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THE EFFECT OF COGNITIVE FUNCTION OF METAPHORS
ON TEACHING ECONOMIC TERMS TO IRANIAN
ECONOMIC MAJORS IN ESP COURSES

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Abstract

The purpose of this study was to investigate the effect of two strategies of explicit teaching of economic terms on learners' vocabulary learning and retention. In the first explicit strategy, known as 'etymological elaboration', the focus was on presenting conceptual metaphors through 'identify-the-source' tasks, that is, providing the learners with the source domains underlying the metaphors, i.e., the literal meaning of the concepts. In the second explicit method, using 'identify-the-meaning' tasks, the metaphors were instructed by means of the context-based definitions. To be sure if there is any effect for the explicit teaching of metaphors or not, a third group was selected to function as the control group. In this group, the economic texts were taught in the traditional way, that is, by translating the texts into the learners' first language, i.e., Persian. The participants were three intact groups of university students majoring in Economics at Isfahan University, Isfahan, Iran. The results of the study demonstrated that the learners in Experimental Group 1 outperformed those in Experimental Group 2 and Control Group in vocabulary and retention tests. The study concluded that making students acquainted with the literal meaning of the conceptual metaphors, i.e., their underlying source domains will help them in learning and retention of technical economic terms.

Keywords: conceptual metaphors, contextual definitions, etymological elaboration

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1. Introduction

The role of metaphors in language and human thinking has been viewed differently in the literature. By and large, the metaphor theories can be divided into two main categories: the classical theories and the contemporary theories (Yu, 1998). All classical theories have one feature in common, that is, "they view metaphor as a linguistic phenomenon, and assume a fundamental distinction between literal and figurative senses" (Yu, 1998, p. 10). However, the contemporary theory of metaphor (first introduced by Lakoff and Johnson, 1980), that was rooted in Cognitive Semantics and is known as Conceptual Metaphor Theory, claims that "metaphor is primarily a matter of thought and action and only derivatively a matter of language" (Lakoff and Johnson, 1980, p. 153). It is believed that many figurative expressions can be traced back to a relatively small set of concrete 'source domains' whose structure is mapped onto our conception of abstract 'target domains' via 'conceptual metaphors' (Boers, Demecheleer & Eyckmans, 2004). For example, the concept of *argument* is structured in terms of *war* forming the conceptual metaphor AN ARGUMENT IS WAR where 'war' is the source domain through which the target domain of 'argument' is illustrated. This conceptual metaphor is linguistically realized in such sentences as:

- 1) *Your claims are indefensible.*
- 2) *He attacked every weak point in my argument.*
- 3) His criticisms were *right on target*. (Kovecses, 2010; p. 6)

In other words, the cognitive function of metaphor, in this theory, is to understand a difficult or abstract concept, called the *target domain*, by means of the structure of a more concrete concept, referred to as the *source domain* (Lakoff & Johnson, 1980).

Following the advent of the Conceptual Metaphor Theory in Cognitive Semantics, some researchers (e.g. Henderson, 1982; McCloskey, 1983) raised a discussion about metaphors in Economics. Henderson (1982) held that despite the fact that metaphors are widely and deliberately used in economic texts, *the literature lacks* adequate research in support of metaphorical analysis. McCloskey (1983), moreover, raised an issue of metaphor investigation within the frame of an economic criticism with the aim of finding out how to convince the reader through argument.

As an example of a conceptual metaphor in Economics, it is worth considering what Boers and Demecheleer (1997) refer to as 'ECONOMICS IS A PERSON' metaphor linguistically realized in the following metaphorical expressions: "Companies are *in good health*" or "The firm is *suffering from a chronic deficit*"(p. 123).

The significance of this study is in the implications of the Conceptual Metaphor Theory for teaching or learning vocabulary, in general, and metaphorical economic terms, in particular. In this regard, the two concepts related to this are Metaphoric Competence (Low, 1988) and Conceptual Fluency (Danesi, 1993). Low (1988) describes metaphoric competence as the ability to understand and use metaphors in natural way. Similarly, Littlemore and Low (2006) argue that metaphoric competence play an important role in all areas of communicative competence including grammatical, textual, illocutionary, sociolinguistic, and strategic competences. They maintain that awareness of metaphor is highly relevant to and beneficial for second language learning, teaching, and testing.

Further, Danesi (1995) maintains that poor performance of second language learners in the acquisition of metaphorical expressions is mainly due to a lack of conceptual fluency. He states that "to be conceptually fluent in a language is to know, in large part, how that language 'reflects' or encodes concepts on the basis of metaphorical reasoning" (p. 5). Danesi (2000) redefines conceptual fluency as "the ability to interrelate the underlying structure of concepts to the surface grammar and vocabulary that reflects them" (p. 42).

The drive to take advantage of the pedagogical potential of metaphor in teaching the target language is evident from the studies done so far (e.g. Lewis, 1993; McCarthy, 1990,1994; Nattinger, 1988; Dudley Evans & St. John, 1998; Li, 2009; Yasuda, 2010).The explicit attention to conceptual metaphors in English for Specific Purposes (ESP) has attracted a large amount of research interest, particularly the language of economics (Boers, 2000a, 2000b; Charteris-Black, 2000; Charteris-Black & Ennis, 2001; Charteris-Black & Musolff, 2003; Herrera & White, 2000; Wang, Runtsova, & Chen, 2013; White, 2003). Other fields include engineering (Roldán-Riejos & Mansilla, 2013), medicine (Salager-Meyer, 1990), and architecture

(Caballero, 2003). These studies also offer valuable pedagogical recommendations regarding the use of metaphor to teach ESP courses (e.g. Caballero, 2003; Charteris-Black, 2000; Cortés de los Rios, 2007; Lindstromberg, 1991; Pablos, 2009; Salager-Meyer, 1990; Wang et al., 2013). However, as will be seen in the literature review below, despite the prevalence of conceptual metaphors in specific fields such as language for economics that is of concern in this study, and the abundance of theoretical studies in this regard, the practical applications of the knowledge of metaphors for language teaching have not been fully explored (Hoang, 2014). For instance, an important study by Sznajder (2010) indicates that there is only a slight overlap between metaphors used in a business English textbook and those found in a professional corpus of English business (two or three items depending on the source domain). Similar findings make us realize that we, as language teachers must be more concerned about bridging the gap between teaching and research. In order to address the gap, this study paid special attention to the application of the findings of the previous theoretical research and brought them into a real classroom setting through exploring the effects of two strategies of explicit teaching of metaphors on learning and retention of metaphorical economic terms.

2. Literature Review

Learning a second language largely means learning its vocabulary (Gass, 1999). This is because vocabulary skills make a significant contribution to almost all aspects of second language proficiency (Dakun, 2000). Accordingly, research on vocabulary acquisition is likely to yield insightful implications for effective second language learning and instruction. One important area of research related to vocabulary acquisition, is whether it is helpful to teach vocabulary in an explicit way or not. Ellis (1994) argues that based on an explicit vocabulary learning hypothesis, "there is some benefit to vocabulary acquisition from the learner noticing novel vocabulary, selectively attending to it, and using a variety of strategies to try to infer its meaning from the context" (pp. 265-266). This is compatible with Schmidt's Noticing Hypothesis (1990) who acknowledges that without noticing, it is impossible for the conversion of input to intake, which he defines as "that part of the input

that the learners notices"(Schmidt, 1990; p. 139). He also argues that no matter a learner attends deliberately to a linguistic form in the input or it is noticed purely unintentionally, once it is noticed, it becomes intake. And he suggests that what is noticed can be any aspect of language: lexicon, grammatical form, pragmatics, etc. (Schmidt, 1990).

The question that arises here is whether an explicit approach to teaching metaphor is beneficial for foreign language learners or not. Metaphor has been shown to play an important role in vocabulary acquisition in terms of extending lexical relations (Sweetser, 1990; Lewis, 1993; MacLennan, 1994; Taylor, 2003; Mahpeykar & Tyler, 2014). In addition to helping language learners to learn vocabulary, enhanced metaphoric awareness via activities that help participants to establish the associations between the metaphorical expression and its more concrete senses can lead to higher retention rate of vocabulary, as well. (Boers, 2000a, 2001; Guo, 2007).

Studies in Cognitive Semantics (e.g. Kövecses, 1990; Lakoff, 1987), and particularly its offspring, Conceptual Metaphor Theory, have revealed that many figurative expressions (including metaphors) are in fact 'motivated' i.e., the relations between form, meaning and use are not arbitrary. Instead, language can be explained with links (or "motivations", in cognitive linguistics term) to bodily or conceptual experiences (Gibbs, 1993, 1994). Therefore, if learners are assisted to become aware of the motivated nature of figurative expressions, they are more likely to learn it in a cognitively, affectively and pragmatically effective way (Boers & Lindstromberg, 2006, 2008). This is because learners are encouraged to analyze the relationship between form and meaning of input, which results in deep processing and an increased learning gain (Boers, 2013).

There are controversies whether to focus on metaphorical terms in English for Specific Purposes (ESP). Dudley Evans and St. John (1998) are among scholars who refer to the pervasiveness of metaphors and their role in vocabulary teaching. They introduce the concept of 'metaphorical sets' as the sets of expressions which are all based on the same conceptual metaphor. They claim that these sets help students simplify the vocabulary that would otherwise be too complicated to understand. Also, Charteris-Black (2000) sees metaphor as an essential feature of technical discourse that plays an

important role in making it easier to understand. Sznajder (2010), however, considers teaching metaphorically-based technical and semi-technical in the field of English for Specific Purposes (ESP) as potentially problematic. One reason seems to be the fact that the interpretation of these words is influenced by the user's background knowledge: a non-expert would consider them as figurative, while for an expert they would most likely be basic or literal (Cameron, 2003; Littlemore & Low, 2006).

Accordingly, the question emerging here is whether there are any advantages for raising ESP students' awareness of conceptual metaphors through explicit teaching of conceptual metaphors. Bores (2000b) believes that by drawing ESP students' attention to the origin of the unfamiliar figurative expressions, i.e., the source domains underlying conceptual metaphors, we can help the learners enhance their metaphoric awareness. Some experts (e.g. Herrera & White, 2000; White, 2003) maintain that a cognitive linguistic approach to teaching metaphorical concepts also may further enhance students' memorization, recall and test performance. Further, Caballero (2003) sees the instructional content of ESP as particularly suitable for the explicit teaching of metaphors due to the fact that it involves intensive language-mediated immersion in the students' discipline. Kalyuga and Kalyuga (2008) suggest that raising metaphor awareness by presenting vocabulary in metaphorical chunks in conjunction with activating learners' prior knowledge can reduce a potential cognitive overload.

Within the different areas related to ESP, conceptual metaphors have received a lot of attention in English for Economics since Henderson (1982) and McCloskey (1986) opened the discussion of metaphor in Economics. This was followed by recognition of the theoretical position of conceptual metaphors in learning, as well as the retention of, specialized vocabulary in economic texts by a number of studies (e.g. Bores, 2000a; Charteris-Black, 2000; Herrera & White, 2000; Herteg & Popescu, 2013, among others).

Various efforts have been made to assist language learners to develop their vocabulary knowledge. Boers, et al. (2004), for example, proposed a strategy called 'etymological elaboration'. In this strategy, the metaphorical basis of the words are clarified by "reactivating the literal sense of the expression, and by tracing it back to its original use or context" (Boers et al.

2004; p. 58). Etymological elaboration is based on two theories of memory and learning, that is, 'dual coding theory' (e.g. Clark & Paivio, 1991, Paivio, 1986) and 'levels of processing theory' (e.g. Cermak & Craik, 1979; Craik & Lockhart, 1972). According to these theories, the activation of the literal sense of a figurative expression create a mental image of a concrete concept in learner's mind and this, in turn, helps the information to be encoded in a dual fashion, and as a result, makes an "extra pathway for recall"(Bogaards & Laufer, 2004, p. 58). In addition, doing 'identify-the-source' tasks involves a certain degree of cognitive effort. This identification seems to occur at a 'deeper' level of processing compared to 'shallow' rote learning. Such a deep-level processing is believed to enhance retention (Boers et al., 2004).

Another theory that seems to support 'etymological elaboration' is the Involvement Load Hypothesis based on which tasks with a higher involvement load will be more effective than those with a lower involvement load in learning words (Hulstijn & Laufer, 2001).

The purpose of this study is to replicate part of Boers' (2004) work and see if there is any significant effect for the etymological elaboration strategy on learners' technical vocabulary acquisition and retention compared with the application of other strategies such as 'identify-the-meaning' technique and the traditional teaching of these specialized terms. In other words, the present study aims to answer the following research questions:

1. Is there any significant difference among Iranian EFL learners in final *vocabulary learning* test results due to the instruction method, that is, etymological elaboration, contextual definitions, and translation?
2. Is there any significant *vocabulary retention* difference among Iranian EFL learners in final test results due to the instruction method, that is, etymological elaboration, contextual definitions, and translation?

3. Method

3.1 Participants

The participants of this study were three intact parallel groups of 56 sophomores of Economics at the University of Isfahan, Isfahan, Iran. They were selected from among seven groups of students who had registered for the English for Students of Economics as a required course for their major.

All the seven groups had passed their General English Course the previous semester and three groups nearly homogenous in terms of the group average score on the general English test were selected for the present study. The range of scores in these groups were between 11 and 20, and for the average score the range was 13.71 to 16.83. All the participants involved in this study were native speakers of Persian aged 19-21. They were randomly selected as Experimental Group 1 (n = 17), Experimental Group 2(n = 20), and Control Group (n = 19). The descriptive statistics for mean score are displayed in Table 1 below. Table 2 illustrates the results of a one-way ANOVA for the mean score on general English test. As can be seen from Table 2, a one-way ANOVA analysis showed no statistically significant difference between the three groups in terms of proficiency: $F(2,53) = 1.062, p = .353 > .05$.

Table 1. Descriptive statistics for groups' mean score on general English test

	N	Mean	Std. Deviation
Etymological Elaboration	17	14.9706	1.85169
Contextual Definition	20	15.8375	2.74254
Translation	19	16.1447	2.69299
Total	56	15.6786	2.49167

Table 2. ANOVA for general English test mean score

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	13.155	2	6.578	1.062	.353
Within Groups	328.309	53	6.195		
Total	341.464	55			

3.2 Materials

Pre-test

To select the appropriate words for this study, a checklist of 100 words was prepared (Appendix 2). The words were selected from The Economist and Financial Times news articles (2014-2015). In order to ensure that the selected words were unknown to the participants, the checklist was handed to the learners in the three groups and they were asked to select one of the options on the following scale (adapted from Paribakht & Wesche, 1997): 1) I have

never seen/heard the word, 2) I have seen/heard the word before but don't know what it means, 3) I know what the word literally means, (4) I know the meaning of the word in an economic context. The familiar words were excluded. Hence, a list was developed including 72 new words about which the learners did not know either in their literal or contextual sense (Appendix 2).

Teaching materials

The materials used in this study included two handouts containing 10 economic texts followed by different exercises based on the group they were delivered to. The texts were economic news articles selected from *The Economist* and *Financial Times* (2014-2015). The metaphors in the handout totaled about 72 economical metaphorical terms. One sample is presented in Appendix 1, from the *Economist*, May 31st 2014.

-test

For the post-test a vocabulary test comprising 25 fill-in-the-blank items was given to all the groups (Appendix 2). The items were randomly selected from among the economic terms the learners had worked on during the teaching process and the sentences in each item were selected from British National Corpus (BNC). In order to make sure of the reliability of the test, it was piloted to a similar group of language learners of economics. A reliability index of .81 was gained using Cronbach's alpha. The validity of the test was confirmed by two experts from the University of Isfahan. The same test was administered after two weeks to measure the effect of teaching strategies on vocabulary retention.

3.4 Procedure

The teaching phase consisted of five sessions each taking 45 minutes. In each session two economic texts selected from news articles published in the *Economist* and *Financial Times* (2014-2015) were worked on. For Experimental Group 1, a glossary accompanied the texts that defined the words through their source domains, i.e., their literal meaning. For 20 subjects in Experimental Group 2, a glossary was provided along each text which gave explanations of the expressions in the context of economics. And for the

Control Group, the texts were translated into the students' first language, that is, Persian (Appendix 1)

For Etymological Elaboration Group (EE), etymological elaboration strategy, that is, '*identify-the-source*' strategy proposed by Boers et al. (2004) was utilized. In the first session, the concept of conceptual metaphor was introduced and the *source* and *target* domains were described through different examples. It was explained that the conceptual metaphors would be taught based on the source domains they are derived from such as ECONOMY-AS-HUMAN BEINGS, ECONOMY-AS-MACHINES, ECONOMY-AS- ANIMALS, etc. For instance, the metaphor '*infant*' in the expression 'the infant company' was defined as 'a very young child' and the students had to make an extension from the literal meaning to the figurative one and interpret it as 'the very new company'. The texts were accompanied by awareness-raising activities with a focus on helping the students find the source domains for the metaphors (Appendix 1)

For Contextual Definition (CD), the explicit '*identify-the-meaning*' strategy was used. The concept of metaphor was introduced but no reference was made to the idea of the *source* and *target* domains. The same economic terms were taught in this group but here based on the meaning of the terms in the given context and not based on the literal meaning. For instance, the term '*infant*' in the expression 'the infant company' was defined as 'the very new company' from the beginning. The glossary for this group was based on the definitions of the words as they were used in an economic context. The texts were followed by exercises in which the students were required to do fill-in-the-blanks or answer multiple-choice questions based on the meaning of the words in context (Appendix 1).

For the Translation Group (TR), the same texts and sentences were taught in the traditional way as it is usually taught in ESP classrooms in Iran, that is, through word-by-word or sentence-by-sentence translation into the learners' L1, i.e., Persian. The texts were followed by the same exercises as those used in ordinary ESP classes in Iran, similar to translation, fill-in-the-blanks, and multiple-choice vocabulary items.

At the sixth session, a vocabulary test of twenty-five items was administered for all three groups. In order to explore the effect of teaching

metaphors on vocabulary retention, the same test was administered after two weeks. The results of the tests were analyzed using the statistical SPSS package the results of which will be presented in the following section.

4. Results and Discussion

The present research was set up to explore the potential effects of the explicit teaching of economy-related conceptual metaphors to the students of economics. It aimed to investigate the difference between three ways of presenting the metaphor-based economic terms that is, presenting them through etymological elaboration (EE), the context-based definitions (CD), and the traditional way of teaching ESP in Iran, i.e., translation into Persian (TR) in terms of the effect of the method on learners' vocabulary acquisition and retention. In order to test the first question concerning the effect of method on the groups' performance on the vocabulary test, a one-way ANOVA was performed using SPSS. Table 3 illustrates the results of this test.

Table 3. Results for the one-way ANOVA for vocabulary

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	160.607	2	80.303	12.232	.000
Within Groups	347.947	53	6.565		
Total	508.554	55			

Analysis of variance showed a statistically significant difference at the $p < .05$ level in vocabulary scores for the three groups: $F(2,53) = 12.23$, $p = .000$. In order to know where the difference is, a post-hoc comparison was done through a Scheffe test the results of which are displayed in Table 4.

Table 4. The results of the Scheffe test for vocabulary

(I) Method	(J) Method	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
EE	CD	3.22647*	.84524	.002	1.0977	5.3553
	TR	4.01858*	.85540	.000	1.8642	6.1730
CD	EE	-3.22647*	.84524	.002	-5.3553	-1.0977
	TR	.79211	.82084	.630	-1.2752	2.8595
TR	EE	-4.01858*	.85540	.000	-6.1730	-1.8642
	CD	-.79211	.82084	.630	-2.8595	1.2752

*. The mean difference is significant at the 0.05 level.

Post-hoc comparisons using the Scheffe test indicated that the mean score for EE (M = 21.17, SD = 2.45) was significantly different from that of CD (M = 15.55, SD= 2.76) and TR (M = 15.63, SD =3.14). It showed that EE outperformed both the CD and TR on the vocabulary test. It can be concluded that the explicit strategy of 'identify-the-source' for teaching economic terms seems to have a more significant effect on learners' vocabulary acquisition compared to presenting the terms through 'identify-the-meaning' method or translation of economic terms into learners' L1, that is, Persian in this context. This is perhaps because of the fact that providing learners with the source domains help them to make an extension from the literal to the figurative meaning and this helps learners acquire metaphors more effectively. The table also shows that CD (M= 15.55, SD= 2.76) did not differ significantly from TR.

In order to find the answer to the second research question related to the effect of presentation method of economic terms on learners' retention of vocabulary, a one-way ANOVA was done. Table 5 illustrates the results for the ANOVA test for retention.

Table 5. Results for the one-way ANOVA for retention

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	224.241	2	112.121	13.435	.000
Within Groups	442.312	53	8.346		
Total	666.554	55			

As it is clear from Table 3, the ANOVA test results showed a statistically significant difference at the $p < .05$ level in retention scores for the three groups: $F(2,53) = 13.43$, $p = .000$. In order to know where the difference is, a Scheffe test was done. The results of the Scheffe test are displayed in Table 6.

Table 6. The results of Scheffe test for retention

(I) Method	(J) Method	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
EE	CD	4.39118*	.95299	.000	1.9910	6.7914

(I) Method	(J) Method	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
CD	TR	4.30960*	.96444	.000	1.8806	6.7386
	EE	-4.39118*	.95299	.000	-6.7914	-1.9910
	TR	-.08158	.92548	.996	-2.4125	2.2493
TR	EE	-4.30960*	.96444	.000	-6.7386	-1.8806
	CD	.08158	.92548	.996	-2.2493	2.4125

*. The mean difference is significant at the 0.05 level.

Post-hoc comparisons using the Scheffe test indicated that the mean score for EE (M = 19.94, SD = 2.72) was significantly different from that of TR (M = 15.63, SD = 43). It showed that EE had a better performance on the retention test than the TR. The table also shows that CD (M= 15.55, SD= 2.76) did not differ significantly from either EE or TR. It can be concluded that the explicit teaching of economic terms through 'identify-the-source' method probably leads to learners' better performance on vocabulary retention compared to presenting the terms through the traditional method, but there is no difference between presenting the words through their contextual definitions or their Persian equivalents.

Putting all obtained data together, the results of this study revealed that the performance of students in Etymological Elaboration Group was significantly better than that of the students in the other comparison groups on the vocabulary learning and retention tests.

The superiority of performance by the participants in Etymological Elaboration Group over the other groups in terms of learning and retention of economic terms can be explicated in several ways. According to Boers & Lindstromberg (2006), the better performance may partly be because of the extra cognitive effort they invested in comprehending the economic terms on the basis of the motivations, which seemingly involved deeper processing than the other methods. They maintain that elaboration seems to foster learning since it involves processing information at a relatively "deep" level, which according to 'levels-of-processing' theory (Cermak & Craik, 1979) increases the likelihood of the information being retained in memory. In other words, when learners are requested to first hypothesize about the origin of an idiom and then try to work out its figurative meaning on the basis of that

original use, they get involved in a kind of ‘problem-solving’ task that is meant to engage students in deep processing. For example, students may invest some extra cognitive effort in putting *The firm will have to prune some of its branches* under the metaphoric heading of *Economics is gardening* (Boers, 2001). Learners who are aware that the foreign language is much more than a system of arbitrary form-meaning connections may be relatively likely to adopt mnemonically fruitful practices of insightful learning rather than less effective ones associated with blind memorization (Boers & Lindstromberg, 2008).

Another factor was probably the fact that the economic terms in Etymological Elaboration Group were classified into categories based on the underlying conceptual metaphors by the students and were checked for accuracy by the teacher. This might have helped the students learn the words in a more effective manner since organized vocabulary is easier to learn than random lists (Boers, 2001; Schmitt 1997; Sokmen 1997).

Another theory that offers a possible rationale for this superior performance is the Dual Coding theory (Clark & Paivio, 1991; Paivio, 1986), which holds that the mental system consists of two separate subsystems: verbal system specialized for dealing directly with language and a nonverbal (imagery) system specialized for dealing with nonlinguistic objects and events (Paivio, 2007). These systems are separate but interconnected, so that they can function in parallel, or in an integrated manner. In case of metaphor-based words, it is believed that awareness of the original, literal usage of such words establishes an association between the figurative meaning of the phrase and a mental image of a concrete scene. In other words, informing learners about the original, literal sense of such words stimulates dual coding to a degree likely to aid comprehension and retention of the words (Boers & Lindstromberg, 2009).

The Involvement Load Hypothesis is another theory that can justify the superiority of etymological elaboration over the other methods. According to this theory, tasks with a higher involvement load will be more effective than those with a lower involvement load in learning words (Hulstijn & Laufer, 2001). Since the participants who were instructed through etymological elaboration had to extend the original meaning of the words to understand

their meaning in the context of economics, they had to deal with a higher cognitive involvement load and as a result demonstrated a better performance in the vocabulary acquisition test.

The etymological elaboration strategy also stimulated a positive affective response from the learners. Many students expressed surprise and interest in the origin of the target economic terms. Based on an informal class survey on strategy preference conducted at the end of the treatment, out of 17 students who participated in the study 12 said they preferred etymological notes to other methods of instruction such as definitions. These findings are in line with the study done by Landau (2001), who found that people like reading about etymologies and therefore etymological entries may increase learners' interest in learning metaphor-based economic terms.

The study that is closest to the present research is that of Boers, Demecheleer and Eyckmans (2004a) based on which it was found that students who had had access to the 'origin' exercises but not the 'meaning' exercises were significantly more likely to be able to reproduce the expressions in the gap-filling exercise than their colleagues who had had access to the 'meaning' exercises but not the 'origin' exercises.

The results of the study are compatible with Herteg and Popescu's (2013) findings suggesting that the explicit teaching of business metaphors is instrumental in students' development of their mental lexicon. This is also the case in the study conducted by Herrera and White (2000) suggesting that learners can recall more lexical items if they are explicitly taught about the conceptual metaphors.

Another reason, based on comments made by the learners in Etymological Elaboration Group is probably the novelty of the method of presentation of conceptual metaphors.

5. Conclusion

The present study was performed to explore if metaphoric awareness on the part of language learners of English for Economics has a role in learners' vocabulary acquisition and retention. The findings of the study demonstrated that an explicit focus on source domains underlying conceptual metaphors can lead to more effective acquisition of vocabulary in ESP contexts.

These results also suggest that, as Boers (2000a, 2000b) maintains, enhanced metaphoric awareness may contribute to the retention of figurative expressions in economic texts.

The considerable effect of explicit teaching of metaphors through the original concepts on both vocabulary acquisition and retention may be a justification to include the strategy as a complementary aid to teaching specialized vocabulary in ESP courses in Iran. It can also be a motivation for material designers to devote a part of vocabulary exercises to metaphor-based terms. This is reasonable because, as the results of this study and the similar ones show, it seems that doing 'identify-the-source' tasks involves a certain degree of cognitive effort and as a result, there will be a deeper level of processing that may lead to learning the words more effectively and keep them in memory for a longer time. Accordingly, since the students learn the terms through the original literal meanings on which they are based, it can work as an aid to memory and also help the learners to generalize what they learn from the literal definitions to the economic context in which they are metaphorically used.

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Appendix 1

Sample text from the Economist

“MONEY is pouring in from everywhere,” said Emilio Botín, chairman of Santander, Spain’s largest bank, late in 2013. Others in southern Europe might say the same as they stumble over representatives of foreign-investment firms legging it round office blocks and down-at-heel plants looking for the deal of the century.

Net foreign direct investment, broadly in retreat since 2007-08, is growing again, most strongly in Spain, followed by Italy, with Greece and Portugal still laggards. The totals are nowhere near their levels before the crisis but the ebbing tide seems to have turned.

There are signs of economic recovery, aided by tough adjustments to aid competitiveness, especially in Spain and Portugal. Market reforms, realized mainly in Spain but promised also in Italy, have boosted confidence.

But what is really driving investment is less a presumption that the periphery is set to boom than the hope that undervalued assets and earnings will revert to trend. In addition, a slew of assets are coming to market as banks seek to slim their balance-sheets before the European Central Bank’s asset-quality review this summer, which will shed a glaring light on the loans they have made in the past—unless they offload them beforehand. PwC, a consultancy, estimates that European banks have perhaps €80 billion (\$109 billion) of loans to shed this year, of which 20% may be in southern Europe.

Glossary and Sample exercises for EX1

stumble: walk in an awkward way

down-at-heel: worn out from long use

ebbing tide: the time when the tide flows out from the land

laggard: a person or thing that does not go as quickly as others

retreat: back movement

slim: make sth thinner

recovery: return to health

offload: unload a vehicle

The tasks following the text for Experimental Group 1 focused on 'identify-the-source' tasks. For instance:

Q1. What source- target relationship do you think the metaphors *stumble* and *slim* comes from?

- a. ECONOMY IS A MACHINE
- b. ECONOMY IS A PERSON

- c. ECONOMY IS WAR
- d. ECONOMY IS A SPORT

Answer: b

Q2. What examples can you find in the text as realization of metaphor ECONOMY IS A SEA?

Answer: ebbing tide

Having practiced the new words in this way, the texts were removed and learners went to the next exercise

which was a fill-in-the-gap one intended to check learners' acquisition of the words. For example:

Q3. Fill in the blanks with the underlined words from the text.

1. The company is going to its foreign transactions because of financial problems.
2. It is better to close thefactories in this slow time of the year.
3. Although the government has provided some long-term loans for the plants, Dairy industry is still among

Answers: 1. Slim 2. Down -at-heel 3. laggards

Glossary and Sample exercises for EX2

stumble:(here) blunder; make a mistake

down-at-heel:(here) in a bad condition because of lack of money

ebbing tide:(here) a condition of weakness or failure

laggard:(here) slow in function

retreat:(here) withdrawal from a position

slim:(here) decrease the size of sth

recovery:(here) return to the normal state

offload: (here) get rid of sth

For Experimental Group 2, the tasks focused on 'identify-the-meaning' technique. For instance:

Q1. The word 'retreat' is closest in meaning to

- a. decrease b. give ground c. blunder d. go up

Answer: b

Q2. Fill in the blanks with the given words.

1. The company is going to its foreign transactions because of financial problems.
2. It is better to close thefactories in this slow time of the year.
3. Although the government has provided some long-term loans for the plants, Dairy industry is still among

Answers: 1. Slim 2. Down -at-heel 3. laggards

Appendix 2

Pretest

Read the following words and decide about the words as follows:

1) I have never seen/heard the word, 2) I have seen/heard the word before but don't know what it means, 3) I know what the word literally means, (4) I know the meaning of the word in an economic context.

Word	1	2	3	4	Word	1	2	3	4
Recession					Linger				
Bounce back					Inflation				
Sluggish					Bubble				
Rock-bottom					Tumble				
Output					Blow-up				
Stagnation					Decline				
Slumping					Suffer				
Strength					Plunge				
Steep					Depress				
Stream out					Turbulence				
Float					Nose-diving				
Hamper					Slid				
Loom					Soar				
Stimulate					Prop up				
Locomotion					Swooning				
Stifle					Mature				
Ailing					Erect				
Crippled					Collapse				
Bleak					Volatility				
Laggards					Survive				

Chilled					Boom				
Downturn					Bailout				
Shrink					Hurdle				
Overheat					Expansion				
Inroads					Prosperity				
Outlier					Revive				
Rebound					Turmoil				
Rebalance					Contract				
Ramp up					Accelerate				
Sink					Depreciation				
Erosion					Recovery				
Retreat					Revise				
Anaemic					Instability				
Falter					Chock off				
Tonic					Kick-start				
Aloft					Struggle				
Restart					Impose				
Weaken					Undermine				
Decouple					Dithering				
Funk					Resist				
Robust					Inflict				
Fate					Slew				
Deflation					Slim				
Flood					Down-at-heels				
Pour					Ebbing tide				
Strip out					Offload				
Sour					Wobbly				
Snap					Burgeon				
Lubricate					Deficit				
Peak					Leg it round				

The List of Words for Teaching

Words	
Recession	Linger
Sluggish	Bubble
Rock-bottom	Tumble
	Blow-up
Stagnation	Decline
Slumping	
	Plunge
Steep	
Stream out	Turbulence
	Nose-dive
Hamper	Slid
Loom	
Stimulate	Prop up
Locomotion	Swooning
Stifle	
Ailing	Erect
Crippled	Collapse
Bleak	Volatility
Laggards	
Chilled	Boom
Downturn	Bailout
Shrink	Hurdle
Overheat	Expansion
Inroads	Prosperity
Outlier	Revive
Rebound	Turmoil
	Contract
Ramp up	Accelerate
Sink	Depreciation
Erosion	

Retreat	
Anaemic	Instability
Falter	Chock off
Tonic	Kick-start
Aloft	
Restart	Impose
Weaken	Undermine
Decouple	Dithering
Funk	
Robust	Inflict
Fate	Slew
Deflation	Slim
	Down-at-heels
	Ebbing tide
Strip out	Offload
	Wobbly
Snap	Burgeon
Lubricate	Deficit
	Leg it round

The Post-test

Fill in the blanks with the given words. There is one extra word in every part.

boost / deflation / ailing / slump / wobbly / stifle / burgeoning / deficit / lubricate

1. Increases in the price of newsprint, a in advertising, a decline in classified ads as the rate of unemployment increased, all impact on the newspaper's balance sheets.
2. Scottish firms expect to output and create more jobs according to the latest survey from the CBI.
3. An extreme area of concern is the extent to which the regulatory system will financial innovation.

4. He also called upon Congress to approve specific tax reforms to encourage investment and to revive the housing market.
5. Recently, however, a nasty combination of stock markets, plunging property prices and a fragile domestic banking system has made them more cautious.
6. Even with the best economic policy it will take two years from this point to go through the unavoidable stages of and recession to reach the start of recovery.
7. Economic growth since 1945 might be slow, and often was, the national balance of payments too often in ; but in literature, by the 1960s, Britain was back.
8. The UK Parliament's Environment Select Committee has called on the government to encourage the growth of more forests and to Britain's hardwood timber industry.

Answers: 1. *slump* 2. *boost* 3. *stifle* 4. *ailing*
5. *wobbly* 6. *deflation* 7. *deficit* 8. *revive*

bleak / laggards / chilled / downturn / shrink / stagnation / inroads / collapse/ rebound

9. Ryan Hotels, the Dublin-based hotel and tour operator, has been badly hit by the in tourism.
10. Germany's trade surplus with the rest of the European Community did last year, to DM65 billion (\$40 billion) from DM94 billion in 1989.
11. The problem is long-standing in some industries but is making fresh with the spread of new technology and keyboards.
12. If the economy's future looks, Mikhail Gorbachev's future looks no better.
13. Their country suffered years of economic and mismanagement under Communist rule.
14. After years of declining prices, there are at last signs that the American gas market has begun to

15. The companies were ranked on various measures of corporate success , and were then split into three groups: top performers, average firms and
16. No one is absolutely certain of the reasons for the, yet it only needed a sudden fear that share prices would drop to produce panic.

Answers: 9. *downturn* 10. *shrink* 11. *inroads* 12. *bleak*
13. *stagnation* 14. *rebound* 15. *laggards* 16. *collapse*

outlier / crippled / nose-dive / boom / bailout / bounce back / hurdle / expansion / prosperity / lubricate

17. "Business prepares to from recession .The nation is feeling positive despite some hard times", reports JOHN GREENLEES
18. Exports of Japanese machinery, on the other hand, withstood the downturn quite well because the Asian economies that buy them continued to
19. America's financial system is under great pressure : the savings-and-loan industry is, banks and insurance companies are struggling, firms and consumers look over-indebted.
20. The pressure on living standards added to general contempt for the regime leads to massive strikes which cause the economy to
21. As the economy slipped into recession and the value of real estate declined, however, estimates of the cost continued to rise throughout the year.
22. Differences in selling price are largely due to the FRG's selling a smaller proportion of large systems than the others, and the Japanese figure is distorted because one company is a high in this sense
23. The two main parties, the ruling Democratic Action and the Social Christian COPEI, have long used their access to oil money to an elaborate system of patronage.
24. The strength of the British economy in the mid-1980s, the signs of growth and rising, helped dispel the old image of 'the sick man of Europe'.

25. There might have been an improvement earlier with a(n) of the German economy, but that is now being deflated.

Answers: 17. *bounce back* 18. *boom* 19. *crippled* 20. *nose-dive*
21. *bailout* 22. *outlier* 23. *lubricate* 24. *prosperity*
25. *expansion*