Journal of English Language
Teaching and Learning
Tabriz University
No. 18, 2016

Vocabulary Instruction Method and Specialized Reading Comprehension: Build a Bridge or Wash it away[*]

Azizollah Dabaghi[**]
Assistant Professor, University of Isfahan (Corresponding author)

Hossein Barati
Associate Professor, University of Isfahan

Adeleh Heidari
PhD Candidate, University of Isfahan

Abstract

The present study aimed to examine and compare the impact of teaching economic terms through etymological elaboration with three more conventional methods of vocabulary instruction in ESP courses in Iran, that is, teaching through contextual definitions, L1 translation, and implicit instruction on the learners' general comprehension of economic texts and their understanding of author's opinion. As for general comprehension, the performance of students on the reading comprehension test was not affected by vocabulary instruction method in the four groups. In other words, it seemed that there was no causal relationship between the vocabulary instruction method and general reading comprehension. Regarding author's opinion, the results showed a superiority of etymological elaboration over contextual definition, translation, and implicit instruction.

Key words: etymological elaboration, English for Economics, contextual definitions, L1 translation, implicit instruction

---

[*] Received date: 2016/10/04 Accepted date: 2016/11/11

[**] E-mail: azizollahd@hotmail.com

Introduction

Vocabulary knowledge has been considered as of the most central factors in learning a foreign or second language to the extent that some experts claim that learning a second or foreign language largely means learning its vocabulary (Gass, 1999, p. 325). Several studies have shown that vocabulary knowledge can determine learners' success with respect to different language skills (e.g. Saville-Troike, 1984; Dakun, 2000; Nation and Meara, 2002; Laufer and Goldstein, 2004). One such aspect is in comprehending language in which the vital role of vocabulary is quite evident since according to some scholars "no text comprehension is possible, either in one s native language or in a foreign language, without understanding the text s key words" (Laufer, 1997, p.20). Regarding the role of vocabulary knowledge in reading comprehension, Anderson and Freebody (1981), Laufer and Sim (1985), Daneman (1991), Bossers (1992), Schoonen, Hulstijn, and Bossers (1998), Alderson (2000), Nation (2001), Verhoeven (2000), Qian (2002), Droop and Verhoeven (2003), Nassaji (2003), and Tannenbaum, Torgesen and Wagner (2006) maintain that vocabulary is the most determinant predictor of reading comprehension. Also, Beck, Perfetti, and MaKeown (1982), Nagy (1988), and Lesaux, Kieffer, Faller, and Keller (2010), believe in a causal view proposing that improved vocabulary promotes reading comprehension.

Based on applied linguistic research findings, Hiebert and Kamil (2005) maintain that vocabulary can play a significant role both in reading comprehension and students overall academic success. Of course, it is quite evident that to achieve both academic success and the ability to read specialized texts in his/her own filed of a study, a language learner needs not only to have a good command of general vocabulary, but also a repertoire of specific words related to his/her major, known as technical or semi-technical words. In relation to the importance of learners' knowledge of technical words specific to different field of study, Nation and Kyongho (1995) maintain that after learning about 2000 general service vocabulary items, providing learners of English for special purposes with special purposes vocabulary items, can be very helpful.

Based on the existing research, among different specialized fields of study, the language of economics is said to abound in such metaphors that merit special attention since they reflect the scientific domains which economics has borrowed from in order to structure itself (Henderson, 1982, 1994; Jeffreys, 1982; McCloskey, 1985; Mata and Lemercier, 2011; Resche, 2012). Therefore, it seems that teaching technical terms through strategies focusing on the origin of these borrowed words can be helpful. One such a strategy is *etymological elaboration* (Boers 2000), that is, "explicit reference to the literal sense or origin of the metaphors" (p.145) and grouping these figurative expressions according to their source domains.

The question that arises here is whether metaphor awareness-raising on the part of language learners' awareness can be helpful in reading specialized texts. According to Sznajder (2010), in ESP courses, teaching metaphorically oriented technical and semi-technical terms is generally considered as potentially problematic. This in turn, makes reading specialized texts difficult for second language learners whose native language is not English. In other words, although many scholars theoretically acknowledge the place of conceptual metaphors in learning specialized vocabulary in economic texts and in facilitating the comprehension of such texts, with the exception for Boers (2000), to the best of our knowledge, there are no empirical studies to put these principles into practice in real ESP classrooms.

For this purpose, teaching economic terms through etymological elaboration was compared to more conventional methods of vocabulary instruction in ESP courses in Iran, that is, teaching through contextual definitions, L1 translation, and implicit instruction.

Literature Review

The introduction of the cognitive linguistic insights into second language acquisition for vocabulary teaching has attracted a lot of attention in applied linguistics (Danesi, 1986, 1993; Low, 1988; MacLennan 1994, Scott, 1994; Deignan, Gabrýs, & Solska, 1997; Boers, 2000a, 2000b, 2001, 2013; Csábi, 2004; Picken, 2005; 2007; Boers & Lindstromberg, 2006, 2008b, 2012; Guo, 2007).

In order to show the justification for the adoption of a cognitive linguistic approach to language teaching, Boers and Linstrombrerg (2008), refer to one eminent feature of cognitive linguistics, that is, the

concept of 'motivation'. Contrary to other paradigms that assume that language is basically arbitrary, Cognitive Linguistics propose that "motivation in language is both primary and pervasive" (Boers & Lindstromberg, 2008, p. 17). According to this view, the meanings of linguistic forms are believed to be motivated by people's physical, social and cultural experiences.

In the same way, Boers et al. (2004), argue that according to cognitive semantics, many figurative expressions can be attributed to a relatively small number of more concrete source domains in order to help us understand some more abstract target domains through conceptual metaphors; in other words these expressions are 'motivated'. The idea of 'motivation' in this sense, may help language learners positively in some ways. For instance, according to Boers & Lindstromberg (2008), presenting elements of a second/foreign language as motivated can help learners gain a deeper understanding of these elements due to the fact that encouraging learners to notice motivation retains highlighting connotations and activation of semantic networks. For instance, motivating the meaning of '*prune*' in *'pruning the company' by* revealing its original context of use (i.e. to cut off some of the branches of a tree to make it grow or look better) that is a linguistic realization of the conceptual metaphor ECONOMICS IS GARDENING, may help a learner better understand the meaning of the word in an economic context (i.e. to reduce something by removing unwanted material). Also, it is helpful since it seems to foster learning as 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. One type of deep level processing is exemplified by dual coding. Dual coding is likely to take place in the above example, if the learner is encouraged to associate the

Moreover, Boers (2000b) points out that due to the fact that an author can use different figurative expressions to describe a specific economic reality, an author's choice of figurative expressions may reflect the author's conception of that reality and his/her viewpoint about the issues of concern. This helps us conclude that if students understand value judgments and inferences that are associated with an

expression, they may recognize the author's point of view in a more effective way. As a result, enhancing metaphoric awareness on the part of learners which may be accomplished by making students aware of the source domain or origin of the figurative expression can be a very helpful tool for critical in-depth reading.

The present study aimed to investigate and compare the impact of teaching economic terms through etymological elaboration with three more conventional methods of vocabulary instruction in ESP courses in Iran, that is, teaching through contextual definitions, L1 translation, and implicit instruction on the learners' general comprehension of economic texts and their understanding of author's opinion.

The following two research questions were investigated:

1. To what extent does the vocabulary instruction method affect learners' general comprehension of economic texts?
2. To what extent does the vocabulary instruction method affect learners' understanding the author's opinion?

Methodology

Participants

Seventy- five students of Economics participated in the main study. All were sophomores enrolled in English for the Students of Economics as a required course for their major in the University of Isfahan, Isfahan, Iran. All the participants were native speakers of Persian aged 19-21. Since the ESP classes schedule could not be disrupted nor classes reorganized to accommodate the present research project, the participants could not be randomly assigned to treatment groups. As a result, there was no choice but to use intact groups of students as participants. However, in order to increase the internal validity of the research, the four intact groups were randomly assigned to the four treatment conditions: etymological elaboration (teaching economic terms through source domains), Contextual Definitions (providing L2 definitions/synonyms), translation (presenting L1 equivalents), and Implicit Instruction (No focus on vocabulary items). Table 1 shows the participants' characteristics in terms of sex and the teaching condition for the main study.

Table 1- Frequencies for Method and Gender Method of Instruction Gender

	Frequency	Percent	Frequency	Percent
Etymological Elaboration	17	22.7%	Male 46	61.3%
Contextual Definition	20	26.7%	Female 29	38.7%
Translation	19	25.3%		
Implicit Instruction	19	25.3%		
Total	75	100.0%	75	100.0%

As the data for gender in Table 1 reveals, the male students accounted for 61.3% of the participants while the female students for 38.7 %.The higher percentage for male participants in comparison to female ones could be attributed to the fact that there are more male students than female students in Economics Faculty as a whole.

Materials

Task Materials

For the first group, known as the *Etymological Elaboration Group,* the accompanying glossary defined economic terms through *etymological elaboration.* The texts for the second group, named the Contextual Definition Group, were presented along with a glossary containing definitions or synonyms for the given words in English as they were used in economic contexts. As for the third group, referred to as the Translation Group, the economic terms were translated into the students' L1, i.e. Persian, in a glossary provided to them along with the texts. Finally in relation to the last group, known as the Implicit Instruction Group, there was no focus on the intended words but rather the learners were required to complete simple reading comprehension tasks.

Research Instruments

Two different research instruments were deployed in this study. A 100-item vocabulary checklist was used to make sure that the participants were not familiar with the economic terms that were going to be taught. The participants were asked to identify the words

they were familiar with. Hence, a list including 72 economic terms with which 80 % of the learners were not familiar was developed.

Secondly, a 30-item reading comprehension test was used in the present investigation as a both the pre-test and the post-test (2). It included five texts followed by comprehension questions that were the same for all groups. Three texts out of the five were selected from among the ten passages that were worked on in the teaching phase. The format for the questions was taken from Boers (2000b) based on which the participants were asked whether they agreed that the sentences are in-line with the contents of the reading passages. For every question they were required to tick YES / NO or DON'T KNOW. Twenty- two items in the test were meant to measure the participants' general comprehension, and the other eight questions were designed to check for the learners' understanding of the author's point of view. All questions on the test were reviewed by five expert judges. The reliability of the test was calculated .81 through Cronbach's alpha.

Procedures

The experiment took place in the natural classroom setting, within regularly scheduled classes and was run by researcher .The participants, except for the Implicit Instruction Group, were aware that they were taking part in a study and that they were going to take a test following the instruction period.

In the first instruction session for the participants in the first group, known as Etymological Elaboration Group (EEG), the instructor, who was the researcher herself, introduced the structure of conceptual metaphors and described the *source* and *target* domains through different examples. For instance, in the conceptual metaphor ARGUMENT IS WAR, '*war*' is the source domain through which we can understand the meaning of '*argument*' that is the target domain. The italic words in the following sentences are the linguistic realizations of this metaphor:

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 addition, it she explained that the economic terms would be taught based on the source domains they are derived from such as ECONOMY IS HUMAN BEINGS, ECONOMY IS A MACHINE, ECONOMY IS AN ANIMAL, etc. Then, the instructor began reading the first text. Whenever she reached an underlined word, she stopped and gave a literal definition of the word orally. The learners were asked to guess what the source domain of each word was and match each word with the given source domains. They were encouraged to apply imagery in processing the words and to make extensions from the literal meanings to the figurative meanings of the words in an economic context (Boers, 2000a).

For the second group, named the Contextual Definition Group (CDG), there was no reference to the idea of Conceptual Metaphors. 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. The texts were followed by some tasks in which the students were required to do focusing on L2 definitions of the words including: *Match the definitions with the given words,* and *Fill in the blanks with the given words* (1).

As for the third group, known as the Translation Group (TG), the same texts with L1 glossaries were used. The texts were followed by *translation* and *fill-in-the-blanks* tasks (1).

In the fourth group, referred to as Implicit Group (IMG), the main focus was on reading comprehension and there was no conscious-raising activity by the teacher to direct the attention of the students to the unknown vocabulary. The students were asked to guess the meaning of the words from the context or skip the words if they did not understand the words. Having completed reading the texts, they were required to answer some reading comprehension questions including *True or False, Choose the best answer,* and *Answer the following questions* (1).

It is worth mentioning that the time allocated to tasks and activities in all groups were the same. The length of instruction was 8 weeks, each week one session, and each session 45 minutes. The last session was devoted to the test administration.

Results

The main purpose of this study was to see whether Conceptual Metaphor Theory, and its representative method in this study, i.e., *etymological elaboration* have anything to say about their effect on reading comprehension or not. Of course, it should be reminded that the only study concerned with this question is Boers (2000b) in which he stated that the method had some effect on realizing authors' opinions, attitudes, and biases, but not so much on general comprehension. Therefore, the investigation has to do with two aspects: the effect of different methods of vocabulary instruction on learners' general comprehension, and on their understanding of authors' viewpoint.

Table 2 shows the frequency of scores on the reading comprehension test. The table shows that the highest mean score belongs to contextual definition (17.40) and the lowest mean score is for etymological elaboration (14.76).

Table 2- Descriptive Statistics for Reading Comprehension Scores

Method	Mean	N	Std. Deviation	Minimum	Maximum
Etymological Elaboration	14.76	17	5.52867	5.00	25.00
Contextual Definition	17.40	20	6.13360	3.00	28.00
Translation	15.42	19	5.06969	9.00	27.00
Implicit	17.10	19	5.76286	8.00	27.00
Total	16.22	75	5.64148	3.00	28.00

A one-way analysis of variance (ANOVA) was utilized in order to find out whether there was a significant difference between means for different groups. As Table 3 illustrates, analysis of variance showed no statistically significant difference at the $p < .05$ level in reading comprehension scores for the the four groups: $F(3,71) = .950$, $p = .421 > .05$.

Table 3- Results of One-way ANOVA for Reading Comprehension Scores

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	90.867	3	30.289	.950	.421
Within Groups	2264.280	71	31.891		
Total	2355.147	74			

Post-hoc comparisons using the Scheffe test revealed that although the mean score for contextual definition (M = 17.40, SD = 6.13) was on the surface higher than that of etymological elaboration (M = 14.76, SD= 5.52), the test showed no statistically significant difference between the two groups. A look at Table 4 shows that there was no difference between the four methods in terms of their effect on reading comprehension scores.

Table 4- Results of Scheffe Test for Reading Comprehension Scores

(I) Method	(J) Method	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Etymological Elaboration	Contextual Definition	-2.63529	1.86293	.575	-7.9702	2.6996
	Translation	-.65635	1.88532	.989	-6.0554	4.7427
	Implicit	-2.34056	1.88532	.674	-7.7396	3.0585
Contextual Definition	Etymological Elaboration	2.63529	1.86293	.575	-2.6996	7.9702
	Translation	1.97895	1.80916	.754	-3.2020	7.1599
	Implicit	.29474	1.80916	.999	-4.8862	5.4757
Translation	Etymological Elaboration	.65635	1.88532	.989	-4.7427	6.0554
	Contextual Definition	-1.97895	1.80916	.754	-7.1599	3.2020
	Implicit	-1.68421	1.83221	.838	-6.9311	3.5627
Implicit	Etymological Elaboration	2.34056	1.88532	.674	-3.0585	7.7396
	Contextual Definition	-.29474	1.80916	.999	-5.4757	4.8862
	Translation	1.68421	1.83221	.838	-3.5627	6.9311

As it was mentioned above, another purpose was to see if there was any significant difference between etymological elaboration and other methods in terms of their effect on realizing authors' opinion. To do so, learners' scores on the eight questions concerned with authors' opinion were analyzed statistically. Table 5 shows the descriptive statistics for the scores on these questions.

Table 5 - Descriptive Statistics for Questions on Authors' Opinion

	N	Mean	Std. Deviation	Std. Error	Minimum	Maximum
Etymological Elaboration	17	5.94	1.24853	.30281	3.00	8.00
Contextual Definition	20	3.80	2.06729	.46226	1.00	8.00
Translation	19	5.00	1.94365	.44590	1.00	8.00
Implicit	19	6.89	1.10024	.25241	5.00	8.00
Total	75	5.3733	2.00522	.23154	1.00	8.00

The data in Table 5 demonstrates the highest mean score belongs to the Implicit Instruction Group (M=6.89) and the lowest mean score for the Contextual Definition Group (M=3.80). It is also clear that the scores range from 3 to 8 for Etymological Elaboration, 1 to 8 for Contextual Definition, 1 to 8 for Translation, and 5 to 8 for Implicit Instruction.

In order to examine the effect of method of vocabulary instruction on the participants' ability to realize the author's opinion, a one-way analysis of variance (ANOVA) was conducted. The descriptive statistics and the results of the one-way ANOVA are presented in Table 6 and 7, respectively.

Table 6- Descriptive Statistics for Author's Opinion

	N	Mean	Std. Deviation	Std. Error	Minimum	Maximum
Etymological Elaboration	17	6.64	1.36662	.33145	3.00	8.00
Contextual Definition	20	4.85	1.81442	.40572	2.00	8.00
Translation	19	4.94	1.50826	.34602	2.00	8.00
Implicit	19	5.36	1.92095	.44070	2.00	8.00
Total	75	5.41	1.78654	.20629	2.00	8.00

Table 7- The Results of One-way ANOVA for Author's Opinion

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	36.386	3	12.129	4.310	.008
Within Groups	199.801	71	2.814		
Total	236.187	74			

Table 7 displays a significant difference between the scores ($p< .05$) for different methods of instruction, $F(3,71) = 4.31$, $p = .008<.05$. To see where the difference, a Scheffe test was conducted. The results of the Scheffe test (Table 8) demonstrated the superiority of etymological elaboration (M= 6.64, SD= 1.36) over contextual definition (M=4.85, SD= 1.81), and translation (M= 4.94, SD= 1.50), but not implicit instruction (M= 5.36, SD= 1.92). The results also show no significant difference between implicit instruction and the other two methods, that is, contextual definition and translation.

Table 8-The Results of Scheffe Test for Author Opinion

(I) Method	(J) Method	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Etymological Elaboration	Contextual Definition	1.79706*	.55339	.019	.2123	3.3818
	Translation	1.69969*	.56004	.033	.0959	3.3035
	Implicit	1.27864	.56004	.167	-.3252	2.8824
Contextual Definition	Etymological Elaboration	1.79706*	.55339	.019	-3.3818	-.2123
	Translation	-.09737	.53742	.998	-1.6364	1.4416
	Implicit	-.51842	.53742	.818	-2.0574	1.0206
Translation	Etymological Elaboration	-1.69969*	.56004	.033	-3.3035	-.0959
	Contextual Definition	.09737	.53742	.998	-1.4416	1.6364
	Implicit	-.42105	.54426	.896	-1.9797	1.1376
Implicit	Etymological Elaboration	-1.27864	.56004	.167	-2.8824	.3252
	Contextual Definition	.51842	.53742	.818	-1.0206	2.0574
	Translation	.42105	.54426	.896	-1.1376	1.9797

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

Discussion

Regarding author's opinion (Research Question 2), the results showed a superiority of etymological elaboration over contextual definition, translation, and implicit instruction. It might be expected that the participants taught implicitly would outperform the participants in Translation and Contextual Definition groups since the focus of tasks for this group was on reading skills and the learners had to challenge with the text much more than the participants in the other two groups. Not observing a significant difference might be due to the fact that

interpreting author's opinion is a kind of evaluative inference that needed to be taught and practiced explicitly.

The participants' significant gain in the Etymological Elaboration Group in comparison to the other groups, can be justified by Boers' (2000b) study. Hez maintains that an author's choice of figurative expressions to talk about an economic reality demonstrates the author's viewpoint and reflects his/her conception of the reality. As a result, an understanding of the author's value judgements related to a figurative expression may help learners recognize the author's point of view; this, in turn, requires raising learners' metaphor awareness that may be accomplished by attracting students' attention to the source domain or origin of the ifgurative expression.

Conclusions and Implications

It is believed that the findings of the present research have some pedagogical findings as follows:

(1) Etymological elaboration as a subtype of semantic elaboration is a useful technique in teaching and learning economic terms. Of course, it does not mean that it is certainly the best method, but it can be used as a very effective complementary technique in teaching economic terms.

(2) Vocabulary instruction can function as a useful device in increasing learners' comprehension of texts, but it is not the only effective factor.

(3) In ESP books for Economics, some place should be given to conceptual metaphors since they are the building blocks of most economic terms.

(4) A successful way of teaching specialized vocabulary may need to be a combination of different methods of instruction both in an explicit and implicit manner.

As with all small-scale studies, the present research is not without limitations that should be addressed by future research.

One of the main limitations of the present study goes with factors related to participants. First, in the present study, only 75 subjects were involved and there were only 20 participants in each group at most. This number is far from satisfactory for the generalizability of

the results. In other words, the small number of participants assigned to any treatment condition makes it problematic to discuss the treatment effects obtained with certainty.

Second, there was no chance for random sampling and the participants were intact groups of learners, a feature that rendered the design of the study into a quasi-experimental one which made the findings fuzzy to some extent.

Third, the participants were selected from one university and one field of study. This might affect the results of the study in the sense that the findings could not be generalized to other universities of the country and other majors.

Except for gender, the present study did not take into account learners variables such as language proficiency and cognitive style, among others, that may affect the results of the study. For instance, in case of etymological elaboration, according to Boers, (2000b) and Boers et al., (2006, 2009), individual learner characteristics, including proficiency level, aptitude, and cognitive style may affect the degree to which learners benefit from this approach.

Another limitation was the limited amount of time devoted to the instruction period. The number of sessions was not enough to work on more texts and teach more words, so vocabulary instruction was restricted to 72 words, that is, 12 words each session on average. In some previous studies, the treatment of etymological instruction had lasted for nearly one semester (Guo, 2007).

Yet, another limitation was that the impact of conceptual metaphor typology on the results was not considered in the present study. The type of metaphors, that is, whether they are structural, ontological, or orientational metaphors, may affect the learners' performance. Moreover, according to Boers (2001), hypothesizing about etymological origin may not be so easy for all figurative expressions. Some of these expressions may be so opaque that it is difficult to retrieve any images or to make any reasonable hypotheses at all. Secondly, cross-cultural differences may hamper successful hypothesizing especially when metaphors are culture specific.

With regard to instruction method, the study was restricted to only four methods of vocabulary instruction, that is, teaching through etymological elaboration, definitions, translation, and implicit

instruction. There are so many other different teaching methods, including semantic mapping, key word method, semantic feature analysis, etc. among others As for the testing instruments, the vocabulary test was in a fill-in-the-blanks format that limited the assessment of the learners' vocabulary knowledge just to choosing a word from a list and put in the blank spaces provided. The format for the comprehension test was adopted from Boers (2000b), that is, choosing between Yes, No, and I Don't Know.

Taking the findings and limitations of the current study, the researcher suggests the following issues for further research.

First, replication of the study with larger number of participants from different fields, different universities and even different countries with different cultural backgrounds will increase both the validity and reliability of the research. Second, if the participants are selected randomly, all the members of the target population will have the same chance of being included in the study and as a result, the findings can be generalized to the whole population with a greater extent of certainty. Learner characteristics like language proficiency, age, cognitive style, aptitude, and the like can be considered as effective factors in future research projects.

A longer period of instruction and a more comprehensive list of economic terms will result in more dependable findings. Considering the effect of metaphor typology will also lead to more fruitful results. Moreover, cross-cultural differences between English and Persian can be taken into account. For instance, future research can be based on a contrastive analysis of conceptual metaphors in English and Persian to see if similarities and differences can affect learning metaphors.

With regard to instruction method, other vocabulary instruction methods like semantic mapping, key word method, semantic feature analysis, etc. can be investigated.

The format of the vocabulary test can be changed to multiple-choice or cloze test to see the possible effects of test type on learners' performance both in vocabulary and retention tests. The format for the comprehension test can also be changed to a different one.

The time interval between the vocabulary learning test and the retention test can be longer to eliminate the practice effect.

References

Alderson, C. (2000). *Reading assessment*. New York: Cambridge University Press.

Anderson, R. C., & Freebody, P. (1981). Vocabulary knowledge. In J. Guthrie (Ed.), *Comprehension and teaching: Research reviews* (pp. 77-117). Newark, Del.: International Reading Association.

Beck, I. L., Perfetti, C. A., & McKeown, M. G. (1982). Effects of long-term vocabulary instruction on lexical access and reading comprehension. *Journal of Educational Psychology*, *74*, 506˚521.

Boers, F. (2000a). Metaphor awareness and vocabulary retention. *Applied Linguistics, 21*, 553˚571.

Boers, F. (2000b). Enhancing metaphoric awareness in specialised reading. *English for Specific Purposes, 19*, 137˚147.

Boers, F. (2001). Remembering figurative idioms by hypothesizing about their origin. *Prospect, 16*(3), 34˚43.

Boers, F. (2013). Cognitive Linguistic approaches to teaching vocabulary: Assessment and integration. *Language Teaching, 46*(2), 208˚224.

Boers, F., Demecheleer, M., & Eyckmans, J. (2004b). Etymological elaboration as a strategy for learning idioms. In P. Boggards & B. Laufer (Eds.), *Vocabulary in a second language: Selection, acquisition and testing* (pp. 53˚78). Amsterdam, Philadelphia: John Benjamins.

Boers, F., & Lindstromberg, S. (2006). Cognitive Linguistic approaches to second or foreign language instruction: Rationale, proposals and evaluation. In: G. Kristaensen, R. Dirven, M. Achard & Ruiz-Mendoza (Eds.), *Cognitive linguistics: current applications and future perspectives* (pp. 305-358). Berlin: Mouton de Gruyter.

Boers, F., & Lindstromberg,S. (2008). Opening chapter: How cognitive linguistics can foster effective vocabulary teaching. In F.

Boers & S. Lindstromberg (Eds.), *Cognitive linguistic approaches to teaching vocabulary and phraseology* (pp. 1˚61). New York: De Gruyter.

Bossers, B. (1992). *Reading in two languages: a study of reading comprehension in Dutch as a second language and in Turkish as a first language.* Rotterdam, The Netherlands: Drukkerij Van Driel.

Caballero, Rodriguez, M. (2003). How to talk shop through metaphor. Bringing metaphor research to the ESP classroom. *English for Specific Purposes, 22*, 177-194.

Cermak, L. S. & Craik, F. I. M. (1979). Levels of processing in human memory. Hillsdale, NJ: Lawrence Erlbaum.

Charteris-Black, J. (2000). Metaphor and vocabulary teaching in ESP economics. English *for Specific Purposes, 19*, 149-165.

Charteris-Black, J., & Ennis. T. (2001). A comparative study of metaphor in Spanish and English financial reporting. *English for Specific Purposes, 20*(3), 249˚266.

Charteris-Black, J., & Musolff, A. (2003). Battered hero or innocent victim? A comparative study of metaphors for euro trading in British and German financial reporting. *English for Specific Purposes, 22*(2), 153˚176.

Clark, J. M., and Paivio. A. (1991). Dual coding theory and education. *Educational Psychology Review, 3*, 233˚262.

Csábi, S. (2004). A cognitive linguistic view of polysemy in English and its implications for teaching. In M. Achard & S. Niemeier (Eds.), *Cognitive linguistics, second language acquisition and foreign language teaching* (pp. 233˚256). Berlin, New York: De Gruyter.

Dakun, W. (2000). Vocabulary Acquisition: Implicit Learning and Explicit Teaching. *REACT, 2*, 15˚22

Daneman, M. (1991). Individual differences in reading skills. In R. Barr, M. Kamil, P. Mosenthal, & P. Pearson (Eds.), *Handbook of reading research* (Vol. 2, pp. 512˚538). White Plains, NY: Longman.

Danesi, M. (1986). The role of metaphor in second language pedagogy. *Rassegna Italiana Di Linguistica Applicata, 18*(3), 1˚10.

Danesi, M. (1993). Metaphorical competence in second language acquisition and second language teaching: the neglected dimension. In J. E. Alatis (Ed.), *Language, and Social meaning* (48-500).Washington, D. C.: Georgetown University Press.

Deignan, A., Gabrys,D. & Solska, A. (1997). Teaching English metaphors using cross-linguistic awareness-raising activities. *ELT Journal 51*,352˚360.

Droop, M., & Verhoeven, L. (2003). Language proficiency and reading ability in first and second language learners. *Reading Research Quarterly, 38*, 78-103.

Gass, S. (1999).Incidental vocabulary learning: Discussion. *Studies in Second Language Acquisition, 21(3), 19-33.*

Guo, S. (2007). Is idiom comprehension influenced by metaphor awareness of the learners? A case study of Chinese EFL learners. *The Linguistics Journal, 3*(3), 148˚166.

Henderson, W. (1982). Metaphor in Economics. Economics 18, 147-153.

Henderson, W. (1994). Metaphor and economics. In R. E. Backhouse (Ed.), New Directions in Economic Methodology (pp. 343-367). London: Routledge.

Hiebert, E. H. & Kamil. (2005). *Teaching and learning vocabulary: Bringing research to practice* (Eds.). Mahwah, NJ: Erlbaum.

Jeffreys, D. (1982). Metaphor in economicsˇ an illustrative. *Economics, 18(4)*, 154-157.

Kövecses, Z. (2010). *Metaphor: A Practical Introduction. (2nd Ed.)* New York: Oxford University Press.

Lakoff, G., & Johnson, M. (1980). *Metaphors we live by*. Chicago: University of Chicago Press.

Laufer, B. (1997). What's in a word that makes it hard or easy: some intralexical factors that affect the learning of words. In N. Schmidtt & M. McCarthy (Eds.), *Vocabulary Description, Acquisition and Pedagogy*. Cambridge: Cambridge University Press.

Laufer, B., & Goldstein, Z. (2004).Testing vocabulary knowledge: Size, strength, and computer adaptiveness. *Language Learning, 54(3),* 399-436.

Laufer, B., & Sim, D. D. (1985). Measuring and explaining the reading threshold needed for English for academic purposes texts. *Foreign Language Annals, 18*, 405˚411.

Lazar, G. (1996). Using figurative language to expand students' vocabulary. *English Language Teaching Journal, 50(1),* 43-51.

Lindstromberg, S. (1991). Metaphor and ESP: A ghost in the machine? *English for Specific Purposes, 10*(3), 207˚225.

Low, G. D. (1998) On teaching metaphor. *Applied Linguistics 9(2), 125-147.*

MacLennan, C. (1994). Metaphors and prototypes in the learning teaching of grammar and vocabulary. *IRAL, 32*(2), 97˚110.

Mata, T., & and Lemercier. C. (2011). Speaking in tongues, a text analysis of economic opinion and Newsweek, 1975˚2007 Duke University: hope Centre Working Papers No.2011˚02.

McCarthy, M. (1990/1994). *Vocabulary*. Oxford: Oxford University Press.

McCloskey, D. (1983). The rhetoric of economics. *Journal of Economic Literature, 21,* 481-517.

McCloskey, D. N. (1985). *The rhetoric of economics*. Madison: The University of Wisconsin Press.

Nagy, W. E. (1988). Teaching vocabulary to improve reading comprehension. *ERIC Document Reproduction Service No. ED 298471*.

Nassaji, H. (2003). L2 vocabulary learning from context: Strategies, knowledge sources, and their relationship with success in L2 lexical inferencing. *TESOL Quarterly, 37* (4), 645-670.

Nation, P. (2001). *Learning vocabulary in another language.* New York: Cambridge University Press.

Nation, P., &Kyongho, H. (1995) .Where would general vocabulary stop and special purposes vocabulary begin? System, 23(1), 35-41.

Nation, P., & Meara, P. (2002).*Vocabulary. An introduction to applied linguistics*, 35-54.

Paribakht, T.S & Wesche, M. (1997).Vocabulary enhancement activities and reading for meaning second language vocabulary acquisition. In *Second Language Vocabulary Acquisition*, J. Coady and T. Huckin (eds), 174˚202. Cambridge: Cambridge University Press.

Qian, D. D. (2002). Investigating the relationship between vocabulary knowledge and academic reading performance: An assessment perspective. *Language Learning*, *52*, 513˚536.

Resche, C. (2012). Towards a better understanding of metaphorical networks in the language of economics: The importance of theory-constitutive metaphors. In H. Herrera-Soler, & M. White (Eds.), Metaphor and

Mills: Figurative Language in Business and Economics (pp. 77-102). Berlin: De Gruyter Mouton.

Salager-Meyer, F. (1990). Metaphors in medical English prose: A comparative study with French and Spanish. *English for Specific Purposes, 9(2*), 145˚159.

SavilleTroike, M. U. R. I. E. L. (1984). What really matters in second language learning for academic achievement?. *TESOL quarterly, 18(2)*, 199-219.

Schoonen, R., Hulstijn, J., & Bossers, B. (1998). Metacognitive and language-specific knowledge in native and foreign language reading comprehension: An empirical study among Dutch students in grades 6, 8 and 10. *Language Learning, 48*, 71-106

Scott, M. (1994). Metaphors and language awareness. In L, Barbara & M. Scott (Eds.), *Reflections on Language Learning* (pp.89˚104). Clevedon, U.K.:Multilingual Matters.

Sznajder, H. S. (2010). A corpus- based evaluation of metaphor in a business English textbook. *English for Speciifc Purposes, 2*(1), 30-42.

Tannenbaum, K. R., Torgesen, J. K., & Wagner, R. K. (2006). Relationships between word knowledge and reading comprehension in third-grade children. *Scientific Studies of Reading, 10*, 381-398.

Verhoeven, L. (2000). Components of early second language reading and spelling. *Scientific Studies of Reading, 4*, 313-330.

White, M. (2003). Metaphor and economics: the case of growth. *English for Speciifc Purposes, 2*(2), 131-15.