How does Diglossia in Arabic affect the development of morphological knowledge throughout elementary schools?

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ABSTRACT

The current study aimed to examine the impact of linguistic distance between spoken Arabic vernacular (SAV) and modern standard Arabic (MSA) on the development of morphological knowledge in the standard Arabic language throughout elementary school. 132 native Arab children (67 boys and 65 girls) from 2nd, 4th and 6th grade have participated in four morphological tasks. The study's results indicated that a significant advantage is ascribed to morphology in spoken Arabic over standard Arabic. This advantage was found beyond the type of task and along the grades examined in the study. In addition, it was found that with the advance in the level of grade, the gaps between the spoken language and the standard language is reduced only at the level of production. Furthermore, the findings showed that throughout the second, fourth and sixth grades, there is a significant advantage for the performance at the identification level over the performance at the production level. A significant interaction was also found in the gap between identification to production and at the level of grade concerning the literary language. The psycholinguistic implications are discussed in light of previous findings regarding morphological knowledge, type of words (cognate versus noncognate) and recognition versus production processes.

Indexing terms/Keywords

Academic Discipline And Sub-Disciplines

INTRODUCTION

In recent years, research on the Arabic language has examined different factors that might explain the reduction of reading skills among Arabic-speaking population [1]. One factor that explains this phenomenon is that Arabic speakers are required to know the two forms of the Arabic language: spoken Arabic vernacular (SAV) and modern standard Arabic (MSA) [2]. This assumption is advocated by studies which have shown that the gap between the two forms of the Arabic language play a significant role in the reduction of reading achievement among Arab population [3;4] this gap has also an essence in the cognitive system of Arabic speakers [5;6]. Regarding the field of orthography, it has recently found research evidences that have confirm the conjecture that orthographical complexity of the system of Arabic writing decelerates the process of identifying words and reading [7]. Moreover, the recent series of studies which have carried out by Eviatar and Ibrahim [6;8;9;10] found that the visual complexity of Arabic orthography influences the involvement of the brain's hemisphere in a way that the right hemisphere is not involved in decoding the writing during the early stages and therefore reading acquisition of Arabic is more difficult in comparison to Hebrew and English.

The current study focuses on the development of morphological knowledge and the extent of its impact on the difference that exists between the two forms of Arabic language. Therefore, this introduction reviews the external measures that explain the characteristics of Arabic language that are related to this study. By the end of this section, we will present the goals of the study, the research question that we will attempt to answer and the study's hypotheses.

The Characteristics of the Arabic language

Diglossia

Diglossia is a linguistic phenomenon which describes a situation in which two forms of the same language are used simultaneously as each form is different from the other from a social perspective. Arabic language has two forms that are used in different situations; the spoken Arabic vernacular (SAV) which is used in the daily life and modern standard Arabic (MSA) that is used in a formal context such as social, religious and political events and the media. Moreover, standard language is used in radio and television programs that address children and adults. In the daily life, we use the SAV and even the dialect changes from place to the other within the same country [11; 12; 13; 14].

Native Arabic speakers study the written language formally as they begin school at the first grade in which the spoken and the standard Arabic are used [13; 15]. The gap between the two forms of the language is expressed at the phonological, morphological, and semantic and syntax levels [6; 16]. Ibrahim and Aharon-Peretz have directly examined the role of the Standard Arabic as a second language among native Arabic speakers [16]. They found that the cognitive system of native Arabic speakers regards the standard language as a second language similarly to the Hebrew language, which is also regarded as a second language. Based on these findings, the conclusion is that although native Arabic speakers use the two forms of the language and integrate them, the spoken language occupies the position of the first language and the standard Arabic occupies the position of a second language. This conclusion confirms the findings of Eviatar and Ibrahim [6], who compared the phonological knowledge among native Arabic speakers with bilinguals of Hebrew and Russian and Hebrew speakers. They found that phonological knowledge among Arabic and Russian speakers is similar but higher than that of Hebrew speakers.

Studies on the gap between the two forms of the language have focused on the difference regarding the phonological and lexical aspects [3; 4; 17]. According to Saiegh-Haddad, the position of the phoneme in the standard language in comparison to its position in the spoken language hinders the children's ability during kindergarten and first grade to differentiate between phonemes whether it is prefix phoneme or suffix phoneme. The impact of the phoneme's position stays as children almost finish the first grade where they are more exposed to the standard language [3]. The examination regarding the impact of the lexical distance between the two forms of the Arabic language on the phonological knowledge indicated that the linguistic source of the target morpheme (phoneme from SAV or phoneme from the MSA) has a central impact on performing the task of phonemic omission. Phonemes in the standard language that do not exist in the spoken language were difficult to omit by the two study groups of kindergarten and first grade children. Similarly, when the target incentive is a phoneme in the spoken language, there is no impact of the lexical position on performing the task of phonemic omission [4]. The examination regarding the impact of diglossia on the development of the phonological ability among Arabic speakers indicate that there is a link between the required phonological ability and the form of language. It appears that on the one hand, there is an advantage for the spoken language over the standard concerning phonemic disassembling but it was not found an interaction between the grade and this ability. On the other hand, when performing the task of phonemic omission, the standard language has an advantage and there is an interaction between the grade and the skill of phonemic omission. From a developmental regard, it was found that the place of the phoneme is significant during a young age yet its position is significant throughout age [18].

At the morphological level [2; 12], the literature indicates that the distance between SAV and MSA can be manifested through the following elements:

First, the absence of the marks of inflections: the standard Arabic has a rich system of inflection, which is suited to number, tense and gender. In the spoken language, the distinction of gender and number is limited. In all dialects, the even mark (which is frequent in the standard language) for masculine gender and feminine is kept in the nominal system. In the verbal system, the even mark of verbal pronouns and adjectives disappears and instead the plural form is used.

Similarly, in many dialects, especially urban, the distinction regarding gender in the second and third person in plural disappears and instead there is generalization of using the form of masculine gender.

Second, the disappearance of vowels that marks the part of speech of the word; Yet, in many dialects of Arabic, words are pronounced without the vowel at the end and no changes made in the suffix.

Third, changes in the affixes of verbs in the base form: in SAV, affixes of verbs in the base form in the past tense is simpler, meaning that for the first person in singular and the second person in singular, masculine gender, there is a same suffix as well as is the case in all persons in plural.

Fourth, a change in the system of root and pattern: in this regard, we can deal with three basic changes. 1) Regarding the first pattern in spoken language, reorganization for coordinating morphemes of vowel in their meaning is carried out. 2) Reduction in the number of the base form of the first pattern of the verb. 3) The disappearance of a part of expanded patterns.

First, in the first pattern there are three base forms regarding the vowel. For each pattern, there is a specific meaning. Yet at the aftermath of phonological changes in spoken language, other base forms that answer different meanings are produced.

Second, in standard Arabic, phonological coordination that takes place in the first pattern of the verb produces four base forms: Strong, hollow, weak and double. Yet, in spoken Arabic, there is no distinction between weak and double and this system is simpler. Similar change is carried out in expanded patterns. Other morphological change that is carried out at this level is the attribution of verbs to the different categories that also happens at the aftermath of phonological changes. While in standard Arabic, verbs begins or ends with hamza is included in the category of الأفعال المهموزة. . In the spoken language, this letter is completely omitted and replaced by a long vowel.

Third, opposed to the affluence of the verbal and nominal patterns of the standard Arabic especially those of the expanded patterns, the different types of patterns and the meanings of its pattern, in SAV are reduced.

To summarize, it can be seen that the morphological structure of the spoken language is simpler than that of the standard. In addition, the linguist, Holes [12] claimed that the distinction between MSA and SAV is even arbitrary and thus there is a direct link between the two forms of the Arabic language.

Morphology

Morphological knowledge deals with the structure of words, their organization and the processing of meaningful units [19]. These units are words or morphemes, and small units that have a meaning in language. Therefore, the meaning of the word is a result of the combination of the different meanings of morphemes of a certain word[20]. Morphological skill is a specific skill that is developed as a function of expertise in the language. In addition, it is found as linked to skill in the spoken language especially to a syntactic understanding of the language [21].

Arabic language is regarded as nominal, disconnected [22] and morphologically rich [23] as the base form of the word consists of two morphemes, root and pattern, that they cannot stand by their self [12;19]. For this basic form, grammatical affixes are joined by which various words in the language are produced. Literature that discusses morphology regards the root as carrying the semantic meaning since it is liaison to the real word or to a general semantic field. In addition, the pattern passes phonological and syntactic knowledge, meaning that the pattern distinguishes between the types of words: nouns, verbs and adjectives [19; 22].

In addition, the Arabic language's morphology is systematic and has clear rules [19]. Morphemes are not sequential and they are [24] with the root which causes the morphology to be vague [21; 25].

Theories of morphology generally focus on two main systems: derivational morphology, which deals with rules of word production, and inflectional morphology, which deals with the change taking place in the word in order to express a certain grammatical category [19; 26; 27; 28].

Thus, it can be understood that the process of derivation is technically carried out before inflection, but the borders between them are unclear. To produce a word, the two processes should be carried out [19].

The derivational morphology

Words in Arabic language are produced through integrating root and pattern. The majority of roots in the Arabic language consist of three phonemes, basically consonants, yet there are roots with two, four or even five phonemes [19]. The patterns are divided into two groups: nine patterns of noun are semantically sequential and some of which are familiar and fifteen patterns of verbs, nine of which are regularly used.

The derivation of verb is carried out through the integration the root with the different patterns over a process that creates new meanings. The derivation of noun is carried out through two ways: the first way is by adding a pattern of word to the root and the second is by switching from past to present and adding a morphological pattern to the present.

The inflectional morphology

The inflectional morphology is linked to syntax and thus is influenced by the context in which the word is stated. It is carried out by combining suffixes or prefixes, a change in the pattern of vowels and a change in the base form. The inflection of verbs is systematic and takes into consideration: person, gender, number and tense. The system of the inflection of nouns and adjectives takes into consideration gender and number. For many words, we can create the form of feminine by adding a suffix to the masculine gender [19; 27; 28]

The verbal system in Arabic

The verbal system in Arabic complex and has two main tenses: past and present, which are separated by the base form and the inflection mark [23; 29].. In the past tense, verb in the base form gets affixes during inflection that shows person, tense and gender, according to the subject of the verb. For inflection in present tense, the base form of the verb gets prefixes and suffixes as prefixes in the present tense express person and suffixes express the type of verb and number. Affixes together represent the complete meaning of the verb in the present tense. For each tense, there are thirteen forms of inflection that are regularly used [12;19]. Verbs in Arabic are divided into two groups: verbs with consonantal root of three letters; these groups are very widespread and verbs with consonantal root of four letters. For each lexical root, there are different base forms, and for each verb, there are an infinitive and gerund. Virtually, the verb and its derivations constitute a significant amount of Arabic vocabulary and can be regarded for a certain extent as the core of the lexicon of this language [19]. Moreover, roots in Arabic basically consist of consonants, yet there are roots that include letters similar to consonants, long vowels, that change during inflection and often disappear. This phenomenon is confusing when identifying the root. The verb has nine-to-ten frequent patterns, as the first and the basic one is regarded as unexpanded pattern and is frequent in the language [12;19]. In addition to the role attributed to morphology in the organization of the mental lexicon, studies in the last decade emphasized the importance of morphology in reading and spelling [30; 31; 32; 33; 34].

The analysis of the findings of [30] suggested that the accuracy in loud reading does not correlate with silent reading. The study attributed this to morphology. While loud reading lies on phonological processes and automatic conversion of grapheme phoneme, silent reading lies on visual and orthographical identification of the roots of word that enables an approach to the lexicon regardless to the accurate phonological representation. Orthographical depth of the language has an impact on the components that are involved in the process of reading [35]. In Arabic, skilled readers are required to read unpunctuated texts that constitute a deep orthography. In this case, the reader relies on morphology, to identify the root and pattern, to fill the missing data, caused by the absence of vowels [21]. It is also for processing affixes to access to the lexicon and comprehend the sentence [31]. Saiegh-Haddad and Geva [21] found that morphological knowledge is the sole predictor for reading derivational words fluently, though words are punctuated. They explain this finding on the ground of the fact that all words in Arabic are combination of root and pattern that means they are morphologically complicated. Consequently, readers employ morphological knowledge in quick reading and they do not rely on detailed phonological knowledge that comes from vowels.

The study of Abu-Rabia [36] that examined from a developmental point of view the role of morphology and short vowels in reading Arabic among regular and dyslectic readers found out that spelling and morphology predict accuracy in reading separate words and reading comprehension throughout all scales of age that were examined and over the two groups of dyslectic and regular participants. The researcher attributes the consistency in the contribution of morphology regarding reading separate words and reading comprehension throughout grades to the morphological complexity of the Arabic language. As the level of reading skills increases, readers are required to deal with a higher level of morphological complexity and thus the cognitive requirements they expect to deal with increases accordingly. In addition, the study examines morphology at the level of identification and production. It finds out a different contribution of two factors over the scales of age.

In light of the situation of diglossia in the Arabic language that causes distinction between the SAV and MSA, it is important to examine the morphological characteristics of the spoken Arabic language.

Identification compared with production

The consensus idea among researchers is that task which requires production is more challenging and difficult than tasks that require identification [21; 37]. Moreover, few studies have directly examined the distinction between the tasks of identification and production, though there is evidence of the existence of such effect.

Researchers examined if French speakers are assisted by the suffixes of nouns in order to determine their gender (feminine or masculine gender). For this end, they chose two groups of nouns. The first group included nouns that it was possible to predict their belonging regarding gender through their suffixes. The second group included nouns that their suffix did not necessarily indicate their belonging regarding gender [38].

Throughout the study, two experiments based on the auditory channel by which they used these words were carried out. The first experiment required to identify the gender of the word through the task of deciding the gender. The second experiment, participant completed pictures of items from the first experiment through the help of nominal sentence. The result of the study revealed that there is interaction between the groups of words in the first experiment (identification), yet there is no interaction of this kind in the second experiment (production). since the difference between the two

experiments is the type of task identification compared with production, researchers concluded that there is an effect for the suffixes on knowing the gender of the word only during identifying words and not during production.

The researcher, Abu-Rabia [31], was interested in the role of phonology, short vowels and morphology in accuracy in reading separate words and reading comprehension among regular and dyslectic readers throughout (different groups of age) third, sixth, ninth and twelfth grade. For examining the role of morphology, the researcher used two tasks: the first is the task of morphological identification in which participants were required to identify words that have the same root. The second is the task of morphological production in which participants were required to produce a word or more that have a similar root to the target incentive. Result regarding the contribution of morphology in accuracy of reading and reading comprehension revealed that throughout grades, the link between morphology and the measures that were examined changes according to the type of the morphological task (identification compared with production). In the third grade, for example, the task of morphological identification predicts reading comprehension and reading among regular readers. Opposed to this finding, among regular readers from the sixth grade, morphological identification as well as morphological production predicts accuracy in reading, while among dyslectic readers, only the morphological production predicts accuracy in reading and reading comprehension. In addition, there is no link between the morphological measures and reading comprehension among regular readers. Regarding ninth grade, it was found that the task of morphological task explains a high percentage of accuracy in reading among regular readers only. Also among this group, morphology does not contribute to reading comprehension. Finally, regarding the twelfth grade, the findings revealed that the task of morphological production predicts reading comprehension among regular and dyslectic readers as well. The task of morphological production predicts accuracy in reading among regular readers.

Additional evidences were provided in the study of [21] who examined the link between morphological knowledge to phonological knowledge in English as a first language and Arabic as a second language. The sample included forty-three Canadian bilinguals from third, fourth, fifth and sixth grades. Also in this study regarding morphology, the results have shown difference in the performance between the task of morphological disassembling in Arabic that was regarded as the task of production, in which participants were required to disassemble the words they hear into small units and the task of the morphological link in which participants were required to distinguish between pairs of words that are morphologically linked and pairs of words that are phonologically linked. The participants' performance was better in the second task that was regarded as a task at the level of identification. The researchers attributed this distinction to the difference in requirements between the tasks at the level of identification to production.

For summary, research evidences show that difference in cognitive requirements (identification compared with production) leads to a difference in the performance between the tasks examining the same field. Consequently, it is important to deal with the difference between the task of identification and the task of production also in the current study.

The current study

In light of the significance of the development of linguistic skills in an intact acquisition of written language and the situation of diglossia in the Arabic language, the current study focuses on examining the impact of diglossia on the morphological knowledge, a subject that has not been examined yet. Especially, the study has focuses on the morphological difference in infliction of verbs. As it is known, formally studying standard Arabic begins at the start of the first grade, and the exposure to the written language increases, therefore the study seeks to examine the impact of age and exposure to the standard language on morphological skills. The inflectional morphology depends on context and appears early in the spoken language. We choose to examine the development of inflectional morphology and the extent of which it is influenced by diglossia through task of identification and production in context. These tasks were developed specially for the sake of the current study. In addition we choose to deal with two types of tasks, identification and production, because various studies have shown evidences to their different contribution to the performance [21; 31]. The goal of this study is to examine the impact of diglossia, which is manifested at the morphological level, on the development of morphological knowledge. Additionally it examines how do variables of age and type of task influence the morphological skills.

As a result of the linguistic distance between the two forms of the language, it is hypothesized that beyond the type of task (identification or production), the grade in spoken morphology is expected to be higher than in standard morphology. The hypothesis is that the gap in grades between the two forms of the language will be reduced as the child advances to a higher grade. Based on the literature, it is hypothesized that the grade in the tasks of morphology at the level of identification will be higher than the grade in tasks at the level of production. The gap between the two types of tasks will be higher in the standard language compared with the spoken, and it will be reduced with the advancing in the level of grade. By comparing the performance between adjacent words (so called cognate) and distant words (so called noncognate), it is assumed that linguistic gap will be manifested by a significant gap between the two types of words (Cognate compared with noncognate) as we assume that the grade in cognate words will be higher than the grade in noncognate words. Moreover, we anticipate that as the child grows up and his/her exposure to the standard language increases, this gap will be reduced.

METHOD

Participants

In the current study, 132 students, (67 boys and 65 girls), have participated, all of whom are native Arabic speakers from a middle-to-low socio-economic class. The sample included 39 second grade students, (Average: 86.79 months, standard deviation: 4.04 months), 48 fourth grade student (Average: 110.45 months standard deviation: 2.34 months), 45 sixth grade students (Average: 133.62 months standard deviation: 5.47). The students have been randomly sampled from two

schools north of the country, where the dialect of each is similar to the other. Students with physical, mental, and learning disabilities and children with ADHD were not included in the sample.

Stimuli and tools

In the current study, 48 verbs, familiar to young students were selected, 45 of them were regular and three were deficient. Yet a process of agreement at the same of their inflection was not required. In addition, the verbs that have been chosen have frequent morphological units in the Arabic language. Many verbs were related to the first pattern [39]. Verbs were divided into two categories: the first category: 24 verbs were morphologically cognate and that had morphological pattern and root common in SAV and MSA. The second category: 24 verbs that were morphologically noncognate, half of which had different roots and the other half have a different inflection. The students were asked to inflect the verbs at the past and present tenses according to the persons: third person masculine singular, feminine singular, duo, and masculine plural and feminine plural.

For examining the development of inflecting verbs and the impact of linguistic distance on this development, four tasks was studied, in which we used these 48 verbs.

First, the task of spoken morphology at the level of identification: this task examines the ability to choose the verb that completes the sentence (reliability .76). The task includes 48 simple sentences in SAV. Participants were asked to fill in the missing with the suitable verb in each sentence by choosing it from three possible choices, as the target verb is one of the forty-eight verbs. The instructions of the task include three item of exercise.

Second, the task of spoken morphology at the level of production; this task examines the ability to inflect from a given root a verb that completes a given sentence (reliability .68). the tasks includes forty-eight simple sentences in the spoken language, each sentences has a missing verb and participant were asked to inflect from a certain root the suitable verb, as the target verb is one of the forty-eight verbs. The instructions of the task include three items of exercise.

Third, the task of standard morphology at the level of production; the task includes forty-eight simple sentences in the standard language. Participants were asked to fill the missing verb with one of three given choices, as the target verb was among the forty-eight verbs. The instructions include three items of exercise (reliability .80).

Fourth, the task of standard morphology at the level of production: the task includes forty-eight sentences in the standard language as in each sentence, was a missing verb and participant was asked to inflect a suitable verb from a given root. The target verb was among the given forty-eight. The instructions of the task include three items of exercise (reliability.92).

In order to neutralize the impact of involved variables, two additional tasks were passed: the first is the task of recognition of verbs: this task was developed for the purpose of examining the extent to which students recognized the verbs that were chosen for the sake of the study (reliability.46). The participants were asked to choose the picture that suited the verb they heard out from four pictures. The second is a test of remembering digits in reverse: this test is a part of the Digit-Span test. The test heard a sequence of digits and he was required to repeat the incentive he heard at a reverse order. The test included 14 sequences of digits divided into seven collections. Each collection had two sequences with the same number of digits and the number of digits increased with the passing between collections. The test was suspended when the participant incorrectly repeated items in two sequences of a same level of difficulty. On the other hand, the participant got one advantage point for every sequence of digits that he/she correctly remembered, and the scale of grades ranged from 0-14.

Procedure

The student was individually tested by a researcher, a speaker of the same dialect of the participants. The test took place over two meetings; each meeting lasted for 30-to 45 minutes at a quiet room within the school they studied at. Student heard all tasks and were accompanied by items of exercise by which the researcher corrected and explained the answers, thing was not been possible during conducting the tasks themselves. The morphological tasks were passed through two ways; half of the sample received the tasks of identification in the first meeting and the tasks of production in the second meeting, while the other half received the task in the opposite direction.

Encoding

In the morphological tasks, the correct answers were counted. In morphological task at the level of standard language, the correct answers concerning the inflection were given regardless to the last vowel. This lies on the fact that the current study focuses on inflection of verbs, whereas in Arabic language, the last vowel in the word indicates its part of speech or its grammatical role [30], an issue that has not been examined in the current study. In the tasks at the spoken level, the correct answers that were given correlated with the answers given by an adult, a speaker of the same dialect. This was consistent with the study of Ravid and Perah [40] and Ravid & Hayek [41]. Also in the task of recognition of verbs and working memory, correct answers were counted.

RESULTS

In examining the research questions, three two-way analyses of variance with repeated measures (ANCOVA) were conducted as the variable of working memory was controlled. The findings of these analyses are presented as follow according to the research questions.
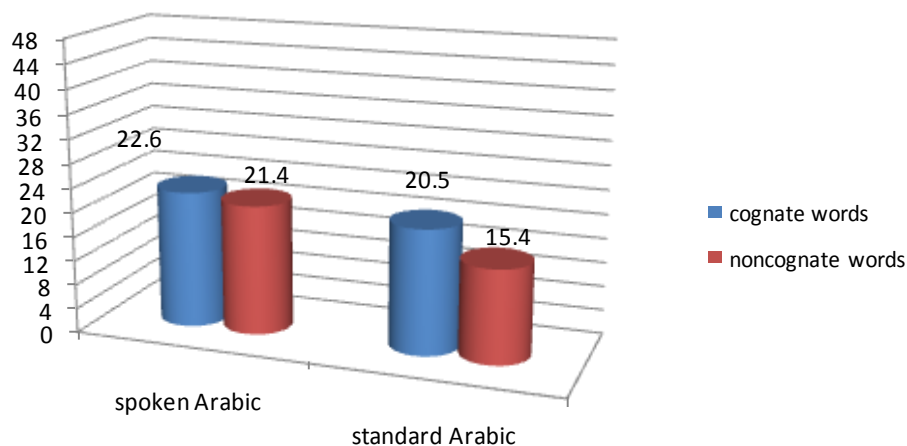
THE IMPACT OF LINGUISTIC DISTANCE ON THE PERFORMANCE AT THE LEVEL OF IDENTIFICATION

The impact of the linguistic distance on the performance in morphology in SAV and MSA (tasks of identification) was examined through a two-way analyses of variance of 2 (SAV / MSA x (2nd 4th 6th grades), with repeated measures. Linguistic distance I.E language has a significant effect, as beyond grades, the level of accuracy in SAV was higher than MSA ($F(1,128) = 133.23$, $\eta^2 = .51$, $p < .001$) in addition the level of the grade has also an effect ($F(2,128) = 22.48$, $\eta^2 = .26$, $p < .001$). Beyond the language, there are significant differences in performance between grades. The performance in the fourth grade was higher than the performance in the second grade and the performance in the sixth grade was higher than the performance in the fourth grade and the second grade ($p < .001$). On the other hand, there was no interaction between the language and the level of grade ($F(2,128) = .52$, $\eta^2 = .59$, $p > .05$). In all grades, there was a significant gap between a higher performance in the SAV compared with MSA (see table 1).

Table 1. Means and Standard Deviations (SD) in identification for morphology of the spoken and standard Arabic according to grades

		Spoken Arabic		Standard Arabic	
	N	Mean	SD	Mean	SD
2nd grade	39	41.077	3.37	31.39	3.89
4th grade	48	44.13	3.69	35.06	5.77
6th grade	45	46.24	1.68	38.29	4.86

For the purpose of sharpening the differences found in the tasks of identification, two tests were carried out; the first test examined the differences between the types of various categories of cognate and noncognate words in the two forms of the language. The second tests examined the differences between the tasks inside grades through t test. in tests t paired to comparison of categories, we compared identification of spoken cognate words with identification of literary cognate words. Similar analyses were carried out for comparing the identification of spoken noncognate words with literary noncognate words. The t test examination, it was found that the identification of spoken cognate words had significant advantage ($t(131)=11.44$, $p<001$). In addition significant difference was found between identifying literary noncognate words and spoken noncognate words ($t(131)=119.16$, $p<0.001$) (See figure 1).

Fig 1. Comparisons of general performances in identification between the types of words, adjacent and distant, in the spoken and the literary language

The second test was carried out by *t* test between each pair of two tasks (identification of spoken and identification of literary), significant differences were found between these tasks throughout all grades (second, fourth and sixth grades).

The impact of the linguistic distance on the performance at the level of production

The impact of the linguistic distance on the performance in the SAV and MSA morphology at the tasks of production was examined through tow-way analysis of variance of 2 (SAV / MSA) X 3 (2nd 4th and 6th grades) with repeated measures. The linguistic distance which is the language has a significant effect as beyond grades, the level of accuracy in the SAV was higher than in the MSA (($F(1,128) = 162.55$, $\eta^2 = .56$, $p < .001$). In addition the level of grade had an effect ($F(2,128) = 36.36$, $\eta^2 = .36$, $p < .001$). beyond the language, there are significant differences between grades and the performance in the SAV and MSA was higher in the fourth grade than in the second grade and it was higher in the sixth grade than fourth

and second grades (p < .001). finally there was interaction between language and the level of grade ($F(2,128) = 10.28$, $\eta^2 = 14$, $p < .001$) (see table 2).

For the purpose of examining the source of interaction, a new test was built regarding the gap between the performances in spoken morphology compared with literary morphology at the level of production. Variance analyses with post hoc tests (Bonferroni), to this variable was carried out. The variance analyses indicated significant differences between second grades on the one hand and fourth and sixth grade on the other hand, while there was no difference between the fourth grade and the sixth grade (See table 2).

Table 2. Means and Standard Deviations (SD) in production for morphology in spoken and standard Arabic according to grades

		Spoken Arabic		Standard Arabic	
	N	Mean	SD	Mean	SD
2nd grade	39	37.3	6.05	17.87	4.67
4th grade	48	41.73	5.49	27.52	8.23
6th grade	45	44.3	2.67	32.33	6.82

Two additional tests were carried out for the purpose of clarifying the source of difference found in the tasks of production. The first examined the difference between the types of the various categories of cognate and noncognate words between the two forms of the language by conducting test t paired to the comparison of categories. In these test comparisons was conducted regarding production of spoken cognate words and production of literary cognate words. Similar analyses were also conducted for comparing the production of spoken noncognate words wit the production of literary noncognate words. The production of spoken cognate words had a significant advantage ($t(131)=13.19$, $p<.001$). In addition, the production of spoken noncognate words had a significant advantage over the production of literary noncognate words ($t(131)=19.16$, $p<.001$). The results are presented in figure 2.
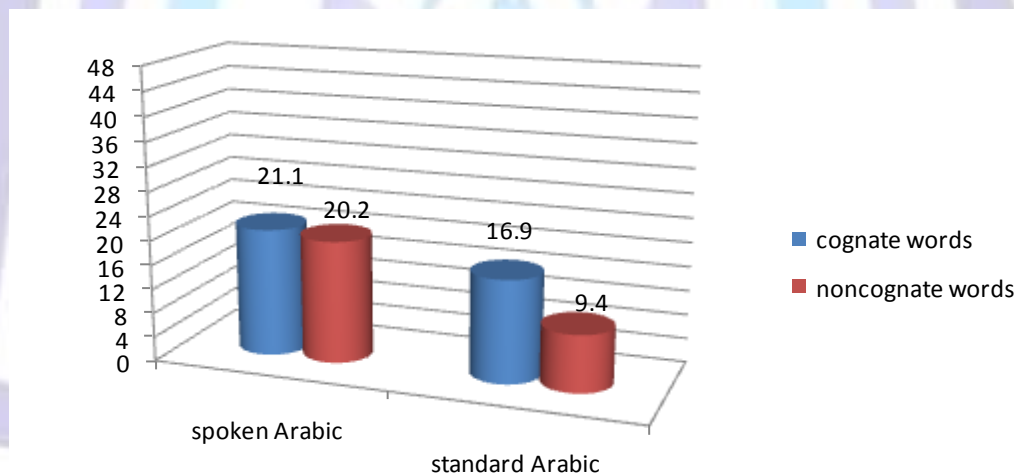
Fig 2. Comparisons of general performances (the number of correct answers) in production between the types of words (cognate compared with noncognate) in the spoken and standard Arabic

The second test aims to show the differences between the tasks inside grades. For the sake of this test, tests t was conducted between each pair of two tasks (production of spoke and production of literary). Significant dereferences were found throughout all grades (2nd, 4th and 6th grades).

The second research question was does the type of task (identification compared with production) affect the extent of accuracy in the tasks of morphology a level of production and the level of identification?, and is there interaction between the types of task to the level of grade?

The impact of the type of task on the performance in morphology in the spoken language

This impact was examined by a two-way analysis of variance of 2 (identification/production) X 3 (2nd, 4th 6th grades) with repeated measures. A significant effect for the type of word as beyond grades, the level of accuracy in identification was higher than in production ($F(1,128) = 9.29$, $\eta^2 = .07$, $p < .01$). In addition, an effect for the level of grades was found ($F(2,128) = 31.2$, $\eta^2 = .33$, $p < .001$). beyond the type of task, there were significant difference in performance between

grades. The performance in the spoken language at the level of identification and production was higher in fourth grade and sixth grade than second grade 6th-4th ($p < .001$). There was no significant interaction between the types of tasks and the level of grade ($F(2,128)$ .82, $\eta^2 = .02$, $p > .06$) (See table 3).

Table 3. Means and Standard Deviations (SD) for accuracy in two tasks (identification/production) in the spoken language according to grade

		Identification		Production	
	N	Mean	SD	Mean	SD
2nd grade	39	41.08	3.37	37.3	6.05
4th grade	48	44.12	3.69	41.73	5.49
6th grade	45	46.24	1.68	44.3	2.67

The impact of the type of task on the performance in literary morphology was examined through a two-way analysis of variance of 2 (identification/production) X 3 (2nd, 4th 6th grades) with repeated measures. A significant effect for the type of task was found as beyond grades, the level of accuracy in the literary language in identification was higher than production ($F(1,128) = 52.97$, $\eta^2 = .29$, $p<.001$). In addition, the level of grade had an effect ($F(2,128) = 35.3$, $\eta^2 = .36$, $p < .001$). Beyond the type of task there was significant differences in performance between grades, the performance in production and identification in the fourth grade was higher the second grade and the performance in sixth grades was higher than second and fourth grades. Finally, an interaction was found between the type of task and level of grade ($F(2,128) = 11.8$, $\eta^2 = .16$, $p < .001$) (See table 4). For examining the source of interaction, a new variable was built regarding the gap between the performance in tasks of identification and tasks of production in the literary language. An analysis of variance with post hoc test (Bonferroni) to this variable was carried out. The analysis of variance indicated significant differences between second grades on the one hand and fourth and sixth grade on the other hand. Yet no significant differences were found between fourth and sixth grades (See table 4).

Table 4. Means and Standard Deviations (SD) for accuracy in two tasks (identification/production) in the standard language according to grade

		Identification		Production	
	N	Mean	SD	Mean	SD
2nd grade	39	31.38	3.89	17.87	4.67
4th grade	48	35.06	5.78	27.52	8.23
6th grade	45	38.29	4.86	32.82	6.82

Gap between accuracy of performance in inflection of noncognate verbs compared with cognate verbs in the literary language. The impact of types of words (cognate/noncognate) on the performance of tasks of identification in the literary language was examined through two-way analysis of variance of 2 (cognate/noncognate) X 3 (2nd, 4th 6th grades) with repeated measures. It was found that there is significant effect for cognate words compared with noncognate words, as beyond grades, the level of accuracy in cognate words is higher than in noncognate words ($F(1,128) = 67.05$, $\eta^2 = .34$, $p< .001$). In addition, there was an effect for the level of grade ($F(2,128) = 12.74$, $\eta^2 = .17$, $p<.001$). Beyond the type of words, there were significant differences in performance between grades. The performance in no ncognate and cognate words was higher in fourth grade compared with the performance in the second grade and the performance in the sixth grade

was higher than in the second and fourth grade. There was no interaction between the types of word to the level of grade ($p < .001$). Finally, there was no interaction between language and the level of grade (See table 5).

Table 5. Means and Standard Deviations (SD) for accuracy in the in cognate and noncognate words at the level of identification according to grade

		Cognate		Noncognate	
	N	Mean	SD	Mean	SD
2nd grade	39	19.36	2.33	12.89	2.67
4th grade	48	20.35	1.99	15.54	4.69
6th grade	45	21.67	1.95	17.47	3.82

The impact of the type of words (cognate/noncognate) on the performance of tasks of production in the spoken morphology was examined through a two-way analysis of variance of 2 (cognate / noncognate) X 3 (2nd, 4th 6th grades) with repeated measures. Significant effect was found for cognate words in comparison to noncognate words as beyond grades, the level of accuracy in cognate words was higher than in noncognate words ($F(1,128) = 12.59$, $\eta^2 = .49$, $p < .001$). in addition, an effect for the level of grade was also found (($F(2,128) = 35.69$, $\eta^2 = .56$, $p < .001$). beyond the types of words, there were significant differences in performance between grades. The performance of cognate and noncognate words was higher in fourth grade than in second grade, and in the sixth grade was higher than in the second and fourth grade 6th-4th($p < .001$). In examining the interaction between language and level of grade, no significance was found ($F(2,128) = .45$, $\eta^2 = .64$, $p > .05$) (See table 6).

Table 6. Means and Standard Deviations (SD) for accuracy in the cognates and noncognate words at the level of production according to grade

		Cognate			Noncognate	
	N	Mean	SD		Mean	SD
2nd grade	39	12.89	3.56		4.97	1.81
4th grade	48	17.71	4.19		9.81	5.64
6th grade	45	19.56	2.65		12.78	4.84

DISCUSSION

The current study has examined the impact of diglossia that characterizes the Arabic language on the development of the morphological knowledge in Arabic language. The study has specifically focused on the inflectional morphology in the verb system. The study's findings point at an effect of language, throughout grades, the spoken morphology has an advantage on the standard, at the level of identification and production as well. Meaning that morphological knowledge in SAV is better than MSA morphology throughout all grades examined in this study. Moreover, beyond the form of language, an effect of the type of task (identification compared with production) was also found. This suggests that in both MSA and SAV, the performances were better in the tasks of identification compared with tasks of production; this effect was found throughout all grades examined in the study.

The findings that examined the impact of the types of words on the accuracy in standard language indicated that beyond the type of task (identification compared with production), cognate words (similar to words in the spoken language) have a significant advantage over noncognate words (different from spoken language regarding inflection and root). In addition, a variance was found concerning interaction with the level of grade. The findings revealed that in spite of the great exposure to the standard language and studying it formally during school, interaction between linguistic distance and the level of grade has been found on in the tasks of production. Meaning that with the advancing at the level of grade, the linguistic distance between the SAV and MSA is only reduced at the level of production and stays as it is at the level of identification. On the other hand, an interaction between the level of grade and the type of task was found only in the standard language. An examination of the performance in the two forms the language revealed that performances in the SAV were regarded as relatively better and were not influenced by advancing in the level of grade. Yet, it was suggested that in the case of examining the different levels of tasks (identification and production) in the standard language, the exposure to this language and studying it throughout school improve the student's performances. However, in contrast to the two former questions that have indicated a partial interaction, there was no interaction found between the types of words and advancing in the level of grade in standard language. The first research question examined the impact of linguistic distance on the performance in tasks in the MSA and SAV at the levels of production and identification. In addition, the impact of advancing in the level of grade on the linguistic distance was examined. Findings indicated that morphological knowledge in the spoken language had a significant advantage over standard language. This finding suggests that performances in tasks of spoken morphology at the levels of identification and production show a good

knowledge and skillfulness in the processes of inflection in spoken morphology in cooperation with standard morphology. In this way, the findings complete the research information that has been recently collected regarding a stronger skillfulness in phonemes and phonological structures related to spoken morphology [18; 21]. This advantage derives from two main causes: 1.) the simplicity of morphology in spoken language; 2.) The linguistic distance between the two forms of the language leads Arabic speakers to a similar situation of that characterizes bilingual speakers [6; 16]. The linguistic distance between the two forms of the language, (SAV compared MSA), is manifested through the simpler morphological structure of the SAV regarding inflections and patterns [12]. Accordingly, spoken language speakers acquires less rules of inflectional morphology, this enables him to be skillful in the morphology of spoken language. This is in contrast to the complexity and compressibility that characterize standard Arabic [42]. This probably decelerates the learning of the rules of Standard Arabic. In addition, diglossia that characterizes the Arabic language leads to a situation in which Arabic speakers is regarded as being similar to bilinguals [6;16]. This may be manifested through a different degree of exposure to MSA in comparison to SAV. Arabic speakers are exposed to the standard language in a formal and intensive basis as they begin school, even then, the usage is limited, prepare homework watch television and read at their free time (if at all). The study on bilingualism in the field of morphology indicate that morphological skill is specific to the language that the person studies [21] and is developed as a function of studying the language and the exposure to it [43; 44]. This is in contrary to the phonological skills that are linked between the first and the second language [6; 21; 45]. Thus in order to

cultivate morphological knowledge in second language and get it closer to the level of the first language, a high degree of exposure is required. While monolinguals are exposed to a one type of input in their native language, bilingual children receive a various amount of input in their languages. Bilinguals who receive a less input I a certain language, need a longer time to build a vocabulary of verbs in this language compared with monolinguals and bilinguals who are exposed to the language in a high degree [46]. Although student of elementary schools are exposed to the standard language, it is not enough to reduce the linguistic distance and lead them to competence in this language. Therefore, throughout elementary grades, spoken morphology still has an advantage of the standard.

Studies on bilinguals focus on the importance an additional factor that affects second language acquisition that is pedagogy. Since 2007, teachers have started to teach inflection of complete and regular verbs in the past and present tenses. In light of the fact that the study's result indicated significant differences between grades, it can be stated that pedagogy contributes in expanding morphological knowledge in the field of inflection in the standard language therefore the participants' performance has improved as they advance to a higher grade. Yet, it should be stated that despite the improvement of performance throughout grades, the gap between the MSA and SAV is lonely reduced at the level of production.

Another explanation for the superiority of morphology in spoken language over the standard derives from the way the tasks have been passed. The necessity to compare the participants' performances in various tasks necessitated the passing of tasks in the same way that was auditory. Since native Arabic speakers are more exposed to the SAV through the auditory channel, whereas they are mainly exposed to MSA through the visual channel, this reality produces difference regarding the patterns of performance compared with input. This data has been approved in the study [47] who examined if the way of perceiving the word, visually compared with auditory, appears in a different way from the extent of exposure to these modality in the first language (Arabic) and the second (Hebrew). Ibrahim found out that student whose level of exposure to the language is higher, identifications of word will be quicker and more accurate. Eventually, it can be assumed that the spoken language's superiority over the standard also derives from the fact that the tasks have been auditory passed in the spoken and the standard language as well, a situation which produces a superiority for the first (spoken) to which the student are exposed through the auditory channel.

The result of the study related to interaction of the gap between the standard language and the spoken with the level of grade were not consistent as interaction was only found at the level of production. This result suggests that the gap between the standard and spoken language permanently stays throughout grades at the level of identification tasks and interaction only exists at the level of production, meaning that the gap is reduced as student advances to a higher grade. In addition, the results of the study indicate an effect of grade, thus we can assume that exposure to the standard language and the systematic learning of morphology in standard language adds morphological knowledge for the student at the level of identification and production as well. Yet, at the level of identification, the average of participants' performance starting from the second grade is higher in the two forms of the language, therefore the possibility to improve the performance at the aftermath of advancing in the level of grade, is minor and explains the absence of interaction between the gap in the two forms of language and the level of grade at the level of identification. Additionally at the level of production, which is cognitively higher, the performance is lower than the level of identification especially in the standard language. Consequently, the gap in performance between the SAV and MSA at the level of production is big and enables a possibility of significant improvement during advancing in the level of grade, eventually an interaction can be achieved. The interaction found between the type of task and the level of grade suggests that during the transition to standard language compared with the spoken, students succeeded to show their morphological knowledge in a better as they were required to identify the verb that completes the sentence than when are required to produce the verb that competes the sentence [21; 37]. This difference between the tasks of production and identification is consistent with the findings of Spalek and his colleagues [38] who indicate pointed at the difference at the level of identification compared with production regarding the performance of participants. The found out that regarding identification, the word's suffix helps to identify its gender. On the other hand, at the level of production the word's suffix does not help in identifying its gender. Possible explanation for this difference at the two levels of identification and production that we expect to find in our study derives from the different cognitive requirements for each task. More specifically, the process of inflection involves at the first phase derivation and inflection comes only afterwards. These processes are difficult to conduct at the level of

production [19]. It can be assumed that at the level of identification, the complex operation of inflection conducted to choose the correct answer is not is relatively simple at the level of production, where the participant is required to conduct two morphological operations (derivation and production) before giving their answers. Furthermore, the difference between identification and production possibly derives from the semantic arousal in the mental memory. At the level of identification, participants hear and comprehend the suggested possibilities; therefore, the semantic arousal in the mental memory is limited. This makes the tasks of morphological choice easier. At the level of production, it can be suggested the root arouses a lot of semantic representatives from both the MSA and SAV this makes the task of production harder [42].

Based on the fact that as the person grows up in age, the knowledge he/she acquires in the two forms of the language is expanded, we have assumed that the gap between the level of identification and production will be reduced regardless to the form of the language.

The findings of the study have partially reinforced the hypothesis. It was found that gap at the level of identification and production will reduce only in the standard language. This means that throughout grades, the gap in identification and production stays permanent in the spoken language and it only reduces in the standard language. A deep observation to the participants' performance in tasks in spoken language compared with standard advocates the findings related to interaction in the first question. This means the performance of the research population in the spoken language at the two

levels of identification and production is higher than their performance it the standard language. As the student moves to a higher grade, his/her linguistic knowledge becomes deeper and richer regarding the two forms of the language, and eventually their performance at the level of production and identification is improved accordingly. Yet concerning the spoken language, the average of correct answers, given by the sample, was high at the two levels (identification and production), and thus the improvement in performance as participants move to a higher grade is relatively minor. This explains the absence of interaction between the gap in the types of tasks and the level of grade. On the other hand, in standard language, the average of correct answers at the two level of tasks was lower that the case in spoken language and especially at the level of production. As a result, the gap between identification and production is wide and leaves a place for more improvement of performance with advancing to a higher grade, which is manifested in reducing gaps.

An additional explanation for reduced gaps between identification and production in MSA is that as the children grow up in age, they construct orthographical representations this language [16; 47]. Therefore, when dealing with tasks in the standard language, participants can rely on orthographical representations, in comparison to tasks in spoken language, by which participants can only rely on representations in the semantic lexicon [15]. Examining the source of interaction between the gap and the level of grade revealed that significant differences between the second grades fourth grade and sixth grade. It can be suggested that the phenomenon of interaction basically derives from the exposure to the written language rather than the systematic learning. If learning is the factor that increases the participants' performance, difference should be seen between the fourth and sixth grade. The third question has examined whether there is a gap between the accuracy of performance in inflection of cognate verbs compared with noncognate in standard language and whether this gap is influenced from the advancing in the level of grade. The results of the study show that cognate verbs have an advantage over noncognate verbs but there was no interaction with the advancing in the level of the grade. These findings are consistent with those of Saiegh-Haddad [3], who indicated that the distance of phoneme in spoken language explains the difference in performance during separating of phonemes. This meant that standard phonemes that do not exist in spoken language are difficult to separate in comparison to phonemes in spoken discourse. In the current study, the cognate verbs are common in the spoken language concerning their root and inflection. Therefore the morphological knowledge that participant have concerning verbs in the spoken language is enough to inflict verbs in the standard language. Yet, participants lack knowledge when they deal with noncognate verbs and this is reflected by the difficulty in inflecting them. This is particularly correct regarding the second grade students who have just started to be exposed to the language and are still at the first stages of studying morphology. This explains the low number of correct answers given by participants in the second grade. In addition, as students move to a higher grade, their performance improves in dealing with cognate as well as noncognate verbs. The exposure to the standard language and learning the rules of inflections improve the participants' performance, yet this improvement is not enough in reducing the gaps between the noncognate and cognate verbs. In other words, until the sixth grade, the student do not reach a complete method of basic inflections in the standard language, although according to the system of studying of the Arabic language, a direct pedagogy in conducted on inflections in past and present in different structures of the verb.

Conclusion

The findings of the study indicate that the linguistic distance hinders the development of morphological knowledge in MSA throughout elementary grades. Despite the exposure and the systematic learning of standard language, gaps between the SAV and MSA have not been bridged. Moreover, learning morphological rules in the educational system adds knowledge about morphological rules of the standard language but does not reduce the gaps between the morphological knowledge toward cognate verbs and morphological knowledge toward noncognate verbs in the standard language. In addition, the research data reinforce the claim that processes of identification easier than the processes of production. It is worthy indicating that this study examined the impact of linguistic distance in the field of morphology on the development of morphological knowledge in the standard language. The findings obtained throughout the current study raise many questions that should be addressed in order to expand the knowledge about significant characteristics of the Arabic language. Consequently, in future research, it will be interesting to examine the impact of linguistic distance on the development the morphological knowledge in the nominal system. Similarly, it is important to examine the impact of the gap in the linguistic distance within the two forms of the language on the process of reading. Furthermore, the study

examines the difference between the level of identification and production with the focus on the auditory modality. It is interesting to conduct Future study on the difference between identification and production in the visual modality. The current study's findings are important in clarifying the field of linguistic functions that are related to the phenomenon of diglossia that characterizes the Arabic language. Therefore, the study has significant implications on two fields related to the educational framework. The findings conclude that there is a necessity for a great and systematic exposure to the MSA already at kindergarten in order to reduce the gaps in the existing knowledge between the SAV and MSA. A deliberate and systematic exposure facilitates assimilating morphological rules mainly absent from the spoken language among young students. It also enables those acquire standard language to reach quicker and greater control in important morphological rules in reading and writing skills. In addition, there is importance for using the standard language and speak it at the framework of school for early age for the purpose of implementing it among the population of students and assisting them to assimilate the language's rules. A great usage of the standard language may also improve the ability of production in this language. Specialists who deal with constructing teaching method are greatly concerned with these issues. The findings concentrate on the importance to start from an early age a systematic teaching inflection of verbs and raising knowledge regarding the difference in the two forms of language, in order to avoid generalization of morphological rules in the spoken language on the standard, on the one hand, and to improving the ability of inflection in this language on the other. The study also indicate the importance of gradual teaching meaning that it is important to start the process of acquisition and learning at the level of identification, which is regarded as easier than production. Regarding increasing the

students' achievements, in light of the difference in the skills in the standard and spoken language, there is importance to evaluate the linguistic skills in the two forms of the language.

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