

3.1 Introduction

In pursuit of the stated objectives in the introduction, this chapter provides an explanation of the findings gleaned from the research study. The data collection techniques used included formally integrated tests. Both closed vocabulary gap filling exercises and open writing assignments were structured to the assigned groups to test the pre-determined hypotheses. The effects of the independent variable upon specific vocabulary acquisition were measured through comparing and contrasting the means of both groups in test scores and the difference between them. In the second part, however, an extended analysis of the results is provided with further suggestions and implications for future research.

In my zeal to pinpoint the effect of metaphor awareness on receptive-oriented vocabulary acquisition, the outcomes of the first and the third studies were measured via constructed response tasks rather than the whole text comprehension tasks which are part of the whole lesson. The retention of the studied vocabulary in both groups was tested in a two-month delayed test; whereas, the use of these lemmas in productive discourse were accounted for in the writing assignment. The final test provided further data on the retention of business vocabulary. The choice of the relevant statistical measuring instrument was based on students' scores along the course of the study comparing the experimental and the control groups in a post-test manner rather than the pretest-posttest design. The pretest which is the first mid-term formal examination was an information-provider on the students' level of proficiency. Comparability between group scores in the three experiments was restricted to young adult learners typically representing the whole population. That is, the age factor was controlled in the analysis as older participants in both groups might bias the external validity of the study. Sixteen students in the control and metaphor groups were compared after the exclusion of the six senior subjects.

3.2 Results of the first mid-term examination

Before delving into the detailed analysis of the first study, the results of students' first mid-term examination are provided. The three levels identified served as an information resource through which conclusions about the level of proficiency at which metaphor-awareness might be introduced were earmarked. The exam followed the standard testing procedure. Comprehension questions and grammatical constructions were further extended with writing tasks. The results of each group are sketched out in the figures below. A matter of concern, however, is the difference between the two groups in terms of high-level proficiency. The higher level students in the experimental group consisted of older students. To control bias in the results, these students were excluded from the analysis.

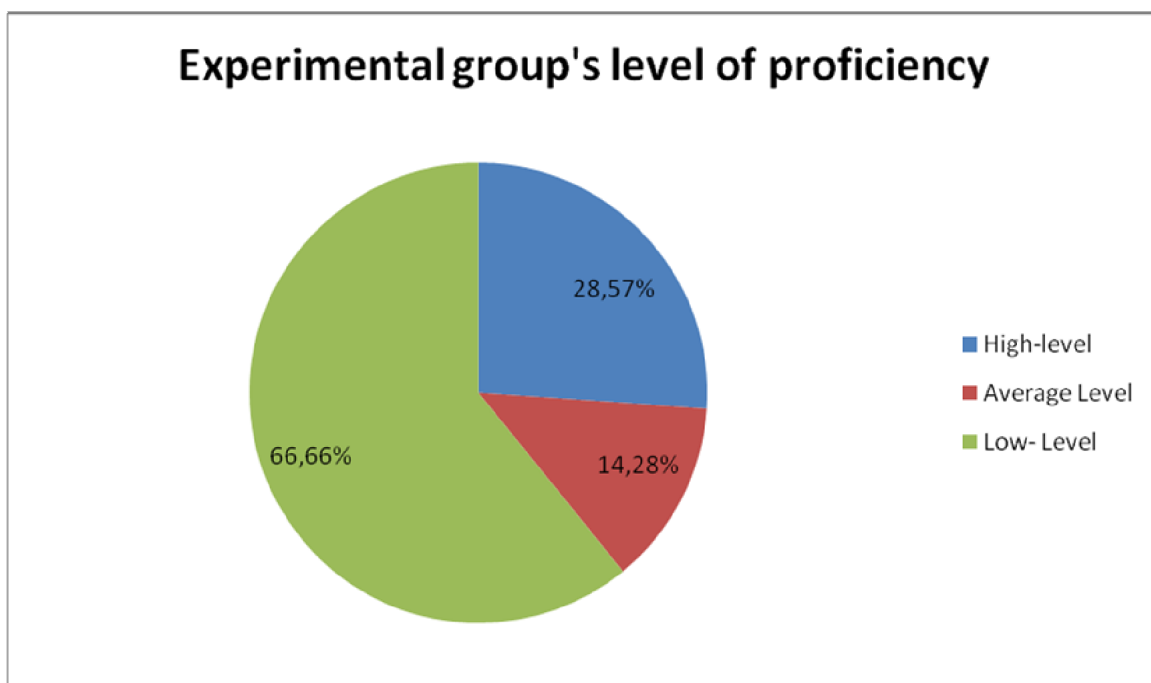


Figure 3. 1: Students' achievements in the first mid-term examination

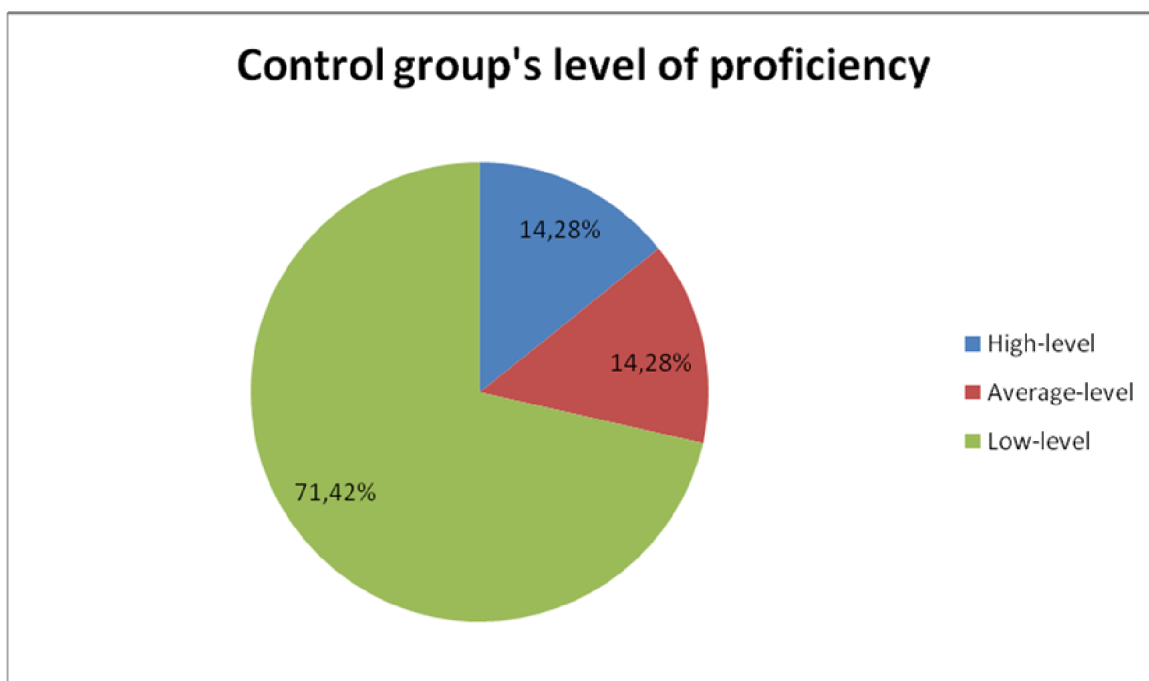


Figure 3.2: Students' achievements in the first mid-term examination

3.3 Results and analysis of the first experiment

The week	The introduced competition vocabulary	Groups' achievement	
The first week	BUSINESS IS WATER, SPORTS AND WAR.	The experimental G 7,25	The control G 6,68

Table 3.1: The experimental procedure of the first study

The scoring procedure followed in the first study to test students', in both groups, acquisition of business competition vocabulary was run as follows. For each correct answer in each sentence, the student takes two points except for the words 'competitors' and 'war' since they are more familiar with the terms. Hence, only one point is scaled for these vocabulary items in the fifth and the fourth statements. On the whole, ten points were

Chapter Three Analyses and interpretation & suggestions and recommendations

awarded to the whole test. Measurement of mean scores between the groups was directional. That is, one mean is expected to be higher than the other between the groups. The mean score of each group which is *the simplest measurement of central tendency* was counted as follows:

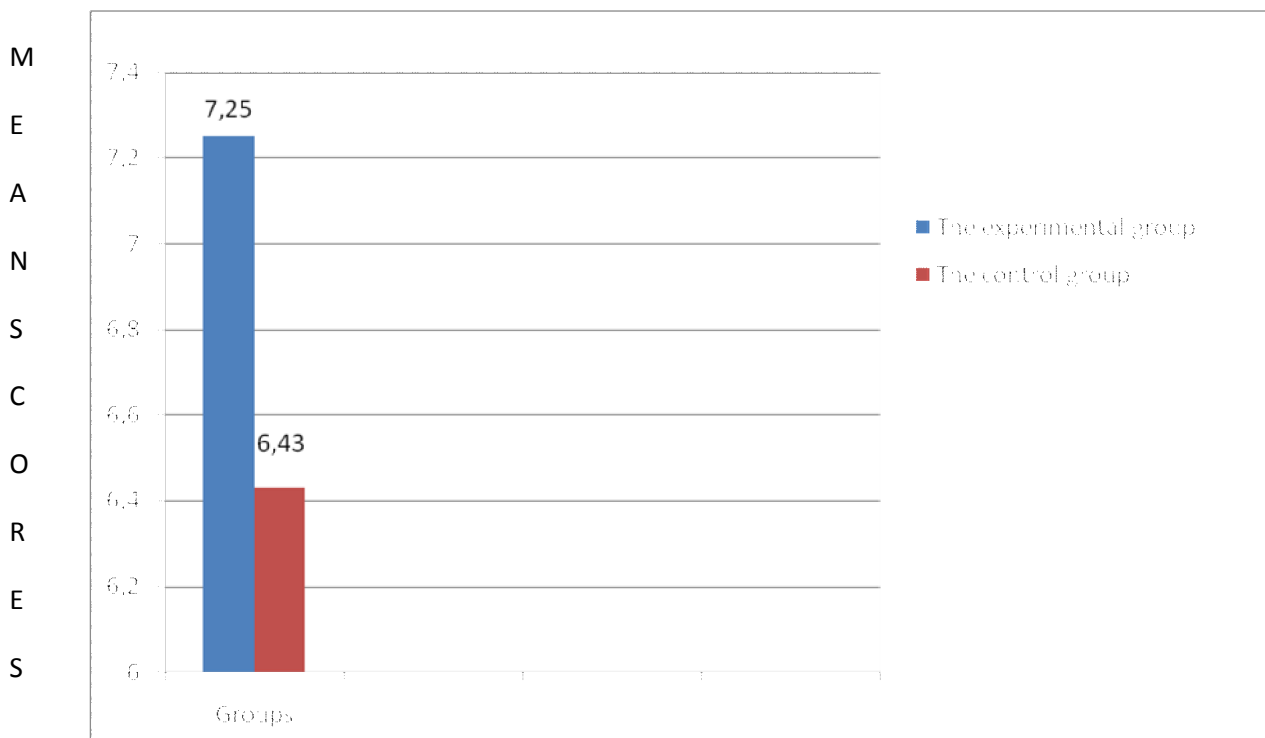
$$X = \frac{X_1 + X_2 + X_3 + \dots + X_n}{n} = \frac{\sum_{i=1}^n X_i}{n} = \frac{\sum X_i}{n}$$

Where X=mean, x=scores, n=number of scores and Σ = sum

The experimental group's mean (Xa) = 116/16 = 7,25

The control group's mean (Xb) = 103/16 = 6,43

Difference between means = Xa - Xb = 7,25 - 6,43 = 0,82



Graph 3.1: Students' achievements in the first study

The results of the first gap-filling exercise clearly show the difference between the experimental group and the control group in mid-term acquisition of vocabulary. The main items that were processed easily by the students are those related to the general encountered competition items like ‘competitors’, ‘war’ and ‘pressure’. In the experimental group, however, the lexical items which were highlighted through conceptual metaphors were successfully acquired. The frequently used items in the experimental group were closely related to the domains of war and water. Namely, ‘pouring’, ‘minefield’ and ‘battle’. The mean score of the experimental group outweighs that of the control group but the difference is not significant. The latter can be attributed to many factors, the newness of the material and the methodology used besides the puzzlement encountered with the visual material related to sports, war and water. Another factor affecting the results is the timing of the session; it is the last session in the morning at lunch time. The cognitive load on students is also a matter of consideration. After three consecutive lectures, students’ come to class almost exhausted.

Indeed, the use of the pictorial support might be a hindrance to some learners as their individual learning style may differ. Further, retention of the learnt vocabulary might take place through continuous encounter with the same word in different contexts. This one-shot encounter with the items could not extend in the mental lexicon unless its extension is provided through prolonged uses. The overall comprehension of the text was significantly higher and faster in the metaphor group than that of the control group which was further fostered by teachers’ explanation in the learners’ first language. Important to mention is the choice of the metaphorical lemmas included in the test, the sentences used were related to the acquired vocabulary a week before. Hence, absence of extension in the words used or the difficulty associated with their newness was eliminated. Thus, the small range of difference between the groups might be attributed to the easiness of the test used and the resemblances between the metaphorical expressions in their L1 and those included in the study.

3.4 Results and analysis of the second study

3.4.1 The gap-filling exercise

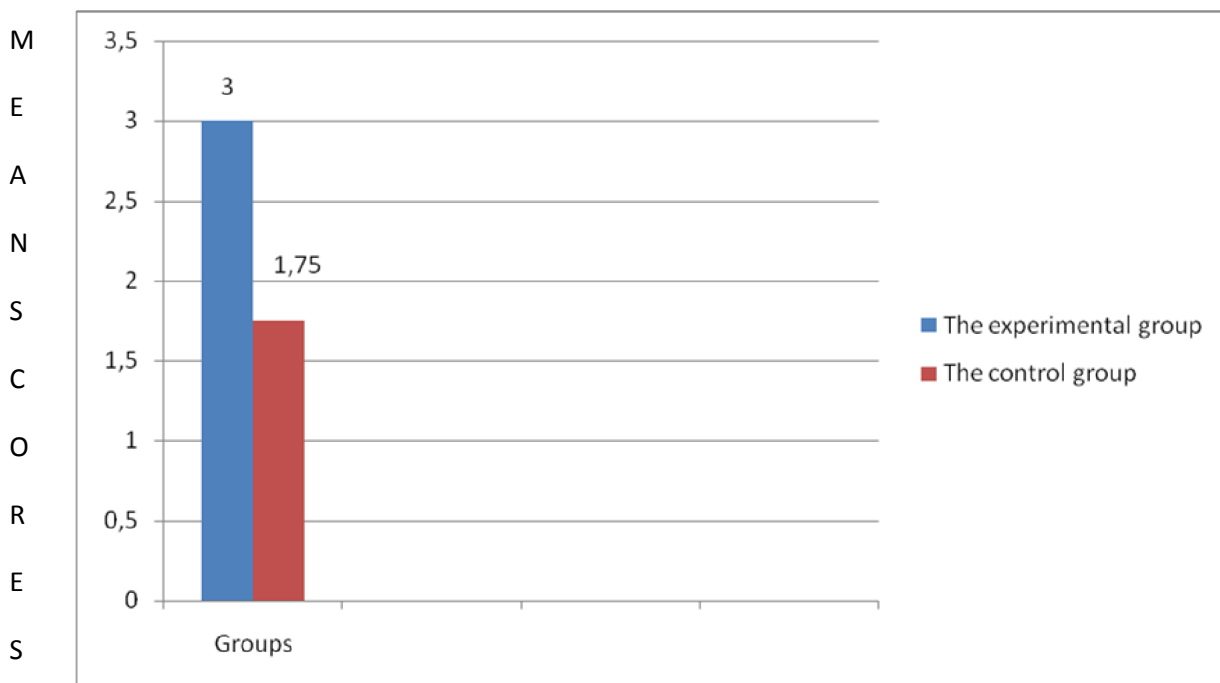
The week	The introduced cash flow vocabulary	Groups' achievement	
The second week	MONEY IS A LIQUID	The experimental G 3	The control G 1,75

Table 3.2: The experimental procedure of the second study

In the second experimental study, two measuring tools were utilised so as to check vocabulary acquisition and retention. Both the gap-filling exercise and the writing assignment were modeled on the learnt vocabulary items under cash flow. In the experimental students' worksheets, an introductory paragraph explaining the intersection between water and business was provided together with a vocabulary list prior to reading the required text. The equivalents in French were given by the teacher and it was up to the learners' to translate the terms in their L1. Elaboration of the students' translation of terms into Arabic was guided by the teacher and the researcher. Further still, 'foreignization' took place due to cultural misunderstanding. In contrast with the first gap-filling exercise, novel metaphorical expressions were included in the sentences. The progress of learners' retention of the studied vocabulary items was measured through implementing the same cloze exercise.

The metaphor group outperformed the control group in the second C-test indeed, but the degree of difference is a matter of caution. The mean of the experimental group fell down from 7, 28 to 3 instead of increasing. The latter case might be attributed to the length of the task compared to the first one. Furthermore, the test was handed to the students' three days before the first mid-term examinations. In other words, the psychological atmosphere might have affected students' achievements. The number of respondents in both groups who accomplished the test was also limited to twelve students only. Thus, the

mean score of metaphor group was counted as follows: $(Xa) = 36/12=3$. The mean of the control group, on the other hand, was calculated through dividing 21 by 12 which yielded $(Xb) = 1,75$. Difference between means (Xa) and (Xb) is: $3-1,75=1,25$



Graph 3.2: Students' achievements in the second study (the gap-filling exercise).

3.4.2 The Writing assignment

The week	The introduced Cash flow vocabulary	Groups' achievement	
The third week	MONEY IS A LIQUID	The experimental G 4,18	The control G 3,53

Table 3.3: The experimental procedure of the second study (the writing assignment)

The productive-oriented vocabulary of the first two experiments was tested in the writing assignment. Subjects in both the control and the experimental groups were required

Chapter Three Analyses and interpretation& suggestions and recommendations

to write a reply to a business e-mail by suggesting solutions to the cash flow problems encountered in Steve and Sue's computer company. Students were asked to comment on the proposed solutions or to propose new ones. By doing as such, the productive use of the studied lexical chunks was scaled according to their frequency. That is, the more the learner uses the studied metaphorical expressions, the better scores s/he gets. A whole point was awarded to the correct use of the expressions; thus, ranging from zero to ten points in total. The scaling of vocabulary items as such might be considered a weakness in the study, but it is rather chosen to keep the same scaling procedure in the whole study and to facilitate calculating the means of the groups. Moreover, students' reluctance to handing in the writing assignment led to the non-equivalence of data between the two groups. The control group participants handed in twenty copies only, while the experimental groups' copies were limited to 21. As previously explained, sixteen copies were analysed accounting for the younger students only. The metaphorical expressions which were widely used in the experimental groups' sheets were 'activating dried up government funds', 'level the stream of inflows and outflows' and 'to bridge temporary gaps'. In the control groups', however, the high-frequency vocabulary items were used instead. The following were mostly used, 'cash flow', 'to liquidate fixed assets' and 'cash injection'. The mean of the groups is provided below:

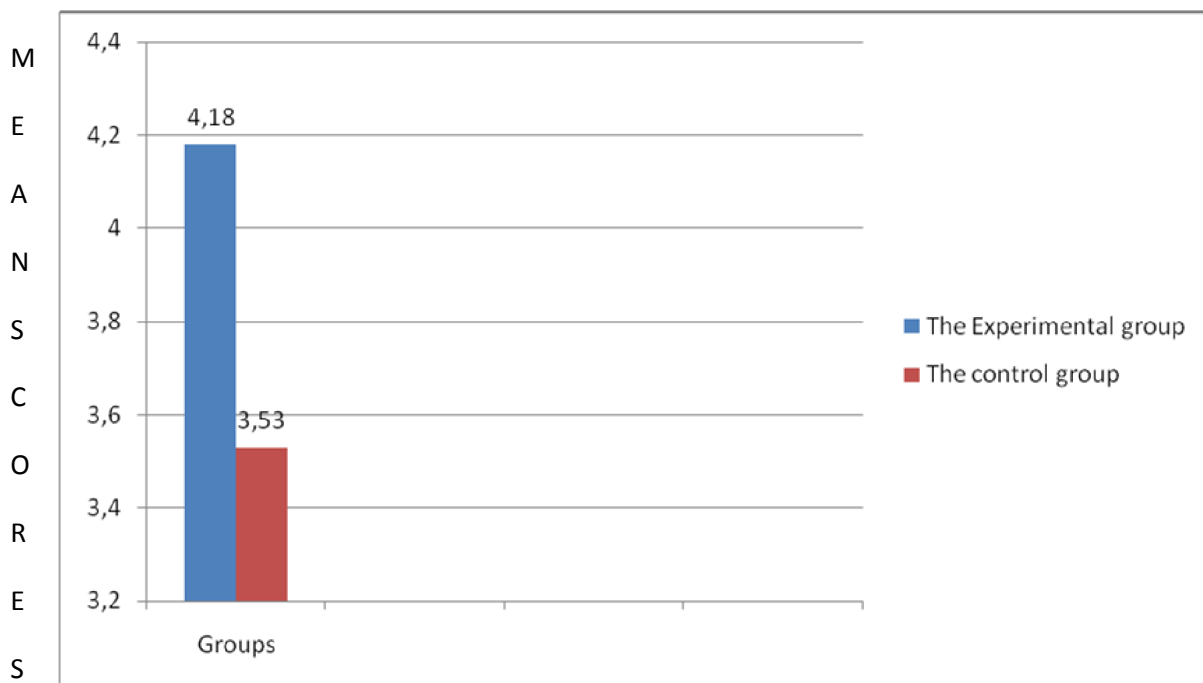
$$(Xa)=67/16=4, 18$$

$$(Xb)=56, 5/16= 3, 53$$

$$\text{Difference between means}= Xa-Xb=4, 18-3, 53= 0, 65$$

The use of the lemmas related to business competition which was the main concern of the first study was tested in the final exam rather than the writing assignment at hand. Although the metaphor group students outperformed their counterparts in the use of the metaphorical expressions, individual learners' texts showed little use of novel metaphorical expressions other than those studied as part of classroom practice. Only three high-level students used expressions like 'drowning in debts' and 'to keep one's head above the water'. Important to mention, indeed, is the linguistic support students might have got from their teachers in private institutions or internet resources. The findings in the writing assignment can be but a tentative conclusion since students are usually provided with some help from professionals in the field. Reliability of the writing assignment can be achieved in another writing assignment hence. Further, two subjects in the control group used the

word ‘dip’ correctly because of the extended explanation the teacher used in class together with animations on the blackboard. The equivalents in Arabic were also part of the studied lesson.



Graph 3.3: Students’ achievements in the second study (the writing assignment)

3.5 Results and analysis of the third study

The month	The introduced Business competition vocabulary	Groups’ achievement	
Two months after the two first studies	BUSINESS COMPETITION IS SPORTS COMPETITION	The experimental G 5.90	The control G 2.62

Table 3.4: The experimental procedure of the third study

After the implementation of the first two studies, which set the ground for the delayed retrieval of the studied vocabulary related to business competition and cash flow problems, the third study embarked upon testing its retention in the medium-term memory. Despite its delayed implementation, the researcher refreshed students' background knowledge of the studied source domains a week before the test through incorporating another text centered around business competition. The text was taken from the popular discourse¹ rather. The length of the studied text, an article taken from Financial Times 2004, was chosen only after familiarising the subjects with texts of nearly the same length in the second semester. It is also considered a furtherance of studied lexis in the first study as part of an extensive reading technique. Through doing as such, the researcher aims at testing the vocabulary studied in the two studies on an equal level. That is, in the cash flow lesson, two measuring tools were used, a close gap-filling test and a writing assignment. In the lessons of business competition, the students were tested twice indeed; a week-delayed gap-filling exercise and a short-answer test implemented two months after the two studies. The difference, however, lies on the purpose of the measurement itself. The first 'cash flow' tests were meant for both receptive-oriented and the productive use of the studied lemmas. While the two delayed tests about business competition were meant for vocabulary retention both short and medium-term recall.

The results obtained from the two-month delayed test revealed the outperformance of the experimental group subjects over their control group participants. The scoring procedure followed is different from the previously counted marks. Instead, it was part of the way continuous assessment was followed by their teacher. The test contained eight sentences where the underlined metaphorical expressions are the targeted items to be explained according to the context. For each correct interpretation, the student gets 1.5 out of 12. The mean score of each group was counted as unfolds in this calculation of data:

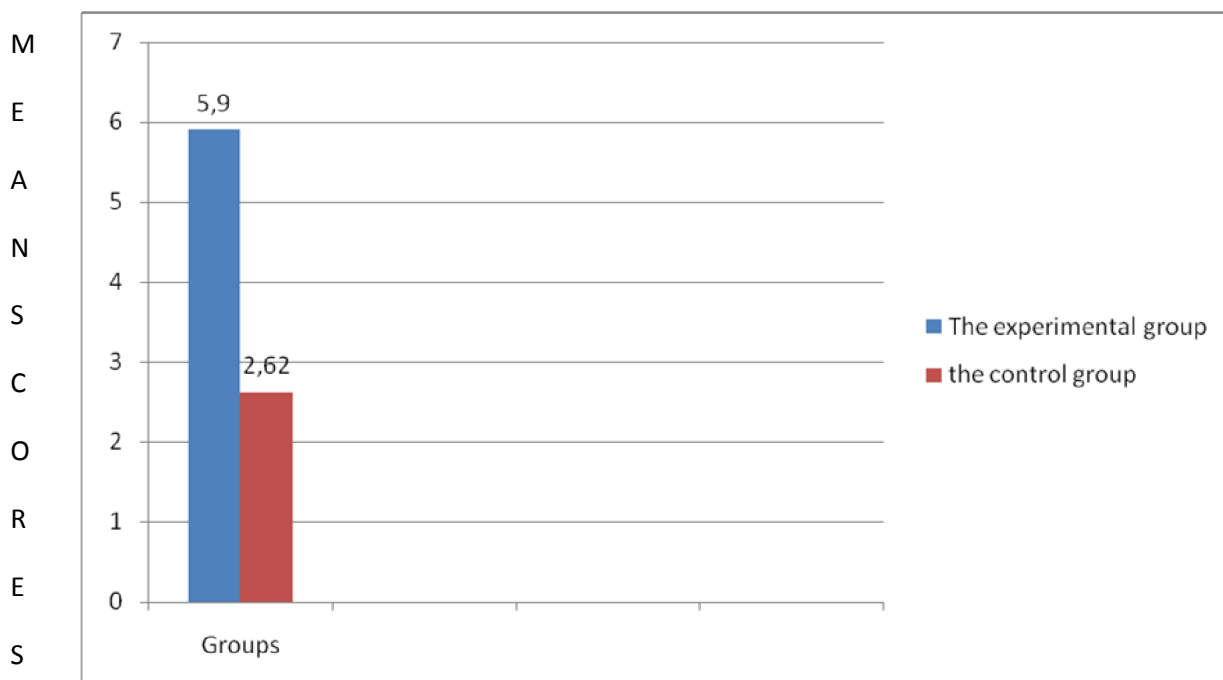
$$(Xa)=94.5/16=5.90$$

$$(Xb)=42/16=2.65$$

$$\text{Difference between means= } Xa-Xb=3.28$$

¹ The text was taken from the Financial Times Newspaper, 2004. It is part of the third experimental study conducted by Grundmann (2009).

In the bar-graph underneath, the difference between the mean scores is shown as highly significant. The experimental group's achievements developed due to the repeated encounter with the metaphorical expressions and the familiarity with metaphor-awareness technique. The control group subjects had the same opportunity for input enhancement through repeated encounter with the studied lexis but they may have failed to remember those expressions in a different context. Detailed discussion of the results of the three studies is dealt with in the next paragraphs hence.



Graph 3.4: Students' achievements in the third study

Vocabulary retention might be achieved due to increased encounter with the same word in different contexts. The natural approach to language learning, indeed, adds impetus to the integration of conceptual metaphor awareness in discourse. It is based on incidental learning of vocabulary items rather than grammatical structures. Meaning should be emphasised more than mere words. The combinatory mechanisms that polysemy of a particular word offers is central to metaphor awareness raising. Teaching concepts rather than words is part and parcel of teaching contextually-engraved lemmas. The text chosen for the third study was also replicated from the third study of Grundmann (2009). It has been selected according to words' frequency. That is, nearly all the expressions mentioned

in the text and the test thereof are low-frequency items. That is they are novel expressions compared to the metaphors used in the first study. The degree of difference between the two groups' mean scores confirms the utility of metaphor awareness on vocabulary retention and further confirms the natural approach to learning and teaching vocabulary. In other words, Stephan Krashen and Terrell's (1983) theory of 'comprehensible input' can be stipulated in the comprehensible input that students received through increased metaphor awareness. The more the item is processed in a comprehensive manner, the better retention it accomplishes in the long-term memory. Further discussion of findings is provided under the next heading.

3.6 General interpretation of findings

The three studies were conducted to test the general hypothesis that conceptual metaphor awareness contributes to vocabulary acquisition and retention. The results of the three studies confirm the general hypothesis through comparing the mean scores obtained by the two groups. In the three studies, the experimental group students surpassed the subjects of the other group. The dependent variable, in this case, students' scores in the assigned close and written tests, is the main distinguishing measurement of the impact of the independent variable. It aims, also, at answering the questions posed in the study. The effect of conceptual grounding on vocabulary acquisition which the first research question tackles has been tested in the three studies. In other words, learners in the experimental group have been continuously instructed about relating the learned expressions to how their bodies function in the language they speak. The results positively answer the first question and, further, contribute to the teaching of conceptual metaphors. The attribution of a lexical item to the etymological origin can be a facilitator to the acquisition of language and its construction in the mind. Thus, it is part of both the lexical approach to language and the neural-blending theories that seek to explicate the learning of language and its production as such.

The empirically-tested hypotheses on vocabulary acquisition and retention were partly based on the Natural Approach to language teaching and learning. In it, Krashen&Terrell (1983) claim:

Acquisition depends crucially on the input being comprehensible. And comprehensibility is dependent on the ability to recognize the meaning of key elements in the utterance. Thus, acquisition will not take place without comprehension of vocabulary (:155).

Indeed teaching conceptual metaphors to students opened insights into the dual processing of items by explaining the motivational aspects of the words. As stated earlier in the first chapter, words are better understood and retained when they are dually-coded in a meaningful context. The improvement of students' achievement in the tasks in the three studies justifies the general hypothesis stated earlier and affirms findings in the domain of cognitive linguistic-inspired metaphor teaching. First, Boers' (2000) findings that grouping lexis under source domains provides systematicity in learning a foreign language is fostered in the first study. He, further, adds that the inclusion of metaphor-awareness into business English discourse teaching provides opportunities for understanding the abstract domain of economics. Conversely, the outcomes of the third study posed problems for learners' capacity to interpret the studied metaphoric expressions related to competition.

Second, the contribution of conceptual metaphor awareness to general text comprehension adds confirmation to the natural approach to language acquisition and the input enhancement hypothesis. In the former, Krashen & Terrell (1983) suggest that vocabulary items are better acquired and learned in context. The best way to do as such is through teaching the lexicon as part of reading texts relevant to the level of the learners.

Conclusions about the level of learners were drawn to determine the level of difficulty for the learners' high, average or low in metaphor instruction. High-level students in both groups, the control group and the experimental group, had difficulties neither in the first test nor in the second gap-filling exercises. All the lexical items in the first and the second tests were successfully filled in. The average level students, however, in the experimental group accomplished the tasks successfully than their counterparts in the control group. The mean score of the average level students in the first gap-filling exercise reached ($X=8, 8$) by summing up the total number of scores obtained by the average level metaphor group students and dividing it by the number of the students. The low-level students, indeed, had lower achievements in the test. The mean score was, hence, ($X=6, 87$). It should be pointed out that the testing procedure that classified the levels of

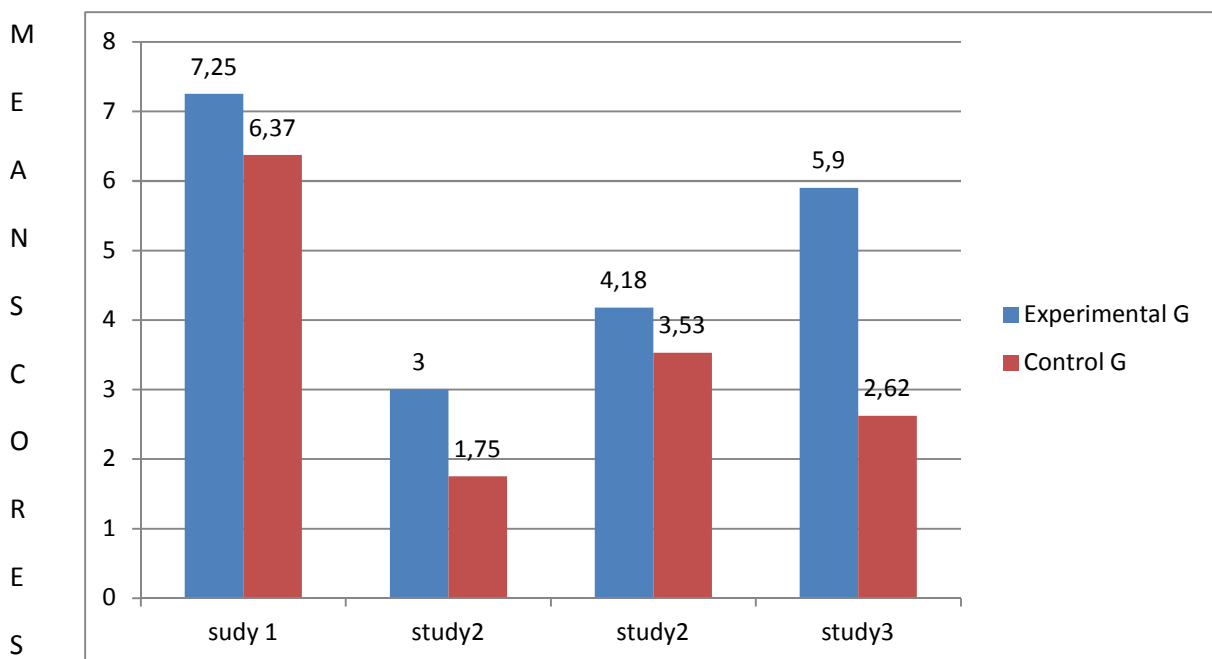
proficiency followed the regular academic evaluation. That is, both continuous assessment of students and the formal final examination were counted. Through the mean scores of the three-level groups of learners in the experimental group, one can conclude that average level learners are prone to the inclusion of metaphor awareness in acquiring vocabulary as the advanced level students. The finding is in full agreement with Boers' (2000) experiments with intermediate-level learners. However, this study is different from it in the classification criteria followed. Instead of a standardised placement test, this study took as reference the formal standard measurement in the Algerian university. In the table below, the aforementioned mean scores of the three groups of learners in the first gap-filling exercise are provided. Their achievements in the second study, however, were excluded from the analysis because of the limited number of students who returned the test. Only two students from the high level were present, six average level and four low level students.

Level of proficiency	Mean scores
High level	9,33
Average level	8,8
Low level	6,87

Table 3.5: The metaphor groups' mean scores according to level of proficiency

The last research question which is concerned with the effects of conceptual metaphor awareness on students' medium term retention of vocabulary has been answered in the third study. The results of the interpretations of the metaphorical expressions were insignificant compared to the results of the first two consecutive studies. The mean score of the experimental group decreased from 7, 28 to 5, 9. The last hypothesis, thus, has been disconfirmed. Metaphor awareness has no significant effects on learners' mid-term retention of vocabulary items. Data gathered from the second study's written assignment aimed at testing the productive-oriented vocabulary. The test the researcher used might be invalidly scored but it revealed the impacts of metaphor awareness on the productive use of lexis. The mean score of the experimental group was near to that of the control group with only 0, 65 of difference between the two means. Productivity of the studied lexis has been

tested only once during the study but it is in accord with Grundmann’s empirical study. He tested the productive-oriented vocabulary items in the same writing assignment with German business learners. The same outcomes were arrived at; however, the difference lies on the learning context and the level of the subjects. The main concluding remark about the productive use of vocabulary can be the difficulty attributed to its applicability in learning a language as *‘productive vocabulary is more elusive, more difficult to learn and possibly more fragile’* (Waring, 1997). On the whole, the results of the experimental study are sketched out in the graph below which recapitulates the two groups’ achievements in the tests. A set of recommendations and suggestions are the main points dealt with under the next sub-heading.



Graph 3.5 recapitulating graph of students’ achievements in the three studies

3.7 Suggestions and recommendations

After presenting and interpreting the results of the three experimental studies, some recommendations and suggestions should be accounted for when future studies might integrate conceptual metaphor awareness in teaching EFL/ESP, on a broader level, and English for Economics and Business studies in the Arab countries. The experimental study pursued by the researcher has been replicated from other studies through which some

Chapter Three Analyses and interpretation& suggestions and recommendations

recommendations were arrived at so as future researches might overcome the weaknesses encountered. First, teachers of business and economics should teach vocabulary through contextualisation rather than isolated words. The reading texts should be geared to learners' level of proficiency and their specialised discourse markers can be cues to understanding the texts in question both intensively and extensively. Organising lexicon under headings might provide opportunities for easier recall and may serve as mnemonics for later recall. Conceptual metaphors, as clarified in the first chapter, are part of business and economics discourse and a constituent of both abstract scientific and popular discourses. Teachers can make use of the strategies metaphor offers to vocabulary acquisition through integrating conceptual metaphor into English classes.

A large-scale study is needed to answer the following questions:

1. To what extent can conceptual metaphor awareness contribute to conceptual fluency in an EFL/ESP context?
2. What are the effects of learners' L1 on the interpretation and the transfer of metaphorical expressions?
3. What effects, if any, has explicit metaphor instruction on learners' vocabulary mid-term retention?

The didactic implications of teaching conceptual metaphors as suggested by Boers (2000) might be used as part of classroom practice as suggested underneath:

- a. Recognition of metaphor as a common ingredient of everyday language.
- b. Recognition of metaphoric themes behind many figurative expressions.
- c. Recognition of the non-arbitrary nature of many figurative expressions.
- d. Recognition of possible cross-cultural differences in metaphoric themes.
- e. Recognition of cross-linguistic variety in figurative expressions. (: 566)

Indeed, teachers might use pictorial support as a mnemonic while considering learner differences. Differences between Arabic and English cultural underpinnings might be integrated in Business classes which demand high-level teacher competence. A multiplicity of activities such as true/false questions, multiple choice questions, sentence completion exercises and oral discussions of conceptual metaphors can also be part of the lesson. In

sum, as part of ESP, teachers should first identify the level of students' proficiency as it is based on learners' needs, interests and wants for learning. Then tailor instruction accordingly.

3.8 Conclusion

In the third chapter of the study, the data collected from the tests and the writing assignment has been analysed simply by counting the mean scores of the two groups and drawing inferences about the difficulty encountered by the learners in the reading texts. The metaphor group outperformed the control group in the three tests but the difference in the productive use of the studied lexis was low compared to the first test. The bias that was uncontrolled for was the homework handed to the students. The results might be attributed to the help they got from more professional learners or teachers. The retention of the lexis in the medium-term memory was also tested in a two-month delayed test. The latter disconfirmed the third hypothesis of the study and it needed confirmation in a large-scale study. In the last part of the chapter, a set of recommendations has been provided in a form of questions for future research. Important to mention, however, is that the results of the experiment might not be generalised to the whole population as learners differ on the level of proficiency and that of perception. Finally, suggestions about the inclusion of conceptual metaphor awareness in discourse were taken from Boers' (2000) experiments with French-speaking students of economics.