



Linguistic Mnemonics affecting Learning L2 Idioms

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Abstract

Finding more effective ways of teaching second language idioms has been a long-standing concern of many teaching practitioners and researchers. This study was an endeavor to explore the effects of three linguistic mnemonic devices (etymological elaboration, keyword method, and translation) on EFL learners' recognition and recall of English idioms. To achieve the purpose of the study, ninety male and female EFL learners at intermediate level of language proficiency who were preparing themselves for IELTS were selected. They were in three groups of thirty members each. Each group was randomly assigned to one of the treatment conditions and was taught idioms using one of the above-mentioned linguistic mnemonic devices. The one-way ANOVA procedure was used to analyze the data. The results showed statistically significant differences between these techniques, with the etymological elaboration method being the most effective of all, on both recognition and recall of idioms. The findings of the study can have implications for textbook designers, curriculum developers, teachers, and learners.

Keywords: Etymological Elaboration, Idiom Recall, Idiom Recognition, Keyword Method, Linguistic Mnemonics, Translation

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Introduction

A growing area of research has been conducted in the field of lexis (Cheng & Matthews, 2018; Schmitt, Jiang, & Grabe, 2011). Lexis is acknowledged as one of the underlying factors of literacy (Pulido & Hambrick, 2008). This knowledge has a facilitative role in fluent real-time language use (Wray, 2002), both in terms of reception (Ellis, Simpson-Vlach, & Maynard, 2008; Matthews & Cheng, 2015) and production (Boers, Eyckmans, Kappel, Stengers, & Demecheleer, 2006). Furthermore, insufficiency of this knowledge may have a detrimental effect on learners' performance (Stengers, Boers, Housen, & Eyckmans, 2011). To sum up, highly-proficient language learners can reap the benefits of having comprehensive knowledge of lexis and phraseological units (Durrant & Schmitt, 2009; Granger & Bestgen, 2014).

Nevertheless, there is more to lexical competence than the knowledge of single words. Larger items like collocations and idioms are included in the language (Cooper, 1999; Erman & Warren, 2000; Read, 2000; Richards & Schmidt, 2010). Idioms learning is deemed to be one of the most challenging issues in ESL/EFL contexts (Conklin & Schmitt, 2008; Hinkel, 2017). The uncompromising nature of idioms stems from the fact that their metaphorical interpretation cannot be readily deciphered from the precise translation of their constituents (Cacciari & Corradini, 2015; Liontas, 2017). For instance, the figurative meaning of "wipe the floor with someone" defies its compositional interpretation. Nevertheless, the contribution of idioms to language fluency is incontrovertible. Therefore, idioms deserve attention and deliberate explicit instruction in language learning (Moreno, 2011). Learners are often oblivious of the idiomatic nature of idiomatic expressions (Martinez & Murphy, 2011), and usually fall back on their native language when dealing with idioms.

Regarding idioms as "dead and frozen metaphors" has a long history and rote-memorization - without associations between forms and meanings - has been considered as the main pathway to mastering idiomatic expressions (Boers, Eyckmans, & Stengers, 2007; Chen & Lai 2013; Vasiljevic, 2015). However, studies in cognitive linguistics have indicated that the idioms meaning is not totally unpredictable to be learnt entirely by way of rote-learning (Kövecses, 2010). Cognitive linguists have suggested more methodological strategies for acquiring idioms (Boers, Demecheleer, & Eyckmans, 2004). Szczepaniak and Lew (2011) assert that most idioms are motivated. Hence, by noticing some discernible links, connecting their compositional and figurative meanings can become conceivable (Boers & Webb, 2015). It is here that mnemonic devices avail themselves as a way of establishing those links.

How different mnemonic devices facilitate L2 idioms learning is of paramount theoretical and practical importance. Nevertheless, there seems to be a dearth of empirical research comparing the effects of various linguistic mnemonic devices (etymology, keyword method, and translation) on idioms learning. This study was an endeavor to partially bridge this gap; it addressed these questions:

1. Which linguistic techniques (etymological elaboration, translation, and the keyword method) are more effective on EFL learners' recognition of English idioms?

2. Which linguistic techniques (etymological elaboration, translation, and the keyword method) are more effective on EFL learners' recall of English idioms?

Literature Review

Idioms

Formulaic sequences are prevalent in written and spoken discourse. MWEs are lexical items encompassing more than one word. Formulaic sequences (FSs) can be broadly defined as multi-word units that are stored in memory as single units (Wood, 2010). According to Siyanova-Chanturia (2015, p. 286), "there are many different types of FSs, including idioms, speech formulae, collocations, multi-word verbs, grammatical structures, and many other categories." FSs can facilitate language processing and efficient communication, particularly fluent speech (Hsu, 2014; Rafieyan, 2018). Formulaic phrases can also assist real-time language production (Boers et al., 2006). Besides, their pervasiveness has drawn language learners' attention to them (Boers, Lindstromberg, & Eyckmans, 2014; Martinez, 2013; Stengers, Deconinck, Boers, & Eyckmans, 2014; Wray, 2012). Idioms have attracted particular attention recently. English is replete with idioms, and native speakers use idioms widely (Brenner, 2013; Zyzik, 2011).

Language learners need to gain proficiency in both linguistic form and metaphorical meaning of idioms. Familiarity with form can be used to address decipherability issues (Martinez & Murphy, 2011), while discernment of figurative interpretation facilitates the production of idiomatic expressions. Despite not making much sense, learners have a propensity to rely on literal interpretation by compiling the meaning of constituting elements, when they come across these expressions in a text (Martinez & Murphy, 2011). To recapitulate, according to Moreno (2011), idioms play a key role in verbal communication and because of their importance in effective communication, proper attention should be devoted to them in teaching syllabuses. Actually, various attempts have been made by researchers and teaching practitioners in search of more effective methods of learning/teaching idioms. One of the ways to facilitate L2 idiom learning is the use of memory strategies, traditionally known as mnemonic devices (Schmitt, 2008).

Mnemonics

The term "mnemonic" is originated from *Mnemosyne*, a Greek word alluding to the prehistoric memory goddess (Pillai, 2017). Shapiro and Waters (2005) suggest that using mnemonic devices has to do with codifying complex information in a way that individuals can recall data almost effortlessly. Mnemonics anchor new information to pre-existing information by deployment of acoustic or pictorial prompts (Kuder, 2017). As a result, they can facilitate retrieval (Scruggs, Mastropieri, Berkeley, & Marshak, 2010). Mnemonics enhance students' learning of new vocabulary in science (Therrien, Taylor, Watt, & Kaldenberg, 2014) and social studies (Swanson et al.,

2014). Mnemonic devices, such as acrostics and acronyms, can facilitate information recall by making new information more meaningful, tangible, and familiar (Bakken & Simpson, 2011). Congos (2011) believes that mnemonics help learners to retrieve and recall more extensive pieces of information.

Scholars have offered different classifications of mnemonic devices. Baddeley (1999) classifies mnemonics into two groups, namely visual images and verbal strategies. Thompson (1987) classifies mnemonic devices into five major groups: verbal mnemonics, spatial mnemonics, linguistic mnemonics, visual mnemonics, and physical responses methods. From among the linguistic mnemonics, this study focused on etymological elaboration, the keyword method, and translation.

Etymology delves into the origins and historical evolution of words. As regards idioms, etymological association has to do with linking the idiomatic or figurative meaning with the compositional application of idioms (Boers et al., 2004). Etymological elaboration conjures up a conceptual picture of a palpable scene which can be consigned to memory in coexistence with the verbal form (Boers et al., 2007). Etymological studies have a long history in the field of learning L2 vocabulary and idioms (Zarei & Rahimi, 2012; Zolfagharkhani & Ghorbani Moghadam, 2011). Boers (2001), as well as Boers et al. (2004) carried out a number of studies on the implementation of etymological explanation and its effect on idioms retention and interpretation. The results substantiated the prominent role of etymological information in learning idioms.

Zhang (2012) sought to determine the impact of etymological elaboration on idioms learning in an online learning platform. The results revealed that although etymology had a negligible effect on receptive knowledge of idioms, it was quite useful on the recollection and retention of idioms. In two other studies, Bagheri and Fazel (2010) and Baleghizadeh and Mohammad Bagheri (2012) reported that etymology can assist learners to retain and comprehend the target idioms more easily.

However, Zarei and Rahimi (2012) concluded that deploying strategies such as direct instruction of words and idioms, elaboration on words roots, and contextual use of them have no differential effect on idioms comprehension. Still, they acknowledge that, in comparison with other techniques, etymological elaboration is more effective in enhancing learners' awareness. Besides, Golaghaei and Kakolian (2015) showed that the combination of etymological explanation and pictorial enrichment was more advantageous than separate individual use of pictorial enrichment and etymology. Haghshenas and Hashemian (2016) reported similar results. Further support for the effectiveness of etymological elaboration on L2 idioms learning comes from Reisi Gahroei and Tabatabaei (2013), Noroozi and Salehi (2013), and Razmjoo, Songhori, and Bahremand (2016).

The other linguistic mnemonic device is the keyword method. The keyword method (KWM) can boost vocabulary learning (Shapiro & Waters, 2005). Keyword is a native lexical item analogous in appearance or sound to the word's foreign language counterpart, and performs a pivotal role as a retrieval cue (Van Hell & Mahn,

1997). In this technique, learning lexical items includes two steps. Initially, by virtue of acoustic resemblance, a foreign word is linked to a keyword. In the second stage, a picture, formed in mind, is used to establish a link between the translated form of the foreign lexical item and the keyword (Rodrigues & Sadoski, 2000).

Zarei and Keysan (2016) investigated the effects of a number of strategies on the knowledge of L2 words. The results showed that the KWM was more beneficial than the other methods on both vocabulary comprehension and production. Zarei and Ramezankhani (2018) compared the impacts of the semantic grouping, storytelling, and the keyword method on learning L2 idioms. They, too, reported that the keyword method was more helpful than the other two techniques in idiom interpretation, retrieval, and production. In case of vocabulary learning, Köksal and Çekiç (2014) employed two types of treatment: a) the combination of the context techniques and rote learning, and b) the combination of the context method and the keyword method. The results indicated that the participants in the groups employing a combination of the context and keyword methods outperformed those of group (a). However, Wei (2015) compared the effect of the word part method and keyword method on the memorization of single words and found that the keyword method had a negligible effect the word part strategy.

The third linguistic mnemonic device is translation. Translation had prominence in the age of Grammar Translation Method (GTM). With the advent of communicative movement in language teaching, there was a downward trend in its popularity (Marquês-Aguado & Solis-Becerra, 2013). Education-wise, translation can be regarded as a useful technique to raise learners' awareness of the existence of nuances between L1 and L2. Still, the culture- and language-specific nature of idioms, along with their figurativeness, has made their translation challenging (Nippold, 2006).

Several studies have already shown that translation can have a favorable effect on vocabulary learning (Pellicer-Sánchez & Schmitt, 2010; Peters & Webb, 2018; Webb & Chang, 2015; Webb, Newton, & Chang, 2013). In addition, several studies have highlighted the importance of L1 knowledge for the processing of figurative expressions in the second language (Carrol, Conklin, & Gyllstad, 2016; Pritchett, Vaid, & Tosun, 2016; Wolter & Gyllstad, 2011, 2013). In a study, Liao (2006) found that students frequently employ translation as a practical course of action to learn English lexical items, idioms, expressions, and grammatical structures. Bagheri and Fazel (2011) explored the strategic role of translation in writing. The findings suggested that Iranian university students considered translation from Persian as a positively effective factor on their writing skill. In the same vein, Karimian and Talebinejad (2013) found that translation made substantial contributions to the students' retrieval and memorization of different items in English. Besides, they used translation to evaluate themselves, and interact with other people in English.

Carrol and Conklin (2014) used a decision-making task, based on the dual-rota framework, in a bilingual environment. They converted a number of Chinese idioms verbatim into English and distorted the ending of these translated phrases. Thus, the prime was comprised of an idiom translated from Chinese, and a target phrase that

finished the idiom was displayed to the Chinese-English bilingual participants. The participants responded more speedily to targets finishing the last word of literally converted Chinese idioms than to English idioms and matched controls. Likewise, in comparison with Chinese idioms and corresponding controls, native English speakers answered targets English idioms in completion tasks speedily. Their conclusion was confirmed by bilingual comprehension frameworks suggestive of indiscriminate conceptualizations that link to both languages (Kroll, Van Hell, Tokowicz, & Green, 2010).

In the same vein, Carrol and Conklin (2017) incorporated translated idioms in a story. The results revealed that Chinese-English bilinguals decipher idiom-final items more swiftly in translated idiomatic expressions than in control conditions. Nonetheless, bilingual students displayed repressive effects for figurative readings of idiomatic expressions in relation to native speakers. This finding indicates that analysis and making sense of a native idiom in a non-native linguistic context can be a challenging issue even for highly sophisticated language learners.

As the above review implies, different aspects of the variables of interest in this study have already been investigated. However, previous studies have paid attention on isolated aspects of these variables. This means that there is scant research on the effects of different linguistic mnemonic devices on L2 idioms recognition and recall. This study is aimed to fill part of this gap in the literature.

Method

Participants

Ninety Iranian male and female learners studying at an IELTS institute in Tehran took part in this study. They were in three groups of thirty members each. According to their educational profiles at the institute, students were intermediate-level students. To homogenize the students, the Oxford Placement Test was administered at the outset of the study.

Instruments

The OPT was administered at the start of the study to fulfill the requirement of homogeneity of participants. 50 multiple-choice questions were used in this pre-test to evaluate the participants' competence in vocabulary and grammar. The students also had to respond to 10 comprehension questions about a reading comprehension. The final part of this test was a writing task to measure the participants' written performance. The learners had 75 minutes to answer the questions. The reliability of the test was established to be .81, based on KR-21 formula.

The second pretest (the idioms test) was administered to reduce the effect of the participants' familiarity with the target idioms. The idioms test consisted of 140 items, containing a bold-faced idiom each. The participants were required to write the Persian translation of the idioms. Idioms with which more than 10 percent of the

participants were familiar were removed from subsequent post-tests. The participants were given 85 minutes to complete this part, and the KR reliability was .79.

The teaching materials including 140 idiomatic expressions were selected and taught to the learners after the second pre-test. Idioms were selected from a variety of sources including: *The American Heritage Dictionary of Idioms* (Ammer, 1997), *Dictionary of Idioms and Their Origin* (Flavell & Flavell, 1992), *Idioms and Phrasal Verbs: Intermediate* (Gairns & Redman, 2011), *A Collection of Original Stories and Lessons for Teaching Idiomatic Expressions* (Glister, 1986), *Idioms in Use* (O'Dell & McCarthy, 2010), and *Red Herrings and White Elephants* (Jack, 2005).

Two post-tests were also used. To explore the effects of linguistic mnemonic devices on the participants' recognition of idioms, a 30-item test in multiple-choice format was used. This test consisted of two sections. In the first, the participants were asked to choose the meaning of the boldfaced idioms. In the next section, the students were required to select the correct alternative to complete the sentences. The KR-21 reliability of this test was 0.80. Since the items in this test were chosen from the instructed idioms, the content validity of the test could be taken for granted. Nevertheless, the test validity was confirmed by a group of experts.

To compare the effects of each subcategory of linguistic mnemonic devices on idioms recall, a 30-item test in fill-in-the-blanks format was used. In each item, there was a sentence that included a blank to be filled with one of the target items. Much like the recognition test, a panel of experts confirmed the content validity of this test prior to its administration, and its reliability was estimated to be 0.78.

Procedure

The following steps were taken to address the research questions:

Initially, a sample of 120 Iranian students, preparing for IELTS (Academic and General Modules), at an IELTS institute in Tehran were selected. Availability was the criterion for their selection, and they were gathered based on convenience sampling. The students were at intermediate level of language proficiency. At the outset of the study, Oxford Placement Test was used to homogenize the students. Those participants whose mark fell more than one standard deviation below or above the mean were removed from subsequent computations. After homogenization and participant attrition, there were 90 participants left, 30 for each treatment condition.

After using the idioms pre-test to ascertain that the students had no knowledge of the selected idioms, the treatments were given. The experiment lasted for eight sessions (two sessions a week), in which the students were instructed the pre-selected idioms in accordance with the mnemonic techniques described below. Each session lasted between 50 to 60 minutes.

The first group received instruction through etymological elaboration. In this group, the instructor/researcher wrote the target idioms on the board one by one and asked the students to guess their meanings. Then, she handed out hard copies of the

origins of the target idioms. Finally, she talked about the meaning and etymology of each idiom and provided examples for them in order to contextualize the target idioms. The students were asked to make sentences with each idiom to make sure that they had grasped its meaning. They were also encouraged to correct their classmates' mistakes if any. The instructor/researcher provided the final feedback after peer-correction. An example of this technique is as follows:

Example: *In the Limelight*

When calcium oxide or lime is heated, it gives off a glaring white light. A British army engineer used this discovery to help his mapmaking in dismal weather conditions. The visible limelight was used as a marker for measuring distances accurately. Scientists took up this invention, adapting it to produce powerful lights that were then used in film-projection, lighthouses and later in the theatre, rather like spotlights, to draw attention to the principal artist on the stage. Someone standing in the limelight was very much the focus of public attention. So powerful was the light that there were cases of people going blind through too great exposure to it. (Source: *Dictionary of Idioms and Their Origins*)

The second group received instruction through the keyword method. The keywords were organized by considering acoustic correspondence to one of the parts of idiomatic expressions. First, the instructor briefly explained the key concepts in this method, including selecting one word in the idiom to be associated with an L1 word based on acoustic similarity. Then, the instructor presented the target idioms through the keyword method and explained their meanings in the target language.

Example:

Idioms	Keywords	Meanings
Few and far between	مار- اینجا به ندرت مار پیدا می‌شود.	Scarce; infrequent

The third group received instruction through L1 translation. In this group, the instructor put the idioms on the board and asked the students to guess their meanings based on the constituents. She provided their corresponding L1 translations afterwards. The students were then encouraged to make sentences using the instructed idioms in order to activate what they had learned in class. They received feedback after reading their sentences.

Example: To make a mountain out of a molehill: از کاه کوه ساختن

After completion of the experimental period, the two posttests with the aforementioned features were administered to all the three groups. The collected data were then summarized and prepared for statistical analysis.

Data analysis

After administering the post-tests, One-Way ANOVA techniques were used to compare the effects of etymological elaboration, keyword method and translation on students' recognition and recall of idioms. Before using ANOVA, its assumptions were checked.

Results and Discussion

Results

Research Question One

The first question of the study was concerned with the effects of linguistic mnemonic devices on idioms recognition. To address this question, a One-Way ANOVA was deployed; descriptive statistics are shown in the following table.

Table 1. Descriptive Statistics for the ANOVA on Idiom Recognition

	N	Mean	Std. Deviation	95% Confidence Interval	
				Lower Bound	Upper Bound
1 Etymological Elaboration	30	23.80	1.769	23.14	24.46
2 Keyword Method	30	23.07	1.552	22.49	23.65
3 Translation	30	19.47	2.102	18.93	20.00
Total	90	22.11	2.470	21.59	22.63

According to Table 1, the highest mean on English idiom recognition test belongs to the etymological elaboration group (23.80), followed by the keyword method and translation. To determine statistically significant differences among the groups, their posttest scores were compared using ANOVA. Before running ANOVA, its assumptions were checked. The result of Levene's test of equality of Variances showed that this assumption was not violated (Levene Statistic = .589; Sig. = .557 > .05). No violation of the other assumptions (independence of observations, interval data, normal distribution, etc.) was observed. The result of the ANOVA is given in Table 2.

Table 2. ANOVA Result on Idiom Recognition

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	322.75	2	161.378	63.779	.000
Within Groups	220.133	87	2.530		
Total	542.899	89		$\omega^2 = 0.594$	

Based on Table 2, the differences between mnemonic groups are statistically significant ($F_{(2, 87)} = 63.779, p < .0005$). Thus, different linguistic mnemonic techniques (etymological elaboration, keyword, and translation) have differential effects on EFL learners' English idioms recognition. The effect size ($\omega^2 = .594$) shows that 59 percent of the variation among the groups can be characterized by the independent variable. According to Cohen's (1988) criteria, this is a considerable effect size. Table 3 displays the result of the Post Hoc Tukey HSD test that was employed to identify significant differences.

Table 3. Multiple Comparisons of Means for Idiom Recognition

(I) Group	(J) Group	Mean Difference (I-J)	Sig.	95% Confidence Interval	
				Lower Bound	Upper Bound
1 Etymological elaboration	2 Keyword	.733	.180	-.25	1.71
	3 Translation	4.333*	.000	3.35	5.31
2 Keyword	3 Translation	3.600*	.000	2.62	4.58

According to Table 3, the etymological elaboration group is statistically better than the translation group. In addition, the participants in the keyword group have outperformed their counterparts in the translation group. However, there is no statistically significant difference between etymological elaboration and the keyword method groups.

Research Question Two

The second question aimed to explore the effects of translation, the keyword method, and etymology on idioms recall. For this purpose, after checking the assumptions (Levene Statistic = .163; Sig. = .850 > .05), another One-Way ANOVA was deployed. Descriptive statistics are given in Table 4.

Table 4. Descriptive Statistics for the ANOVA on Idiom Recall

	N	Mean	Std. Deviation	95% Confidence Interval	
				Lower Bound	Upper Bound
1 Etymological Elaboration	30	23.20	1.690	22.57	23.83
2 Keyword	30	22.20	1.562	21.62	22.78
3 Translation	30	19.30	1.690	18.74	19.86
Total	90	21.57	2.284	21.09	22.04

The ANOVA was used to find any possible significant differences. The results are included in Table 5.

Table 5. ANOVA Result on Idiom Recall

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	246.200	2	123.100	49.150	.000
Within Groups	246.200	87	2.505		
Total	464.100	89		$\omega^2 = 0.530$	

As displayed in Table 5, group differences are statistically significant ($F_{(2, 87)} = 49.150$, $p < .0005$). Omega squared ($\omega^2 = .530$) indicates that 53 percent of the variation among these groups can be ascribed to treatment effects. Tukey HSD was then used for Post-hoc comparison, the result of which is summarized in Table 6.

Table 6. Multiple Comparisons of Means for Idiom Recall

(I) Group	(J) Group	Mean Difference (I-J)	Sig.	95% Confidence Interval	
				Lower Bound	Upper Bound
1 Etymological Elaboration	2 keyword	1.000*	.043	-1.97	-.03
	3 translation	3.900*	.000	-4.87	-2.93
2 Keyword	3 translation	2.900*	.000	1.93	3.87

Based on Table 6, the etymological elaboration group is statistically better than both the keyword and the translation groups. Moreover, the participants in the keyword group have outperformed the learners in the translation group.

Discussion

The findings of this study showed significant differences among the effects of etymological elaboration, the keyword method, and translation techniques on both recognition and recall of English idioms. As for idiom recognition, both etymological elaboration and the keyword method were more effective than translation, while there was no significant difference between the etymological elaboration and keyword groups. Concerning idioms recall, etymology was more effective than both the keyword method and translation. The superiority of etymology can be explained on different grounds. Building upon the tenets of cognitive linguistic semantics (Boers, 2013; Croft & Cruse, 2004; Kövecses, 2002; Taylor, 2002), the meaning of an idiom is by no means entirely randomly stipulated, and as Boers et al. (2007) point out, is “motivated by their original, literal usage” (p. 43). Accordingly decontextualized, blind memorization is unable to tap into deep semantic processing of target idioms. In order to learn idioms correctly, learners should establish logical links between the linguistic forms and mental images of these linguistic elements (Boers &

Webb, 2015). Etymological information equips learners with the ability to come up with appropriate mental images of idioms. Dobrovolskij and Piirainen (2005) specify “additional naming” and the “image component” as major criteria for figurativity. Additional naming is related to the fact that idioms serve as an alternative way of denoting a given concept. By way of illustration, *a piece of cake* can be used to express the concept of “easy”. What is important in etymology is the second criterion namely the image component which can be described as the cognitive “bridge” appearing between the literal form of an idiom and its figurative meaning (Dobrovolskij & Piirainen, 2005). Imageability of meaning can be regarded as a prominent semantic factor in intentional idioms learning process (Steinel, Hulstijn, & Steinel, 2007). Etymological background can boost the creation of mental images, thereby making idioms more imageable. Etymology provides learners with information about the setting in which idioms are used (for instance, *throw in the towel* comes from boxing, where formerly a fighter conceded defeat by throwing the sponge or towel into the ring) (Boers, 2013). In other words, etymological background can unravel the pragmatic nature of these structures (Sánchez-López, 2015; Timofeeva-Timofeev, 2012).

From the empirical point of view, these findings are consistent with a number of studies that have confirmed the highly beneficial results of deploying etymological elaboration and the keyword method. Regarding recognition, the findings are in conformity with those of Boers (2001) and Boers et al. (2007). Boers (2001) pointed out that learners can enhance the likelihood of remembering figurative idioms if they become aware of their original literal usage. In addition, Boers et al. (2007) maintained that etymological elaboration can enable learners to forge meaningful connections between abstract and conceptual images of solid and palpable scenes and their verbal forms. As a result, etymology can have a facilitative role in storing information in memory. As to idioms recall, the present study showed that etymological elaboration was influential in assisting learners to recall English idioms. This finding is in line with that of Zhang (2012), who concluded that etymological information could enhance the productive knowledge of idioms. This finding is also compatible with the findings of Razmjoo, Songhori, and Bahreman (2016), Bagheri and Fazel (2010), as well as Noroozi and Salehi (2013). They compared etymological elaboration with different techniques and found it more effective than those techniques on idioms recall. However, the findings of this study do not lend support to Szczepaniak and Lew’s (2011) argument about the deleterious effect of etymological explanations on the learning of idioms.

On the theoretical ground, the better performance of the etymological elaboration group is in line with Paivio’s (1990) Dual Coding Theory. Etymology is thought to summon mental pictures. These images can, in turn, supplement verbal explanation. Learners gain benefit from verbal (or in some cases textual) data and build up pictorial imagery when they are provided with etymological explanation. In other words, etymological information enables deeper processing through form and meaning associations.

The discrepancies between the findings of this study and those of Szczepaniak and Lew (2011) can be attributed to the different learning styles at various age levels. The participants of the current study were adult EFL learners (Mean age: 24.1). Nikolov (2009) posits that young language learners generally benefit from memory-based learning strategies, while adult language learners primarily rely on rule-based learning. In other words, adults can benefit from rational explanation more than pictorial support. Thus, the higher mean score of the etymological group compared to the keyword method on the recognition and recall of English idioms can be related to the afore-mentioned possibility.

The findings of this study also indicated that the keyword method is more effective than translation on L2 idioms recognition and recall. These results are, somehow, in line with Zarei and Ramezankhani's (2018) findings, wherein the keyword method was more effective than the other instructional interventions (storytelling and semantic organization) on L2 idiom learning. The findings are also in agreement with that of Wyra, Lawson, and Hungi (2007), who showed the prominent role of the keyword method in the learning of vocabulary. The superiority of the keyword method over translation is also supported by the results of Köksal and Çekiç's (2014) study, although they focused on words rather than idioms. However, the findings of this study are in conflict with those of Wei (2015). In that study, the keyword method was less promising than random memorization.

In the present study, translation turned out to be the least successful way of teaching idioms. Despite the beneficial role of translation in many contexts, deficiency of discernible links between the compositional and metaphorical meanings of idioms can justify the unpromising results of the translation technique. In other words, translation conjures up the traditional approach in which decontextualized blind memorization, with no association, is considered to be the main pathway to the learning of L2 idioms. In addition, semantic complexity can be associated with many factors including lack of cultural awareness. The fact is that language and culture are inextricably interwoven, and idioms are culture-specific. Therefore, finding counterparts for idioms in another language is hard, if not impossible. This explains why translation was the least effective technique on both recognition and recall of idioms. The finding that translation turned out to be less effective than the other techniques does not come as a big surprise. Mnemonic devices, by definition, are ways of activating the mental engagement of learners. In translation, learners are usually provided with the equivalents of the target idioms in their mother tongue. As a result, there is little, if any, mental engagement on the part of the learners.

Conclusion and Implications

The findings of this study suggest the success of etymology on L2 idioms learning. Since the essence of etymological elaboration is helping learners shape mental images of idioms, it can be concluded that putting language learners in the center of the learning process is of paramount significance, especially in EFL contexts. In other

words, it may be concluded that, instead of the almost outdated practice of providing learners with the direct equivalents of the target idioms in their native language (which is common practice in translation), it is important to engage learners mentally, helping them develop their own mental image. The finding that both etymological elaboration and the keyword method were more effective than translation on both idioms recognition and recall further consolidate the above conclusion and lend further support to the cognitive psychologists' motto that instead of giving people fish, we need to teach them how to catch fish. In other words, instead of forcing learners to blindly memorize target idioms, we need to encourage learners to think about and process idioms more deeply. It might also be concluded that these findings somehow support the basic tenets of the dual coding theory. Both etymological elaboration and the keyword method engage learners in some sort of mental images. Translation, on the other hand, provides merely linguistic support. It may be concluded, therefore, that when learners are engaged both linguistically and non-linguistically, their idiom learning will be more viable than when they are only linguistically engaged.

On the basis of these findings, one can also draw the conclusion that the inclusion of etymological elaboration, the keyword method, and translation under the general category of linguistic mnemonics may be problematic. As Boers et al. (2007) acknowledge, etymology involves creating a mental image of a scene to be consigned to memory along with the verbal form. In the keyword method, too, a mental image is created to connect the keyword with the translation of the target word (Rodrigues & Sadoski, 2000). In translation, however, no images are involved. Therefore, it may be concluded that the support that is provided in etymological elaboration and the keyword method is not purely linguistic, as it is in translation. This might imply that Thompson's (1987) categorization of mnemonics needs a second thought.

At the same time, given the diversity of learning styles and individual differences among learners, it may be concluded that the way learners benefit from mnemonic devices might depend on their learning style. Since both etymological elaboration and the keyword method require mental images, learners with visual learning style may benefit more from such devices. We did not check the learning style of the participants for manageability reasons. If such a relationship is reported in future studies, it would mean that the choice of mnemonic devices should be based, at least partially, on the learning style of the learners.

Needless to say, the findings of the present study should be interpreted with caution as it involved a number of limitations. The scope of the study was limited to EFL participants, the duration of the treatment was limited, and the participants were limited to intermediate level learners. Bearing these caveats in mind, to not taken be should care overgeneralize the results of the study.

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