather than in learners using complex psycholinguistic processes (Van Els et al., 1984). As a result of the failure of the strong version of CA, Wardhaugh (1970) suggested a weak version of CA which proposed that the findings of CA could be used to explain transfer after the fact. This version had limited explanatory value, although it was later incorporated as part of EA (James, 1998).

In conclusion, transfer may be one aspect of SLA, but it does not explain it fully. An adequate explanation of the process of development in SLA is therefore not provided by CA (Towell & Hawkins, 1994). Contrastive analysis was largely abandoned during the 1970s, but it is perpetuated in a modified form in transfer analysis (James, 1998). Transfer analysis is concerned mainly with processes such as cross-linguistic influence (Kellerman & Sharwood Smith, 1986) and language transfer (Odlin, 2001). This newer

version of CA is not the same as the original because “you are comparing IL with MT [mother tongue] and not MT with TL” (James, 1998, p. 5). This study will take a transfer analysis perspective.

2.7 Error Analysis (EA)

In the 1960s, CA came under attack. It was shown, for example, that many of the errors predicted to occur by a CA did not in fact occur and, furthermore, that some errors that were not predicted to occur did occur. On these empirical grounds and also because the theoretical underpinnings of CA in behaviorism were rejected (Chomsky, 1959), researchers began to look for an alternative method for investigating L2 acquisition. The method they initially turned to was EA. Corder is the “father” of EA. It was in his article entitled “The significance of learners’ errors” (1967) that EA took a new turn. Errors used to be “flaws” that needed to be eradicated. Corder (1967) presented a completely different point of view. He contended that those errors are “important in and of themselves”. In a series of articles published in the late 1960s and early 1970s, Corder spelt out the theoretical rationale and empirical procedures for carrying out an EA. In his opinion, systematically analyzing errors made by language learners makes it possible to determine areas that need reinforcement in teaching.

According to Ellis and Barkhuizen (2005), EA is theoretically based on “nativist theories, which emphasize the mental processes that occur in the black box of the mind when learning takes place, and the emergence of interlanguage theory” (p. 54). In fact,

Error analysis tries to account for learner performance in terms of the cognitive processes learners make use of in recognizing the input they receive from the target language. A primary focus of errors analysis is on the evidence that learners' errors provide to an understanding of the underlying processes of second language acquisition. As Dulay, Burt and Krashen (1982) assert, people cannot learn language without first systematically committing errors. The learner profits from his/her errors by using them to obtain feedback from the environment and in turn uses that feedback to test and modify his/her hypotheses about the target language.

2.7.1 Errors versus Mistakes

In an attempt to analyze learners' errors in a proper point of view, it is important to make a distinction between mistake and error, which are technically two very different phenomena. Different definitions of the concept of error have been developed from various perspectives in the error analysis literature. According to Corder's definition (1967), a mistake is a deviation in learner language that occurs when the learner fails to perform at their competence level: it is a lapse that reflects processing problems; but error, on the other hand, is a deviation in learner language which results from lack of knowledge of the correct rule. Sridhar (1981) defines an error as "a systematic and consistent deviation from a given norm, representative of the state of the learner's L2 system at a given stage of acquisition or development; but mistakes or lapses are random deviations which, when pointed out, can easily be corrected by the learner" (p. 224). Crystal (1992) states that, "mistakes are unsystematic features of production that speakers

would correct if their attention were drawn to them. On the other hand, errors are considered to be systematic, governed by rules, and appear because a learner's knowledge of the rules of the target language is incomplete" (p. 125). Another definition of errors is suggested by Dulay, Burt & Krashen (1982) who claimed that the term error can be used to refer to "any deviation from a selected norm of language performance, no matter what the characteristics or causes of the deviation might be" (p. 139).

Table 2.9 compares and contrasts errors and mistakes according to many researchers (Corder, 1967; Richards, 1974; Sridhar, 1981; Dulay, Burt & Krashen, 1982; Lennon, 1991; Crystal, 1992; Selinker, 1997; Ellis, 2003; James, 1998; Brown, 2000; Keshavarz, 2005).

Table 2.9: Errors versus Mistakes

Errors vs. Mistakes	
1. Errors are rule governed and systematic in nature.	1. Mistakes are random deviations, unrelated to any system.
2. Errors reveal something about the learners underlying knowledge of target language.	2. Mistakes are the same as performance mistakes of native speakers of any language (a failure to utilize a known system correctly).
3. Errors occur consistently in the learner's performance.	3. Mistakes may be caused by non-linguistic factors such as fatigue, emotions, etc.
4. Error cannot be self-corrected.	4. Mistakes can be self-corrected.
5. Errors have a high frequency of occurrence.	5. Mistakes have a rather low frequency of occurrence.
6. Errors arise because of gaps in the learners L2 knowledge.	6. Mistakes occur because of the difficulty of processing forms that are not yet fully mastered.

Corder (1974) is of the view that error analysts should focus attention on errors. Accordingly, many researchers (Richards, 1974; Corder, 1981) assert that EA should be

restricted to the study of errors and should exclude mistakes. Therefore, errors are more serious and should be treated by the EFL teacher more carefully. According to Littlewood (1984) “errors should not be seen as signs of failure, but as evidence that the learner is developing” (p. 22).

2.7.2 Significance of Errors

Many scholars in field of error analysis have stressed the significance of second-language learners’ errors. Corder (1967), for instance, in his influential article remarks that:

> …they are significant in three different ways. First to the teacher, in that they tell him, if he undertakes a systematic analysis, how far towards the goal the leaner has progressed and, consequently, what remains for him to learn. Second, they provide to the researcher evidence of how language is learnt or acquired, and what strategies or procedures the learner is employing in his discovery of the language. Third, they are indispensable to learner himself, because we can regard the making of errors as a device the learner uses in order to learn. It is a way the learner has for testing his hypotheses about the nature of the language he is learning (p. 167).

Corder’s views in this regard have been reiterated in the literature. Richards (1971), for example, remarks that errors are significant and of interest to:

a. Linguists, because as Chomsky suggests, the study of human language is the most fruitful way of discovering what constitutes human intelligence.

b. Psychologists, because by looking at children's speech and comparing it with adult speech, they have been able to examine the nature of the mental processes that seem to be involved in language learning.
c. Teachers, because by analyzing learners' errors, they are be able to discover the learner’s difficulties and devise a method for addressing them.

Jain (1974) also maintains that errors are significant for two reasons: a. for understanding the process of second language acquisition, and b. for planning courses incorporating the psychology of second-language learning.

2.7.3 Types of Errors Representing Stages of Second Language Learning

In the process of second language learning, learners go through different stages of language learning, each of which has certain characteristics. Relying on findings of other researchers, particularly a model offered by Corder (1973, pp. 270-72) and based observations of what the learner does in terms of errors alone, Brown (2000, pp. 227-28) proposes four stages of interlanguage development, as follows:

The first is a stage of “random errors”, a stage which Corder calls "pre-systematic stage" in which the learner is not aware of the fact that there is some systematic order to a particular class of items. The second, or “emergence”, stage of interlanguage finds the learner growing in consistency in linguistic production. The learner has begun to discern a system and to internalize certain rules. These rules may not be correct by target

language standards, but they are nevertheless legitimate in the mind of the learner. Generally, the learner at this stage is still unable to correct errors when they are pointed out to him/her by someone else. Avoidance of structures and topics is typical. The third stage is truly “systematic” in the sense that the learner is able to manifest more consistency in producing the second language. While those rules inside the head of the learner are still not all 'well-formed'. They are more closely approximating the target language system. The most salient difference between the second and third stage is the ability of learners to correct their errors when they are pointed out – even very subtly to them. A final stage, which Brown (2000) calls the “stabilization” stage in the development of interlanguage system, is similar to what Corder (1973) calls a "post-systematic stage". In this stage, the learner has relatively few errors and has mastered the system to the point that fluency and intended meaning are not problematic. This stage is characterized by the learner's abilities to self-correct. The system is complete though that attention can be paid to those few errors that occur and correction made without waiting for feedback from someone else.

Brown (2000) suggests three reasons for the shortcomings of EA. First, EA focuses only on the learners’ errors, whereas the correct utterances are not taken into account. Second, by using free composition method, EA fails to give an account for the existence of avoidance strategy, in which the learner might avoid some structure that he or she is not familiar with. Third, EA concentrates on specific languages rather than viewing the universal aspects of language.

Although EA has been criticized, currently "it is showing signs of making a comeback" (Ellis, 1994, p. 69) as both the qualitative approach and the improved quantitative approach to error interpretations have much to offer SLA. To sum up, James (1994) remarks on the present status of CA and EA as follows:

> …there is still a great deal to be said and a great deal of work to be done in CA and EA. They are vital components of the applied linguistic and language teaching enterprise. In English, one talks of something being 'as dead as the dodo', the extinct bird of Mauritius. If CA/EA is a dodo, then there is no point flogging a dead horse; if alive and well, as is certainly the case, she deserves to be studied for her rich plumage (p. 196).

2.7.4 Identification of Errors

One of the common difficulties in understanding the linguistic systems of the language learners is the fact that such system cannot be directly observed. They must be inferred by means of analyzing production and comprehension data. The analysis of collected data involves several stages. The first stage in the technical process of describing the linguistic nature of errors is to detect and identify them. Ellis & Barkhuizen (2005) state that the identification of error involves a comparison between what the learner has produced and what a native speaker counterpart would produce in the same context. The basic procedure is as follows:

a. Prepare a reconstruction of the sample as would have been produced by the learner's native speaker counterpart.

b. Assume that every utterance or sentence produced by the learner is erroneous and systematically eliminate those that an initial comparison with the native speaker sample shows to be well-formed. The remaining utterances or sentences should therefore contain errors.
c. Identify which part(s) of each utterance or sentence produced by the learner differs from the reconstructed version (p. 58).

Therefore, interpretation is central to the entire process, because the researcher's interpretation of what he thinks the student meant may the determine reconstruction. According to Douglas McKeating (1989), clues to interpretation may be available from a combination of any of the following: a. the general context, b. the knowledge of similar errors made by similar students, c. the knowledge of the students' MT and the possible results of phonological interference or direct translation into English, and d. direct questioning, perhaps in the MT, as to what the student meant. Corder (1971) provides a model for identifying errors in the utterances of second and foreign language learners. That model is schematized in Figure 2.7.

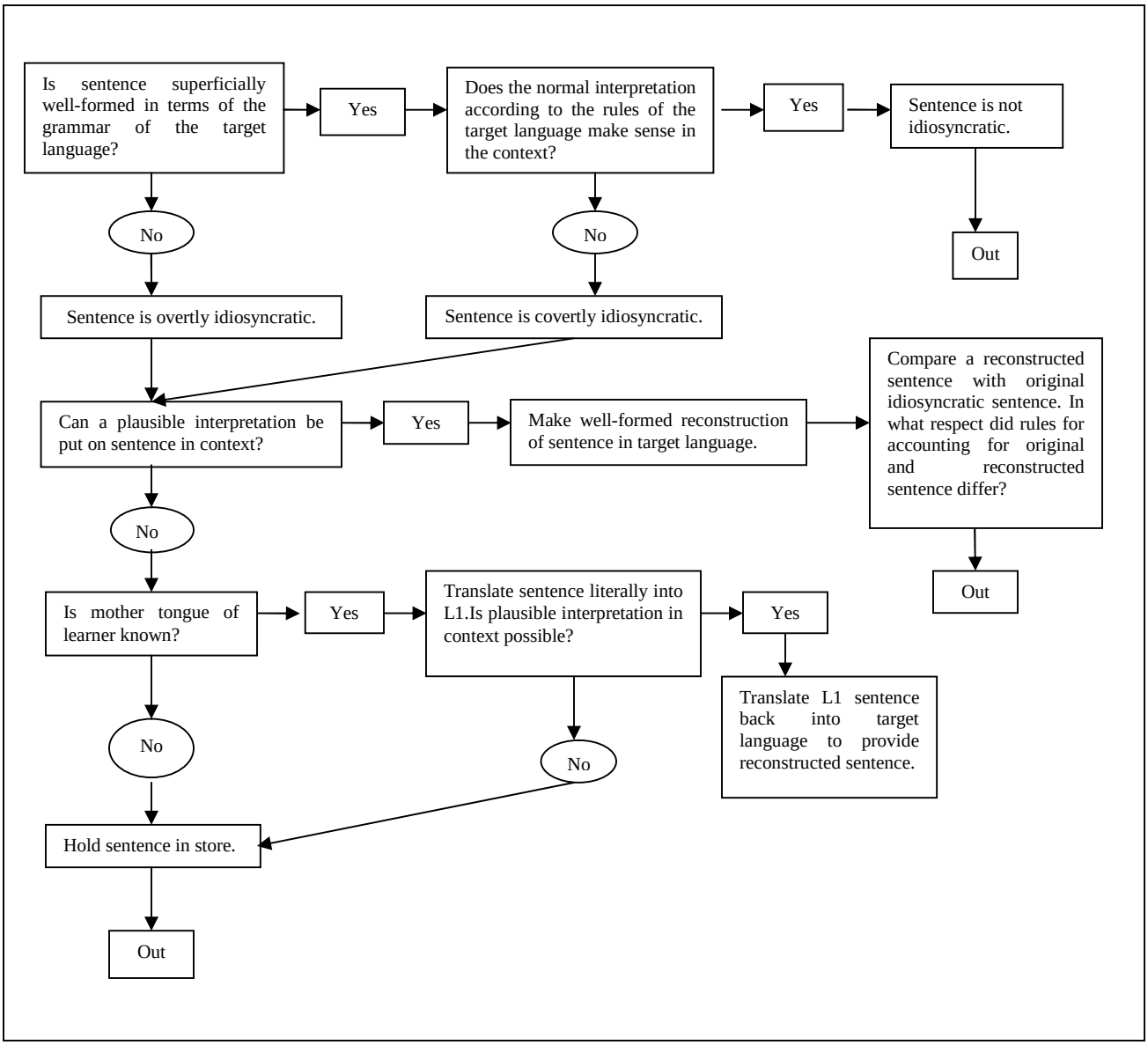

Figure 2.5: Procedure for Identifying Errors in Second-Language Learner Production Data (Corder, 1971, p. 150).

According to this model, every sentence is to be regarded as idiosyncratic until shown to be otherwise (Corder, 1981). When the sentences are ill-formed in the terms of TL rules, they are regarded as “overtly idiosyncratic”, while the sentences that are superficially well-formed but do not mean what the learner intends the sentence to mean

are regarded as “covertly idiosyncratic” (ibid). In this sense, the linguistic and extralinguistic contexts must be taken into account to make judgments which often leads to the detection of errors of a more pragmatic or discoursal nature (Penny, 2005). Corder's model also acknowledges the significance of interpreting the learner's utterances. As Corder (1978) points out, to identify the presence and nature of an error, an interpretation of the learner's utterance is necessary. In other words, the interpretation of the learner's utterance can reveal the differences between what the learner wants to say and what the learner has said. This model also shows that translation is a possible indicator of the errors that may be attributed to NL interference.

For the purposes of this study, following Corder’s procedure (1971), every word that deviates from the norms of written Standard English is identified as an error. According to Anderson and Trudgill (1990), the language forms which are considered to be correct are those associated with the upper class dialect, also known as Standard English. Trudgill (quoted in Wardhaugh 1983, p. 31) adds that Standard English is the variety of English that is usually used in print and is taught in schools and to the non-native speakers learning English. Standard English is also used in news broadcasts and other public discourse.

2.7.5 Explanation of Errors

This stage is the most important for SLA research as it involves an attempt to establish the processes responsible for L2 acquisition. As stated by Ellis and Barkhuizen

(2005), the explanation of errors includes determining their sources in order to find out how and why errors are made.

As Taylor points out, the error source may be psycholinguistic, sociolinguistic, epistemic, or may reside in the discourse structure. Psycholinguistic sources concern the nature of the L2 knowledge system and the difficulties learners have in using it in production. Sociolinguistic sources involve the learners' ability to adjust their language in accordance with social context. Epistemic sources concern the learners' lack of world knowledge, while discourse sources involve problems in the organization of information into a coherent text. As Abbott (1980) states, "the aim of any EA is to provide a psychological explanation" (p. 124). A number of different sources of psycholinguistic errors have been identified. Richards (1971) distinguishes three:

a. Interference errors: they are caused by the influence of the learner's mother tongue on production of the target language in presumably those areas where the languages clearly differ.
b. Intralingual errors: they are those originating within the structure of a language itself. They reflect the general characteristics of rule-learning, such as faulty generalization, incomplete application of rules and failure to learn conditions under which rules apply.
c. Developmental errors: they reflect the strategies the learner uses to acquire the language. These errors show that the learner, sometimes completely independent of the native language, makes false hypotheses about the target language based on

limited exposure to it. Corder (1981) points out that a major justification for labeling an error as developmental comes from noting similarities to errors produced by the children who are acquiring the target language as L1.

Brown (2000) has divided sources of errors into four different categories. The first category, “interlingual transfer”, is defined as “the carryover of previous performance or knowledge to subsequent learning”. The second source of error is “intralingual transfer” which refers to generalization within the target language. Brown (2000) labels the third source of errors as “context of learning” errors. By context, he means the physical environment: for example, the classroom, its teacher and the materials are all part of the context, and each can lead the learner to make faulty hypotheses about the language. This is what Richards (1971) calls “false concepts” and Stenson (1974) terms as, “induced errors”. The fourth category is labeled “communication strategies”, which happens when learners use erroneous production strategies in order to enhance their ability to get their messages across. Examples include word coinage, circumlocution, false cognates and prefabricated patterns.

Dulay and Burt (1972) also categorize second language learners’ errors, or goofs in their terminology, into the following categories:

a. Interference-like Goofs, i.e. those errors which reflect native language structure and are not found in L1 acquisition data of the target language.

b. L1-Developmental Goofs, i.e. those that do not reflect native language structure, but are found in L1 acquisition data of the target language.
c. Ambiguous Goofs, i.e. those that can be categorized as either interference-like goofs or L1 developmental goofs.
d. Unique Goofs, i.e. those that do not reflect L1 structure, and also are not found in L1 acquisition data of the target language.

As far as psycholingustic sources of errors are concerned, and according to Ellis (2005), two major processes are identified, distinguishing interlingual errors and intralingual errors. Therefore, the focus of attention in this study is on two major sources of errors, interlingual and intralingual one.

2.7.5 (a) Interlingual Errors

Based on the assumption that interference occurs across a learner's native language and the target language, we can now proceed to a discussion on what linguists mean by interlingual errors. Interlingual errors seem to result from L1 interference, which is related to the concept of transfer as explained by Lado (1957). L1 interference refers to those instances of deviation from the norm of the target language which occurs as a result of familiarity with the mother tongue or first language. Although the contrastive hypothesis cannot be accepted as accounting for all errors in L2 use, it is nonetheless true that there is a "transfer effect" from the mother-tongue to the new language. As stated by Schachter and Celce-Murcia (1977), interlingual errors are "those caused by the influence

of the learner's mother tongue on production of target language in presumably those areas where languages clearly differ" (p. 443). Also, Dulay et al (1982) define interlingual errors as "L2 errors that reflect native language structure, regardless of internal processes or external conditions that spawned them" (p. 171). Interlingual errors, According to Keshavarz (2005), "result from the transfer of phonological, morphological, grammatical, lexico-semantic, and stylistic elements of the learner's mother tongue to the learning of the target language" (p. 102).

According to Brown (2000), interlingual transfer is a significant source of errors for all learners. In the beginning stages of learning a second language, learners usually make interlingual errors, because of transfer of L1 onto L2. In this relation, Richards (1979) mentions that interference from the mother tongue is clearly a major source of difficulty in second-language learning, and contrastive analysis has proved valuable in locating areas of interlanguage interference. Regarding to spelling errors, James et al (1993, pp. 291-300) divides sources of interlingual errors or "L1 interference errors" into three types:

a. Mispronunciation or L1 interference: Using a spelling rule from L1 which does not exist in the target language.
b. Misrepresentation: Using a letter from L1 which also exists in the target language, but has a different sound value.

c. Lexical cognate misspelling: Using a letter that exists in both L1 and the target language, but that same letter is distributed differently in the target language than it is in the L1.

2.7.5 (b) Intralingual Errors

Richards (1971) defines intralingual errors as those which occur as a result of interference from application of general learning strategies similar to those manifested in first language acquisition. In other words, they occur because of negative transfer of certain rules or features from the target language itself to another situation that requires application of other rules or features within the same language in the process of second language acquisition. With regard to this type of errors, Corder (1967) proposes the following hypothesis:

> I propose therefore as a working hypothesis that some at least of strategies adopted by the learner of second language are substantially the same as those by which a first language is required. Such a proposal does not simply imply that course or sequence of learning is the same in both cases (p. 161).

This hypothesis suggest that some errors committed in second language acquisition can be considered as intralingual errors and not interlingual errors since they are similar to those committed by L1 learners. According to Keshavarz (2005), intralingual errors are caused by the mutual interference of items in the target language, i.e. the influence of one target language item upon another. Such errors reflect the learner's competence at a particular stage of second language development and illustrate

some of the general characteristics of language learning. In fact such errors are similar to errors produced by monolingual children, and result from the learner's attempt to build up concepts and hypotheses about the target language from his/her limited experience with it.

Richards (1974) states that intralingual errors reflect the general characteristics of rule-learning, such as:

a. Overgeneralization: this refers to the deviant structures produced by the learner on the basis of his limited knowledge of and exposure to other structures of the target language. As such, overgeneralization is a common strategy not just in second language acquisition but also in first language acquisition (Richards, et al., 1985). Learners create ill-formed utterances due to their partial learning of the TL rules as they expect greater regularity in the rules of the TL than actually exists there. With regard to L2, Richards (1974) argues that overgeneralization is associated with redundancy, reduction and simplification. He claims that errors committed by the L2 learner because of the influence of certain other structures which are similar to the ones used by her/him are said to be errors of overgeneralization. Generally, overgeneralization is the creation of one deviant structure in place of two regular structures (ibid).

b. Ignorance of rule restriction: this type of error is due to the learner's ignorance of the restrictions of an exception to general target-language rules. That is, the

learner fails to observe restrictions of target-language structures to contexts where they do not apply. Errors caused by ignorance of rule restriction may result from analogical extension or the rote learning of rules.

c. Incomplete application of rules: involves a failure to fully develop a structure. Through this category of error, we may note the occurrence of structures whose deviancy represents the degree of development of the rules required to produce acceptable utterances (Richards, 1974). It occurs in cases where the learner finds he can have successful communication by using simple rules than complex ones. The learner tends to apply some of the rules and continues to make deviant forms in order to make himself easily understood.

d. False concepts hypothesized: refers to errors derived from faulty understanding of target language distinctions or inaccurate ideas about language rules (Richards, 1974). Such intralingual errors, according to Richards, are sometimes due to poor gradation of teaching items. He traces errors of this sort to classroom presentation, and to presentation which is based on CA of English and another language or on contrasts within English itself (ibid).

Ellis and Barkhuizen (2005) also state that intralingual errors reflect the operation of learning strategies that are universal, i.e. evident in all learners regardless of their L1. James (1998) provides a useful summary of these strategies, the most of which are false analogy, misanalysis, incomplete rule application, exploiting redundancy, overlooking co-occurrence restrictions, and system-simplification. Ellis and Barkhuizen (2005) state

that identifying the source of particular errors is not an easy task. In fact, many errors are likely to be explicable in terms of multiple, rather than single, sources. Thus, it is not surprising that researchers have produced different estimations of the percentage of errors that can be traced to interlingual and intralingual sources. Regarding to spelling errors, James (1993, pp. 301-302) divides intralingual errors or "non-interference errors" into three types:

a. Overgeneralization of an L1 spelling rule.
b. Homophone confusion: It is the result of failing to differentiate between two existing words that sound the same but are differently spelt.
c. Letter naming: Using a letter to represent a sound which is identical to the sound of the name of the letter.

In order to classify interlingual and intralingual sources of spelling errors of Persian English language learners, this study has benefited from the classification utilized by James et al. (1993) because this classification is an excellent account of spelling errors within the context of EA which distinguishes among sources of interlingual errors and intralingual errors. Apart from that, according to James et al. (1993), this classification seems to facilitate a plausible description of types of spelling errors. They also suggest that it could be used for raising teachers' and learners' awareness of the kinds of options and decisions that are made in real time during the act of composition (ibid).

2.8 Language Components of Teaching Spelling

Spelling is a complex language-based skill (Apel & Masterson, 2001). Spelling viewed as a visual rote memory task is inaccurate and fails to recognize the linguistic underpinning that spelling requires (Moats, 2000; Schlagal, 2001). Resent research indicates that several linguistic knowledge sources provide the foundation for spelling abilities (Bourassa & Treiman, 2001). These linguistic foundations include knowledge of phonology, orthography, morphology, and mental orthographic images. Each of these areas of linguistic knowledge contributes to spelling success. Therefore, learners must be able to access and apply these linguistic sources as they write to be successful spellers (Treiman & Bourassa, 2000). The following sections briefly review each of the spelling components.

2.8.1 Phonological Knowledge

Phonological knowledge in particular is found to be a primary process in L1 spelling. It refers to the ability to identify explicitly, reflect on, and manipulate the sound structures of a language, i.e. it is the ability to recognize the sounds of a language and also be able to identify the sequence of those sounds within words (Apel, Masterson & Hart, 2004; Kelman & Apel, 2004). According to Wasowicz and Evanston (2007), learners rely upon the phonological knowledge of phoneme segmentation, sequencing, discrimination, and identification during the spelling or encoding process. They use phonological knowledge when spelling by breaking down words into smaller units - such

as syllables and phonemes - then linking these smaller units to their written forms. They use sound sequencing skills to map the letters to sounds in the correct order.

Goswami (1992) indicates that phonological rather than visual skills play the greater role in spelling development. Sprenger-Charolles, Siegel and Bonnet (1998) found that phonological mediation is a primary process in acquisition of French reading and spelling skills and may allow construction of orthographic lexicon, i.e., children use graphemes in early stages of reading and spelling. Phonological knowledge affects use of sound-letter relationships (Rego & Bryant, 1993). Phonological knowledge consistently predicted later spelling and that phonological knowledge is mostly related to spelling real words (Rohl & Pratt, 1995). It is a significant predictor of spelling skills of adolescents. It plays an important role in early spelling. Poor spellers were impaired on the phonemic segmentation task (Holligan & Johnsto, 1991; MacDonald & Cornwall, 1995; Treiman et al., 1994).

Wasowicz and Evanston (2007) state that when phonological knowledge skills are weak or underdeveloped; spelling is negatively affected in very predictable ways. Typically, learners with poor phonological segmentation skills will delete letters and syllables, usually omitting letters for less salient phonemes, especially those that occur in internal locations and in unstressed syllables (e.g., pat for past, relize for realize). Learners with poor sound sequencing skills commonly reverse the sequence of letters when spelling. Letters reversals most commonly occur for liquids and nasals in a word or syllable sequence (e.g., flod for fold, bets for best). Learners with poor phoneme

discrimination and identification skills are likely to spell distinct vowel sounds with the same letter (e.g., bet and bit both spelled bet), and add letters for phonemes that do not occur in a word (e.g., ment for met).

2.8.2 Orthographic Knowledge

Orthographic knowledge is the ability to translate spoken language into a written form (Apel et al., 2004). Orthographic knowledge takes several forms. It includes knowledge of specific letter-sound relationships, spelling rules, spelling patterns of English (Masterson & Apel, 2000; Treiman & Bourassa, 2000).

Ehri (2000) and Treiman & Bourassa (2000) state that learners draw upon their orthographic knowledge during the encoding process. Specifically, they draw upon their knowledge of sound-letter relationships and knowledge of letter patterns and conventional spelling rules to convert spoken language to written form. Cunningham et al. (2001) suggest that orthographic knowledge does not rely totally on phonological knowledge. Rather, they view orthographic knowledge as a unique, contributing factor to spelling development.

According to Wasowicz and Evanston (2007), learners whose orthographic knowledge is deficient often spell words incorrectly because they fail to recognize accepted spelling conventions. As such, the misspellings of learners with orthographic knowledge deficits are predictably characterized by illegal substitutions, non-allowable

letter sequences, phonetically possible spellings that violate rules, and violation of word position constraints.

2.8.3 Morphological Knowledge

Typical spelling practices require students to memorize words without realizing that the morphological structure of those words can help determine meaning and spelling patterns. Morphological knowledge has been generally overlooked in research studies and also in instructional practices with regard to spelling (Apel et al., 2004; Bear et al., (2004); Carlisle, 2003).

Morphological knowledge is the awareness that words can be broken into smaller units of meaning (Apel et al., 2004). According to Carlisle (1995) learners rely upon their morphological knowledge when spelling inflected or derived forms of words. Specifically, learners rely upon their knowledge of letter-meaning relationships of individual morphemes (i.e., suffixes, prefixes, base words, and word roots), their understanding of semantic relationships between a base word and related words, and their knowledge of modification rules when adding prefixes and suffixes. According to Apel et al. (2004), morphological knowledge enables the speller to recognize and mark:

1. The presence of an additional morpheme (e.g., dogs).
2. The correct and consistent spelling of a morpheme, regardless of its pronunciation (e.g., regular past tense is always spelled with an -ed, such as in picked, begged, and chatted).
3. How base words may be modified when an additional morpheme is attached (e.g., stop becomes stopped with the addition of the regular past-tense marker).

They also state that morphological knowledge helps spellers understand relationships between base words or roots and related inflected or derived words. A reliance on morphological relationships among words for spelling aids reading comprehension for many English words, because many words are spelled based on meaning rather than sound.

In many cases, as Treiman (1998) states, a spelling that would be anticipated on the basis of phoneme-grapheme correspondences is overridden by morphological considerations. For example, the English writing system does not represent the difference between the final /t/ sound of “jumped” and the final /d/ sound of “hemmed”. Both words are spelled with final ‘‘ed’’ to indicate that both are past tense verbs. According to Wasowicz & Evanston (2007), deficits in morphological knowledge and knowledge of semantic relationships present their own predictable patterns of spelling errors. The spelling errors of learners with these types of deficits are characterized by omission of morphemes, phonetic spelling of morphemes, failure to use spelling of the semantically

related base word to correctly spell the inflected or derived form, and spelling error of modifications when spelling inflected and derived forms of words.

2.8.4 Mental Orthographic Images

When spelling, learners rely upon the mental image of a word when phonological awareness and knowledge of phonics, vocabulary, and word parts and related words are not sufficient to correctly spell a spelling pattern within a word. Mental orthographic imì8484, also known as visual orthographic images, are mental images of letters, syllables, words, and morphological units which are created and stored in mental lexicon after repeated exposure to them in print (Aple, 2004; Ehri, 1980; Glenn & Hurley, 1993).

With repeated exposure to written language, and as decoding abilities improve, the number and clarity of mental orthographic images increase in memory; thus, spelling becomes more fluent and automatic (Ehri & Wilce, 1982). Although the other linguistic components of spelling frequently allow individuals to spell words correctly, at times, these components are insufficient to formulate completely a correct spelling. Spellers, then, need to rely on clear mental orthographic images to spell some words, or parts of words, correctly (Aple et al., 2004). Carlisle & Fleming (2003) also state that a clearly formed mental orthographic image requires that a person be able to link not just letters to corresponding sounds as the word is sounded out, but also be able to identify syllables and morphological units (affixes) that are attached to the base or root words. To create a clear, storing mental orthographic image, the three underlying spelling components need

to be thoroughly integrated. Clearly developed mental images of words allow learners to quickly recall and spell common, well-known words (Cassar & Treiman, 2004).

According to Wasowicz & Evanston (2007), inadequate mental images of words are often formed when learners use inappropriate reading strategies such as partial cue analysis, a process whereby the student guesses the identity of a word after decoding only the first letter(s) of the word. They also state that when mental orthographic images are weak or not fully developed, spelling is negatively affected in very predictable ways. The misspellings of learners with weak or "fuzzy" mental images of words are characterized by "legal" substitutions, misspelling of unstressed vowel sounds, and homophone confusions.

2.8.5 Multiple-linguistic Spelling Instruction

Traditional spelling instruction has involved the repetitious copying of words or the memorization of word lists (Carreker, 2005; Treiman, 1998). Carreker notes that the traditional spelling instruction approach does not promote active, reflective thought about language. It contradicts the belief that spelling is a linguistic skill by focusing on spelling as a convention or a rote skill akin to memorizing phone numbers and addresses.

Contrary to the basic tenets of traditional spelling instruction, studies by Treiman (1991, 1993, and 1994) show that for young children, spelling is a creative linguistic process rather than a learned habit involving rote visual memorization. Young children

create spellings for words based on their knowledge of language and their knowledge of print (Hughes & Searle, 1997; Treiman, 1998). In addition, Carreker (2005) states that students must be explicitly taught about language structure for spelling, and they must be actively engaged in thinking about language. Effective spelling instruction should not teach students how to spell individual words; rather, it should teach students how to think about language through the integration of the multiple linguistic factors underlying spelling.

Many researchers (Masterson, Apel, & Wasowicz, 2002; Masterson, Apel, & Wasowicz, 2006) have already discovered that phonemic awareness activities, such as phonemic segmentation, lead to improvements in spelling. However, it seems that spelling instruction with a focus solely on phonemic awareness will yield only limited improvement in spelling performance. As mentioned above, spelling is written language skills that draws upon an individual's repertoire of linguistic knowledge, including phonology, orthography, morphology, and mental orthographic images. A collective body of current research demonstrates the importance of integrating multiple linguistic processes within spelling instruction (Masterson, Apel & Wasowicz, 2002; Masterson, Apel & Wasowicz, 2006). In comparison to traditional spelling instruction multiple-linguistic spelling instruction has been shown to be more effective for improving student's spelling performance (Apel et al., 2004; Kelman & Apel, 2004; Roberts & Meiring, 2006). Therefore, researchers must go beyond phonological awareness instruction and address all linguistic aspects of spelling within their curriculum, with an emphasis on the integration of all linguistic skills that underlie spelling – knowledge of

phonology, orthography, morphology, and mental orthographic images. Students should be encouraged to use a repertoire of linguistic knowledge to spell. This requires researchers to become knowledgeable about the phonological, orthographic and morphological underpinnings of English spelling, and be able to use that knowledge in an integrated manner as they instruct students.

In short, research into the spelling system (Templeton and Morris 2000; Venezky, 1999; Templeton, 1997; Gentry and Gillett, 1993, Ehri 1994) suggests that students need to learn and integrate knowledge about: phonology, orthography, morphology and mental orthographic images. If these different types of knowledge are taught to children as they are developing spelling skills, in a manner that is memorable, spelling skills should improve.

2.9 Spelling Theories

The two prevalent theories regarding spelling development are stage or phase theory and repertoire theory. Stage theory purports that children learn the specific underlying linguistic components sequentially in stages. Once they acquire certain knowledge in one stage they advance to the next stage (Ehri, 1986; Templeton & Bear, 1992). Repertoire theory, on the other hand, postulates that children learn about the four underlying spelling components across stages and use these knowledge sources according to each task demand (Apel, Masterson & Hart, 2004). A brief description of both theories follows.

2.9.1 Stage Theory

Many researchers (Ehri, 2000; Hughes & Searle, 1997; Lombardino et al., 1997) have discussed the various models for stage theory. Although the labels differ, Ehri (2000) reports that these developmental stages are similar and she combines the various models into the stages defined below:

1. Pre-alphabetic or logographic stage: Children have little knowledge of the alphabetic system. They scribble or may be able to draw several letters as print. Interestingly, at this stage, the children's drawings of objects look different than their drawing for print. In this stage, there is minimal attention provided to specific letter shapes and the relationship between sounds and letters.

2. Partial alphabetic stage or transitional: At this stage, children begin learning the names and sound of the letters in alphabet. They start to write the first and/or last correctly when spelling a word or use one letter for each syllable. Invented spellings occur during this stage.

3. Full alphabetic level stage: Children begin to segment syllables and sounds within word patterns. They begin to use spelling by analogy and to store more words into memory as mental orthographic images. Pattern recognition for analogy includes rime units and its corresponding letter can be added to create a new word. Some patterns that

children learn in this stage are rules for doubling consonants in the middle of a word and long vowel patterns written with two vowels.

4. Consolidated alphabetic stage: At this stage, children learn larger words, replete with more meaningful units, such as syllables and affixes. They learn that these specific morphological units change the meaning of the words. Also, the meaning of words helps dictate the spelling patterns of related words.

Stage theory purports that children move from one stage to the next stage once they have mastered the skills in the previous stage. The process continues through the subsequent stages as they are able to learn these tasks. According to this model, children learn these different knowledge bases in a linear manner at any given time in development. Initially, they have little knowledge of any component. In theory, they learn all they need to know about phonological knowledge. Once that stage is mastered, they move onto orthographic knowledge. Finally, they develop morphological knowledge which, according to this theory, occurs around third or fourth grade.

Stage theory actually provides a general idea of typical development for children at these levels; however, this theory is intractable and does not fully capture the complexities of the various linguistic components the children actually use for spelling (Treiman & Bourassa, 2000). Important in their delineation of what skills children need to be good spellers, stage theory becomes less effective because it limits our

understanding to the processes the children are actually using at any given time (Hughes & Searle, 1997).

2.9.2 Repertoire Theory

Based on research suggesting that children utilize the multiple linguistic factors throughout the process of learning to spell (Lyster, 2002; Reece & Treiman, 2001; Treiman & Bourassa, 2000), other researchers (Apel et al., 2004; Kelman & Apel, 2004) have proposed a repertoire theory of spelling development. Repertoire theory describes children using different types of knowledge and strategies in varying degrees at any given time in their development (Bourassa & Treiman, 2001; Hughes & Searle, 1997; Masterson & Apel, 2000; Treiman & Bourassa, 2000). This theory suggests that children access and utilizes a range of linguistic knowledge from their written and spoken language as they progress in their spelling abilities (Apel et al., 2004). For example, across several studies, Treiman and her colleagues (Reece & Treiman, 2001; Treiman & Cassar, 1996; Treiman, Cassar, & Zukowski, 1994) have shown how children apply orthographic and morphological knowledge to their spellings in kindergarten and first grade, a finding that seems to conflict with the stage theory of spelling development.

Results of recent studies support the repertoire theory. Hughes and Searle (1997) postulate as children begin to expand and overlap their repertoire of strategies, they progress in their learning rather than moving from one strategy to another in a linear fashion as the stage theory suggests. Treiman (1994) argues that spelling development is

not linear. Oral and written language skills are intertwined and they develop simultaneously at differing rates. Children use multiple sources and gradually build a repository of skills and use them as needed for spelling tasks. Kelman and Apel (2004) outlined the spectrum of skills that children develop as they increase their linguistic knowledge. Repertoire theory helps explain how very young children start out with minimal phonological knowledge and mental orthographic images in the form of logos but virtually no orthographic knowledge and morphological knowledge. Preschool and kindergarteners begin to use more phonological knowledge and some orthographic knowledge, and on occasion rely on morphological knowledge to help with spelling. As they become better spellers, they rely more on orthographic knowledge and morphological knowledge and rely on phonological knowledge only when encountering a new or more complex word. The mental orthographic images they are forming now become stronger and clearer due to repeated exposures during reading. Finally, they begin to rely on their morphological knowledge more than orthographic and\or phonological knowledge as they continually encounter more advanced words that contain derived and/or inflected morphemes.

Carlisle (2004) refutes the stage theory because the simultaneous occurrence of derivational knowledge for preschoolers occurs during the “partial alphabetic” level noted in stage theory. According to stage theory, however, this derivational knowledge could not occur during the partial alphabetic stage but would occur during the last stage of consolidated knowledge. Although younger children do exhibit some morphological

knowledge, it is minimal and their morphological ability continues to develop as they mature.

The flexibility of the repertoire theory explains the ability of children to access each knowledge base when needed. Children often learn some orthographic patterns before they have learned all of the letters/sounds of alphabet. They show awareness of morphology when they create novel words. Repertoire theory allows for these explanations of children's spelling strategies whereas the stage theory cannot accommodate the intermingling of the underlying linguistic knowledge base that children use to spell words.

2.10 Review of Studies on English Spelling

Many studies show that second-language learners tend to be interfered by their L1 in the acquisition of English spelling. In this regard, Rodriguez-Brown (1987) investigated the language transfer hypothesis in L2 spelling of 84 secondary school students learning Spanish as a second language. Ferroli (1991) examined the relative influence of L1 literacy skills and L2 oral proficiency on students' ability to read and spell in L2. He examined students' L2 misspellings in order to identify examples of positive and negative transfer of L1 spelling knowledge. Ferroli and Shanahan (1993) studied the kinds of misspellings that can be attributed to differences in voicedness between English and Spanish.

The effect of L1 orthography on L2 spelling was the focus of studies by Ogorodnikova (1992) and Odisho (1994). Ogorodnikova examined orthography as a source of non-target-like phonetic output in Russian. Odisho reviewed recent research on English spelling and the alphabet and examined the alphabet in terms of symbols, letter names and sounds. English is considerably less phonetic than most Western languages, with many symbols having more than one sound. This factor makes English difficult for learners of English as a second or foreign language. Recognizing that the alphabet has three distinct identities: as a group of symbols, letter names and sounds not only lead to better understanding of the role of the alphabet but also helps in a better understanding of the manner in which the three identities relate to the acquisition of the different language skills including.

In short, the results of these studies reveal that students applied whatever conceptual background knowledge they had of spelling in their native language to the spelling task in English.

In addition to an awareness of the L1 influence, the possible effect of the L2 is another important issue that has been widely discussed in the acquisition of English spelling by second-language learners. In this regard, Dildine (1994) investigated the spelling acquisition for elementary ESL students. A study with 38 Spanish-speaking and 3 English-speaking second and third graders was conducted by Fashola et al. (1996) to examine how Spanish-speaking children spell English words. James et al. (1993) examined the extent to which the ESL spelling of young Welsh-English bilinguals is

systematically idiosyncratic. St. Pierre et al. (1995) studied the nature of the spelling lag existing in the development of English spelling in early French immersion students. Al-Jarf (2008) examined the sources of spelling errors that ESL Arab college students make. The results of these investigations make clear that sources such as overgeneralization, ignorance of rules restriction, and incomplete application of rules also account for many errors. Ibrahim (1978) states that non-phonetic nature of English spelling, inconsistent and arbitrary nature of English word derivation are major sources of spelling errors.

Another important study which contributes much to the current body of knowledge in spelling patterns studies is that of Scott (2007). This study was designed to determine if older students performed similarly to the younger students when spelling errors were analyzed according to four spelling components, i.e. phonological knowledge, orthographic knowledge, morphological knowledge, and mental orthographic images. Students' errors were also analyzed based on specific orthographic spelling patterns. This study grouped specific orthographic spelling patterns into broad spelling categories and analyzed students' spelling based on these larger categories (e.g. consonants, consonant digraphs, short vowels, long vowels).

Fourteen students with atypical spelling were matched with 14 students with typical spelling based on their raw scores from the Test of Written Spelling-4 (TWS-4). Students completed a 15-words dictation test lasting approximately fifteen minutes. The words were recorded on an audio cassette. The recording followed the test directions of stating the word, using that word in the given sentence, and repeating the word again. An

eight second pause followed each test item. Spelling error analysis of the 14 matched pairs was conducted by administering the Spelling Performance Evaluation of Language and Literacy (SPELL). The SPELL is a computerized program that incorporates algorithms to analyze spelling errors based on four spelling components and 120 specific orthographic spelling patterns. These 120 patterns have been collapsed into 11 broad spelling categories for the purpose of this study, i.e. consonant, consonant digraphs, short vowels, long vowels, other vowels, within word doubling, clusters, vocalic /r/ + /l/, silent letters, schwas, and inflected words.

A one way MANOVA (Multivariate Analysis of Variance) was conducted with group as the independent variable and the number of intervention recommendations for each spelling component entered as the multiple dependent variables. Differences regarding the number of recommendations for each linguistic component were not significant. Although not significant, the students with atypical spelling performed better in the phonological component, while the students with typical spelling performed better in the remaining components. Regarding the broad spelling categories, a two (group) x eleven (consonants, consonant digraphs, short vowels, long vowels, other vowels, within word doubling, clusters, vocalic /r/ and /l/, silent letters, schwas, and inflected words) ANCOVA (Analysis of covariance) was conducted. Differences for age were significant in the consonant group. Other differences for group based on the 11 categories were not significant. Differences for group concerning the total number of possible spellings within each broad spelling category were not significant. Also, age as the covariate was not significant.

Based on the review of studies on English spelling, a few conclusions might be reached. First, native and target languages play a crucial role in the spelling errors of both second language and foreign language learners. Second, the influence of target language is far less than the influence of the learner's native language in the spelling errors of second and foreign language learners. And third, the number of the studies on the sources and patters of spelling errors among second and foreign language learners is few.

Due to the limited body of research on the acquisition of spelling skills, the types of spelling errors, and the major spelling difficulties for Persian English language learners, this study investigates the sources and patterns of spelling errors for these learners.

2.11 Theoretical Framework of the Study

As mentioned in Chapter One, this study sets out to investigate sources and patterns of spelling errors in Persian English language learners. Based on what has been discussed in the previous sections of this chapter, the current section combines the related theoretical constructs to form the theoretical framework of the study.

Language-learner language, as Selinker (1972) states, is a separate linguistic system clearly different from both the learner's native language and the target language being leaned, but linked to both NL and TL by interlingual identifications in the perception of the learner. In other words, language-learner language is a language in its own right and should therefore be described in its own terms. According to Selinker (1972), language-learner language is systematic, dynamic, permeable, and variable.

As mentioned in Chapter One the focus of this study is on spelling errors. In order to elaborate on this issue, this study benefits from Apel, Masterson & Hart (2004) Repertoire Theory of spelling because this theory describes a learner’s use of different types of knowledge and strategies in varying degrees at any given time in his development of all four spelling skills i.e. phonological, morphological, orthographic, and mental orthographic images. The Repertoire Theory emphasizes simultaneous access to all of these four components when spelling and provides a better explanation of learners spelling development (Masterson & Apel, 2000; Bourassa & Treiman, 2001). This theory suggests that a learner accesses and utilizes a range of linguistic knowledge

from his written and spoken language as he progresses in his spelling abilities. Therefore, analyzing spelling errors based on the spelling components would provide information regarding the underlying cause of the errors.

Naturally, language learner commits errors while attempting to communicate in target language. Corder (1981, p. 25) states that, “making of errors is an inevitable and indeed necessary part of the learning process”. To analyze spelling errors of Persian learners of English, this study has adopted Corder’s (1974) two steps involved in conducting EA: Identification of Errors and Explanation of Errors.

The first step in the process of error analysis in this study is the identification of errors. To identify spelling errors of Persian English language learners, Corder’s (1971) procedure is adopted. According to Brown (2000), Corder's procedures for identifying errors have the advantage of eliciting information regarding the learner’s erroneous and non-erroneous utterances in second language. For the purpose of this study, every word that deviates from the norms of written Standard English is identified as an error.

The second step is the explanation of errors which is concerned with establishing the sources of the error, i.e. accounting for why it is made. As Taylor (1986) points out, the error source may be psycholinguistic, sociolinguistic, epistemic, or may reside in the discourse structure. Abbott (1980) states, “the aim of any EA is to provide a psychological explanation” (p. 124). In this regard, and according to Ellis (2005), two

major processes are identified, distinguishing interlingual and intralingual errors. This study will investigate these sources.

On the one hand, interlingual errors seem to result from L1 interference, which is related to the concept of transfer as explained by Lado (1957). L1 interference refers to those instances of deviation from the norm of the target language which occurs as a result of familiarity with the mother tongue. Although the contrastive hypothesis cannot be accepted as accounting for all errors in L2 use, it is nonetheless true that there is a "transfer effect" from the mother-tongue to the new language.

On the other hand, intralingual errors are those which result from faulty or partial learning of L2, rather than from language transfer. Richards (1974) states that intralingual errors reflect the general characteristics of rule learning, such as: faulty generalization, ignorance of rule restrictions, incomplete application of rules, and false concepts hypothesized. In order to classify interlingual and intralingual sources of spelling errors of Persian English language learners, this study has benefited from the classification utilized by James et al. (1993) because this classification is an excellent account of spelling errors within the context of EA which distinguishes among sources of interlingual errors and intralingual errors.

After determining interlingual and intralingual sources of spelling errors, patterns of interlingual and intralingual errors in the spelling of Persian English language learners will be determined. Pattern of spelling is a sequence of graphemes which regularly

represents a particular sequence of phonemes. In order to establish patterns of spelling errors of Persian English language learners, this study has adopted the categories utilized by Scott (2007) because these categories provide a comprehensive analysis of students' spelling patterns and measure their ability in each of the four spelling components. She grouped spelling patterns into categories such as consonants, silent consonants, consonants clusters, vowels, silent vowels, homophones, and spelling rules. The theoretical framework of the study is shown in Figure 2.6.

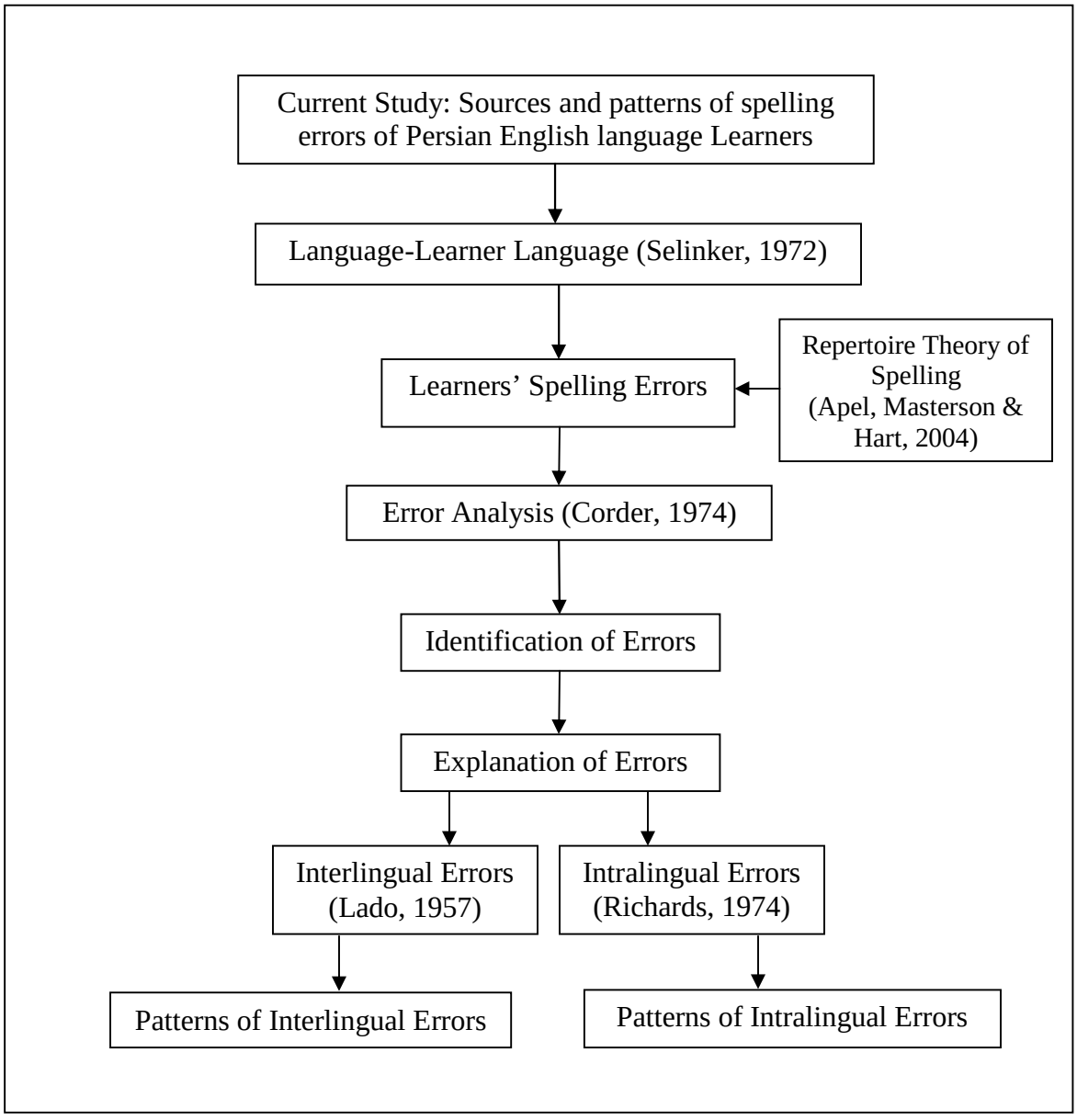

Figure 2.6: Theoretical Framework of the Study

2.12 Chapter Summary

This chapter explained the related literature of the study in greater detail. It started with a concise historical review of English spelling changes, an overview of Persian writing system, and comparison between Persian and English syllable structure and sound system. Next, theoretical issues in second language acquisition – IL, CA and EA - were overviewed. Finally; the chapter presented the language components of teaching spelling, spelling theories, the review of studies on English spelling and the theoretical framework of the study. The methodology of the present research will be discussed in the next chapter.

CHAPTER THREE

METHODOLOGY

3.0 Introduction

Based on the research objectives formulated in Chapter One and the literature review described in Chapter Two, the current chapter proceeds to discuss the research methodology adopted to investigate the sources and patterns of spelling errors made by Persian English Language Learners. The problem was investigated based on the following research questions:

1. What are the sources of interlingual errors in the spelling of Persian English language learners?
2. What are the sources of intralingual errors in the spelling of Persian English language learners?
3. What are the patterns of interlingual errors in the spelling of Persian English language learners?
4. What are the patterns of intralingual errors in the spelling of Persian English language learners?

The chapter begins with a discussion on the design of the study and describing the subjects. Next, the data collection procedures, which include the preparation and

administration of the research instruments, and data analysis procedures will be described.

3.1 Design of the Study

This study is a quantitative and descriptive one in nature. According to Best and Kahn (1993), quantitative descriptive research uses quantitative methods to describe, record, analyze, and interpret conditions that exist. Taylor (2005) also states "the major purpose of quantitative research is to make valid and objective description on phenomena" (p.91). Farhady (2002) points out that by using the descriptive method of research, the researcher attempts to describe and interpret the current statues of phenomena since in the descriptive method, the researcher directly observes a naturally occurring event. Direct observation means that the researcher examines the event as it happens and not one that is created, sustained, or discontinued solely for the sake of research. Furthermore, such a method is independent of any interference from the researcher (Taylor, 2005). Seliger and Shohamy (1989) describe descriptive research as deductive in its objectives and as often quantitative. It has a narrow scope of investigation.

This study also is a cross-sectional one as the data will be collected at one point in time in order to describe the subjects' behavior at that time. As stated by Brown (1988) "substantial amounts of information can be collected in a relatively short time when using this method of data collection" (p. 3).

Based on the above, it can be deduced that this study is a quantitative and descriptive in nature as the data will be collected at one point in time and it does not propose to utilize method such as observation, control group and other such research techniques in its investigation of the problem. Furthermore, addressing the research questions mentioned above typically warrants quantitative and intensive description and interpretation. In the current study, data such as frequency of the sample are used to explain the sources of errors. Distributions of errors are tabulated so that the study can focus on the areas in which interference occurred more often. No claim is made on the completeness of the areas of difficulty since it was not intended as a complete statistical count of errors in the current study, but as a probe which might suggest many important points for further investigations.

Due to the descriptive nature of the study, the researcher adopted a series of steps aimed at collecting data, followed by identifying and explaining the spelling errors occurring in the dictation of the randomly selected subjects.

3.2 Describing the Samples

The total population in this study was 200 students from Imam Khomeini high school in Daragaz, Iran, who were in grade one of the secondary education cycle and enrolled in the first semester of the academic year 2008-2009. Gay and Diehl (1992) argue that the number of respondents acceptable for a study depends upon the type of research involved - descriptive, correlational or experimental. For descriptive research,

the sample should be 10% of population. However, if the population is small, then 20% of the population may be required. In correlational research, at least 30 subjects are required to establish the existence or nonexistence of a relationship. For experimental research, 30 subjects per group are often cited as the minimum sample size. For the purpose of this study, random sampling described in Gay and Airasian (2003, p. 104) has been used to select 20% of the 200 subjects, or 40 subjects for the study. The specific procedure used for sample selection was a "table of random numbers" (ibid, p. 552). This procedure involved assigning each subject in the population to a number, and then selecting 40 random numbers from the population. Since each number corresponds to a subject in the population, the selected numbers form the sample of subjects for the study.

Block (2003) notes that SLA researchers have often been neglected to provide detailed information about the situational background of the learners they study. The Table 3.1 from Ellis & Barkhuizen (2005, p. 24) suggests the kinds of variable that need to be considered when producing a full description of the learner-participants in a study.

Table 3.1: Describing the Learner–Participants in a Study

Learner variables	Description
Mother tongue	The language (s)the participants learned as a child
Other languages	Any other languages the participants have learned as second foreign languages
Age	Stated in years and months
Gender	The number of male and female learners in the sample
Education	a: Number of years of formal schooling b: Number of years studying the target language
Social Economic Status	Various measures of SES have been used based on one or more of the following: Occupation, level of education, income, area of residence.
Opportunity for naturalistic acquisition	Number of years and months spent in a country where the target language serves as the main medium of communication

Taken from Ellis (2005, p. 24)

As Table 3.1 shows variables such as; learners' mother tongue, language, age, gender, education, social economic status, and opportunity for naturalistic acquisition need to be considered when producing a full description of the learner-participants in a study. According to Table 3.1, the description of Persian English language learners in this study will be as follow:

The Iranian educational system is bifurcated into male and female sectors, meaning boys and girls go to different schools. Male teachers teach male students, and female teachers teach female students. That is basically the reason why this study has chosen 40 male students from Imam Khomeini high school in Daragaz, a city in Khorasan Razavi state of Iran.

The students have 14-16 years of age and have already passed a regional exam at the end of their junior high school cycle in order to proceed to the secondary education. Even though they are the products of different junior high schools, they have had similar education. They have been learning English for three years in junior high school and have received three hours of English instruction per week. The students' exposure to the English language was limited to the classroom. All of them had already passed the regional written English exam. Therefore, they are able to understand and use English language skills at the basic level of language proficiency.

Regarding English spelling, they basically learn the sounds of the English language, apply letters to those sounds, and gradually learn to apply inflected and derived morphemes to words. With repeated exposure during reading activities, the students develop clear mental orthographic images. The English instruction is based on the British system of pronunciation. Given the discussion above, it can be concluded that the subjects were homogeneous in the terms of language exposure, linguistics and educational backgrounds.

3.3 Data Collection Procedures

Due to the importance of adequate data for an effective errors analysis process, using appropriate procedures for data collection is one of the most important steps in the investigation of a learner's language. James (1998) states that "to systematize the different methods of data collection, initially, a distinction is drawn between

observational and experimental studies, the difference between these two residing mainly in the naturalness of the former compared to the manipulative nature of the second" (p. 20). Another issue is whether the samples of learner language are collected cross-sectionally (i.e., at a single point in time) or longitudinally (i.e., at successive points over a period of time). Ellis and Barkhuizen (2005) distinguish three broad types of data that can be collected from learners. They are shown in Figure 3.1.

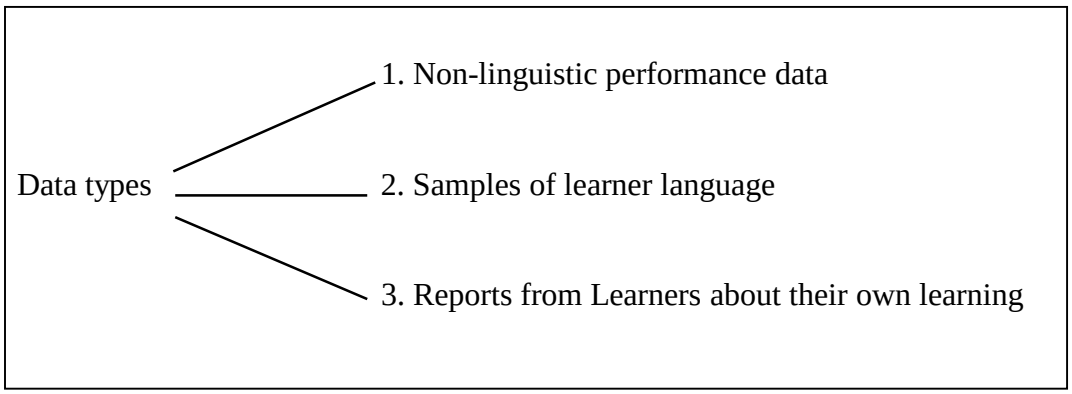

Figure 3.1: Various Types of Data (Ellis & Barkhuizen, 2005, p. 15)

Non-linguistic performance data involve measuring learners' non-verbal response to linguistic stimuli. The data include measures of learner's reaction time to linguistic stimuli, non-verbal measures of learner's comprehension of linguistic input, and measures of learner's intuitions about the grammaticality or acceptability of sentences.

Learner production data can consist of oral or written samples of naturally occurring language use (i.e. the samples are taken from the kind of communication that learners engage in when they are not being studied), or elicited data. According to Corder (1976), two kind of elicitation can be distinguished: clinical elicitation (inducing the

learner to produce data of any sort) and experimental elicitation (inducing the learner to produce data relating to the specific features in which the researcher is interested).

Cohen (1987) defines self-reports as “learner's descriptions of what they do characterize by generalized statements about learning behavior …or labels they apply to themselves” (p. 84). The most common method used to obtain self-reports from learners are: questionnaires, interviews, and personal learning histories (Ellis & Barkhuizen, 2005).

Ellis and Barkhuizen (2005) believe that ,“the primary data for investigating L2 acquisition should be samples of learner’s language because it provides data that can be used to develop descriptions of learner’s interlanguage” (p. 21). For the purpose of this study, the researcher developed a 65-word dictation test for the eliciting and collecting data and the samples of learner language are collected cross-sectionally.

3.3.1 Preparing Research Instrument

The three most common methods for collecting data regarding a student’s spelling performance are norm-referenced tests, writing samples, and word dictations (Masterson & Apel, 2000). A brief description of them follows.

3.3.1 (a) Norm-Referenced Measures

Some researchers may use standardized, norm-referenced tests to assess spelling. Measures such as the Test of Written Spelling–4 (Larsen, Hammill, & Moats, 1999), the Test of Written Language (Hammill & Larsen, 1996), and the Wide Range Achievement Test–3 (Wilkinson, 1995) permit a researcher to compare students' spelling skills to that of their peers, and determine whether the target students are within the typical range of abilities. Although reviewers concluded that these tests met the minimal standards of the American Psychological Association for technical adequacy, the tests are not able to sample the entire domain of English orthographic patterns sufficiently (Moats, 1994). Thus, data collected with the use of norm-referenced tests, while valuable in identifying students who have special spelling needs, do not address the goal of prescriptive assessment; that is, they provide little information about students' spelling performance or competence.

3.3.1 (b) Writing Samples

Students' writing samples are perhaps the best measure of their spelling performance (Westwood, 1999). As Singer and Bashir (2004) state, spelling is one of several cognitive-linguistic foundational component skills and processes that support and constrain the writing process. When engaged in writing composition, students must balance the demands of spelling along with other skills and processes to complete the task successfully. Thus, spelling is affected by, and may affect, myriad components of the

writing task. Spelling data collected from a writing sample, then, represent an authentic illustration of how students spell when all aspects of written composition are engaged.

There are potential dangers to the use of writing samples as the means of assessing spelling abilities. Students with spelling deficits often avoid attempts to spell words that they do not know how to spell (Masterson & Scott, 1997). A selection and avoidance phenomenon occurs; in which students often select simple, one- to two-syllable, uninflected words for their written composition, avoiding more complex, multi-morphemic words that require a blended strategy of considering phonology, orthography, semantics, and morphology (Masterson & Scott, 1997). Unless the researcher dictates the specific words to be used in the writing task, students have control over the vocabulary used. Thus, students' selection and avoidance strategies may disguise or overestimate their spelling abilities. In this regard, Randall (1997) states that:

> In free production material students may well avoid using words which they do not know or are unsure of how to spell and thus the corpus is biased towards those words which the subjects are sure of, perhaps overemphasizing surface performance problems, slips of the pen, in contrast to deeper errors of competence (p. 3).

A final concern about writing tasks as a means to assess students' spelling skills is the length of the sample (Berninger & Amtmann, 2003). Currently, no data suggest what comprises a representative sample of a student's written composition.

3.3.1 (c) Word Dictations

Recent research pioneered by Oller and his followers (1979) indicates that dictation is a highly valid and reliable measure of language proficiency. Oller and Streiff (1975) have made the strongest case for dictation. They propose dictation as an excellent measure of overall language proficiency:

> Since dictation activates the learner's internalized grammar of expectancy, which we assume is the central component of his language competence, it is not surprising that a dictation test yields substantial information concerning his overall proficiency in the language - indeed, more information than some other tests that have been blessed with greater approval by the experts. …It seems likely to be a useful instrument for testing short-term instructional goals as well as integrated language achievement over the long-term. There are many experimental and practical uses which remain to be explored (p. 78).

Rivers (1981) claims when certain combinations of phonemes create problems for students, dictation can be a useful technique for verifying students' achievement. Further, dictation can be used as a technique to check students' phonetic and phonemic discrimination ability. Heaton (1988) also states that:

> The integrated skills involved in tests of dictation include auditory discrimination, the auditory memory span, spelling, the recognition of sound segments, a familiarity with the grammatical and lexical patterning of the language, and overall textual comprehension (p. 17), and claims, dictation tests can prove good predictors of global language ability (ibid).

The use of word dictations to obtain adequate samples of students' spelling abilities is not new (Masterson & Apel, 2000). Typically, a word dictation is administered

by pronouncing aloud the target word, using it in a sentence, and repeating it. Students then are required to spell the target word, through handwriting (Bear et al., 2004; Schlagal, 1992).

In this study, a word dictation test is selected to collect data because of the following concerns as mentioned by many researchers (Moats, 1994; Masterson & Scott, 1997; Randall, 1997; Berninger & Amtmann, 2003; Masterson & Apel 2000) about norm-referenced tests and writing samples:

1. Data collected with the use of norm-referenced tests do not address the goal of prescriptive assessment; that is, they provide little information about students' spelling performance or competence.

2. In writing samples, spelling is affected by myriad components of the writing task. Students with spelling deficits often avoid attempts to spell words that they do not know how to spell. Thus, students' selection and avoidance strategies will disguise or overestimate their spelling abilities.

Moseley (1980) states that word dictation tests can be derived from three main sources:

1. Graded vocabulary lists.
2. Lists of words misspelled in free writing by pupils of different ages.

3. Lists of words judged by teachers to be appropriate for different age-groups.

Feez (2001), Kibbel & Miles (1994) state that words selected for dictation should all be familiar to the learners and match the language level of the course of study. Mayer, Crowley and Kaminska (2006) also point out that the word for spelling test should be assembled in consultation with the learners' teachers, and be selected on the basis that they are all words that would be familiar to the learners.

According to Fender (2008), two main criteria should be used to select the words for dictation test. One is to select words that are familiar and known by students. The second is to select words that correspond appropriate to levels of spelling difficulty. According to Shaughnessy (1979) and Scott (2007), the spelling words list used for the dictation test should have the following features:

1. Homophone: words pronounced the same, e.g. to, too, two.
2. Consonant: a sound produced with some constriction of airstream (e.g., b, p, t …). Consonants may be double (e.g., ss, tt, dd ...), silent (e.g., autumn, climb ...), and digraph (two letters used to represent a single sound. e.g., th, wh, sh …), and cluster (e.g., st, cl, sch …).
3. Suffix: an affix that is attached to the end of a morpheme or steam, e.g., -er in taller.

4. Vowel: a sound produced without constriction of air flowing through the oral cavity. Vowels may be silent (e.g., leave, write …), long (e.g., field, tree …) and short (e.g., dress, fat …).
5. Diphthong: a sound that is made up of "vowel + glide", e.g., hear, raise ….

For the purpose of this study, words having these features were derived from the English textbook of Persian learners of English in grade one of the secondary education cycle and spelling word lists of learners' final examinations. The words used in this study came to a total of 32 single-syllable words, 28 two-syllable words and 5 three-syllable words. As stated by Masterson & Apel (2000), most standardized and criterion-reference measures use 25–50 words to assess students' spelling skills. While there are no data to suggest the optimal sample size, a corpus of 50-100 words would appear to be an appropriate amount to capture patterns of spelling. In this regard, Moseley (1980) states that "it is clearly possible for researchers to produce a valid and reliable spelling test for a particular age group by drawing up a list of 60 words" (p. 18).

Following Fender (2008), Mayer et al., (2006), Feez (2001), Kibbel & Miles (1994), and Moseley (1980) the following procedures were adopted to select the words:

1. 90 words have been selected from English Textbook One of Persian learners of English in grade one of secondary education cycle and from learners' final examinations.

2. The lists were reviewed and judged by three experienced teachers who have taught English for more than ten years in secondary schools. All of them have MA in teaching English as a foreign language.
3. A trial version of 90-word dictation test was given to 30 Persian English language learners in grade one of secondary education cycle in Daragaz.
4. Based on teachers' comments and some other factors in the pilot study, 25 words were deleted (please refer to the explanations in the pilot study section 3.5).
5. The 65 remaining words were selected for word dictation test.

According to the teachers who reviewed and judged the words, the 65 remaining words were the commonest problematic words for learners in grade one of secondary education cycle, and were always used in final exam test.

3.3.2 Administration of the Research Instrument

Before administering word dictation test, it was important to determine the suitability of the testing room. It was quiet, well lighted, comfortable and air-conditioned. With the help of two proctors, the microphone was checked in the testing room to ensure the clarity of the sound in all parts of the room. In addition, there was enough physical space for the number of the students. Assuming these criteria were satisfied, the subjects were called into the testing room and assigned to their seats in random order to prevent friends from sitting near each other. They were informed that the success of the research depends upon their careful and honest writing. Following Fender (2008), Scott, (2007),

Randall (1997) and Kibbel and Miles (1994), the word dictation test was administered in a single session and lasted about 30 minutes. It was administered as shown in Figure 3.2.

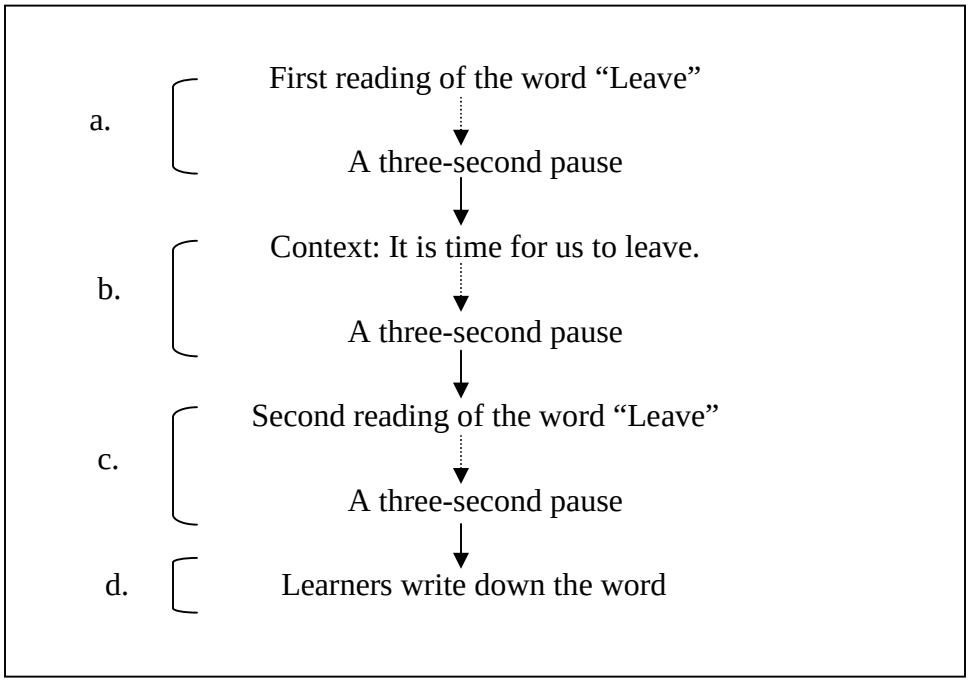

Figure 3.2: Administration of the Word Dictation Test

For administering the word dictation test, a teacher was selected. He was an experienced instructor recommended by the English Department of Daragaz Board of Education. He had taught English for more than ten years in high schools and held an MA in TEFL. He followed these steps:

a. First, he read a word to the learners, followed by a three-second pause.

b. Next, he read the context for the learners, followed by a three-second pause.

c. Then, he gave the learners a second reading, followed by a three-second pause.

d. Finally, he asked the learners to write down the words they had heard.

The learners' word dictations were then analyzed for the purpose of identifying and explaining the spelling errors. Data analysis procedures will be explained in next section.

3.4 Data Analysis Procedures

The first step in the process of error analysis in this study is the identification of errors. To identify spelling errors of Persian English language learners, Corder's (1971) procedure is adopted. In identifying learners' error it is essential to determine the standard against which a particular item is considered erroneous. Several researchers (Corder, 1981; Ellis, 1994; and Brown, 2000) consider any deviant from what native speaker would produce as an error. Thus, for the purpose of this study, every word that deviates from the norms of written Standard English is identified as an error. Trudgill (quoted in Wardhaugh 1983, p. 31) adds that Standard English is the variety of English that is usually used in print, and is taught in schools and to the non-native speakers learning English. Standard English is also used in news broadcasts and other similar situations. In this study, the norms used were those of written Standard English, and they were checked against the English book of Persian English language learners in grade one of high school.

The second step is the explanation of errors which is concerned with establishing the sources of the error, i.e. accounting for why it is made. In this regard, according to Ellis (2005), two major processes are identified, distinguishing interlingual and intralingual errors. This study will particularly investigate these sources.

Interlingual errors seem to result from L1 interference, which is related to the concept of transfer as explained by Lado (1957). L1 interference refers to those instances of deviation from the norm of the target language which occurs as a result of familiarity with the mother tongue. Intralingual errors, however, are those which result from faulty or partial learning of L2, rather than from language transfer. According to Richards (1974), intralingual errors are those which occur as a result of interference from application of general learning strategies similar to those manifested in first language acquisition. In order to classify interlingual and intralingual sources of spelling errors of Persian English language learners, this study has benefited from the classification utilized by James et al. (1993).

After determining sources of interlingual and intralingual spelling errors, spelling patterns of interlingual and intralingual errors will be determined. In order to establish patterns of spelling errors of Persian English language learners, this study has adopted the categories utilized by Scott (2007). According to Treiman, Cassar and Zukowski (1994), the domain of spelling patterns in the English language is quite large and several exemplars of each pattern must be collected to obtain a representative sample of the student's spelling ability. A minimum of three exemplars for each spelling pattern is recommended. An example of data analysis is presented in Figure 3.3.

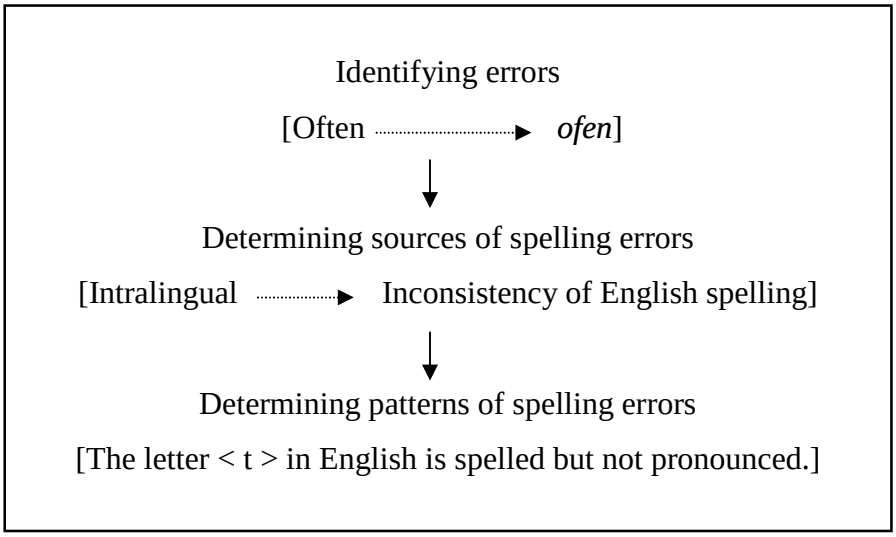

Figure 3.3: An Example of Data Analysis

Figure 3.2 illustrates the three stages of date analysis. First, spelling errors will be identified. Second, sources of spelling errors (interlingual and intralingual) will be determined. Finally, patterns of spelling errors (interlingual and intralingual) will be determined.

3.5 Pilot Study

As stated by McKay (2006), the purpose of the pilot studies "is to find out what problems exist in the clarity of directions and which items might be confusing or difficult" (p. 41). Seliger and Shohamy (1990) highlight the objectives of the pilot study by stating that:

> …field-testing the questionnaire before using it in the real study is also important in order to obtain information about the relevancy and clarity of the questions, the format, and the amount of time required to answer the questions, so that the questions can be revised if necessary (p. 172).

To achieve the primary objectives - determining the time needed for the word dictation test, to discover the words which seemed to be difficult, easy or ambiguous in order to modify them as necessary before carrying out the main study - the 90-word dictation test was carried out with 30 students from Imam Khomeini high school in Daragaz, Iran, who were in grade one of the secondary education cycle and enrolled in the first semester of the academic year 2008-2009. The subjects in the pilot study were representative of the subjects chosen for the main study in that they possessed the same characteristics. The pilot study was conducted four weeks prior to main study, and the subjects of the pilot study were not included in the main study. All the subjects were informed of the objectives of the pilot study. The instructions of the word dictation test were explained to the subjects, after which the students received a response sheet on which to write word dictation. After the test was completed, the results were analyzed and assessed.

The researcher attempted to ensure that each stage of the test administration proceeded with accuracy and precision, and the results of the pilot study supported the fundamentals of the procedure. First, the results showed that the subjects understood the instructions and the words used in dictation test. Second, the words used in the dictation test reflected the subjects' interlingual and intralingual sources and patterns of spelling errors. Upon analyzing the spelling errors of Persian English language learners in the

current study, the main sources of interlingual and intralingual errors were L1 phonological interference and L1 syllable structure interference, inconsistency of English spelling, ignorance of spelling rules, and homophone confusion. The main patterns of interlingual and intralingual errors were patterns of consonants, patterns of vowels, patterns of consonant clusters, pattern of silent consonant, pattern of silent vowel, patterns of spelling rules and patterns of homophones. Third, it was observed that the time spent for a 90-word dictation test was approximately 45 minutes. In addition, the pilot study revealed that a 90-word dictation test makes the student tired.

After a thorough analysis, the researcher came up with the following observations: First, the 90-word dictation session was quite long and hence tiring the students. Second, as seen in the pilot study, some of the words in the original list were so easy that every student could write them without any problem. And finally, according to the comments made by teachers, there were a number of four-syllable words which dictation was not particularly taught to the students at this language level. Therefore, there was a cut down of 25 words from the initial dictation list.

The 65 remaining words were selected for the main study, with the allotted time for the main study being set at approximately 30 minutes.

3.6 Chapter Summary

This chapter provided a detailed account of the methodology used in this study. It began by describing the research design, which illustrated that the research is qualitative

in nature and utilizes a cross-sectional survey method. Then, it elaborated on the sampling techniques, data collection and data analysis procedures. The data was gathered using a word dictation test. To achieve the objectives, the methodology utilized in this study for identification and explanation of spelling errors was adopted from Corder (1974). The results of data analysis will be outlined in Chapter Four.

CHAPTER FOUR

FINDINGS AND DISCUSSIONS OF THE STUDY

4.0 Introduction

This chapter presents the findings and the analysis of the collected data, and also addresses the research questions mentioned in Chapter One. Through a detailed analysis of collected data through the word dictation test, this chapter will attempt to determine sources and patterns of spelling errors of Persian English language learners, as outlined by the research questions presented in Chapter One.

4.1 Findings of the Study

In this section, the findings of the study attributed to the sources and patterns of interlingual and intralingual spelling errors are presented. Examples of the learners spelling errors are presented in Appendix B. Table 4.1 shows the frequency of misspelled target words of the learners. In table 4.1, the words are arranged in the order of the misspelling frequencies, from highest to lowest.

Table 4.1: Frequency of Misspelled Target Words of the Subjects

Number	Intended Words	Phonemic Representation	Frequency of Misspelled Target Words	Some Examples
1	Mosque	/mɒsk/	33	mosk, mask
2	Wednesday	/'wenzdei/	32	venzday, wensday
3	Busy	/'bɪzi/	31	bisy, bizy
4	Accident	/'æksɪdənt/	31	akcident, acsident
5	Wise	/waɪz/	30	vaiz,waiz
6	Climb	/klaɪm/	30	clime, celimb
7	Foreign	/'fɒrɪn/	30	faren, foregn
8	Still	/stɪl/	29	estil, stil, estill
9	Bread	/bred/	29	bered, beread
10	Prophet	/'prɒfɪt/	29	profet, prafit
11	Sitting	/'sɪtɪŋ/	29	siting, citing
12	Autumn	/'ɔ:təm/	29	atem, otem
13	Than	/ðən/	28	dan, zan
14	Place	/pleɪs/	28	plase, pelace
15	Practice	/'præktɪs/	28	peraktis, practic
16	Studies	/'stʌdiz/	28	estudyz, studiz
17	Thirsty	/'θɜ:sti/	28	sersty, terrsty, thisty
18	Guess	/ges/	27	ges, guss
19	Friend	/frend/	27	frend, ferend
20	Three	/θri:/	27	tree, sree
21	Weigh	/weɪ/	27	wei, way
22	Arrive	/ə'raɪv/	26	arive, eraive
23	Whose	/hu:z/	26	hos, hoze
24	Heavier	/'heviə/	26	hevier, heavyer
25	Night	/naɪt/	25	nait, nite

Table 4.1: Continued

Number	Intended Words	Phonemic Representation	Frequency of Misspelled Target Words	Some Examples
26	Thing	/θɪŋ/	25	ting, sing
27	High	/haɪ/	25	hi, hay, hy
28	Kettle	/'ketl/	24	kettel, ketel
29	Learned	/'lɜ:nɪd/	24	lernd, learnd
30	Money	/'mʌni/	24	many, mony
31	Enough	/ɪ'nʌf/	23	inafe, enagh
32	About	/ə'baʊt/	23	ebout, ebaot
33	Cities	/'sɪtiz/	23	sityes, cityes
34	Bicycle	/'baɪsɪkl/	23	baysikel, bicykl
35	Watch	/wɒtʃ/	22	wach, vatch
36	While	/waɪl/	22	vile, wail, wile
37	Write	/raɪt/	22	writ, rite
38	Think	/θɪŋk/	22	tink, sink
39	Carefully	/'keəfəli/	22	carefuly, kerfully
40	Easily	/'i:zɪli/	22	isely, easyly
41	Burn	/bɜ:n/	21	birn, bern
42	Could	/kʊd/	21	kood, coud
43	Summer	/'sʌmə/	21	samer, sommer, summe
44	Fatter	/fætə/	21	fateer, fater
45	Raise	/reɪz/	20	reise, rais, reiz
46	Fruit	/fru:t/	20	frot, ferut
47	Sea	/si:/	19	see, sie
48	Two	/tu:/	19	too, to
49	Dress	/dres/	19	dres, deress
50	Address	/ə'dres/	19	adres, edress
51	Believe	/bɪ'li:v/	19	belive, bilive
52	Leave	/li:v/	18	live, leav
53	Hour	/'aʊə/	18	our, haur, hou

Table 4.1: Continued

Number	Intended Words	Phonemic Representation	Frequency of Misspelled Target Words	Some Examples
54	People	/'pi:pl/	18	pipel, peaple
55	Receive	/rɪ'si:v/	18	resive, receiv
56	Hear	/hɪə/	17	heer, haer, hea
57	Seat	/si:t/	17	sit
58	Wrong	/rɒŋ/	16	rong, wrang
59	Breakfast	/'brekfəst/	16	berekfast, brackfast
60	Many	/'meni/	16	meny, meni
61	Ticket	/'tɪkɪt/	15	tiket, tickit
62	Bottle	/'bɒtl/	13	botel, batel
63	Cut	/kʌt/	12	cat, kut
64	Women	/'wɪmɪn/	12	wimen, vimin
65	Field	/fi:ld/	11	fild, filed

As we can see in the above table, “mosque, Wednesday, busy, accident, wise, climb, foreign, still, bread, prophet, sitting, autumn, than, place, practice, studies, thirsty, guess, friend, three, weigh, arrive, whose and heavier” are the most misspelled target words of the subjects. The data in the above table also show that the word “mosque” has the highest frequencies and the word “field” has the lowest one in the word dictation test of Persian English language learners. The table shows the number of misspelled target words is much bigger than number of the correct words. This support findings of Yarmohammadi (2005), Khodaverdilou (1997), and Miremadi (1990) who state that the bulk of students in Iran are found to have inadequate competence in English spelling in high school. In the following, grapheme appear between angled brackets < > and sounds appear between single diagonal slashes / /.

4.1.1 Findings of the Study Attributed to the Sources of Interlingual Spelling Errors

As mentioned in Chapter Two, Interlingual errors seem to result from L1 interference. L1 interference refers to those instances of deviation from the norm of the target language which occurs as a result of familiarity with the mother tongue or first language. To classify sources of interlingual spelling errors, James et al (1993) classification is adopted. The sources of interlingual spelling errors according to James et al are: L1 interference, misrepresentation, and lexical cognate misspellings. Because of differences between Persian and English writing system, misrepresentation and lexical cognate misspellings were not applied in this study. Upon the analysis of the spelling errors of Persian English language learners in the current study the sources of interlingual spelling errors are:

a. L1 phonological interference

The current study reveals that some specific differences between the sound systems of English and Persian have affected the spelling ability of Persian learners of English.

	Intended Word		Written Word
Example (1):	**th**an	⟶	**d**an or **z**an

The example displays that Persian learners alter the grapheme <th> to <z> and <d> as no /ð/ sound exists in Persian. As a result, /z/ and /d/ sounds in Persian which are represented by graphemes <z> and <d> in English, replace the grapheme <th> in the word "than".

	Intended Word		Written Word
Example (2):	**th**ink	⟶	**t**ink or **s**ink

The example shows that Persian learners of English change the grapheme <th> to <s> and <t> because no /θ/ sound exists in Persian. As a result, /s/ and /t/ sounds in Persian which are represented by graphemes <s> and <t> in English, replace the grapheme <th> in the words "think".

	Intended Word		Written Word
Example (3):	**w**atch	⟶	**v**atch

The example illustrates that Persian learners change the grapheme <w> to <v> since no /w/ sound exists in Persian. As a result, /v/ sounds in Persian which is represented by grapheme <v> in English, substitutes the grapheme <w> in the words "watch".

From the above examples, it can be interpreted the fact that Persian lacks consonants that are available in English, have affected the spelling ability of Persian

English language learners. Consequently, when Persian learners spell English words, they cannot help but tending to substitute graphemes <s, t, z, d> for <th>, and <v> for <w>. As such, this is the main reason why spelling errors such as “tink, dan, vatch” are quite common among Persian learners.

b. L1 syllable structure interference

The differences between L1 and L2 syllable structure is another source of interlingual error that affects spelling ability of Persian English language learners.

	Intended Word		Written Word
Example (1):	**br**ead [CC-]	⟶	**ber**ead [CVC-]

The example shows that Persian learners of English substitute Persian cluster CVC- for English cluster CC-, since Persian does not permit any initial consonant clustering. The clusters involved are ‘‘cl, br, dr, fr, pr and pl’’.

	Intended Word		Written Word
Example (2):	**st**ill [CC-]	⟶	**ʔest**ill [ʔVCC-]

As seen, Persian learners of English substitute Persian cluster ʔVCC- for English cluster CC-. As Persian syllable does not begin with a vowel, a glottal /ʔ/ is phonologically inserted before a vowel at the beginning of a breath group. The cluster

involved is “st”.

As examples reveal, some of Persian learners’ spelling errors are caused by the differences in the syllable structure of the two languages. The examples show that initial consonant clusters are not permitted in Persian. Therefore, Persian learners substitute Persian cluster CeC- or ʔVCC- for English cluster CC-.

4.1.2 Findings of the Study Attributed to the Sources of Intralingual Spelling Errors

As mentioned in Chapter Two, intralingual errors are those which result from faulty or partial learning of L2, rather than from language transfer. To classify sources of intralingual spelling errors, James et al. (1993) classification is adopted. The sources of intralingual spelling errors according to James et al are overgeneralization, ignorance of rule restriction, homophone confusion and letter naming. Because of differences between Persian and English writing system, letter naming was not applied in this study. Upon the analysis of the spelling errors of Persian English language learners in the current study the sources of intralingual spelling errors are:

a. Overgeneralization

Overgeneralization errors refer to the deviant structures produced by the learner on the basis of his/her limited knowledge of and exposure to other structure of target

language. As the result of the study show, large amounts of spelling errors are caused by the inconsistency of English spelling system. In majority of cases, there is no one-to-one correspondence between graphemes and phonemes they represent. Therefore, learners impose certain spelling features on words that do not contain them. For example, Persian learners replace grapheme <k> for a range of spelling representations for the /k/ sound which are <c>, <k>, <ck>, <que>.

The analysis of spelling errors of Persian English language learners reveals that a consonant can be represented by different graphemes. Their manifestations are illustrated in Table 4.2.

Table 4.2: English Consonants Representation and Subjects Spelling Errors

Consonant Sound	Consonant Representation	Intended Word	Written Word
/k/	<c>, <ck>, <que>	practice ticket mosque	pra**k**tice ti**k**et mos**k**
/f/	<gh>, <ph>	prophet enough	pro**f**et enou**f**
/s/	<ss>, <s>, <ci>, <ce>, <cy>	cities bicycle accident place guess	**s**ities bi**s**ycle ac**s**ident pla**s** gue**s**
/z/	<s>, <se>, <es>	cities visit raise	citi**z** vizit rai**z**
/l/	<l>, <ll>	still	sti**l**,
/t/	<t>, <tt>	kettle	ke**t**le
/m/	<m>, <mm>	summer	su**m**er
/r/	<r>, <rr>	arrive	a**r**ive
/d/	<d>, <dd>	address	a**d**ress
/silent consonants/	<n>, <g>, <t>, <w>, <gh>, <b>, <d>, <r>	autumn watch wrong foreign night climb Wednesday summe	autum wach rong foren nait clim Wenesday summer

From Table 4.2, it can be interpreted that the non-phonetic nature of English spelling caused a lot of spelling errors for Persian English language learners because: a. There are different spelling representations used to denote each consonant sound, which means that a given consonant sound is often represented by different graphemes, b. The double consonants that are not distinguishable in pronunciation from the single ones create a lot of problems for Persian learners in spelling English, such as in the words "still, bottle and arrive", c. Some of the consonants that do not represent any sound in a

particular word (silent consonant) are another main sources of spelling errors for Persian English language learners, and d. Spelling errors related to silent consonants are the most common spelling errors for Persian English language learners.

The analysis of spelling errors of Persian English language learners also reveals that a vowel can be represented by different graphemes. Their manifestations are illustrated in Table 4.3.

Table 4.3: English Vowels Representation and Subjects Spelling Errors

Vowel Sound	Vowel Representation	Intended Word	Written Word
/e/	<ue>, <ie>, <ea>, <a>	guess friend bread many	ges frend bred meny
/i:/	<ea>, <ie>, <eo>, <ei>, <ee>	easily believe people receive three	**i**sily bel**i**ve p**i**ple rec**i**ve thr**i**
/ɪ/	<o>, <e>, <u>	receive busy women	r**i**ceive b**i**sy w**i**m**i**n
/silent vowel/	<e>	while arrive bottle	whil arriv bottl

Table 4.3 shows that there are different spelling representations used to denote each vowel sound, which means that a given vowel sound is often represented by different graphemes. It also shows that some of the vowels that do not represent any sound in a particular word (silent vowels) are other main sources of spelling errors for Persian English language learners, and spelling errors related to silent vowels are the

most common spelling errors for Persian English language learners. Table 4.3 also illustrates that phonemic distinctions are evident in the English /ɪ/ and /i:/ sounds. Such phonemic distinctions are absent in Persian. This creates several problems for Persian learners in spelling English, as demonstrated by the incorrect spellings "belive, wimin" and "bisy". In these cases, Persian learners have substituted the letter "i" for the English /ɪ/ and /i:/ sounds.

b. Ignorance of spelling rules

This type of error is due to the learner's ignorance of the restrictions of an exception to general English spelling rules. That is, the learner fails to observe restrictions of English spelling rules. The analysis of spelling errors of Persian English language learners in the present study reveal that the ignorance of spelling rules is another source of spelling errors. Consider the examples in Table 4.4.

Table 4.4: Subjects' Ignorance of Spelling Rules in English Suffixes

Tapes of English Suffixes	Intended Words	Written Words
-es	studies	studyes
-ing	sitting	si**t**ing
-ly	easily	eas**y**ly
-er	heavier fatter	heav**y**er fa**t**er

The data in Table 4.4 shows that learners have ignored the following rule:

1. When a word ends in –y and is preceded by a consonant, the -y usually changes to -i when you are adding a suffix.

2. When a one-syllable word ends in the CVC combination, it is usually appropriate to double the final consonant when adding a suffix that begins with a vowel.

The above data reveal the Persian learner's ignorance of restrictions of and exceptions to English spelling rules (adding suffixes), as demonstrated by the misspellings “studyes, siting, easyly, heavyer, fater”. It seems that spelling error attributed to ignorance of spelling rules be the results of weak morphological knowledge and rote learning of rules. As most English spelling rules have many exceptions, it’s no wonder that Persian learners find it very hard to spell English.

c. Homophone Confusion

Homophone confusion is the result of failure to make fine distinction between two existing lexical items that sound the same but are not spelt the same. The current study reveals that homophone confusion is a source of many spelling errors of Persian English language learners. Consider the examples of homophone confusion in Table 4.5.

Table 4.5: Subjects' Homophone Confusion in English Spelling

Written Word	Intended Word
sit	seat
live	leave
their	there
our	hour
see	sea
hi	high
who's	whose
here	hear
right	write
too/to	two

Based on the present study, it appears that homophone confusion is the consequence of failure to make fine distinctions between two existing lexical items, that pronounced the same but differ in meaning and spelling. These errors may be due to lack of exposure to the English spelling system, insufficient experience and practice, and the way English words are grouped and presented to the students. It also seems that spelling errors attributed to homophone confusion be the results of weak or fuzzy mental images of words. The present study also reveals that "hear-here" and "write-right" are the dominant homophone confusion spelling errors.

The results of this study also reveal that some of the spelling errors does not have to be attributable exclusively to L1 or L2 interference, but can be the results of a combination of these forces in variable proportion. Dulay et al. (1982) call grammatical and lexical errors of this nature ambiguous. James et al (1993) calls spelling errors of this nature ambivalent. In this study, some of the spelling errors seem to be ambivalent: for example, "b**e**rn" could be the result of L2 interference as /ɜ:/ sound in English is represented by different graphemes like <u>, <ea> and <e>. Alternatively, it could be L1

phonological interference as no /ɜ:/ sound exists in Persian. As a result, the /e/ sound in Persian which is represented by <e> in English, is substituted for the graphemes <u> and <a> in the words burn and breakfast. As mentioned in Chapter One, this study investigates the sources and patterns of interlingual and intralingual errors of Persian English language learners so dual origin errors are not the focus of this study. According to James et al. (1993) and Dulay & Burt (1973), dual or multiple origin errors are really small and a lot lesser than that of interlingual and intralingual ones. In this regards, Gass & Selinker (2001) also state that it is reasonable to say that there must always be a single etiology for errors. That is, Errors must be of type X or type Y, but not both. This is the reason why dual or multiple origin errors are eliminated.

4.1.3 Findings of the Study Attributed to the Patterns of Interlingual Spelling Errors

In this study Scott (2007) categories of spelling patterns are adopted to classify Patterns of interlingual spelling errors of Persian English language learners. Upon the analysis of spelling errors in the current study, the patterns of interlingual errors in the spelling of Persian English language learners are:

a. Patterns of consonants

1. Substitutions of <s> or <t> for English /θ/ sound.

	Intended Word		Written Word
Example:	thirsty	⟶	tirsty or sirsty

As seen, Persian English language learners substitute tV- or sV- for thV-.

2. Substitutions of <z> or <d> for English /ð/ sound.

	Intended Word		Written Word
Examples:	**th**an [CCV-]	⟶	**d**an or **z**an [CV-]

As example shows, Persian English language learners substitute dV- or zV- for thV-.

3. Substitutions of <v> for English /w/ sound.

	Intended Word		Written Word
Examples:	**w**atch	⟶	**v**atch

As the example illustrates, Persian English language learners substitute vV- for wV-.

Upon analysis of the spelling errors of Persian English language learners in the current study and as above examples show, it can be interpreted the fact that some

specific differences between the sound systems of English and Persian have affected the spelling ability of Persian learners of English. So, Persian learners of English tend to transfer their mother tongue sounds into English, and in the process of transfer the learners substitute the dissimilar and non-matching English sounds with the most similar Persian sounds in spelling English. As such, this is the main reason why spelling errors such as “tirsty, dan, and vatch” are quite common among Persian learners. Therefore, the English sounds /w/, /θ/ and /ð/ are the main obstacles for Persian English language learners in spelling English words.

b. Patterns of consonants cluster

1. Substitutions of Persian CVC- cluster for English CC- cluster.

	Intended Word		Written Word
Example:	climb	⟶	celimb

2. Substitutions of Persian ʔVCC- cluster for English CC- cluster.

	Intended Word		Written Word
Example:	**st**ill	⟶	**ʔest**ill

As the patterns show, because of the difference between English and Persian syllable structure - Persian syllable structure is represented as (C)V(C)(C) and English

syllable structure is represented as (C)(C)(C)V(C)(C)(C)(C) - Persian learners of English change the English clusters CC- to either ʔVCC- or CVC-. This is due the fact that Persian does not permit any initial consonant clustering. As such, this is the main reason why spelling errors such as “celimb, ʔestill” are quite common among Persian learners.

4.1.4 Findings of the Study Attributed to the Patterns of Intralingual Spelling Errors

In this study Scott (2007) categories of spelling patterns are adopted to classify Patterns of intralingual spelling errors of Persian English language learners. Upon the analysis of spelling errors in the current study, the patterns of intralingual errors in the spelling of Persian English language learners are:

a. Patterns of consonants

1. The /k/ sound in English is represented as <c>, <ck>, <que>.

	Intended Word		Written Word
Examples:	a. **c**limb	⟶	**k**limb
	b. ti**ck**et	⟶	ti**k**et
	c. mos**que**	⟶	mos**k**

2. The /f/ sound in English is represented as <gh>, <ph>.

	Intended Word		Written Word
Examples:	a. pro**ph**et	→	pro**f**et
	b. enou**gh**	→	enou**f**

3. The /s/ sound in English is represented as <s>, <ss>, <ci>, <ce>, <cy>.

	Intended Word		Written Word
Examples:	a. practi**s**	→	practi**ce**
	b. gue**s**	→	gue**ss**
	c. bisycle	→	bicycle
	d. citting	→	sitting

4. The /z/ sound in English is represented as <s>, <se>, <es >.

	Intended Word		Written Word
Examples:	a. rai**se**	→	rai**z**
	b. vi**s**it	→	vi**z**it
	c. citi**es**	→	citi**z**

5. The /l/ sound in English is represented as < l>, <ll >.

	Intended Word		Written Word
Examples:	sti**ll**	⟶	sti**l**

6. The /t/ sound in English is represented as <t>, <tt >.

	Intended Word		Written Word
Examples:	ke**tt**le	⟶	ke**t**le

7. The /m/ sound in English is represented as <m>, <mm>.

	Intended Word		Written Word
Examples:	su**mm**er	⟶	su**m**er

8. The /r/ sound in English is represented as <r>, <rr >.

	Intended Word		Written Word
Examples:	a**rr**ive	⟶	a**r**ive

9. The /d/ sound in English is represented as <d>, <dd >.

	Intended Word		Written Word
Examples:	a**dd**ress	→	a**d**ress

10. Some graphemes don't represent any sound in a particular word. For example, <n>, <h>, <g>, <t>, <w>, <gh>, <r>, <b>, <d> in the following words:

	Intended Word		Written Word
Examples:	autum**n**	→	autum
	hour	→	our
	forei**g**n	→	forein
	wei**gh**	→	wei
	clim**b**	→	clim
	We**d**nesday	→	Wenesday
	wrong	→	rong

Upon the examples presented above, it can be concluded that due to the inconsistency of English spelling, one consonant can be represented by different graphemes in different words. As such, this is the main reason why spelling errors such as "adres, arive, stil, vizit, gues, profet, tiket" are quite common among Persian learners.

b. Patterns of Vowels

1. The /e/ sound in English is represented as <ue>, <ie>, <ea>, < a>.

	Intended Word		Written Word
Examples:	a. g**ue**ss	→	g**e**ss
	b. fr**ie**nd	→	fr**e**nd
	c. h**ea**vier	→	h**e**vier
	d. m**a**ny	→	m**e**ny

2. The /i:/ sound in English is represented as <ea>, <ie>, <eo>, <ei>, <ee>.

	Intended Word		Written Word
Examples:	a. p**eo**ple	→	p**i**ple
	b. f**ie**ld	→	f**i**ld
	c. **ea**sily	→	**i**sily
	d. rec**ei**ve	→	rec**i**ve
	f. thr**ee**	→	thr**i**

3. The /ɪ/ sound in English is represented as <o>, <e>, <u>.

	Intended Word		Written Word
Examples:	a. w**o**m**e**n	→	w**i**m**i**n
	b. b**u**sy	→	b**i**sy

Upon the examples presented above, it can be concluded that due to the inconsistency of English spelling, one vowel can be represented by different graphemes

in different words. As such, this is the main reason why spelling errors such as "autum, wach, rong, forein, ofen, wei, nigt, clim, Wenesday" are quite common among Persian learners.

c. Pattern of Silent Consonant

1. In English <k>, h>, <g>, <t>, <w>, <gh>, <b>, <d> are spelled but not pronounced.

	Intended Word		Written Word
Examples:	a. wa**t**ch	→	wach
	b. **w**rong	→	rong
	c. autum**n**	→	autum
	d. foreign	→	forein
	e. climb	→	clim
	f. Wednesday	→	Wenesday

As the above examples show, English spelling is full of idiosyncrasies, such as when certain letters in a word are spelled but not pronounced. Persian, on the other hand, does not contain such idiosyncrasies. As such, this is the main reason why spelling errors such as "autum, wach, rong, forein, ofen, wei, nigt, clim, Wenesday" are quite common among Persian learners.

d. Pattern of Silent Vowel

1. In English <e> is spelled but not pronounced.

	Intended Word		Written Word
Examples:	a. writ**e**	⟶	writ
	b. peopl**e**	⟶	peopl

As the above examples show, English spelling is full of idiosyncrasies. Persian, on the other hand, does not contain such idiosyncrasies. As such, this is the main reason why spelling errors such as “receiv, whil, writ, kettl, peopl, believ, arriv, bottl, and bicycle” are quite common among Persian learners.

e. Patterns of Ignorance of Spelling Rules

The results of the study show that learners have ignored the following patterns of spelling rule:

1. If a word ends in -y and the –y is preceded by a consonant, the -y changes to <i>, and the suffix is added.

For example: city + -es = cities/ learners written word "cityes".

2. When a one-syllable word ends in the CVC combination, it is usually

appropriate to double the final consonant when adding a suffix that begins with a vowel.

Example: a. sit + ing = sitting (learners written word is “siting”)

It seems that these types of errors are due to the learners’ ignorance of the exceptions to general target language rules. The learner fails to observe the restrictions of target language structures or rules. Based on spelling errors of Persian learners in this study, it appears that if a spelling rule is learned without its exception, the learning of the rule will be incomplete, and spelling errors will occur. The reason is that one basic spelling rule in English has many exceptions. Spelling errors committed by Persian learners in this study show that learners have little difficulty mastering Basic English spelling rules, but often struggle with the exceptions.

f. Patterns of Homophones

1. Identically sounding words that are spelled differently.

The current study shows that the learners are already well familiar with both forms of the words. It seems that the unawareness of the lexico-grammatical functioning of the words results in the occurrence of spelling errors. Consider the following examples:

	Intended Word		Written Word
Examples:	hear	→	here
	leave	→	live
	there	→	their
	hour	→	our
	sea	→	see

4.1.5 Discussion of the Findings

The following tables show the percentile information of sources of spelling errors, interlingual errors and intralingual errors. As Table 4.6 shows, the sources of spelling errors are interlingual and intralingual.

Table 4.6: The Percentile Information of Subjects' Sources of Spelling Errors in English Spelling

Sources of Spelling Errors	Interlingual Errors	Intralingual Errors	Total
Frequency	130	439	569
Percentages	22.84%	77.15%	100%

Upon analyzing spelling errors of Persian English language learners of this study, the figures offered in Table 4.6 reveal the fact that in the present study the number of intralingual errors is far beyond the number of interlingual errors. This may be attributed to the lack of the correct semantic, phonological and orthographic associations between

the spoken sounds and the printed symbols in English spelling (Ehri and Wilce, 1987; Treiman, 1993). Errors due to L1 transfer (interlingual errors) in the spelling errors of Persian learners in this study amounted to 130, which constituted approximately 22.84%, while errors attributed to L2 transfer amounted to 439, which constituted approximately 77.15% of the overall total number of errors recorded (569). This study supports the view that L1 transfer does not appear to be the major source of errors in learning L2 (Dulay and Burt, 1974; Tran-chi-chau, 1975; Ellis, 1994 etc).

Table 4.7: Frequency and Percentage of Subjects' Interlingual Errors in English Spelling

Sources of Errors	Interlingual Errors		Total
	L1 Phonology	L1 Syllable Structure	
Frequencies	72	58	130
Percentages	55.38%	44.61%	100%

Furthermore, Table 4.7 shows that Persian English language learners on produced a total of 130 interlingual spelling errors: 72 or 55.38% related to transfer of L1 phonology and 58 or 44.61% related to transfer of L1 syllable structure. The distribution of errors seems to suggest that Persian learners have more problems due to transfer of L1 phonology than due to L1 syllable structure.

Table 4.8: Frequency and Percentage of Subjects' Intralingual Errors in English Spelling

Sources of Errors	Intralingual Errors			Total
	L2 Inconsistency	Overgeneralization	Homophone Confusion	
Frequencies	238	63	138	439
Percentages	54.21%	14.35%	31.43%	100%

Table 4.8 shows that Persian English language learners on produced a total of 439 intralingual spelling errors: 238 or 54.21% related to Overgeneralization, 63 or 14.35% related to ignorance of spelling rules and 138 or 31.43% related to homophone confusion. The distribution of errors seems to suggest that Persian learners lacked knowledge about English consonants and vowels than about spelling rules or homophones.

The rank ordering of the various English spelling errors of Persian learners in the term of L1 and L2 transfer based on frequency information of sources of spelling errors (Table 4.4) are outlined in Figure 4.1.

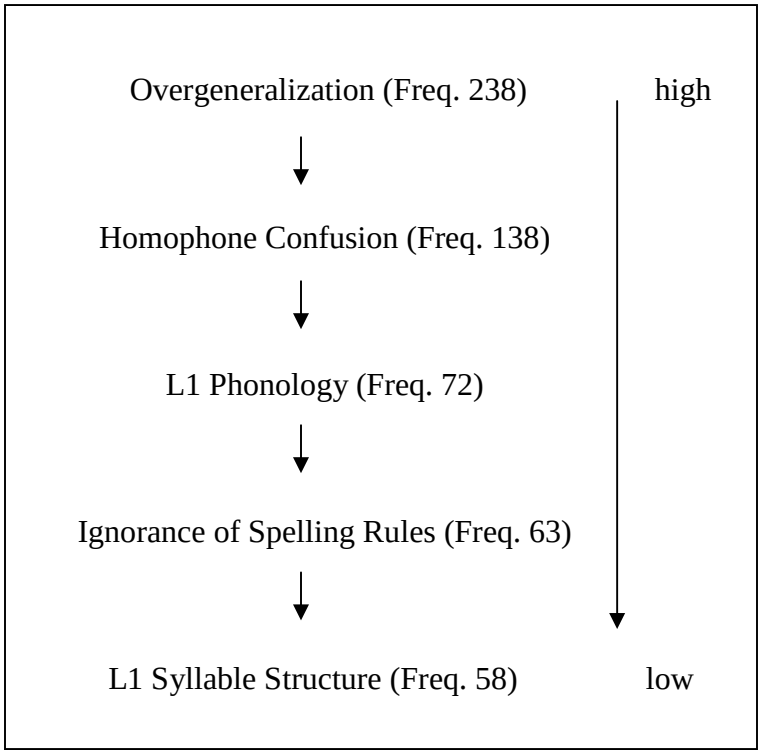

Figure 4.1: The Rank Ordering of Subjects' Sources of Spelling Errors

The rank ordering of sources of English spelling errors based on their frequency reveals that the most dominant errors made by Persian learners are attributed to the overgeneralization and homophones. This study implies that the subjects of the study who were all in their third year of academic English did not yet have a fixed idea of the English sound system, and they have low spelling proficiency in English spelling. In other words, the results of the current study imply that many spelling problems that Persian English language learners have in spelling English may be due to lack of knowledge of phonology, orthography, morphology, and mental orthographic images. This implies that at secondary school in Iran, spelling receives very little attention in EFL instruction and evaluation. As a result, many phonological and spelling problems that Persian English language learners have in spelling English may be due to a lack of

English spelling instruction. The inability to realize the differences between the L1 and L2 sound systems could be the reason behind the occurrence of the interlingual errors. The results of this study imply a real need for enough time, adequate instructions, and teacher knowledge.

4.2 Research Question 1

What are the sources of interlingual errors in the spelling of Persian English language learners?

The purpose of this research question is to determine the sources of interlingual errors in the spelling of Persian English language learners. Upon the analysis of the spelling errors, two sources of interlingual errors for spelling errors emerged as the most prevalent.

4.2.1 L1 Phonological Interference

According to the spelling errors of Persian English language learners in their dictation test, one of the sources of spelling errors is due to the facts that Persian lacks several sounds that are used in English. These errors are presented in Tables 4.9 and 4.10. In these tables, English sounds and substituted letters are given, followed by the intended words, written words and frequency.

Table 4.9: Frequency and Subjects' Spelling Errors for /θ/ Sound

English Sound	Substituted Letters	Intended Words	Written Words	Frequency	Percentage
/θ/	<s> , <t>	thirsty think thing three	**t**irsty or **s**irsty **t**ink or **s**ink **t**ing or **s**ing **t**ree or **s**ree	27	37.5%

The data in Table 4.9 indicate that Persian learners of English change the grapheme <th> to <s> and <t> because no /θ/ sound exists in Persian. As a result, /s/ and /t/ sounds in Persian which are represented by graphemes <s> and <t> in English, replace the grapheme <th> in the words "think, thing and three".

Table 4.10: Frequency and Subjects' Spelling Errors for /ð/ Sound

English Sound	Substituted Letters	Intended Words	Written Words	Frequency	Percentage
/ð/	<z> , <d>	than	**d**an or **z**an	30	41.66%

The data in Table 4.10 display that Persian learners alter the grapheme <th> to <z> and <d> as no /ð/ sound exists in Persian. As a result, /z/ and /d/ sounds in Persian which are represented by graphemes <z> and <d> in English, replace the grapheme <th> in the word "than".

Table 4.11: Frequency and Subjects' Spelling Errors for /w/ Sound

English Sound	Substituted letter	Intended Words	Written Words	Frequency	Percentage
/w/	<v>	watch women wise weigh Wednesday while	**v**atch **v**omen **v**ise **v**eigh **V**ednesday **v**ile	15	20.83%

The data in Table 4.11 illustrate that Persian learners change the grapheme <w> to <v> since no /w/ sound exists in Persian. As a result, /v/ sounds in Persian which is represented by grapheme <v> in English, substitutes the grapheme <w> in the words "women, watch, wise, weigh, Wednesday and while".

From the data presented in Tables 4.9-11, it can be interpreted the fact that Persian lacks consonants that are available in English, have affected the spelling ability of Persian English language learners. Consequently, when Persian learners spell English words, they cannot help but tending to substitute graphemes <s, t, z, d> for <th>, and <v> for <w>. As such, this is the main reason why spelling errors such as "tink, dan, and vatch" are quite common among Persian learners. Tables 4.9-11 also exhibit the frequency of consonant errors in the area of L1 phonological interference of Persian English language learners. They reveal that Persian English language learners produced a total of 72 consonant spelling errors: 27 related to the /θ/ sound, 30 related to the /ð/ sound and 15 related to the /w/ sound.

These findings support those of Sterling (1983) and Teschner (1988), who state that poor spelling sometimes results from cases where English uses phonemes that are not present in the speaker's native language. This result is also consistent with the results of a study by Baron and Hodge (1978), who found that analogy and generalization are the most likely mechanisms for transferring spelling-sound correspondences in the absence of knowledge about the existence of the correspondences.

4.2.2 L1 Syllable Structure Interference

The differences between L1 and L2 syllable structure is another source of interlingual error that affects spelling ability of Persian English language learners. The syllable structure of Persian can be represented as CV(C)(C), which means that Persian permits only clusters of two consonants syllables at the end of the word. Persian does not permit any initial consonant clustering. The syllable structure of English can be represented as (C)(C)(C)V(C)(C)(C)(C), which means that English permits up to three clusters of consonants at the beginning of the word and four at the end of the word. Thus, Persian English language learners change the clusters CC- to either ʔVCC- or CVC- (Khanlari, 1994). A glottal /ʔ/ is phonologically inserted before a vowel at the beginning of a breath group. The glottal stop is therefore not distinctive in initial position: a word-initial glottal-vowel sequence never contrasts with a word-initial vowel. The glottal is distinctive in non-initial position. For instance, /u:/ (he, she) is actually said as /ʔu:/ and /ɑ:rd/ (flour) is actually said as /ʔɑ:rd/ (ibid). Their manifestations are shown in Tables 4.12 and 4.13.

Table 4.12: Frequency and Subjects' Spelling Errors for CC- Cluster (1)

Intended Word	Intended Cluster	Written Words	Written Cluster	Frequency	Percentage
climb **br**ead **dr**ess **fr**iend **pl**ace **fr**uit **pr**ophet **pr**actice	CC-	**cel**imb **ber**ead **der**ess **fer**iend **pel**ace **fer**uit **per**ophet **per**actice	CVC-	32	55.17%

The data in Table 4.12 show that Persian learners of English substitute Persian cluster CVC- for English cluster CC-. The clusters involved are: "cl, br, dr, fr, pr and pl".

	Intended Word		Written Word
Example:	climb [CC-]	⟶	celimb [CVC-]

Table 4.13: Frequency and Subjects' Spelling Errors for CC- Cluster (2)

Intended Word	Intended Cluster	Written Words	Written Cluster	Frequency	Percentage
studies **st**ill	CC-	**ʔest**udies **ʔest**ill	ʔVCC-	26	44.82%

The data in Table 4.13 show that Persian learners of English substitute Persian cluster ʔVCC- for English cluster CC-. The cluster involved is: st. A Persian syllable always begins with a consonant sound. Note that syllables which visually begin with a vowel sound, have a preceding glottal stop /ʔ/ merged with their sound.

	Intended Word		Written Word
Example:	studies [CC-]	⟶	ʔestudies [ʔVCC-]

Results of the study related to L1 syllable structure interference: as data in Table 4.12 and 4.13 reveal, some of Persian learners' spelling errors are caused by the differences in the syllable structure of the two languages. The examples of Tables 4.12 and 4.13 show that initial consonant clusters are not permitted in Persian. Therefore, Persian learners substitute Persian cluster CeC- for English cluster CC-. For example; "bread" tends to be rendered as "beread". Persian learners also substitute Persian cluster /ʔesC-/ for English cluster sC-. For example; "school" tends to be rendered as "ʔeschool". Thus, it is not surprising that Persian learners spell words "bread" and "study" as "beread" and "ʔestudy", respectively. Tables 4.12 and 4.13 also depict the distribution of errors attributable to the L1 syllable structure interference. They show that Persian English language learners produced a total of 58 spelling errors of cluster change: 32 related to CVC- cluster and 26 related to ʔVCC- cluster.

These findings support those of Sterling (1983) and Teschner (1988), who believe that the differences in syllable structures between L1 and L2 is a source of spelling problems for L2 learners, and also support those of Oller and Ziahosseiny (1970); Michelson (1974); Ibrahim (1978); Bebout (1985); James et al (1993); and Al-Jaref (2008) who believe that L1 interference has an effect on the spelling errors of L2 learners. These findings also support Odlin (2001) who states that, "the Persian and the English alphabet have no letters in common and they use opposite directional principle.

As the two languages only share the alphabetic principle, there is little, if any, positive transfer aiding the acquisition of English by Persian speaker (p. 125).

4.3 Research Question 2

What are the sources of intralingual errors in the spelling of Persian English language learners?

The purpose of this research question is to determine the sources of intralingual errors in the spelling of Persian English language learners. Upon the analysis of the spelling errors of Persian English language learners in the current study, the following sources of intralingual errors emerged as the most significant.

4.3.1 Overgeneralization

Overgeneralization means ignoring conditions on the applicability of a rule to a particular instance, thus making its remit excessively wide (James et al., 1993). Despite all claims of consistency in English spelling (Venezky, 1999, 1876b; Cronnell, 1971, 1979), Persian learners' spelling errors in this study demonstrate that English spelling actually has a great deal of arbitrariness and inconsistency. In the majority of cases, there is no one-to-one correspondence between letters of alphabet and the sounds they represent. Some sounds (vowels or consonants) have more than one representation in writing. Therefore, learners impose certain spelling features on words that do not contain

them. For example, Persian learners replace grapheme <k> for a range of spelling representations for the /k/ sound which are: <c>, <k>, <ck>, <que>. The analysis of spelling errors of Persian English language learners reveals that a consonant can be represented by different letters or combination of letters. Their manifestations are illustrated in the following tables.

Table 4.14: Frequency and Subjects' Spelling Errors for /k/ Sound

English Consonant	Consonant Representations in English	Intended Word	Written Word	Frequency	Percentage
/k/	<c>, <k>, <ck>, <que>	pra**c**tice a**cc**ident bicy**c**le **c**arefully ti**ck**et mos**que** **c**limb **c**ut	pra**k**tice a**k**cident bicy**k**le **k**arefully ti**k**et mos**k** **k**limb **k**ut	18	11.76%

The data in Table 4.14 show a range of spelling representations for the /k/ sound which are: <c>, <k>, <ck>, <que>. For example, Table 4.14 shows that Persian English language learners have spelled the word "mosque" as "mosk". The reason is that the /k/ sound is spelled <que> in the word "mosque" and Persian learners of English replace the grapheme <k> with <que> in the word "mosque". The words concerned in this study according to Persian learners' spelling errors are "practice, accident, bicycle, carefully, ticket, mosque climb and cut".

Table 4.15: Frequency and Subjects' Spelling Errors for /f/ Sound

English Consonant	Consonant Representations in English	Intended Word	Written Word	Frequency	Percentage
/f/	<gh>, <ph>	pro**ph**et enou**gh**	pro**f**et enou**f**	9	5.88%

The data in Table 4.15 display different spelling representations for the /f/ sound which are: <gh>, <ph>. For example, Table 4.15 shows that Persian learners have spelled the word "prophet" as "profet". The reason is that the /f/ sound is spelled <ph> in the word "prophet" and Persian learners substitute the grapheme <f> for <ph> in the word "prophet". The words involved in this study according to Persian learners spelling errors are "prophet and enough".

Table 4.16: Frequency and Subjects' Spelling Errors for /s/ Sound

English Consonant	Consonant Representations in English	Intended Word	Written Word	Frequency	Percentage
/s/	<ss>, <s>, <ce>, <ci>, <cy>	practi**ce** **s**itting **ci**ties bi**cy**cle gue**ss**	practi**s** **c**itting **s**ities bi**s**ycle gue**s**	28	18.30%

The data in Table 4.16 illustrate a variety of spelling representations for the /s/ sound which are: <ss>, <s>, <cy>, <ci>, <ce>. For example, Table 4.16 shows that Persian learners of English have spelled the word "practice" as "practis". The reason is that the /s/ sound is spelled <ce> in the word "practice" and Persian learners of English substitute the grapheme <s> for <ce> in the word "practice". The words concerned in this

study according to Persian learners spelling errors are “practice, sitting, cities, bicycle, place, receive, guess, dress, accident and address”.

Table 4.17: Frequency and Subjects’ Spelling Errors for /z/ Sound

English Consonant	Consonant Representations in English	Intended Word	Written Word	Frequency	Percentage
/z/	<s>, <se>, <es>	citi**es** rai**se** bu**s**y	citi**z** rai**z** bu**z**y	25	16.33%

The data in Table 4.17 show various spelling representations for the /z/ sound which are: <s>, <se>, <es>. For example, Table 4.17 demonstrates that Persian learners have spelled the word “visit” as “vizit”. The reason is that the sound /z/ is spelled <s> in the word “visit” and Persian learners replace the grapheme <z> with <s> in the word “visit”. The words involved in this category according to Persian learners spelling errors are “cities, raise, wise, busy, studies, easily, Wednesday and whose”.

Table 4.18: Frequency and Subjects’ Spelling Errors for /l/ Sound

English Consonant	Consonant Representations in English	Intended Word	Written Word	Frequency	Percentage
/l/	<l> , <ll>	sti**ll**	sti**l**	8	5.22%

The data in Table 4.18 show the spelling representation for the /l/ sound which are: <l>. <ll>. For example, Table 4.18 demonstrates that Persian learners of English have spelled the word “still” as “stil”. The reason is that the sound /l/ is spelled <ll> in the word "still" and Persian learners of English substitute the grapheme <l> for <ll> in

the word “still”. The word concerned in this study according to Persian learners spelling errors is “still”.

Table 4.19: Frequency and Subjects’ Spelling Errors for /t/ Sound

English Consonant	Consonant Representations in English	Intended Word	Written Word	Frequency	Percentage
/t/	<t>, <tt>	ke**tt**le bo**tt**le	ke**t**le bo**t**le	11	7.18%

The data in Table 4.19 demonstrate spelling representation for the /t/ sound which are: <t>, <tt>. For example, Table 4.19 shows that Persian learners of English have spelled the word “bottle” as “botle”. The reason is that the sound /t/ is spelled <tt> in the word “bottle” and Persian learners of English substitute the grapheme <t> for <tt> in the word “bottle”. The words involved in this study according to Persian learners spelling errors are “kettle and bottle”.

Table 4.20: Frequency and Subjects’ Spelling Errors for /m/ Sound

English Consonant	Consonant Representations in English	Intended Word	Written Word	Frequency	Percentage
/m/	<m>, <mm>	su**mm**er	su**m**er	5	3.26%

The data in Table 4.20 present the spelling representation for the /m/ sound which are <m>, <mm>. As Table 4.20 shows, Persian learners of English have spelled the word “summer” as “sumer”. The reason is that the /m/ sound is spelled <mm> in the word

“summer”, and the Persian learners of English replace the grapheme <m> with <mm> in the word “summer”. The word concerned in this study according to Persian learners spelling errors is “summer”.

Table 4.21: Frequency and Subjects’ Spelling Errors for /r/ Sound

English Consonant	Consonant Representations in English	Intended Word	Written Word	Frequency	Percentage
/r/	<r>, <rr>	a**rr**ive	a**r**ive	7	4.57%

The data in Table 4.21 illustrate the spelling representation for the English /r/ sound, which are: <r>, <rr>. As Table 4.21 shows, Persian learners of English have spelled the word “arrive” as “arive”. The reason is that the /r/ sound is spelled <rr> in the word “arrive”, and Persian learners of English replace the grapheme <r> with <rr> in the word “arrive”. The word concerned in this study according to Persian learners spelling errors is “arrive”.

Table 4.22: Frequency and Subjects’ Spelling Errors for /d/ Sound

English Consonant	Consonant Representations in English	Intended Word	Written Word	Frequency	Percentage
/d/	<d>, <dd>	a**dd**ress	a**d**ress	8	5.22%

The data in Table 4.22 show the spelling representation for the /d/ sound, which are: <d>, <dd>. As Table 4.22 shows, Persian learners have spelled the word “address” as “adress”. The reasons is that the /d/ sound is spelled <dd> in the word “address” and Persian learners of English substitute the grapheme <d> for <dd> in the word “address”.

The word concerned in this study according to Persian learners spelling errors is "address".

Table 4.23: Frequency and Subjects' Spelling Errors for Silent Consonant

English Consonant	Consonant Representations in English	Intended Word	Written Word	Frequency	Percentage
/silent consonant/	<n>, <h>, <g>, <l>, <t>, <w>, <gh>, <b>, <d>, <r>	autum**n** wa**t**ch **w**rong forei**g**n clim**b** We**d**nesday w**h**ile cou**l**d summe**r**	autum wach rong forein clim Wenesday wile coud summe	34	22.22%

The data in Table 4.23 illustrate the fact that some consonant letters in English are written but not pronounced. According to the spelling errors of Persian learners of English, the letters involved in this category are: <k>, <h>, <g>, <t>, <w>, <gh>, <b>, <d>, <r>. As Table 4.23 shows, Persian learners of English have spelled the word "watch" as "wach". The reason is that the silent letter is spelled <t> in the word "watch", and Persian learners of English leave out the grapheme <t> in the word "watch" as it is not pronounced. The words concerned in this study according to Persian learners spelling errors are "autumn, watch, wrong, foreign, weigh, high, night, climb, hour, whose, while, could and Wednesday".

Results of the study related to inconsistency of English consonants (Tables 4.14-

23) are as follow:

a. There are different spelling representations used to denote each consonant sound, which means that a given consonant sound is often represented by different letters or combination of letters.
b. One of the reasons that English spelling is difficult for Persian learners is the inconsistency of consonant sound in English.
c. In English, nine consonant sounds are spelled in twenty four different ways; this makes English spelling very difficult for Persian learners.
d. The double letters that are not distinguishable in pronunciation from the single ones create a lot of problems for Persian learners in spelling English, such as in the words “still, bottle and arrive”.
e. Some of the letters that do not represent any sound in a particular word are other main sources of spelling errors for Persian English language learners.
f. Spelling errors related to silent consonants are the most common spelling errors for Persian English language learners.

Tables 4.14-23 also display the frequency of inconsistency of consonants in the English words spelled by Persian learners of English. They show the distribution of errors across ten consonants. Persian English language learners on average produced a total of 153 spelling errors based on the inconsistency of English consonants: 18 related to the /k/ sound, 9 related to the /f/ sound, 28 related to the /c/ sound, 25 related to the /d/ sound, 8 related to the /l/ sound, 11 related to the /t/ sound, 5 related to the /m/ sound, 7

related to the /r/ sound, 8 related to the /d/ sound, and 34 related to silent letters. Based on the tables, it can be observed that the errors due to silent letters were the most common.

By analyzing the spelling errors of Persian English language learners, this study revealed that a vowel sound can be represented by different letters or combination of letters. Their manifestations are exemplified in the following tables.

Table 4.24: Frequency and Subjects' Spelling Errors for /e/ Sound

English Vowel	Vowel Representations in English	Intended Word	Written Word	Frequency	Percentage
/e/	<ue>, <ie>, <ea>, <a>	g**ue**ss fr**ie**nd br**ea**d m**a**ny	g**e**s fr**e**nd br**e**d m**e**ny	21	24.70%

The data in Table 4.24 illustrate the spelling representations for the /e/ sound, which are <a>, <ea>, <ie>, <ue>. As Table 4.24 shows Persian learners of English have spelled the word "many" as "meny". The reason is that the /e/ sound is spelled <a> in the word "many" and Persian learners of English often replace the grapheme <e> with <a> in the word "many". The words concerned in this study according to Persian learners spelling errors are "guess, friend, bread, breakfast, heavier, learned, many, about and arrive".

Table 4.25: Frequency and Subjects' Spelling Errors for /i:/ Sound

English Vowel	Vowel Representations in English	Intended Word	Written Word	Frequency	Percentage
/i:/	<ea>, <ie>, <eo>, <ei>, <ee>	**ea**sily f**ie**ld p**eo**ple rec**ei**ve thr**ee**	**i**sily f**i**ld p**i**ple rec**i**ve thr**i**	18	21.17%

The data in Table 4.25 show the spelling representations for the /i:/ sound, which are <ee>, <ea>, <ie>, <eo>, <ei>. As Table 4.25 shows Persian learners of English have spelled the word "field" as "fild". The reasons is that the /i:/ sound is spelled <ie> in the word "field", but Persian learners of English substitute the grapheme <i> for <ie>. The words involved in this study according to Persian learners' spelling errors are "easily, believe, field, people, receive and three".

Table 4.26: Frequency and Subjects' Spelling Errors for /ɪ/ Sound

English Vowel	Vowel Representations in English	Intended Word	Written Word	Frequency	Percentage
/ɪ/	<o>, <e>, <u>	b**u**sy **e**nough w**o**m**e**n	b**i**sy **i**nough w**i**m**i**n	14	16.47%

The data in Table 4.26 demonstrate the spelling representations for the /ɪ/ sound which are: <o>, <e>, <u>. As Table 4.26 shows Persian learners have spelled the word "busy" as "bisy". The reason is that the sound /ɪ/ is spelled <u> in the word "busy", and Persian learners replace the grapheme <i> with <u> in the word "busy". The words

concerned in this study according to Persian learners spelling errors are “receive, busy, enough and women”.

Table 4.27: Frequency and Subjects’ Spelling Errors for Silent Vowel

English Vowel	Vowel Representations in English	Intended Word	Written Word	Frequency	Percentage
/silent/	<e>	receiv**e** whil**e** writ**e** kettl**e**	receiv whil writ kettl	32	37.64%

The data in Table 4.27 illustrate the silent vowel, which is spelled but not pronounced. The silent vowel involved in this study is /e/. As Table 4.27 shows learners have spelled the word “people” as “peopl”. The reasons is that the silent vowel is spelled <e> in the word “people”, and Persian learners leave out the grapheme <e> in the word “people” as it is not pronounced. The words involved in this study according to Persian learners spelling errors are “receive, while, write, kettle, people, believe, arrive, bottle, bicycle and leave”.

Results of the study related to inconsistency of English vowels (Tables 4.24-27) are as follow:

1. A given vowel sound is often represented by different letters or combination of letters.
2. One of the reasons that English spelling is difficult for Persian learners is the inconsistency of vowel sound in English.

3. The silent vowel involved in this study is one of the main sources of spelling errors for Persian English language learners.
4. Tables 4.24-27 illustrate the distribution of errors attributed to the inconsistency of English vowels. It illustrates that phonemic distinctions are evident in the English /ɪ/ and /i:/ sounds. Such phonemic distinctions are absent in Persian. This creates several problems for Persian learners in spelling English, as demonstrated by the incorrect spellings “belive, wimin” and “bisy”. In these cases, Persian learners have substituted the grapheme <i> for the English /ɪ/ and /i:/ sounds.
5. Tables 4.24-27 display the frequency inconsistency of English vowels in the current study. Persian English language learners on average produced a total of 85 spelling errors of inconsistency of English vowels: 21 related to the /e/ sound, 18 related to the /i:/ sound, 14 related to the /i/ sound and 32 related to the silent vowel.
6. The frequency of inconsistency of vowels reveals that the error due to the silent vowel is the most common spelling error.

As the data demonstrate, inconsistency of consonants and vowels in English is one of the reasons that makes English spelling difficult for Persian learners. This finding is in line with O’Grady et al. (1996) who noted that spelling is made more difficult by the inconsistencies of English pronunciations, and by the discrepancies in the numbers of graphemes and combinations of graphemes used to represent English sounds.

4.3.2 Ignorance of Spelling Rules

This occurs when the learner has master a general rule but does not yet know all the exception to that rule. The analysis of spelling errors of Persian English language learners in the present study reveals that the ignorance of English spelling rules is another source of spelling errors. Consider the examples in the following tables.

Table 4.28: Frequency and Subjects' Spelling Errors for "-es" Rule

English Suffix	Intended Words	Written Words	Frequency	Percentage
-es	cit**ies** stud**ies**	cit**yes**/cit**ys** stud**yes**/stud**ys**	17	26.98%

The data in Table 4.28 show that learners have ignored the following rule: when a word ends in -y and is preceded by a consonant, the -y usually changes to <i> when you are adding a suffix.

Examples: a. city + -es= cities (learners written word is "cityes/citys")

b. study + -es = studies (learners written word is "studyes/studys")

Table 4.29: Frequency and Subjects' Spelling Errors for "–ing" Rule

English Suffix	Intended Word	Written Word	Frequency	Percentage
–ing	si**tt**ing	si**t**ing	14	22.22%

The data in Table 4.29 show that learners have ignored the following rule: when a one-syllable word ends in the CVC combination, it is usually appropriate to double the final consonant when adding a suffix that begins with a vowel.

Example: a. sit + ing = sitting (learners written word is “siting”)

Table 4.30: Frequency and Subjects’ Spelling Errors for “–ly” Rule

English Suffix	Intended Word	Written Word	Frequency	Percentage
–ly	eas**i**ly	eas**y**ly	12	19.06%

The data in Table 4.30 show that learners have ignored the following rule: if a word ends in -y and the –y is preceded by a consonant, the -y changes to <i>, and the suffix is added.

Example: a. easy + ly = easily (learners written word is “easyly”)

Table 4.31: Frequency and Subjects’ Spelling Errors for “-er” Rules

English Suffixes	Intended Words	Written Words	Frequency	Percentage
–er	heav**i**er, fa**tt**er	heav**y**er, fa**t**er	20	31.76%

The data in Table 4.31 show that learners have ignored the following rules: if a word ends in -y and the -y is preceded by a consonant, the -y changes to <i>, and the suffix is added.

Example: a. heavy + -er = heavier (learners written word is “heavyer”)

When a one-syllable word ends in the CVC combination, usually the final consonant is doubled when adding a suffix that begins with a vowel.

Example: a. fat + er = fatter (learners written word is “fater”)

Findings of the study attributed to ignorance of English spelling rules are as follow: The above data reveal the Persian learner's ignorance of restriction of and exception to English spelling rules (adding suffixes), as demonstrated by the misspellings “citys, siting, fater etc”. As most English spelling rules have many exceptions, it’s no wonder that Persian learners find it very hard to spell English. It seems that Persian learner's ignorance of spelling rules can result from analogical extension or the rote learning of rules.

Tables 4.28-31 also illustrate the frequency of errors attributed to ignorance of English spelling rules. Persian learners produced a total of 63 spelling errors of ignorance of English spelling rules: 17 related to suffix -es, 14 related to suffix -ing, 12 related to suffix -ly, and 20 related to suffix -er. Tables 4.28-31 also reveal that suffix -er is the dominant spelling error, based on the frequency of ignorance English spelling rules.

4.3.3 Homophone Confusion

The current study reveals that homophones - two words that sound the same but are not spelt the same - are a source of many spelling errors of Persian English language learners. Consider the frequency and the examples of homophone confusion in Table 4.32.

Table 4.32: Frequency and Subjects' Spelling Errors for Homophone Confusion

Intended Word	Written Word	Frequency	Percentage
seat	sit	11	7.97%
leave	live	15	10.86%
there	their	11	7.97%
hour	our	13	9.42%
sea	see	9	6.52%
high	hi	8	5.79%
whose	who's	17	12.31%
hear	here	20	14.49%
write	right	19	13.76%
two	too/to	15	10.86%

Based on the present study, it appears that homophone confusion is the consequence of failure to make fine distinctions between two existing lexical items, that pronounced the same but differ in meaning and spelling. The data in Table 4.32 also reveal that the frequency of homophone confusion in the words "hear-here" and "write-right" are the dominant ones.

The results of Research Question Two supports the view of Mohammadi (1992) who asserts that the greatest difficulty encountered by Persian learners result from the apparently irregular spelling system of English compared with the greater regularity of the mainly phonetic script of Persian. These results also affirm the view of Mirhassani (2003) who states that spelling is one of the most difficult problems that Persian learners face. They have a hard time spelling words because:

1. They do not have some of the English sounds (/w/, /ð/, /θ/) in Persian.
2. They cannot understand why some graphemes are written but not pronounced (light, sign).
3. They do not start a word with two consonants in Persian, so they have a problem spelling words such as (small, school, student) respectively and they spell the above words as esmall, eschool, estudent.

4.4 Research Question 3

What are the patterns of interlingual errors in the spelling of Persian English language learners?

The purpose of this research question is to determine the patterns of interlingual errors in the spelling of Persian English language learners. According to spelling errors of Persian English language learners in this study, one of the sources of spelling errors is due to the facts that Persian lacks several sounds that are used in English. Upon analyzing

the spelling errors of Persian English language learners in the current study, the following patterns of interlingual errors emerged.

4.4.1 Patterns of Consonants

1. Substitutions of <s> or <t> for English /θ/ sound. In other word, Persian English language learners substitute sV- or tV- for thV-.

	Intended Word		Written Word
Examples:	a. **th**ink	→	**t**ink or **s**ink
	b. **th**ing	→	**t**ing or **s**ing

2. Substitutions of <z> or <d> for English /ð/ sound. In other word, Persian English language learners substitute dV- or zV- for thV-.

	Intended Word		Written Word
Examples:	a. **th**an		**d**an or **z**an
	b. **th**ere	→	**d**ere or **z**ere

3. Substitutions of <v> for English /w/ sound. In other word, Persian English language learners substitute vV- for wV-.

	Intended Word		Written Word
Examples:	a. **w**atch	→	**v**atch
	b. **w**omen	→	**v**omen
	c. **w**ise	→	**v**ise
	d. **w**eigh	→	**v**eigh

The above examples illustrate that in these cases, because of differences between Persian and English sound system, Persian learners substitute Persian consonant sounds and patterns for English consonant sounds and patterns in spelling English. As such, this is the main reason why spelling errors such as “tirsty, dan, vatch” are quite common among Persian learners.

4.4.2 Patterns of Consonants Cluster

1. Substitutions of Persian CVC- cluster for English CC- cluster.

	Intended Word		Written Word
Examples:	a. climb	→	c**e**limb
	b. bread	→	b**e**read
	c. dress	→	d**e**ress
	d. place	→	p**e**lace
	e. fruit	→	f**e**ruit

2. Substitutions of Persian ʔVCC- cluster for English CC- cluster.

	Intended Word		Written Word
Examples:	1. **st**udies	→	**ʔest**udies
	2. **st**ill	→	**ʔest**ill

As the results show, because of the difference between English and Persian syllable structure - Persian syllable structure is represented as (C)V(C)(C) and English syllable structure is represented as (C)(C)(C)V(C)(C)(C)(C) - Persian learners of English change the English clusters CC- to either ʔVCC- or CVC-. This is due the fact that Persian does not permit any initial consonant clustering.

The results mentioned above support those of Shaughnessy (1979) and Scott (2007), who believed that interlingual interference are most evident in foreign language situations wherein the learners are in inconstant exposure to the foreign language input. In other words, here the learner replaces L1 sounds and sound patterns for L2 sounds and sound patterns in spelling English.

4.5 Research Question 4

What are the patterns of intralingual errors in the spelling of Persian English language learners?

The purpose of this research question is to determine patters of intralingual errors in the spelling of Persian English language learners. Upon the analysis of the spelling errors of Persian English language learners in the current study, the following patterns of intralingual errors emerged.

4.5.1 Patterns of Consonants

1. The /k/ sound in English is represented as <c>, <ck>, <que>.

	Intended Word		Written Word
Examples:	a. **c**limb	⟶	**k**limb
	b. ti**ck**et	⟶	ti**k**et
	c. mos**que**	⟶	mos**k**

Based on Persian learners' spelling errors in this study, the words involved in this pattern are "practice, accident, bicycle, carefully, ticket, mosque and climb".

2. The /f/ sound in English is represented as <gh>, <ph>.

	Intended word		Written word
Examples:	a. pro**ph**et	⟶	pro**f**et
	b. enou**gh**	⟶	enou**f**

Based upon Persian learners' spelling errors in this study, the words involved in this pattern are "prophet and enough".

3. The /s/ sound in English is represented as <s>, <ss>, <ci>, <ce>, <cy>.

	Intended word		Written word
Examples:	a. practi**ce**	→	practi**s**
	b. gue**ss**	→	gue**s**

According to Persian learners spelling errors in this study, the words involved in this pattern are "practice, sitting, cities, bicycle, accident, place, receive, guess, dress, address".

4. The /z/ sound in English is represented as <s>, <se>, <es >.

	Intended word		Written word
Examples:	a. rai**se**	→	rai**z**
	b. vi**s**it	→	vi**z**it
	c. citi**es**	→	citi**z**

According to Persian learners' spelling errors in the current study, the words involved in this pattern are "cities, visit, raise, wise, busy, studies, easily, Wednesday, whose".

5. The /l/ sound in English is represented as < l>, <ll >.

	Intended word		Written word
Examples:	a. sti**ll**	⟶	sti**l**

According to Persian learners spelling errors in this study, the word involved in this pattern is “still”.

6. The /t/ sound in English is represented as <t>, <tt >.

	Intended word		Written word
Examples:	a. ke**tt**le	⟶	ke**t**le
	b. bo**tt**le	⟶	bo**t**le

According to Persian learners spelling errors in this study, the words involved in this pattern are “bottle and kettle”.

7. The /m/ sound in English is represented as <m>, <mm>.

	Intended word		Written word
Examples:	a. su**mm**er	⟶	su**m**er

According to Persian learners’ spelling errors in this study, the word involved in this pattern is “summer”.

8. The /r/ sound in English is represented as <r>, <rr >.

	Intended word		Written word
Examples:	a. a**rr**ive	⟶	a**r**ive

According to Persian learners spelling errors in this study, the word involved in this pattern is “arrive”.

9. The /d/ sound in English is represented as <d>, <dd >.

	Intended word		Written word
Examples:	a. a**dd**ress	⟶	a**d**ress

According to Persian learners’ spelling errors in this study, the word involved in this pattern is “address”.

10. Some letters don't represent any sound in a particular word. For example, <n>, <h>, <g>, <t>, <w>, <gh>, <b>, <d> in the following words:

	Intended word		Written word
Examples:	a. autum**n**	→	autum
	b. **h**our	→	our
	c. forei**g**n	→	forein
	d. wei**gh**	→	wei
	e. clim**b**	→	clim
	f. We**d**nesday	→	Wenesday
	g. **w**rong	→	rong

Upon Persian learners' spelling errors in this study, the words involved in this pattern are "autumn, watch, wrong, foreign, often, weigh, high, night, climb, hour, whose, who, Wednesday".

4.5.2 Patterns of Vowels

1. The /e/ sound in English is represented as <ue>, <ie>, <ea>, <a>.

	Intended word		Written word
Examples:	a. g**ue**ss	→	g**e**ss
	b. fr**ie**nd	→	fr**e**nd
	c. h**ea**vier	→	h**e**vier
	d. m**a**ny	→	m**e**ny

According to Persian learners' spelling errors in this study, the words involved in this pattern are "guess, friend, bread, breakfast, heavier and many".

2. The /i:/ sound in English is represented as <ea>, <ie>, <eo>, <ei>, <ee>.

	Intended word		Written word
Examples:	a. p**eo**ple	→	p**i**ple
	b. f**ie**ld	→	f**i**ld
	c. easily	→	isily
	d. receive	→	recive
	f. three	→	thri

According to Persian learners' spelling errors in this study, the words involved in this pattern are "easily, believe, field, people, receive, three".

3. The /ɪ/ sound in English is represented as <o>, <e>, <u>.

	Intended word		Written word
Examples:	a. w**o**m**e**n	→	w**i**m**i**n
	b. b**u**sy	→	b**i**sy

According to Persian learners' spelling errors in this study, the words involved in this pattern are "receive, busy, enough and women".

Established upon the results presented above, it can be concluded that due to the inconsistency of English spelling, in most cases there is not a one-to-one correspondence between letters of the alphabet and the sound they represent. So, one consonant or vowel can be represented by different letters or combinations of letters in different words.

4.5.3 Pattern of Silent Consonant

1. In English <k>,< h>, <g>, <t>, <w>, <gh>, <b>, <d> are spelled but not pronounced.

	Intended word		Written word
Examples:	a. wa**t**ch	⟶	wach
	b. **w**rong	⟶	rong

According to Persian learners' spelling errors in this study, English consonants which are spelled but not pronounced are <k>, ,h>, <g>, <t>, <w>, <gh>, <b>, <d>. The words involved in this pattern according to Persian learners' spelling errors are "autumn, watch, wrong, foreign, often, weigh, high, night, climb, hour, whose, who, and Wednesday".

4.5.4 Pattern of Silent Vowel

1. In English <e> is spelled but not pronounced.

	Intended word		Written word
Examples:	a. writ**e**	→	writ
	b. peopl**e**	→	peopl

According to Persian learners' spelling errors in this study, <e> is the English vowel that is spelled but not pronounced. The words involved in this pattern based on Persian learners' spelling errors are "receive, while, write, kettle, people, believe, arrive, bottle, and bicycle". As the above results show, English spelling is full of idiosyncrasies, such as when certain letters in a word are spelled but not pronounced. Persian, on the other hand, does not contain such idiosyncrasies.

4.5.5 Patterns of Ignorance of Spelling Rules

Based on spelling errors of Persian learners in this study, it appears that if a spelling rule is learned without its exception, the learning of the rule will be incomplete, and spelling errors will occur. The reason is that one basic spelling rule in English has many exceptions. Spelling errors committed by Persian learners in this study show that learners have little difficulty mastering Basic English spelling rules, but often struggle with the exceptions.

1. The basic spelling rules:

a. singular noun + -s = plural noun, e.g. boy + s= boys

b. verb + -s = 3rd person singular, e.g. play + s = plays

Patterns of ignorance of spelling rules: For a word that ends in a consonant <-y>, change the <-y> to <i>.

Examples: a. city + -es = cities/ learners written word "cityes".

b. study + -es = studies/ learners written word "studyes".

2. The basic spelling rules:

a. verb + –ing = gerund, e.g.: work + ing = working

Patterns of ignorance of spelling rules: For a single syllable word ending in a single consonant and preceded by a single vowel the consonant is doubled.

Example: a. sit + -ing = sitting/ learners written word "siting".

3. The basic spelling rules:

a. adjective + -ly = adverb, e.g.: loud + ly = loudly

Patterns of ignorance of spelling rules: For a word that ends in a consonant -y, the -y changes to -i.

Example: a. easy + -ly = easily/ learners written word "easyly".

4. The basic spelling rules:

a. adjective + er = comparative adjective, e.g.: quick + -er = quicker

Patterns of ignorance of spelling rules: For a single-syllable adjective ending in a single consonant and preceded by a single vowel, or a two-syllable adjective ending in -y the consonant is doubled.

Examples: a. fat + er = fatter/ learners written word "fater"

b. heavy + er = heavier/ learners written word "heavyer".

It seems that these types of errors are due to the learners' ignorance of the exceptions to general target language rules. The learner fails to observe the restrictions of target language structures or rules.

4.5.6 Patterns of Homophones

In English, two words may have the same pronunciation, but they may not be spelled in the same way. Consider the following examples:

	Intended Word		Written Word
Examples:	hear	→	here
	leave	→	live
	there	→	their
	hour	→	our
	sea	→	see
	high	→	hi
	whose	→	who's
	seat	→	sit
	two	→	to, too
	write	→	right

The current study shows that the learners are already well familiar with both forms of the words. It seems that the unawareness of the lexico-grammatical functioning of the words results in the occurrence of spelling errors. This study also shows that when identically sounding words are spelled differently, Persian learners often pick the wrong alternative.

4.6 Summary of Results

Based on the analysis of spelling errors of Persian English language learners in the current study, the following findings were gained: a. there were two sources of interlingual errors (L1 phonological interference and L1 syllable structure interference),

b. there were three sources of intralingual errors (overgeneralization, ignorance of spelling rules, and homophone confusion), c. there were two main categories for patterns of interlingual spelling errors (one pattern attributed to consonant and one pattern attributed to consonant cluster), d. there were six main categories for patterns of intralingual spelling errors (patterns of consonants, pattern of silent consonant, patterns of vowels, pattern of silent vowel, patterns of ignorance of spelling rules, and patterns of homophones).

To sum up, the results presented and discussed in this chapter suggest that some of the errors committed by the subjects are attributed to interlingual interference, but most of the errors seemed to be the result of intralingual interference. According to Ehri & Wilce (1987) and Treiman (1993), this may be attributed to the lack of correct semantic, phonological and orthographic associations between the spoken sounds and the printed symbols in English spelling. The distribution of errors also seems to suggest that the students lacked knowledge about the rules and conventions of the English language (morphological knowledge) and that they also had difficulties using appropriate spelling patterns to represent sounds (orthographic knowledge). Poor sound analysis skills (phonological knowledge) and weak or fuzzy mental images of words made up the rest of the errors.

CHAPTER FIVE

CONCLUSION

5.0 Introduction

This chapter presents the summary of the study and provides an overview of the main findings of research questions, its pedagogical implications, and suggestions for further research.

5.1 Summary of the Study

According to Brann (1997) and Mosely (1993), spelling has a direct impact on the ability to read and write. The ability to be a good speller also makes the student a good reader and writer. In other words, spelling is the key to both good reading and writing of the language. Therefore, effective writing depends on effective spelling, and understanding learners' spelling difficulties can help teachers support the development of learners' writing.

Many studies show that second-language learners tend to be interfered by their L1 in the acquisition of English spelling (Rodriguez-Brown, 1987; Ferroli, 1991; Ferroli and Shanahan, 1993; Randall, 2005 and 1997). In this regard, Ferroli (1991) states that a better understanding of the L1 influence in the acquisition of English spelling will help teachers know students' difficulties in learning English spelling.

In addition to an awareness of the L1 influence, the possible effect of the L2 is another important issue that has been widely discussed in the acquisition of English spelling by second-language learners (Ibrahim, 1978; Bebout, 1985; Haggan, 1991; Al-Jarf, 2008).

In light of this, and because of the difficulties Persian English language learners have in the acquisition of the English spelling as revealed by (Miremadi, 1990; Mohammadi, 1992; Birjandi, 1994; Khodaverdilou, 1997; Swan and Smith, 2001; Yarmohammadi, 2002; Mirhassani, 2003; Keshavarz, 2003; Sadeghi, 2005; Zohrabi, 2005) the present study was conducted to answer the following questions:

1. What are the sources of interlingual errors in the spelling of Persian English language learners?
2. What are the sources of intralingual errors in the spelling of Persian English language learners?
3. What are the patterns of interlingual errors in the spelling of Persian English language learners?
4. What are the patterns of intralingual errors in the spelling of Persian English language learners?

As the present study was designed to investigate sources and patterns of spelling errors of Persian English language learners, Corder's (1971) procedure was adopted to identify spelling errors in Persian English language learners.

After the spelling errors were identified, they were explained. Explanation of errors is concerned with establishing the sources of the error, i.e. accounting for why it was made. In this regard, and according to Ellis (2005), two major processes are identified, distinguishing interlingual and intralingual errors. Interlingual errors seem to result from L1 interference. Intralingual errors, however, are those which result from faulty or partial learning of L2, rather than from language transfer. In order to classify interlingual and intralingual sources of spelling errors of Persian English language learners, this study has benefited from the classification utilized by James et al. (1993).

After determining interlingual and intralingual sources of spelling errors, spelling patterns of interlingual and intralingual errors would be determined. In order to establish patterns of spelling errors of Persian English language learners, this study has adopted the categories utilized by Scott (2007).

Data collected, from a word dictation test administered on forty male students from Imam Khomeini high school in Daragaz, a city in Khorasan Razavi state of Iran, show that both L1 and L2 interference might account for the subjects' errors in the use of English spelling.

As shown in Chapter Four (Table 4.6), the overall results reveal that 22.84% of errors committed by the Persian learners of English is attributed to interlingual errors and 77.15% is attributed to intralingual errors. In other words, TL interference accounts for more than two thirds of the errors committed by the subjects in the use of English

spelling.

These findings support those of Oller and Ziahosseiny (1970); Ibrahim (1978); Bebout (1985); James et al (1993) and Al-Jaref (2008) who believe that not all spelling errors can be attributed to native language influence. The results of this study make it clear that TL interference plays a significant role in the spelling errors of Persian English language learners. These results also support the view that L1 transfer does not appear to be the major source of errors in learning L2.

5.1.1 Summary of Findings for Research Question One

What are the sources of interlingual errors in the spelling of Persian English language learners?

Upon the analysis of the spelling errors, two sources of interlingual errors for spelling errors totaled this study.

1. L1 phonological interference

The current study reveals that the spelling ability of Persian learners of English is hindered because Persian lacks sounds that are available in English.

	Intended word		Written word
Examples: 1.	**th**an	→	**d**an or **z**an
2.	**th**ink	→	**t**ink or **s**ink
3.	**w**atch	→	**v**atch

From the above examples, it can be interpreted the fact that Persian lacks consonants that are available in English, have affected the spelling ability of Persian English language learners. And this lack is the one, according to Keshavarz (2005), which gives rise to difficulty.

Consequently, when Persian learners spell English words, they cannot help but tending to substitute graphemes <s, t, z, d> for <th>, and <v> for <w>. As such, this is the main reason why spelling errors such as “tink, dan, vatch” are quite common among Persian learners. Tables 4.9-11 in Chapter Four reveal that Persian English language learners produced a total of 72 consonant spelling errors: 27 related to the /θ/ sound, 30 related to the /ð/ sound and 15 related to the /w/ sound. The most significant effect of the L1 seems on the subjects acquisition of the the /ð/ sound.

These findings support those of Sterling (1983) and Teschner (1988), who state that poor spelling sometimes results from cases where English uses sounds that are not present in the speaker’s native language.

2. L1 syllable structure interference

The differences between L1 and L2 syllable structure is another sources of interlingual errors that affect the spelling ability of Persian learners of English. As mentioned in Chapter Two, Persian does not permit any initial consonant clustering. And, therefore, each consonant in the initial position is either preceded or followed by a vowel. Thus, it is not surprising that Persian learners of English spell words such as 'bread' and 'still' as “beread” and “ʔestill” respectively.

	Intended word		Written word
Examples:	1. **br**ead [CC-]	→	**ber**ead [CVC-]
	2. **st**ill [CC-]	→	**ʔest**ill [ʔVCC-]

Tables 4.12 and 4.13 in Chapter Four depict the distribution of errors attributable to the L1 syllable structure interference. They shows that Persian English language learners produced a total of 58 spelling errors of cluster change: 32 related to CVC- cluster and 26 related to ʔVCC- cluster. The most significant effect of the L1 seems on the subjects acquisition of the the ʔVCC- cluster. These findings support those of Sterling (1983) and Teschner (1988), who believe that the differences in syllable structures between L1 and L2 is a source of spelling problems for L2 learners.

The findings obtained from this section, as discussed in detail in Chapter Four, indicate that interlingual interference is a problem for the learners in their acquisition of

the English spelling. The findings of this study reinforce the usefulness of doing CA: in this way it was possible to pinpoint those areas of spelling that gave problems and to separate these from those that did not. Thus teachers can be given information about the potential trouble spots on which to concentrate their attention. In this study, English sounds /w/, /θ/ and /ð/ and English clusters CC- were the main obstacles for Persian English language learners in spelling English words.

As shown in Chapter Four (Table 4.6), the extent to which interlingual interference accounts for the errors in the use of English spelling by Persian English language learners is 22.84%. Therefore, in terms of percentage, in contrast to intralingual interference (77.15%), it is not significant. The claim made by Dulay et al. (1982) that L1 interference accounts for no more than 3% of (non-spelling) errors in second-language setting has to be seriously doubted when one takes sources of spelling errors into account – which Dulay et al. did not do.

The results of the study also show that a relatively higher portion of interlingual errors appeared to be attributable to transfer of L1 phonology. Dulay and Burt (1973, 1974) suggested that L1 interference may be a major factor only in phonology. The results of the study confirm this. A possible interpretation for this from the IL theory is that “the use of NL information in the formation and structure of ILs is, it is now clear, a selective process, i.e. there are some NL structures and processes more likely to transferred than others” (Selinker, 1992. p. 207).

The above findings concur with that of Rodriguez-Brown (1987), Ferroli and Shanahan (1993), St.-Pierre (1995) who noted that whatever conceptual understanding students have of the spelling system in their native language is applied to the new language. In this study it seems that insufficient exposure to the English spelling system and unfamiliarity with the differences between the English and Persian spelling systems might add up to the Persian learners spelling difficulty.

5.2.2 Summary of Findings for Research Question Two

What are the sources of intralingual errors in the spelling of Persian English language learners?

As mentioned in Chapter Two, intralingual errors are those which result from faulty or partial learning of L2, rather than from language transfer. An in-depth analysis of Persian English language learners spelling errors revealed the following sources of intralingual errors:

1. Overgeneralization

Overgeneralization errors refer to the deviant structures produced by the learner on the basis of his/her limited knowledge of and exposure to other structure of target language. As the result of the study show, large amounts of spelling errors are caused by the inconsistency of English spelling system. In majority of cases, there is no one-to-one

correspondence between graphemes and phonemes they represent. Therefore, learners impose certain spelling features on words that do not contain them.

In the case of consonants, the present study found that for each consonant sound, there are different spelling representations used to denote it. For example, Persian learners replace grapheme <k> for a range of spelling representations for the /k/ sound which are: <c>, <k>, <ck>, <que>.

	Intended word		Written word
Examples:	practice	→	praktice
	ticket	→	tiket
	mosque	→	mosk

According to the findings of the study (Chapter Four, Tables 4.2), non-phonetic nature of English spelling caused a lot of spelling errors for Persian English language learners because:

1. There are different spelling representations used to denote each consonant sound, which means that a given consonant sound is often represented by different graphemes. This creates a lot of problems for Persian learners in spelling English. Examples of this difficulty are found in the English words "prophet, place, visit" which are spelled by Persian learners as “profet, plas, vizit”.

2. There often are double graphemes that are not distinguishable in pronunciation from the single grapheme, which also creates a lot of problems for Persian learners in spelling English. Examples of this difficulty are found in the English words "still, bottle and arrive" which are spelled by Persian learners as “stil, botle and arive”.

3. Some of the graphemes that do not represent any phonemes in a particular word are other sources of spelling errors of Persian English language learners.

	Intended word		Written word
Examples:	often	⟶	ofen
	wrong	⟶	rong

Tables 4.14-23 in Chapter Four, display the distribution of errors across ten consonants. Persian English language learners on average produced a total of 153 spelling errors based on the inconsistency of English consonants: 18 related to the /k/ sound, 9 related to the /f/ sound, 28 related to the /c/ sound, 25 related to the /d/ sound, 8 related to the /l/ sound, 11 related to the /t/ sound, 5 related to the /m/ sound, 7 related to the /r/ sound, 8 related to the /d/ sound, and 34 related to silent letters. Based on the tables, it can be observed that the errors due to silent letters were the most common.

In the case of vowels, the results of the study show that there are different spelling representations used to denote each vowel sound, which means that a given vowel sound

is often represented by different graphemes. The findings also illustrate that phonemic distinctions are evident in the English vowel sounds, as in /ɪ/ and /i:/. In contrast, such phonemic distinctions are absent in Persian. This creates a lot of problems for Persian learners in spelling English, causing spelling errors such as "belive, wimin" and "bisy" etc. The Persian learners tend to substitute the grapheme <i> for the English sound /ɪ/ and /i:/.

	Intended word		Written word
Examples:	field	→	fild
	busy	→	bisy

The silent vowel <e> is another source of spelling errors of Persian English language learners. The study reveals that the number of spelling errors in the area of the silent vowel <e> is far beyond the other types of errors.

	Intended word		Written word
Examples:	write	→	writ
	arrive	→	arriv

According to Tables 4.24-27 in Chapter Four, Persian English language learners on average produced a total of 85 spelling errors of inconsistency of English vowels: 21 related to the /e/ sound, 18 related to the /i:/ sound, 14 related to the /i/ sound and 32 related to the silent vowel. The frequency of inconsistency of vowels reveals that the

error due to the silent vowel is the most common spelling error.

As the results of the study reveal, spelling error attributed to overgeneralization may be the results of poor phonological segmentation skills and orthographic knowledge. Wasowicz & Evanston (2007) state that learners with poor phonological segmentation skills will delete letters and syllables, reverse the sequence of letters when spelling, spell distinct vowel sounds with the same letter, and add letters for phonemes that do not occur in a word. Furthermore, they state that the misspellings of learners with orthographic knowledge deficits are predictably characterized by illegal substitutions, non-allowable letter sequences, phonetically possible spellings that violate rules and violation of word position constraints (ibid).

This finding is in line with O'Grady et al. (1996) who noted that spelling is made more difficult by the inconsistencies of English pronunciations, and by the discrepancies in the numbers of graphemes and combinations of graphemes used to represent English sounds.

2. Ignorance of spelling rules

The current study reveals that the Persian learner's ignorance of restriction of an exception to English spelling rules (adding suffixes) is another source of spelling errors. In this case, the learner applies rules to contexts where they do not apply.

	Intended word		Written word
Examples:	1. cities	→	citys
	2. sitting	→	siting
	3. fatter	→	fater

The results of the study show that learners have ignored the following rule:

1. When a word ends in –y and is preceded by a consonant, the -y usually changes to -i when you are adding a suffix (example one).

2. When a one-syllable word ends in the CVC combination, it is usually appropriate to double the final consonant when adding a suffix that begins with a vowel (example two and three).

According to Tables 4.28-31 in Chapter Four, Persian learners produced a total of 63 spelling errors of ignorance of English spelling rules: 17 related to suffix -es, 14 related to suffix -ing, 12 related to suffix -ly, and 20 related to suffix -er. Tables 4.28-31 also reveal that suffix -er is the dominant spelling error, based on the frequency of ignorance English spelling rules.

It seems that spelling error attributed to ignorance of spelling rules be the results of weak morphological knowledge and rote learning of rules. Wasowicz & Evanston (2007) state that the spelling errors of learners' morphological deficits are characterized

by omission of morphemes, phonetic spelling of morphemes, and spelling error of modifications when spelling inflected and derived forms of words. As most English spelling rules have many exceptions, it's no wonder that Persian learners find it very hard to spell English.

3. Homophone confusion

The analysis of spelling errors of Persian English language learners show that homophone confusion - two words that sound the same but are not spelt the same - is a source of many errors in spelling English.

	Intended word		Written word
Examples:	seat	→	sit
	leave	→	live
	high	→	hi

The data in Chapter Four (Table 4.32) reveal that the frequency of homophone confusion in the words "hear-here" and "write-right" are the dominant ones. It appears that homophone confusion results from failure to make fine distinctions between two existing lexical items, which are pronounced the same but, differ in meaning and spelling. These errors may be due to lack of exposure to the English spelling system, insufficient experience and practice, and the way English words are grouped and presented to the students. This is probably due to inadequate spelling instruction and practice. It also

seems that spelling errors attributed to homophone confusion be the results of weak or fuzzy mental images of words.

The results of Research Question Two support the view of Mohammadi (1992) who asserts that the greatest difficulty encountered by Persian learners result from the apparently irregular spelling system of English compared with the greater regularity of the mainly phonetic script of Persian. Additionally, the more significant effect of intralingual interference over interlingual interference on the subjects' errors is consistent with previous studies of ELL/EFL learners conducted by different researcher such as Dulay and Burt, 1974; James et al, 1993; Lim, 1998; Al-Jarf, 2008. The results, shown in Chapter Four (Table 4.6), also reveal that intralingual interference appeared to be the cause of the majority of the errors committed by the present subjects. With regard to the results, overgeneralization seemed to be more significant than those cased by ignorance of spelling errors and homophone confusion.

As mentioned in Chapter Two, recent research indicates that several linguistic knowledge sources provide the foundation for spelling abilities. These linguistic foundations include knowledge of phonology, orthography, morphology, and mental orthographic images. The results of the current study imply that many spelling problems that Persian English language learners have in spelling English may be due to lack of knowledge of phonology, orthography, morphology, and mental orthographic images.

In this study some of the spelling errors seem to be dual origin: for example, "s**a**mmer, m**a**ney" could be the result of L2 interference. Alternatively, it could be L1 phonological interference as no /ʌ/ sound exists in Persian. As a result, the /ɒ/ sound in Persian which is represented by <a> in English, is substituted for the graphemes <u> and <o> in the words summer and money. As mentioned in Chapter One this study investigates the sources and patterns of interlingual and intralingual errors of Persian English language learners so dual origin errors are not the focus of this study.

5.2.3 Summary of Findings for Research Question Three

What are the patterns of interlingual errors in the spelling of Persian English language learners?

Upon the analysis of the spelling errors of Persian English language learners in the current study, the following patterns of interlingual errors emerged.

a. Patterns of consonants

1. Substitutions of <s> or <t> for English /θ/. (e.g. "tink or sink" for "think")
2. Substitutions of <z> or <d> for English /ð/. (e.g. "dan or zan" for "than")
3. Substitutions of <v> for English /w/. (e.g. "vatch" for "watch")

This study reveals that /w/, /θ/ and /ð/ are the main obstacles for Persian English language learners. In these cases, the learners substitute L1 consonant sounds and patterns for L2 consonant sounds and patterns in spelling English.

b. Patterns of consonant clusters

1. Substitutions of CVC- cluster for CC- cluster. (e.g. “celimb” for “climb”)
2. Substitutions of ʔVCC- cluster for CC- cluster. (e.g. “ʔestill” for “still”)

Because of the difference between English and Persian syllable structure, this study shows that Persian learners of English change the English clusters CC- either to ʔVCC- or CVC-. This is most likely due to the fact that Persian does not permit any initial consonant clustering.

5.2.4 Summary of Findings for Research Question Four

What are the patterns of intralingual errors in the spelling of Persian English language learners?

Upon the analysis of the spelling errors of Persian English language learners in the current study, the following patterns of intralingual errors emerged.

a. Patterns of consonants

1. The /k/ sound in English is represented as <c>, <k>, <ck>, <que>.

2. The /f/ sound in English is represented as <gh>, <ph>.

3. The /s/ sound in English is represented as <ss>, <c>, <ce>.

4. The /z/ sound in English is represented as <s>, <se>, <es >.

5. The /l/ sound in English is represented as < l>, <ll >.

6. The /t/ sound in English is represented as <t>, <tt >.

7. The /m/ sound in English is represented as <m>, <mm>.

8. The /r/ sound in English is represented as <r>, <rr >.

9. The /d/ sound in English is represented as <d>, <dd >.

10. Some letters don't represent any sound in a particular word.

	Intended word		Written word
Examples:	raise	→	rai**z**
	ticket	→	tiket
	prophet	→	profet

As the results show, because of the inconsistency of the English spelling system, in the majority of cases, there is no one-to-one correspondence between letters of alphabet and the sounds they represent. One consonant can be represented by different letters or combinations of letter in different words. As a result, inconsistency of

consonant sounds in English is one of the reasons that makes English spelling difficult for Persian English language learners.

b. Patterns of vowels

1. The /e/ sound in English is represented as <ue>, <ie>, <ea>, <a>.

2. The /i:/ sound in English is represented as <ea>, <ie>, <eo>, <ei>, <ee>.

3. The /ɪ/ sound in English is represented as <o>, <e>, <u>.

	Intended word		Written word
Examples:	guess	→	gess
	field	→	fild
	women	→	wimin

As results show, because of the inconsistency of the English spelling system, one vowel can be represented by different letters or combinations of letter in different words. As a result, inconsistency of vowel sounds in English is one of the reasons that makes English spelling difficult for Persian English language learners.

c. Pattern of silent consonant

1. In English <k>, <h>, <g>, <t>, <r>, <w>, <gh>, <b>, <d> are spelled but not pronounced.

	Intended word		Written word
Examples:	watch	→	wach
	wrong	→	rong

d. Pattern of silent vowel

1. In English <e> is spelled but not pronounced.

	Intended word		Written word
Examples:	write	→	writ
	people	→	peopl

e. Patterns of ignorance of spelling rules

The results of this study show that learners have ignored the following patterns of spelling rule:

1. If a word ends in -y and the –y is preceded by a consonant, the -y changes to <i>, and the suffix is added.

For example: city + -es = cities/ learners written word "cityes".

2. When a one-syllable word ends in the CVC combination, it is usually appropriate to double the final consonant when adding a suffix that begins with a vowel.

Example: a. sit + ing = sitting (learners written word is “siting”)

It seems that these types of errors are due to the learners’ ignorance of the exceptions to general target language rules. The learner fails to observe the restrictions of target language rules.

f. Patterns of homophones

1. Identically sounding words are spelled differently

	Intended word		Written word
Examples:	hour	→	our
	sea	→	see

The analysis of spelling errors of Persian English language learners illustrate that this is the result of failure to make fine distinctions between two existing lexical items, namely those that are pronounced the same but differ in meaning and spelling.

To sum up, the findings of this study reveal the most frequent sources of spelling errors of Persian English language learners, which are listed as follows:

1. L1 phonological interference
2. L1 syllable structure interference

3. Overgeneralization

4. Ignorance of spelling rules

5. Homophone

All these suggest that steps need to be taken in order to assist Persian English language learners in improving their English spelling. Also the above finding implies that Iranian Ministry of Higher Education, teachers, syllabus designers, teaching techniques, etc have not been successful in implementing their major objectives of foreign language teaching in Iran, which was declared (as stated in Chapter One) to be raising Iranian learners competencies in literacy skills (reading and writing) in order to be able to use the foreign language for reading foreign scientific articles and journals, to become informed of the latest technological and research developments of other countries, as well as to be able to express themselves in the written form of a foreign language for presenting their thoughts in international conferences or journals. In other words, as Reid (1995) states, improvement in spelling English would yield improvement in writing, and writing helps learners to reinforce grammatical structures, idioms and vocabulary being taught to them. When learners write, they go beyond their knowledge levels and they become very involved with the new language. In the light of the findings of the current study, the results can be used as a starting point for establishing guidelines to suggest appropriate techniques in the teaching of English spelling to Persian English language learners.

5.3 Pedagogical Implications of the Study

Learners' errors in language learning have always been of interest and

significance to teachers and syllabus designers. It is believed that the insights gained from the study of sources and patterns of spelling errors of Persian English language learners can provide valuable information for devising appropriate materials and effective teaching techniques suitable for different groups of learners at various stages of second language development. Accordingly, this section intends to offer some pedagogical recommendations related to sources and patterns of spelling errors.

5.3.1 Pedagogical Implications for Teachers

Through the study of sources and patterns of spelling errors of Persian learners teachers can identify the problematic areas which learners experience at different levels of instruction. As mentioned in Chapter Four, the rank ordering of the various English spelling errors of Persian English language learners in the term of L1 and L2 transfer were: overgeneralization, homophone confusion, L1 phonology, ignorance of spelling rules, and L1 syllable structure, respectively.

The rank ordering of English spelling errors reveals that the most dominant errors made by Persian learners are attributed to overgeneralization and homophones. The rank ordering of English spelling errors enable teachers to devise effective teaching techniques for different groups of Persian English language learners at various stages of development. It may suggest modifications in teaching techniques or the order of presentation. In other words, easy elements of English spelling should be taught first while the difficult parts like L2 inconsistency and homophone confusion should be

touched upon when the learners have a good grasp of the basics. This could be the case if it appears that some learners' errors may have been caused or compounded by the way in which a particular item was presented. Thus, it is recommended for teachers who teach English spelling to give extra practices on difficult items.

A survey of the spelling errors may help teachers to predict the likely problem areas of a future similar group of learners, as well as indicate learning items which will require special attention and extra practice.

Furthermore, as the results of this study show, learners' knowledge of phonology (L1 and L2), the spelling rules of the English language, and their understanding of the morphological relationship among words contribute to their developing spelling abilities. This indicates that spelling instruction should be taught explicitly; rather than memorization of a list words. This would appear to apply to students with poor spelling abilities, especially, instruction should include not only specific orthographic spelling patterns but also morphological and phonological information.

Suggestion for teaching spelling according to Van-Bon and Duighuisen (1995), Aleman et al. (1990), Van-Houten & Van-Houten (1991), and Brooks (1995):

1. Spelling should be taught on the basis of patterns of sound-to-letter correspondences.
2. English sounds should be paired with their spelling patterns.

3. Phonemic segmentation skills should be taught to the students.
4. Spelling instruction should focus on auditory/visual practice.
5. Spelling instruction should increase the students' sensitivity to basic orthographic syllabic structure, breaking words into small segments.
6. Words can be visualized in terms of syllables and in the case of non-phonetically spelled words, dual pronunciations are learned: one non-phonetic pronunciation to be used in speaking and one phonetic pronunciation to be used in spelling.

In short, it is essential that the teacher be aware of difficulty in learning caused by the linguistic contrasts between Persian and English spelling system and L2 influence. Thus the teacher will be able to teach at the points of the spelling errors, explaining more carefully those areas where the error frequency is high. Furthermore, a great deal of remedial work should be done incidentally, as soon as the need for it is apparent, in the form of frequent revision of problem areas. This can be done in the early stages of a course, when problem areas are likely to be few and fairly clearly defined.

5.3.2 Pedagogical Implications for Syllabus Designers

Sources and patterns of spelling errors are significant to syllabus designers to see what items are important to be included in the syllabus and what items are redundant and should be excluded. An analysis of spelling errors of Persian English language learners can provide reliable data upon which remedial materials can be constructed. In other words, the analysis of Persian learners' spelling errors can help identify learners'

linguistic difficulties and needs at a particular stage of language learning. This can serves as a basis for remedial courses and programs of re-teaching. Spelling error analysis of Persian learners can also be used as a means for assessing the degree of mismatch between a learners' learning syllabus and that of the teacher's syllabus. By identifying these mismatches, the gaps between the two syllabi can be bridged effectively within the context of more realistic learning goals and targets.

Therefore, while designing the syllabus for Persian English language learners, syllabus designers can focus on the sources and patterns of interlingual and intralingual errors in their syllabus, so that more emphasis is put on the English spelling system and the differences between the Persian and English writing systems.

5.4 Suggestions of the Study

Two things, according to Freeman & Freeman (2004, p. 112), seem to help students become better at spelling:

1. They need to be doing writing that they want others to read. When students produce writing they are proud of, they want to present it in the best possible form.
2. Students need to understand that the spelling system is logical and does follow rules. Many poor spellers think that good spellers just memorize all the words. It does appear that good spellers develop some sort of visual image of a correct

spelling, but the best spellers approach spelling as a problem solving activity, not as a memorization task.

To help Persian English language learners master English spelling, they should receive more listening practice and they should be more exposed to English. To prevent spelling difficulties, several practices and activities were suggested by Glenn and Hurley (1993). These include: fostering use of full cues in reading, encouraging visualization of words and syllables, providing a print-rich environment, providing computers for spell-checkers and materials for word banks, and teaching spelling patterns and etymology. Ample time to read, write and use words in meaningful connected text are crucial in developing good spelling ability.

The other step that can be implemented to help Persian English language learners to improve their English spelling is through error correction since moderate attention to error makes learners "modify their hypothesis about how target language is formed or functions" (Larsen-Freeman, 1991, p. 293). Furthermore, if errors are not pointed out and corrected, they can become ingrained or fossilized in students' writing. Besides this, research in L2 also indicates that students both attend to and appreciate their teacher's highlighting of their problems (Cohen, 1987; Ferris, 1995; Leki, 1991). The nature of correction depends on the cause of errors. If a spelling error is clearly the result of L1 interference, then the comparative technique has to be adopted. This means an explanation of the difference of Persian and English spelling system - followed by exercises aimed at reinforcing the explanation. If it is a case of analogy, then the

inapplicability of certain analogical principles in certain environments has to be pointed out. Again, if the problem results from apparent difficulty in the English spelling system, some explanation of the system in terms comprehensible to the students is called for. In short, in trying to reduce the errors in acquisition of the English spelling, it is worth quoting Zamel (1985) who suggests that "error correction should be based on clear focused strategies rather than random and arbitrary reactions done by ESL teachers" (p. 88). The following suggestions are offered by Keshavarz (2005) for the correction of foreign language learners' errors:

1. The teacher should make sure that an error has been committed before attempting to do something about it. That is, it is possible, especially in large classes where noise can often be considered a distraction, which the teacher does not hear accurately what the learner has said, or he may misinterpret what the learner has meant.
2. The teacher should feel confident and competent about correcting the error. If he is not sure of the correct model or appropriate correction procedures, he should refrain from correcting his students. In this case, he should consult authoritative reference books or those colleagues of his who have a better command of the target language.
3. It is recommended that a hierarchy be established for correction of errors in accordance to the nature and significance of errors. In such a hierarchy, priority should be given to errors which may hamper communication and distort comprehensibility.

4. It is also recommended that a learner should not be interrupted during the performance of error(s); rather errors should be corrected after the classroom activity is over. The teacher should make a note of the errors during such activities, and then explain them to the class as a whole and not directly to the individual who has made the error. In this way, a more relaxed atmosphere will be created in the classroom whereby the learner would feel free to express themselves in the target language.

5.5 Recommendations for Further Studies

While the results of the present research offer a list of pedagogical recommendations that should be taken into consideration by Iranian teachers and syllabus designers to enhance the teaching and learning of the English spelling in Iranian high schools, they also point to areas where more research is necessary. Therefore, it is recommended that further research be done in the following areas to further consolidate the significance of this study.

Since the present investigation is limited to determining the source and patterns of spelling errors of Persian English language learners, further research on possible effects of nonlinguistic factors that might influence the acquisition of English spelling should be carried out.

The current study was a cross-sectional one. It is suggested that further researches

develop a longitudinal research model to determine the sources and patterns of spelling errors of L2 learners.

This study was developed in a province in the northeast of Iran. It can be implemented in a wider area or even in two different contexts (say Iran and Malaysia) to have a more in-depth understanding of L1and L2 interference (negative transfer). Subjects of this study were Persian English language learners in grade one of the secondary education cycle in Iran. Additional research can be done on other English language learners such as sophomore, senior or junior university students who learn English as a second or foreign language.

As the study was restricted to forty students in Imam Khomeini high school in Daragaz, Iran, , it is recommended to replicate the present study and increase the sample size by including a larger numbers of students from all the Iranian secondary schools, including students at different levels of proficiency in order to enhance the generalizability of the findings.

5.6 Conclusion

In conclusion, it should be noted that the results of this study support the claim that English spelling is difficult for Persian English language learners in the early stages of English spelling development. The major contribution of this study is its finding on the possible sources and patterns of interlingual and intralingual errors of Persian English

language learners in English spelling. Through analyzing Persian's English spelling errors, this study discovered the most problematic sources and patterns of spelling errors that Persian learners encountered due to the interference of L1 and L2.

The findings of the present study suggest that a more significance portion of errors committed by the Persian English language learners might have been the result of intralingual interference, i.e. the result of subjects' overgeneralization, homophone confusion, and ignorance of spelling rules. With regard to the results, overgeneralization seemed to be more significant than those cased by ignorance of spelling errors and homophone confusion.

The results also show that interlingual interference might cause a few number of the errors. In this regard, James (1998) claims that FL learners should be aware of the forms of their L1. He points out that "such awareness would refine their insights into the NL and at the same time allow them to monitor its transfers into the FL" (ibid, p. 261). Therefore, the teachers in Persian English language learners' classroom should be aware of and also be able to deal positively and effectively with the differences between Persian and English syllable structure and sound system. Based on the findings, some pedagogical recommendations related to sources and patterns of spelling errors were provided to the teacher and syllabus designers to ease the teaching of the English.

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Appendix A

An Example of the 65-Words Dictation Test

1. Guess	I guess birds find their way back.
2. Leave	It is time for us to leave.
3. Than	Abadan is hotter than Tehran in summer.
4. Burn	Be careful! You may burn your hand.
5. Sea	We went for a swim in the sea.
6. Still	Ali was still in bed when I returned.
7. Two	I have two bags.
8. Night	Did you sleep well last night?
9. Wrong	I think you are wrong.
10. Hear	It's only the steam that you hear.
11. Raise	Farmers raise animals.
12. Wise	Ahmad is a wise boy.
13. Fruit	When a fruit is ripe it is good to eat.
14. Thing	What's that red thing?
15. Place	He made school a happier place for children.
16. Watch	I usually watch TV on Monday night.
17. Seat	Pleas take a seat.
18. While	The guests arrived while we were having dinner.
19. Friend	I have a good friend in Tehran.
20. Hour	She returned almost an hour later.
21. Mosque	That mosque looks very old.

22. Dress	She is wearing an expensive dress.
23. Write	I want to write a letter.
24. Three	There are three students in the classroom.
25. Could	He could swim last year.
26. Field	The cows are eating grass in the field.
27. Bread	I bought a loaf of bread.
28. Climb	Many animals can climb trees.
29. Think	Do you think Ali will come today?
30. Weigh	How much does your father weigh?
31. High	Some birds can fly high in the sky.
32. Cut	My mother will cut the cake with a knife.
33. Kettle	The fire made the water in the kettle very hot.
34. Address	I will give you my address.
35. Ticket	He had a ticket for a bullfight.
36. People	People learned about new school.
37. Foreign	He visits many foreign countries.
38. Practice	We must practice English more.
39. Breakfast	We eat breakfast every morning.
40. Many	There are many countries all over the world.
41. Women	Few men or women live like Newton.
42. Summer	Summer is the hottest season of the year.
43. Receive	I will receive a letter today.
44. Learned	People learned about his new school.

45. Believe	We believe in God.
46. Busy	Tehran is a busy city.
47. Prophet	The Prophet taught man to do good.
48. Enough	I don't have enough money to buy a car.
49. Fatter	Ali is fatter than Reza.
50. About	He's about 50 years old.
51. Arrive	When did he arrive here?
52. Sitting	Reza was sitting near the fireplace.
53. Studies	He studies the lesson carefully at home.
54. Bottle	I bring a bottle of water to class every day.
55. Whose	Whose car is this?
56. Autumn	Birds fly south in autumn.
57. Money	We can't pay much money for the car.
58. Wednesday	The lesson will be practiced on Wednesday.
59. Cities	There are many big cities in Iran.
60. Thirsty	The thirsty boy drank all the water.
61. Heavier	My bag is heavier than your bag.
62. Carefully	The little girl carefully crossed the busy street.
63. Bicycle	His bicycle doesn't work.
64. Accident	Ten people were killed in the accident.
65. Easily	I forget numbers very easily.

Appendix B

Examples of the Learners Written Words

Intended word	Learner's Written Words
1. Guess	ges, gess, gues.
2. Leave	live, leav.
3. Than	dan, zan.
4. Burn	birn, bern, berun.
5. Sea	see, sie.
6. Still	estil, stil, estill, steel, steal.
7. Two	too, to.
8. Night	niht, nait, nite.
9. Wrong	rong, rang, rung, wrang.
10. Hear	heer, her, haer.
11. Raise	reise, reize, ryse, rais, raiz, reice.
12. Wise	waise, vaise, vise, vays, wize, wais, vaiz, waiz.
13. Fruit	frot, feruit, frout, froot.
14. Thing	ting, sing.
15. Place	plase, pelase, peleys, pelace, plas, pleac.
16. Watch	wach, vach, vatch.
17. Seat	sit.
18. While	vile, vaile, whil, wail, wile.
19. Friend	frend, ferend, feriend, frind, freind.
20. Hour	our, haur, haor.

21. Mosque	moske, maske, mosk, mask, masqe, mosqe, musque.
22. Dress	dres, deress, deres, drees, drees.
23. Write	writ, rite, rit, rait, right.
24. Three	tree, sree, thri.
25. Could	cod, cood, cold, coud.
26. Field	fild, filed.
27. Bread	bered, beread, bred.
28. Climb	clim, clame, kelim, klimb, clim, celimb.
29. Think	tink, sink, thinck.
30. Weigh	wei, veigh, wey, way.
31. High	hi, hay, hy.
32. Cut	cat, kat, cot.
33. Kettle	kettel, ketel, kettle, kettl.
34. Address	addres, adress, adrees, aderes, edress.
35. Ticket	tiket, tikit, tickit.
36. People	pipel, pepole, peaple, peopl, pepol, piple.
37. Foreign	faren, forein, farin, foriegn, forgne, fargen, foregn.
38. Practice	praktice, peractice, prtactis, peraktis, practis, practic.
39. Breakfast	berekfast, brekfast, brackfast, breakfest, breckfast.
40. Many	meny, meni.
41. Women	wimin, wemen, vimin, vymen, vimen, vomen.
42. Summer	samer, sumer, sammer, sommer.
43. Receive	resive, receiv, recieve, resiv, recive, riceive.

44. Learned	lernd, learnd.
45. Believe	belive, believ, beleave, beleive, bilive, biliv.
46. Busy	bisy, besy, besi, buzy, bizy.
47. Prophet	profet, prafet, perophet, profit, prafit.
48. Enough	inafe, enaf, inaf, enouf, inough, inof, enagh.
49. Fatter	fateer, fater.
50. About	ebout, ebaot.
51. Arrive	erive, arriv, arive, errive, eraive.
52. Sitting	siting, citting, seting, seating.
53. Studies	stadies, studys, studiz, estudies, studyes, studis.
54. Bottle	botel, bottl, batel, battle, botle, battel, butel, buttel.
55. Whose	whos, hos, hose, hoze, who's, whoz.
56. Autumn	atem, otem, otumn, outem, autemn, autum, utem.
57. Money	many, maney, mony.
58. Wednesday	Venzday, Vensday, Wenesday, Wednezday, Vednesday.
59. Cities	sityes, sitiz, cityes, sities, citiz, sitys, citys, sities.
60. Thirsty	tristy, tersty, sirsty, sersty, terrsty, teresty, tirsty.
61. Heavier	hevier, hevyer, heavyer, heviyer.
62. Carefully	carefuly, karefully, kerfully, cerfully, cafully.
63. Bicycle	baysikel, bicykle, bysycle, bicycl.
64. Accident	akcident, acsident, aksident, acksident.
65. Easily	isely, easyly, isily, eazily, easely.