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**English Department**

Topic:

The Influence of Mother Tongue (Arabic) on the Spelling of Novel Graphemes in English as a Foreign Language

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# Abstract

Spelling is a complex cognitive task that requires multiple linguistic knowledge. The present study intended to investigate the influence of target language (Arabic) in novel consonants graphemes /p/, /v/ and /g/ in different positioning (initial/final). In order to fulfill the aims of the study, the research examined a dictation task of (N=61) fifth learners in elementary school in north Glial in Israel. The findings showed spelling errors in learners' performances of novel phonemes particularly in final position. In fact, learners tend to substitute the novel phoneme with others non-novel phonemes. The results reveled that differences in spelling system between English and Arabic was the major cause of errors. Besides, the lack of phonological awareness and inconsistent of phoneme-grapheme correspondence were found to be additional cause of spelling errors among Arab Israeli learners.

# Introduction

Language is considered a fundamental element in the communication process that enables humankind to convey messages, thoughts and beliefs among each other. Acquiring an additional language requires special linguistic knowledge including phonology, syntax, morphology, and many others. As English and Arabic are two distinct languages, each with its own unique linguisticsystem, Arab native learners face various difficulties while acquiring the English language. Numerous arguments have been presented regarding mother-tongue interference, with many researchers (Alsaawi, 2015; Derakhshan & Karimi, 2015; Sabbah, 2015) showing that the spelling performance in the target language is influenced by the use of the L1 of the learners. This study focuses on one such difficulty: the spelling performance of Arab learners (EFL) on specific, novel phonemes (/p/, /g/ and/v/).

Spelling is a process that converts the spoken form of a word into written form. Thus, learners’ spelling acquisition depends on two fundamental elements: phonological awareness of phonemes and alphabetical knowledge. As a result, differences in the phonological aspect and the correspondence of phoneme and grapheme in Arabic and English can affect learners’ spelling performance. This may lead to a negative transfer, caused by native Arab learners using their first language when they learn to spell in English. There are particular graphemes which exist in English but are absent in the Arabic system of graphemes such as, (/p/, /g/ and/v/). The absent graphemes are considered novel to learners of English as a foreign language.

It is important to emphasize that the absence of novel phonemes from the phonemic inventory of the first language causes difficulties for the leaners to correspond the phonemes with their written representations (Russak & Saiegh-Haddad, 2010). Consequently, leaners substitute the novel phoneme with another close phoneme from their first language. Among Arab Israeli learners, the difficulty of accurately representing the phonological structure of novel phonemes is a stumbling block in acquiring the English language (Russak, 2013). This issue has been studied among native Hebrew learners of English (Russak & Saiegh-Haddad, 2010) but not among Arab Israelis. Hence, the main aim of this study is to examine how the native language of foreign learners of English, in this case Arabic, affects the spelling performance on novel phonemes (/p/, /g/ and/v/). the absence of particular phonemes (/p/, /v/ and /g/) from the target language (Arabic), causes spelling errors among Arab learners. Subsequently, learners tend to substitute the novel phonemes with the corresponding phoneme pairs that exist in both the target language and the foreign language (e.g., Arab learners of English tend to substitute /b/ for /p/).

Learning and teaching English is a challenging task for both teachers and leaners. Arab students experience problems in phonological encoding that may be due to difficulties in the phonological representation of certain novel phonemes. Therefore, this study will attempt to clarify the spelling performance on novel phonemes. Consequently, the findings will enable teachers and learners to base their actions on a more empirically-based understanding of the spelling acquisition process. In addition, teachers together with learners may be able to come up with strategies to avoid certain spelling errors while acquiring English. Fundamentally, we hypothesize that novel phonemes will be more difficult to spell than non-novel phonemes. We can further speculate that novel phonemes that occur word-finally will be more challenging for native Arabic speakers to spell accurately compared to non-novel phonemes.

This study will attempt to answer the following questions:

1. In what way does the Arabic language affect the spelling performance of novel consonant graphemes in EFL, in particular (/p/, /v/, /g/)?
2. Does the absence of particular consonants novel phonemes (/p/, /v/, /g/) influence the learners' spelling performance?
3. Does the phonological environment (initial/final positioning) of a novel sound affect spelling?

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L1: refers to Arabic language as a mother tongue language.

L2: refers to English as a second or foreign language.

Transfer: refers to the manner in which the L1 influences the acquisition of the L2.

Phoneme: the smallest unit of individual sounds (unit of sound)

Grapheme: the written form of verbal sounds (unit of encoding)

# Literature Review

# Phonological Awareness

Research has shown that young children generally start to develop phonological awareness when they begin to understand simple spoken words, typically at the preschool age (Adams, 1998). Bryant & Goswami (2016) have shown that children first begin to recognize words as separate entities, and then they become aware of how group of sounds operate in words (syllables and rhymes). Adams (1998) adds that after developing an awareness of these individual sounds (phonemes) children begin to attach and manipulate them in words. Phonological awareness emerges initially in oral language, and does not require that children possess any level of literacy. Abdelsabour (2016) defines phonological awareness as the ability to divide verbal language into smaller units and manipulate these smaller units into new word combinations. Phonological awareness is a fundamental required element in the literacy acquisition process among language learners for L1 and L2, and thus has been the focus of numerous research (Russak & Saiegh-Haddad, 2010; Saiegh-Haddad & Geva, 2007). Many definitions have been proposed for this phenomenon, one of the most basic of which is that of Bryant & Goswami (2016), who state that "someone who can explicitly report the sound in any way is ‘aware’ phonologically" (p. 3). Children, when first learning to read and write, must recognize that each orthographic letter corresponds to a specific sound (or sounds) and that the sequence of these sounds can indicate spoken words. Such phonological awareness enables children to recognize that the word *mat*, for instance, can be produced by connecting the letters *m*-*a*-*t* (Bryant & Goswami, 2016). Other definitions are generally similar in their fundamental descriptions, though some are vaguer than others are. For instance, Abu-Rabia & Abu Rahmoun (2012) suggest that phonological awareness is the capacity to analyze spoken words into phonemes and syllables, in addition, Blachman (2010) states that phonological awareness, which develops progressively over time and has a fundamental equal relationship with reading, focuses on the phonological structure of the spoken words as opposed to their meaning while Stahl & Murray (1994) define phonological awareness as "an awareness of sounds in spoken or written words that is revealed by such abilities as rhyming, matching initial consonants, and counting the number of phonemes in spoken words" (p. 221). Additionally, Anthony & Francis (2005) and Stahl & Murray (1994) posit that phonological awareness is comprised of different skills that are discriminated by the kind of task performed, and they divide the phonological process into five different stages, the last of which they deem the most fundamental: i) the ability to recognize rhymes (e.g., *bat* and *mat*); ii) the ability to recognize alliteration (e.g.,*p-en*, *p-at*, *p-ell*); iii) the ability to blend and split syllables (e.g., *fl-ight*, *fi-ve*); iv) the ability to segment a syllable into phonemes (e.g., *m-at*, *c-at*, *p-at*); v) the ability to manipulate phonemes of spoken words (e.g., *m-a-t*, *c-a-t*). For the purposes of the present work, I will take ‘phonological awareness’ to mean the phonological recognition, distinguishing, and manipulation of sounds throughout an individual’s language development period. Bryant & Goswami (2016) explain that, as there are different manners in which words and syllables can be parsed into smaller segments of sound, there are also different forms of phonological awareness. They express that one form of phonological awareness is the parsing of words into smaller morphemes. For instance, *mailman* can be broken down into *mail* and *man*. They add that another form of phonological awareness is the manipulation of the sequence of phonemes to indicate different words. As words are comprised of sequences of phonological units, the alteration of theses sequences can change the meaning of a word. For example, the phonemes *a*, *b*, *e,* and *k* can be arranged to render *bake* or *beak*. Therefore, children must recognize the correspondence between graphemes and phonemes.

 Finally, another type of phonological awareness is the ability to recognize the onset (i.e., the initial phonological unit of a word) and rime (i.e., the string of letters that follow the onset) of a word.

## Phonological Awareness in L1 and L2

Phonological awareness and phonological representation are considered fundamental elements for the different stages of language development, namely the content and use of words, the phonology of the language, and the utterance of words (Abu-Rabia & Abu Rahmoun, 2012). It is important to assert that phonological awareness of the L2 is a basic requirement for decoding and encoding words (Saiegh-Hadadd & Geva, 2007). Furthermore, Russak & Saiegh-Haddad (2010) maintain that phonological awareness is considered an essential demanding factor when acquiring literacy in any language. Many factors (such as phoneme identity) influence the development and performance of phonological structure. For instance, phonemes that are shared between the L1 and L2 are ‘familiar’ phonemes (as they are already in the phonemic inventory of the L1 and thus already familiar to the L2 learner) and present less difficulty for L2 learners compared with ‘novel’ phonemes (i.e., phonemes that occur in the L2 but are absent in the L1).

 Russak and Kahn-Horwitz (2013) explain that the capacity for an individual to create sound-letter correspondence is contingent upon varying underlying abilities, starting with the ability to recognize and distinguish spoken sounds and ending with the ability to match the spoken sound with the correct orthographic symbol. Additionally, Verhoeven (2007) asserts that the ability of phonological awareness “requires children to consciously reflect upon the phonological segments of spoken words and manipulate these segments in a systematic manner" (p. 427). According to Anthony & Francis (2005), children begin acquiring phonological awareness from the preschool through early elementary school period and continue to revise their previous knowledge of phonological awareness while learning additional phonological skills.

## Phonological representation

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Phonological awareness is imperative for understanding spoken language— the human brain does not analyze arbitrary noises to interpret the semantic implication lent by an utterance, but rather, drawing upon phonological representation, works in an ordered system to analyze connected sounds and structures. That is to say, phonological representation is intrinsically connected to the speaker’s previous semantic and phonological knowledge (Pierrehumbert, 1990). When acquiring an additional language, learners must possess a strong understanding of the phonology of each sound and its respective orthographic representation in order to achieve spelling accuracy in the additional language. Russak & Kahn-Horwitz (2013) postulate that in order for a learner to accurately represent the correlation between phonemes and their orthographic representations, two fundamental criteria must be met. Firstly, the learner must possess the capacity to recognize, distinguish, and memorize sounds, and secondly, s/he must possess the capacity to match particular sounds to the accurate corresponding orthographic symbols.

# Type of Transfer

The process of transferring phonological knowledge from the L1 and applying it to the L2 can either facilitate or hinder L2 acquisition. Consequently, by examining the factors motivating inaccurate spelling of particular phonemes, the present work focuses on the phonological awareness of English (L2) learners and their representations of the novel consonant graphemes, which do not exist in Arabic (L1). Sabbah (2015) states that there are two types of transfer: positive transfer and negative transfer. Perkins& Salomon (1992) claim that "positive transfer occurs when learning in one context improves performance in some other context, adding that speakers of one language find it easier to learn related rather than unrelated second languages… negative transfer occurs when learning in one context influences negatively on performance in another (e.g., despite the generally positive transfer among related languages, contrasts of pronunciation, vocabulary, and syntax generate stumbling blocks" (p. 4). In short, when there are linguistic similarities between the L1 and L2, positive transfer (i.e., applying rules from the L1, which facilitate or have a positive influence on the acquisition to the L2) may arise. Conversely, negative transfer (i.e., the application of rules from the L1, which impede of hinder the acquisition of the L2) may arise due to the differences between the L1 and L2. As regards an Arabic (L1) and English (L2) context, the assumption is that Arabic’s distinctive nature will negatively affect the learner’s acquisition of English.

# Spelling

Abu-Rabia & Sammour (2012) define spelling as the process of segmenting words into smaller phonemic units and then accurately matching the grapheme with the phoneme it represents. The acquisition of spelling. Mahmoud (2013) states that "spelling is a language skill whereby sounds (phonemes) are represented by letters (graphemes) which constitute the smallest building blocks of written language. The structure and texture of written language begins with spelling. Most researchers, past and present, highlight the importance of spelling in writing" (p. 6). English contains obvious spelling rules that administer the phoneme–graphemes correspondence. To clarify, Ashour (2017) compares the consonant sounds of English (which has 24 consonant sounds) and Arabic (which has 32 consonant sounds). Although both languages share some common consonantal phonemes, they also possess a substantial number of distinct consonantal phonemes. Another major difference is that Arabic does not differentiate between many voiceless and voiced consonantal sound pairs (e.g., /p/ and /b/; /g/ and /k/ (plosives or stops) and /f/ and /v/ (fricatives). Unlike English, they are not distinct phonemes but rather allophones in Arabic.

## Spelling Transfer among EFL

Due to the differences in the phonological systems of English and Arabic, it is unsurprising that Arabic EFL learners consider accurately spelling English words a difficult task (Mohamed, 2014). English presents irregularity in the degree of correspondence between phonemes and graphemes, while Arabic possesses a clear, and generally consistent, correspondence between phonemes and graphemes. The lack of phoneme-grapheme correspondence in English presents serious difficulties for Arabic EFL learners (Abu-Rabia & Siegel, 2006). Furthermore, instances in which the phonological structure of the L2 is highly divergent from/possesses phonemes that are lacking in the L1 prompt the learner to transfer the background knowledge of the phonemes from their L1 to their L2 (Russak & Saiegh-Haddad, 2010). Moreover, Fender (2008) argues that the L1 influences the spelling of EFL learners in that they transfer their knowledge of phonology/phoneme-grapheme correspondence from their L1 (e.g., native Arabic speakers who learn English as an L2 realize the /p/ in *pen* as /b/ and the /v/ in *van* as /f/) (as cited in Figueredo, 2006, p. 25). Such knowledge transfer often prompts spelling errors (Fender, 2008). That said, Saiegh-Haddad & Geva (2007) suggest that a strong phonological awareness of English may positively influence the learner's acquisition of the L2, particularly in reading and writing and may potentially simplify spelling difficulties.

# Causes of spelling errors

Understanding the linguistic differences between Arabic and English can help us to better understand the factors prompting spelling errors committed by Arab learners of English. Arabic and English differ in almost all linguistic features (e.g., alphabet, phonology, syntax), and these differences will be pointed out and discussed below.

## The Nature of Mother Tongue (Arabic)

The nature of the Arabic language is one of the main causes of spelling errors among Arab learners of English. Corder (1993) explains that the L1 causes serious difficulties when learning the L2 if the two languages are linguistically distant as is the case for English and Arabic. The Arabic alphabet is comprised of 28 consonants and is written from right to left. In addition, there are four orthographical representations for each Arabic letter, depending on where it occurs in a word, be it independently, initially, medially, or finally. Furthermore, as only consonants and long vowels have their own respective orthographical symbols in Arabic, diactical signs which indicate short vowels add to the Arabic alphabet (Abu-Rabia, 2001). Alliath (2010, p. 9) states that "Arabic language is a consonantal language, in which only consonants and long vowels are represented by letters”. He adds that many of Arabic consonants are phonologically similar to their English counterparts, expect for the sounds /p/,/g/, and /v/. This implies that phonological difference between both languages could be a predictable variable for spelling errors committed by language learners. Another language scholar, Zarka (2013), explains in his study that Arabic does not exhibit the voiceless stop consonant /p/, while English does. Thus, Arab learners of English tend to resort the voiced stop /b/ instead, employing voicing as repair strategy. Also, the absence of the phoneme /v/ in Arabic prompts learners to employ the nearest “equivalent” in their native Arabic, the voiceless /f/. Moreover, Allaith & Joshi (2011) compared the performance of fourth and sixth grade students (a mixed group comprised of both English native speakers and EFL Arab students) and concluded that Arab learners tend to be confuse the spelling of words that contain the phonemes /f/, /v/, /p/and /b/. In other words, novel phonemes cause native Arabic speakers to substitute the novel phonemes with non-novel phonemes due to their nonexistence in Arabic. Additionally, Abu-Rabia, Shar & Manssour (2003) state that, in literary Arabic there is a predictable sound-symbol correspondence between the letter and the sound. It is important to assert that Russak & Saieht- Haddad (2010) found in their study that unique phonological structures (i.e., structures that do not exist in the L1) are a common source of difficulty for language learners.

Another characteristic differentiating Arabic from English is that Arabic presents a diglossic phenomenon, both the standard and colloquial forms exist side-by-side. Abu-Rabia & Sammour (2013) and Abu-Rabia & Taha (2006) agree that Arab native speakers use colloquial Arabic (an informal form that is usually unique to certain geographical areas and does not have a standard orthography) for daily communication purposes, while Standard Arabic is reserved for reading, writing, and formal spoken situations. Saighet-Haddad (2007) maintains that the novel phonological phonemes that are not present in the learners’ L1 are more challenging to access. To sum up, Arab learners tend to rely on their mother tongue as an additional source for learning and developing their L2 (English).

## The Role of Mother Tongue in Language Learning

There are many terminologies that are used to refer to one’s native language (e.g., “first language”, “native language”, “mother tongue”, “L1”, etc.). Gass & Selinker (1992) state that language acquisition develops from simple structure to highly complex structure progressively and is a complex process dependent upon major linguistic aspects, a basic one of which is proficiency in the L1. They further maintain that language acquisition is a continuous process and the L1 is the starting point for the acquisition. Troike (2016) claims that the previous knowledge of the L1 is responsible for the transfer of knowledge from the L1 to the L2 during second language acquisition. Fundamentally, Corder (1993) clarifies that language acquisition depends on the learner's native language; the ease or difficulty of acquiring specific linguistic features of the L2 depends crucially upon the similarity or difference between the L1 and L2. In other words, similarity between both languages prompts quicker and earlier acquisition, while differences lead to slower and delayed language acquisition. Additionally, Al-Joshi (1994) states that the L1 can influence the acquisition of the L2 in different ways; on one hand, learners face particular linguistic features in the L2 which are not present in the L1 (e.g., silent letters exist in English but are not found in Arabic). Thus, learners tend to use different strategies to facilitate their language learning.

# 2. The Nature of the Target language (English)

## 2.2 English orthography

One fundamental step toward understanding the difficulties faced by EFL learners, particularly Arab learners, is recognizing the depth of English orthography. “Orthography”, according to Tavosains (2007), refers to the accurate way to write a word in any language; if a learner knows how to speak the language, he will know how to spell. This can be accurate in instances in which the respective language has one-to-one correspondence between phonemes and graphemes. In contrast, if the language presents irregularity between phonemes and graphemes, learners of that language will face difficulty spelling accurately. Venezjy (2011, p. 29) adds: "orthography considered the recognition of morphemic elements as important as the recognition of phonemic ones". Saiegh-Haddad & Geva (2008) clarify that alphabetic orthographies map the oral language at the level of the phoneme. They add that in shallow orthographies the relation between the spelling of the word and its pronunciation is regular and reliable. Furthermore, orthography can be predicted on grapheme-to phoneme conversion, while in deep orthography (such as English) individual graphemes may map into a variety of different phonemes.

Cook (1997) points out that accurately spelling words in English is dependent upon the knowledge of the combination of letters as opposed to sound-letter correspondence. For instance, English has several possible letter combinations for a single sound (e.g., the letter “c” can be pronounced /c/ or /k/). The multiplicity of such letter-sound combination can be considered a fundamental factor motivating misspelling. Thus, Gass & Selinker (1992) add that the acquisition of the phonology of the L2 is indeed largely a matter of progressively reformulating the phonological system of the L1 in the direction of the target L2. Al-Jarf (2010) states that spelling errors can be categorized into two types, based on the factors motivating the errors, namely phonology and orthography. Problems arising from phonology arise when a misspelled word does not sound like the target word, while orthographic problems arise in instances in which the misspelled word sounds like the written word, but the grapheme used in the misspelled word does not correspond with the target phoneme.

## 2.3 Inconsistency in the English Spelling System

The lack of correspondence between the written and spoken forms of words in English does not exist in Arabic and thus presents a series of problems among Arabic learners of English. Bourassa & Treiman (2001, p. 172) state that "successful spelling performance involves the process of segmenting the spoken words into their phonemic components, and then selecting the appropriate grapheme to represent the phoneme". Said (2018) exemplifies that each English phoneme is represented by a variety of graphemes or sequences of letters. Moreover, other letters in English represent more than one phoneme, or it may not even represent any sound at all (e.g., silent letters). Cook (1997) claims that there are 44 phonemes in English, which can be represented by different combinations of the 26 letters. Umera-Okeke (2008) sets forth the problems causing spelling errors in English, and they classify them under the following headings:

 • The same letter does not always represent the same sound.

 • The same sound is not always represented by the same letter.

 • Some letters are not pronounced at all (silent letters).

• We pronounce sounds in some places where there is no letter.

 • There are variants of the plural and past tense morpheme.

Fender (2008) states that part of difficulty may be due to the fact that Arabic language literacy skills develop from reading fully vocalized scripts with reliable and consistent grapheme-phoneme mapping. In contrast, English has some variable grapheme-phonemes spelling even for consonants with arguably no straightforward phoneme-grapheme correspondence. Bourassa & Treiman (2001) demonstrate that learners have many choices at their disposal when it comes to selecting the accurate grapheme to represent the phonological depiction of words. For example, some phonemes corresponding to consonants have more than one possible orthographic representation, and the suitable choice depends on phoneme's position in the word. Odlin (1989) discusses that the differences in phonemic inventories can cause perceptual confusion during the process of language acquisition, since the phonemic inventory of the native language does not totally impede perception of L2 vocabulary. Therefore, language learners are capable of adjusting their pronunciation of phonemes to match those of the L2.

# Source of Error

For analytical purposes, it is necessary to explain the distinction between “mistakes” and “errors”, in order to determine the source of errors. Brown (2000) states that errors committed by L2 learners arise from several sources (e.g., interlingual errors of interference, intralingual errors within the L2, sociolinguistic context, and cognitive strategies).

We can classify the sources of such errors in many ways. For example, Selinker (1972) proposes the following categories:

1. Language transfer

2- Transfer of training

3- Strategies of second language learning

4- Strategies of second language communication

5- Overgeneralization of target language.

Other researchers such as James (2013), Brown (2000) and Oldin (1989) point out that learners' errors are caused by different processes which include transfer, overgeneralization, and communication strategies.

## Errors vs. Mistakes

Essentially, it is important to make a distinction between “mistakes” and “errors” in order to analyze the learners' language performance. Brown (2000) states that the term “mistakes” refers to a performance error that is either a random guess or a slip, in that it is a failure to utilize a known system correctly. The term “error”, on the other hand, refers to a noticeable deviation from the grammar of an adult native speaker and reflects the competence of the learner. Errors cannot be self-corrected, while mistakes can, if the deviation is mentioned.

## Interlingua (interference)

Interlingual errors account for a considerable number of errors among SLA (second and foreign language learners). The term was first used by Selinker (1972) to indicate the linguistic knowledge of an L2, and the errors denote the interference of interlingual errors. Gass & Selinker (1992) define “interlingual” as a system intermediate between the L1 and L2. They, additionally, use it to refer to "the temporary or permanent use of linguistic features from one language in the performance of another" (p. 26). Corder (1981) suggests that interlanguage is a systematic production of the L1 and L2. In other words, the learner's production of language is distinctive and comprises features from the L1 and L2. Oldin (1989) and Brown (2000) define “language transfer (interference)” as the carrying over of previous systematic or linguistic knowledge to subsequent learning, adding that "it is the influence resulting from similarities and differences between the target language and any other language, that has been previously acquired" (p. 27). “Transfer” can be classified into two types: positive transfer and negative transfer. Positive transfer occurs when the preceding linguistic knowledge facilitates the acquisition of the L2, while negative transfer occurs when previous performance disrupts performance in the L2. Brown (2000) asserts that negative language inference is surely the most immediately noticeable source of errors among language learners. Fender (2008) dictates that one way in which the L1 influences language spelling in the L2 is in the transfer of phonological knowledge or the transfer of grapheme-phoneme correspondence skills. In other words, transfer includes not only the familiarity of the letter but also the corresponding letter mapping. Oldin (1989) categorizes the errors in speech and writing into three types, namely: substitution (for example Arab learners occasionally commit spelling errors by substituting the letter /p/ with the letter /b/ both phonologically and orthographhically), calques, and alteration.

## Intralingual Errors

Kaweera (2013) states that intralingual errors can be defined as deviations from the language, which are caused by conflicting information present in the L2. These errors are not related to language transfer; however, they comprise the L2 itself. In addition, Lott (1983) posits that intraligual errors reflect general features of rule learning, such as overgeneralization, incomplete application of rules, ignorance of rules, and failure to learn.

# Related Studies

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Native language interference has become a topic of interest among linguist internationally, motivating them to examine and identify errors made by L2 learners in order to better understand the factors prompting such errors. The present study focused on this very phenomenon as it pertains to Arab-Israeli learners. A number of studies have been conducted in different countries. For example, Allaith & Joshi (2011) examined the influence of the phonological system of the L1 on the L2, comparing the spelling performance of Arab students to the performance of English natives by administering spelling tests. The results demonstrated the importance of phonology in spelling as well as the influence of the L1 on spelling performance in the L2. Similarly, Al-Jayousi (1994) states that errors are attributed to a number of causes such as irregularity of the orthographic system in the L2 and L1 interference. Saiegh-Haddad & Geva (2007) present the significant correlation between phonological awareness in English and Arabic.

In a study conducted in Israel specifically, Russak & Saiegh-Haddad (2010) investigated the relationship between phonological awareness in Hebrew (the L1) and English (the L2), among normal reading and reading-disabled Hebrew native speaking adults. They confirmed that the process of acquiring reading in a specific language is contingent upon awareness of the phonological structure of that language, not only among normal readers, but also among disabled readers. It is important to note that the present study is based on Russak & Saiegh-Haddad (2010) for examining Arab learner's spelling performance.

#  Methodology

## Objective of the Study

The main aim of this study is to outline and investigate the types of spelling errors made by native Arabic-speaking EFL (English Foreign Learner) at elementary school, in Judida-Maker village in Israel, As well as to investigate the factors prompting such errors. In order to carry out this study, samples of dictation tasks were collected from participants. This data was subsequently analyzed and the learners’ errors were identified. The present work sets forth a discussion and an explanation of the learners’ errors. The main objectives for the current study are:

1. To identify the spelling errors of novel consonants (/p/, /v/ and /g/) made by EFL students who have Arabic as a L1.
2. To explore the main causes for spelling errors made by EFL students who have Arabic as a L1.
3. To compare between novel phonemes and non-novel phonemes, and its effect on learners' spelling performance.

The present work seeks to answer the following research questions:

1. In what way does the Arabic language affect the spelling performance of novel consonant graphemes in EFL, in particular (/p/, /v/, /g/)?
2. Does the absence of /p/, /v/, and /g/ influence Arab learners' spelling accuracy in English?
3. Does the phonological environment (initial/final positioning) of a novel consonant affect learners’ spelling?

# Methodology

## Method

I will utilize dictation tests in order to uncover the factors prompting spelling errors of the novel consonant phonemes /p/, /v/, /g/, as these phonemes are not present in Arabic (i.e., the native language of the participants). A dictation test will be administered over one session. The test will be comprised of 48 randomly selected monosyllabic English words possessing consonants in different phonological environments (i.e., initial vs. final position). 24 of the words treat the target phonemes /p/, /v/ and /g/, while the other 24 words treat their respective phoneme pairs, i.e., /b/, /f/ and /k/.

The words contain the target phoneme in the initial and final position, in order to determine if the phonemes' position effect the learners' spelling accuracy.

The participants’ usual English teacher will conduct the tests, and the students will be unaware that they are being tested.

I will analyze the data in four different stages. Firstly, I will collect the data to be analyzed by conducting dictation and listening tasks. Secondly, I will identify the participants’ spelling errors. Thirdly, I will classify these errors. Finally, I will analyze the errors and attempt to uncover the factors motivating Arab learners of English to commit spelling errors in regards to /p/, /v/, and /g/.

## Participants

The participant pool was comprised of 61 fifth grade students (35 females and 26 males) who are learning English as a foreign language and have English proficiency levels ranging from low intermediate to intermediate. The students were selected randomly, and gender was not counted as a variable. The dictation task was administered in two classes, each consisting of 30 students. The participants had been learning English since the third grade (at the same school). Fifth grade students were selected as the most suitable participants for this study, as they have more advanced vocabulary inventories and writing abilities (compared to younger learners).

## Producer and data collection

The first step was acquiring a permission from the principle and the English teacher in the school for conducting the spelling dictation task for fifth graders. Then, the English teacher informed the learners that they will be given a dictation task during the lesson, and she explained to them that the task is for a research purposes. Therefore, they have to take it seriously and do not write their names. In addition, they were told that the task would not be graded in order to avoid any anxious, which may affect their writing performance. The spelling dictation task was administrated to the whole two classes (N=61) totally 61 students. The words were divided randomly over the dictation task, and the task administrated by their normal English teacher. At the beginning, teacher gave introductions for doing the task, to write down the word they hear, the teacher read each word twice in order to ensure that the learners hear it and write it on their papers. During the task, the teacher provided adequate time to complete the task, and learners were encouraged to write the word even if they are not sure of the correct spelling. Lastly, the teacher collected the papers for the analyzing the data.

#

# Limitations of the Study

It goes without saying that this study was not without some limitations. Firstly, the participant pool was solely comprised of Arab-Israeli students, which may have affected the results. Secondly, all of the participants were students at the same elementary school. Consequently, the findings of this study might not be applicable to all Arab-Israeli EFL students.

# Findings and analysis

The present chapter introduce the data analysis and discussion.

## Research Variables

##

In the study reported here, three variables were used: the type of letter (independent variable), the place where the signal appeared (independent variable) and the test score (dependent variable). The three variables were presented operationally as follows:

1. Word type: dichotomous variable:

 1. Novel,

 2.Non-Novel.
2. Where the letter appears: Dichotomous variable:

 1. at the beginning of the word,

 2. at the end of the word.

3. The percentage of students who recorded the word correctly: The scale of this variable is between zero and one (0 - all words were written incorrectly and 1 all words were written correctly). So that any word written correctly entitles one point, otherwise it does not merit points. In this way, the average of all the points accumulated by the student indicates the percentage of words he wrote correctly and that is the student's grade in the test. In addition, this score can indicate the student's chance of writing a word correctly.

## Data analysis

In the analysis, two levels of analysis were used: one-variable and multivariate. In one of the variables there were descriptive statistics, such as averages and standard deviations. In a multivariate, a two-way analysis was used to examine the hypotheses of the study. All the statistics were done using SPSS version 24.

## Ethics

Not only will research be done well, it must be conducted ethically. There are numbers of ethical principles and values that the researcher must accept and commit to and are not open to negotiations. Including fairness, respect for others and gratitude. The two most important and central principles for the protection of interrogates are conscious consent to participate in the study and to preserve the anonymity and privacy of the interrogate (Smith, 1990).

## Results

The main purpose of this study was to examine the three research questions that were:

1. In what way does the Arabic language affect the spelling performance of novel consonant graphemes in EFL, in particular (/p/, /v/, /g/)?
2. Does the absence of particular consonants novel phonemes (/p/, /v/, /g/) influence the learners' spelling performance?
3. Does the phonological environment (initial/final positioning) of a novel sound affect spelling?

The research findings will be presented one by one according to the order of the research questions. First, descriptive findings regarding the research questions will be presented, followed by a discussion of the research's findings that examined the research questions.

## Descriptive statistics In this sub-section, the mean and standard deviation were calculated for each of the letters that appeared in the test. Table 6 presents the averages and standard deviation for all words appearing in the novel phonemes test.

Table 6: Mean and standard deviation of words that appeared in the novel phonemes test (N = 61)

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Letter type | Position  | letter | Dictated words | The percentage of students who recorded the word correctly | Standard deviation |
| novel phonemes | Initial Position | p | Pen | **0.68** | **0.47** |
| Pig | **0.27** | **0.47** |
| Pear | **0.33** | **0.47** |
| Pie | **0.33** | **0.47** |
| Final Position | p | Tap | **0.43** | **0.50** |
|  | Cap | **0.37** | **0.49** |
|  | Lip | **0.50** | **0.50** |
|  | Top | **0.83** | **0.96** |
| Initial Position | **v** | Vet | **0.43** | **0.50** |
|  | Vote | **0.40** | **0.49** |
|  | Van | **0.40** | **0.49** |
|  | Vase | **0.40** | **0.49** |
|  | Final Position | **v** | Shiv | **0.40** | **0.50** |
|  |  | Live | **0.40** | **0.50** |
|  |  | Civ | **0.80** | **0.41** |
|  |  | Give | **0.43** | **0.50** |
|  | Initial Position | **g** | Girl | **0.80** | **0.40** |
|  |  | gas | **0.77** | **0.43** |
|  |  | goat | **0.70** | **0.43** |
|  |  | ghost | **0.70** | **0.41** |
|  | Final Position | **g** | Dig | **0.77** | **0.43** |
|  |  | dog | **0.73** | **0.45** |
|  |  | Big | **0.77** | **0.43** |
|  |  | fog | **0.73** | **0.45** |

Table 6 shows that 83% (M = 0.83, SD = 0.96) of all students succeeded in recording the word "Top" correctly. 80% of the students were able to write both the words Civ and the word "Girl" correctly (M = 0.80, Sd = 0.41, Sd = 0.50, respectively). In addition, Table 6 shows that the percentage of students who were able to correctly register the words that included the letter G (regardless of where the letter appears) is the highest compared to the other words (M = 0.70-.0.80). It also emerges from the table that a small percentage of the students (M = 0.27, SD = 47) succeeded in correctly recording the word "pig".

Figure 1 shows a comparison between the percentage of students who succeeded in recording the word correctly when the letter was at the beginning of the word and the percentage of students correctly recorded the word when the letter is at the end of the word, with the signal type of non phonemes.

Figure1.

Figure 1:
Figure 1 shows that the percentage of students who recorded the word novel phonemes correctly as the letter is at the end of the word is higher than the percentage of students who recorded the word of the same type correctly when the letter is at the beginning of the word. For example, the percentage of students who recorded the words correctly, when the letter p appeared at the beginning of the word is 41%, while the percentage of students who recorded the word correctly, when the letter P at the end of the word is 53%.

Table 7 shows the percentage of students who correctly recorded the words that appeared in the list of non-novel phonemes.

Table 7: Percentage of students who correctly recorded the words in the list of non-novel phonemes.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Letter type | Position  | grapheme | word | Average scores | Standard deviation |
| Non -novel phonemes | Initial Position | **B** | Bag | **0.87** | **0.34** |
| Bat | **0.90** | **0.30** |
| Bill | **0.90** | **0.30** |
| Ban | **0.93** | **0.25** |
| Final Position | **B** | Lab | **0.47** | **0.50** |
|  | Rob | **0.47** | **0.49** |
|  | Hob | **0.40** | **0.50** |
| Initial Position | **F** | face | **0.97** | **0.18** |
|  | far | **0.97** | **0.18** |
|  | full | **0.87** | **0.53** |
|  | fair | **0.87** | **0.51** |
|  | Final Position | **F** | golf | **0.97** | **0.18** |
|  |  | beef | **0.97** | **0.18** |
|  |  | Grief | **0.90** | **0.30** |
|  |  | loaf | **0.83** | **0.38** |
|  | Initial Position | **KA** | can | **0.77** | **0.43** |
|  |  | cat | **0.80** | **0.41** |
|  |  | Kit | **0.83** | **0.38** |
|  |  | Kim | **0.83** | **0.38** |
|  | Final Position | **KA** | Ink | **1.00** | **0.00** |
|  |  | Sick | **0.97** | **0.18** |
|  |  | Pink | **0.97** | **0.18** |
|  |  | Ark | **1.00** | **0.00** |

Table 7 shows that the percentage of students who recorded correctly the words that appeared at the end of the word B was the lowest (M = 0.40-0.47) compared with the percentage of students who succeeded in recording the rest of the words that appeared on the non-novel phonemes test.

In addition, all students correctly recorded both the words "Ink" and "Ark" (M = 1.0).

 Figure 2 shows a comparison between the percentage of students who correctly recorded the words in which the letter appeared at the beginning of the word non-novel phonemes and the percentage of students who recorded the word correctly, when the letter appeared at the end of the word hundreds of type of non-novel phonemes.

Figure 2 shows that there is no significant difference between the percentage of students who recorded the word correctly whether the letter appeared at the beginning of the word or whether it appeared at the end of the word, except for the list of words that included the letter B. Thus the percentage of students who recorded the words in which the letter B appeared at the beginning of the word Non-novel Phonemes (M = 0.90) were much higher than the percentage of students who recorded the word B at the end of the word (M = 0.44) of the same type. Table 8 presents the averages of the percentages of students who correctly recorded the words that appeared in each of the four categories.

Table 8: Percentage of students who recorded the words correctly in each of the categories

|  |  |  |
| --- | --- | --- |
|  | Position | Totally  |
|  | Initial Position | Final Position |  |
| novel phonemes | **0.52** | **0.59** | **0.55** |
| Non -novel phonemes | **0.88** | **0.82** | **0.84** |
| Totally  | **0.69** | **0.69** | **0.69** |

Table 8 shows that there is a difference between the marginal mean of the percentage of students who recorded the word correctly when the signal is a novel phonemes (M = 0.55) and the marginal average of the percentage of students who correctly recorded the letters non -novel phonemes. This difference indicates a major effect of the type of signal on the average percentage of students who recorded the word correctly. However, this preliminary conclusion does not indicate a statistically significant effect on the average percentage of students who recorded the word correctly. On the other hand, Table 8 shows that there is no difference in the marginal average of the percentage of students who recorded the words correctly whether the letter appeared at the beginning of the word or whether the letter appeared at the end of the word (M = 0.69). This means that there is no main effect for where the signal appears on the average percentage of students who recorded the word correctly.

Figure 3 shows the averages of the percentages of students who correctly recorded the words according to the different levels of the word type.

Figure 3.



In Figure 3, the intersection between straightness indicates that there is an interaction effect between the type of letter and the location of the letter. However, the diagram does not show that the interaction effect is statistically significant.

## Statistical statistics

In this sub-section, the statistical analyzes in the research hypotheses and the significance of the main effects of the word type and the place of the letter on the average percentage of students who correctly recorded the words are presented. In addition, the significance of the interaction between the two variables will examine the place and type of the percentage of students who recorded the word correctly. In the present study, three hypotheses were examined using bi-directional analysis.

Table 9 presents the findings of the bi-directional analysis.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| source of Variance  | Amount of squares | Freedom degrees | Average sum of squares | F  | Effect size |
| The letter's position  | .00 | 1 | .00 | .03 | .001  |
| The letter's type | .97 | 1 | .97 | 29.24 | .405 |
| interaction | .06 | 1 | .06 | 1.76 | .039 |
| errors | 1.42 | 43 | .03 |  |  |
| Including  | 25.40 | 47 |  |  |  |
|  |  |  |  |  |  |

|  |
| --- |
| Table 9 shows that there was no significant effect for the interaction between the word type and the place of the letter on the percentage of students who recorded the words correctly F(1, 43)=1.76, P>0.05. |

1. The first research hypothesis was that there was a statistically significant effect of where the letter appeared in the word on the percentage of students who recorded the word correctly - was not confirmed.

2. The second research hypothesis was that there was a statistically significant effect on the percentage of students who recorded the words correctly - was confirmed by the novel phonemes and non-novel phonemes. There is a statistically significant effect on the percentage of students who recorded the words correctly, which is confirmed when the letter in English has a letter similar to the one in Arabic in terms of spelling, so the percentage of students who succeeded in recording the word Is higher in comparison to students who succeeded in correctly writing the word if the English letter does not have a similar letter in Arabic in terms of spelling.

3. The third hypothesis was that there was a statistically significant effect on the interaction between the type of letter and the location of the letter in the word on the percentage of students who recorded the words correctly - not confirmed.

# Discussion

The process of acquiring a foreign language is a challenging task, which requires multiple linguistics features to learn and to practice. Arab English learners face different difficulties while learning English. Both English and Arabic language are two distinct language and each has its unique linguistic features. One of the most difficult task while learning English language is spelling.

The present study first aim was to examine the interference of mother tongue Arabic on learners' spelling performance, particularly in consonants novel graphemes /p/, /v/ and /g/. In addition, it aims to identify the spelling errors of novel consonants (/p/, /v/ and /g/) made by EFL students who have Arabic as a L1. For answering the first question of the study - In what way, does the Arabic language affect the spelling performance of novel consonant graphemes in EFL, in particular (/p/, /v/, /g/)a negative effect of the first language Arabic on English spelling performance was apparent when learners tend to use close phoneme from their mother tongue to present the novel phonemes. For instance, learners use the non-novel phoneme /b/, which exist in Arabic language, instead of novel phoneme /p/. This kind of spelling errors can be attributed to first language phonological awareness.

Positive transfer occurs when learning in one context improves performance in some other context, adding that speakers of one language find it easier to learn related rather than unrelated second languages. Negative transfer occurs when learning in one context influences negatively on performance in another (Perkins & Salomon, 1992; Sabbah, 2015). In short, when there are linguistic similarities between the L1 and L2, positive transfer may arise. Conversely, negative transfer may arise due to the differences between the L1 and L2. As regards an Arabic (L1) and English (L2) context, the assumption is that Arabic’s distinctive nature will negatively affect the learner’s acquisition of English.

As it can be seen, the finding that points to negative affect of the first language Arabic on English spelling performance is adequate with the research field in this area.

As written above, this kind of spelling errors can be attributed to first language phonological awareness. Based on earlier researches, such as Alliath (2010), who shows that one basic factor that influence the spelling performance of English learners is the phonological system of the L1, another relevant research that applied among normal and disabled readers (Russak & Saiegh-Haddad, 2010), state that participants show poor performance on novel phoneme than non-novel phoneme. As a result, this finding affirm that phonological awareness is at least in some extant language specific, and it is affected by linguistic property of the target phonemes. Similarly, the findings of the present study are consistent with Russak & Saiegh-Haddad (2010) that shows low percentage of correct words that contain novel phonemes, comparing with words that contain non-novel phonemes.

This explanation regarding the phonological awareness as a significant factor Meets the second purpose of this study: to explore the main causes for spelling errors made by EFL students who have Arabic as a L1.

For many decades, researchers have been discussing the issues of first language interference, which has become an integral part in the process of language acquisition. Researchers such as Brown (2000), Oldin (1989), Corder (1983), and Selinker (1972) present the idea of Interlanguage (IL) that make L2 learners use their first language knowledge during their language learning acquisition. According to the interlanguage hypothesis, transfer regards as one of the major factor that affect the language learning process. Different studies indicate that L1 interference the English second language spelling abilities. Therefore, this interference can present in two ways: the first is the transfer of first language phonological knowledge, and the second can presents as the transfer of phoneme-grapheme correspondence. As known, Arabic language system based on reliable and consistent grapheme-phoneme correspondence, while English spelling system has inconsistent correspondence between the sound and the letter, which cause some difficulties among language learners. As a result, learners may use their first language spelling recognition to deal with English spelling. Obvious examples for misspellings such as kake for cake, fone for phone.

As Fender (2008) state in his article that transfer of first language phonological knowledge cause difficulties among Arab leaners that may encounter them while acquiring English language, in particular phonemes which do not exist in their native language. For example, Arab leaners find it difficult to distinguish between the two billable letter /b/ and /b/ during writing tasks, while Arabic language has only one letter /b/. Consequently, Arab learners' misspellings with letters that do not exist in Arabic language.

Additional reason for committing spelling errors among Arab participants is the lack of phonological awareness this phonological awareness enable language learners to distinguish between novel phonemes and their pair phonemes. In other words, learners consider the graphemes/p/ and/b/, /v/ and /f/, /g/ and /ka/ as three graphemes that correspond to the same phoneme. This would explain why Arab learners commit more errors with consonants novel graphemes than non-novel graphemes. Consequently, Arab fifth learners during the current study have depended on phonological knowledge of their native language while representing graphemes of the target language (English).this elaborate the second question of the present study, which indicate that the absent of particular sound in the native language, causes difficulties and confusion to decide the accurate graphemes. Consequently, the lack of educational training in classes and lack phonological awareness among EFL to differentiate between the novel phoneme and non- novel phonemes, learners tend to treat /p/ and /b/ as two graphemes that corresponds to same one phoneme.

It was hypostasized that the consonants' graphemes position environment (initial vs. final) influence the possibly committing errors, that it will be challenging for students to write the correct grapheme if it in the final position. However, the position environment (initial/final) of the graphemes was not seriously apparent statically, which shows that 0.52 students write the word correctly in the initial position, and 0.59 of the students write it correctly in the final position. This findings show that the difference of target graphemes in both initial and final position was not statically significant.

The finding of the present study consist with a previous study of Allaith (2010), who presents that the effect of the position of the phoneme in the word was not apparent. In the current study, the graphemes' environment position was not explicit (see figure 1) learners write the novel grapheme correctly in the final position (0.59) while in the initial positioning (0.52) the variation is nor considerable. As well as in the non –novel graphemes learners tend to write the non – novel phoneme correctly in the initial (0.89) comparing with the final (0.82), the variation is not apparent.

The finding of the present study shows that acquiring additional language is related in somehow to the learners' native language, thus learners may utilize their pervious knowledge while acquiring another language. English teachers should expect this kind of spelling errors, and to recognize the reasons behind them. Therefore, EFL should get sufficient phonological awareness related to novel graphemes and their orthographic representations.

# Conclusion

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Language is used as a method for communication between human, so it play a significant role in our life. Acquiring additional language requires a huge effort among learners; it is a challenging task for learners and teachers. Learners should be attentive to the linguistic features of each language and its application. Each language starts with its sound system, thus learners how to recognize the phonological aspects of the language (phonemes) and the way it the way it correspond to the appropriate graphemes. EFL encounter a difficulty in distinguishing the similarities and dissimilarities between the phonemes and to represent in correctly in graphemes. This study indicate that the sound system of Arabic influence the learners' performance in novel consonants graphemes. Consequently English teachers should be aware of spelling errors, thus they have to organize a remedial program in order to overcome these s spelling errors and to reduce the confusion among learners.

# References

Abdelsabour, S. (2016). The influence of language skills on literacy acquisition in Arabic/English bilinguals.‏

Abu-Rabia, S., & Abu-Rahmoun, N. (2012). The role of phonology and morphology in the development of basic reading skills of dyslexic and normal native Arabic readers. *Creative Education*, *3*(07), 1259.

Abu-Rabia, S., & Sammour, R. (2013). Spelling errors’ analysis of regular and dyslexic bilingual Arabic-English students. *Open Journal of Modern Linguistics*, *3*(1), 58-68.‏

Abu-Rabia, S., & Sammour, R. (2013). Spelling errors’ analysis of regular and dyslexic bilingual Arabic-English students. *Open Journal of Modern Linguistics*, *3*(1), 58-68.‏

Abu-Rabia, S., & Siegel, L. S. (2006). Reading, syntactic, orthographic, and working memory skills of bilingual Arabic-English speaking Canadian children. *Journal of Psycholinguistic Research*, *31*(6), 661-678.

Abu-Rabia, S., & Taha, H. (2006). Phonological errors predominate in Arabic spelling across grades 1–9. *Journal of Psycholinguistic Research*, *35*(2), 167.‏

Abu-Rabia, S., Share, D., & Mansour, M. S. (2003). Word recognition and basic cognitive processes among reading-disabled and normal readers in Arabic. *Reading and writing*, *16*(5), 423-442.

Adams, M. J., B. R. Foorman, I(1998) . Lundberg, and T. Beeler. Phonemic Awareness in Young Children: A Classroom Curriculum. Paul Brookes Publishing Co.

Al-Bereiki, S. A., & Al-Mekhlafi, A. M. (2016). Spelling errors of Omani EFL students: Causes and remedies. *Journal of Applied Linguistics and Language Research*, *3*(7), 20-46.‏

Al-Jarf, R. (2010). Spelling error corpora in EFL. *Sino-US English Teaching*, *7*(1), 6-15.‏

Allaith, Z. A. (2010). *Analysis of Spelling Performance in English Among Students Whose First Language is Arabic* (Doctoral dissertation, Texas A & M University).‏

Allaith, Z. A., & Joshi, R. M. (2011). Spelling performance of English consonants among students whose first language is Arabic. *Reading and Writing*, *24*(9), 1089-1110.‏

Alsaawi, A. (2015). Spelling errors made by Arab learners of English.‏ International Journal of Linguistics. ISSN 1948-5425 2015, Vol. 7, No. 5

Anthony, J. L., & Francis, D. J. (2005). Development of phonological awareness. *Current Directions in Psychological Science*, *14*(5), 255-259.

Ashour, H' M'. (2017). Major Differences between Arabic and English Pronounciation Systems: A Contrastive Analysis Study. AijllsMagazine, 132-150.

Blachman, B. A. (2000). Phonological awareness. *Handbook of Reading Research*, *3*, 483-502.

Bourassa, D. C., & Treiman, R. (2001). Spelling development and disability. *Language, Speech, and Hearing Services in Schools*.‏

Brown, H. D. (2000). Principles of language learning and teaching.‏

Bryant, P., & Goswami, U. (2016). *Phonological skills and learning to read*. Routledge. Phonological Press Classical Edition

Cook, V. J. (1997). L2 users and English spelling. *Journal of Multilingual and Multicultural Development*, *18*(6), 474-488.‏

Corder, S. P. (1982). *Error analysis and interlanguage* *198* (1). Oxford University Press.‏

Corder, S. P. (1983). A role for the mother tongue. *Language transfer in language learning*, *1*, 85-97.‏

Derakhshan, A., & Karimi, E. (2015). The interference of first language and second language acquisition. *Theory and Practice in Language Studies,5*(10), 2112-2117.

Fender, M. (2008). Spelling knowledge and reading development: Insights from Arab ESL learners. *Reading in a foreign language*, *20*(1), 19-42.‏

Figueredo, L. (2006). Using the known to chart the unknown: A review of first-language influence on the development of English-as-a-second-language spelling skill. *Reading and Writing*, *19*(8), 873-905.‏‏Gass, S. M., & Selinker, L. (Eds.). (1992). *Language transfer in language learning: Revised edition* (Vol. 5). John Benjamins Publishing.

Figueredo, L. (2006). Using the known to chart the unknown: A review of first-language influence on the development of English-as-a-second-language spelling skill. *Reading and Writing: An Interdisciplinary Journal*, 19, 873-905.

Hanna, P. R. (1966). Phoneme-grapheme correspondences as cues to spelling improvement.

James, C. (2013). *Errors in language learning and use: Exploring error analysis*. Routledge.‏

Jayousi, A., & Thaher, M. (2011). *Spelling errors of Arab students: Types, causes and teachers' responses* (Doctoral dissertation).‏

Kaweera, C. (2013). Writing Error: A Review of Interlingual and Intralingual Interference in EFL Context. *English language teaching*, *6*(7), 9-18.

‏Lott, D. (1983). Analysing and counteracting interference errors. *ELT journal*, *37*(3), 256-261

Mahmoud, A. (2013). Spelling errors of Arab learners of EFL: A two-way analysis. *TESOL Arabia Perspectives*, *20*(1), 6-12

Pennington, M. C., & Richards, J. C. (1986). Pronunciation revisited. *TESOL quarterly*, *20*(2), 207-225.‏

Perkins, D. N., & Salomon, G. (1992). Transfer of learning. *International Encyclopedia of Education*, *2*, 6452-6457.

‏Pierrehumbert, J. (1990). Phonological and phonetic representation. *Journal of Phonetics*, *18*(3), 375-394.

Richards, J. C. (1974). *Error analysis: Perspectives on second language acquisition*. Routledge.‏

Russak, S., & Kahn‐Horwitz, J. (2015). English as a foreign language spelling: comparisons between good and poor spellers. *Journal of Research in Reading*, *38*(3), 307-330.

Russak, S., & Saiegh-Haddad, E. (2010). Phonological awareness in Hebrew (L1) and English (L2) in normal and disabled readers. *Reading and Writing*, *24*(4), 427-442.

Sabbah, S. S. (2015). Negative transfer: Arabic language interference in learning English. Arab World English Journal, 6(4), 269–288.

Saiegh-Haddad, E. (2007). Linguistic constraints on children's ability to isolate phonemes in Arabic. *Applied Psycholinguistics*, *28*(4), 607-625.‏

Saiegh-Haddad, E., & Geva, E. (2007). Morphological awareness, phonological awareness, and reading in English–Arabic bilingual children. *Reading and Writing*, *21*(5), 481‏.

Selinker, L. (1972). Interlanguage. *IRAL-International Review of Applied Linguistics in Language Teaching*, *10*(1-4), 209-232.‏

Stahl, S. A., & Murray, B. A. (1994). Defining phonological awareness and its relationship to early reading. *Journal of Educational Psychology*, *86*(2), 221.

Tavosanis, M. (2007). A causal classification of orthography errors in web texts. In *IJCAI-2007: Workshop on Analytics for Noisy Unstructured Text Data* (pp. 99-106).‏

Umera-Okeke, N. (2008). Spelling and Phonetic Inconsistencies in English: A Problem for Learners of English as a Foreign/Second Language. *African Research Review*, *2*(1), 64-83.‏

Venezky, R. L. (2011). *The structure of English orthography* (Vol. 82). Walter de Gruyter.

Verhoeven, L. (2007). Early bilingualism, language transfer, and phonological awareness. *Applied Psycholinguistics*, *28*(3), 425-439.

Zarka, E., & El Said, A. M. (2013). *The Pronunciation Errors of L1 Arabic Learners of L2 English: The Role of Modern Standard Arabic and Vernacular Dialects Transfer* (Doctoral dissertation, The British University in Dubai (BUiD)).

# Appendix 1.

Dictation task for the novel consonant graphemes (/p/, /v/, and /g/) and other random words of non-novel phonemes (phonemes pair /b/,/f/, /k/)

**Words with novel phonemes**

Initial Position

|  |  |  |
| --- | --- | --- |
| Consonant /g/ | Consonant /v/ | Consonant /p/ |
| girl | Vet | Pen |
| gas | Vote | Pig |
| goat | Van | Pear |
| ghost | Vase | Pie  |
|  |  |  |

Final Position

|  |  |  |
| --- | --- | --- |
| Consonant /g/ | Consonant /v/ | Consonant /p/ |
| dig | Shiv | Tap |
| dog | Live | Cap |
| big | Civ | Lip |
| fog | Give | Top |

**Non- Novel phonemes Words**

Initial position

|  |  |  |
| --- | --- | --- |
| Consonant /ka/ | Consonant /f/ | Consonant /b/ |
| can | face | Bag |
| cat | far | Bat |
| kit | full | Bill |
| kim | fair | Ban |
|  |  |  |

Final position

|  |  |  |
| --- | --- | --- |
| Consonant /ka/ | Consonant /f/ | Consonant /b/ |
| ink | golf | Lab |
| sick | beef | Rob |
| pink | Grief  | Hob |
| ark | loaf | Job |