The relationship between the use of language learning strategies and English language proficiency

A large-scale study with first-year students of economics at Ghent University

Masterproef voorgelegd tot het bekomen van de graad van Master in de Taal- en Letterkunde: Engels en Spaans

Nina Vertongen

Promotor: Prof. Dr. Mieke Van Herreweghe

Co-promotor: Prof. Dr. Geert Jacobs
Acknowledgements

Several people have helped to make writing this thesis much more enjoyable and effortless. First of all, I would like to thank my supervisor Prof. Dr. Mieke Van Herreweghe for her assistance and especially for proofreading my drafts and for her most helpful suggestions. I’m really grateful that she agreed to be my promoter this year even though she was on a research sabbatical.

Secondly, I like to express my gratitude towards my co-promotor Prof. Dr. Geert Jacobs for letting me use the information concerning the students’ proficiency level gathered at the beginning of the academic year with the Dialang test and for providing me with the results of the intermediate test of Economic English I.

In addition, I would like to express my gratitude to all the students at the faculty of economics of Ghent University who participated in this study and who were willing to report about their general strategy use in the strategy survey.

Next, for the statistical interpretation and analysis of the gathered results I received much help from Ludovic De Cuypere. He made the beautiful figures that can be seen in the results section. Without his help, the task of analysing the results would have been more difficult.

Lastly, I want to thank my friend Matthias Flement for putting so much time and effort into proofreading my literature study.
# Table of contents

Acknowledgements ........................................................................................................... 3  
List of figures .................................................................................................................... 7  
List of tables ..................................................................................................................... 7  
1 Introduction ................................................................................................................... 8  
2 Literature study ............................................................................................................. 11  
   2.1 Defining language learning strategies ................................................................... 11  
      2.1.1 The distinction between strategies, techniques, tactics, processes and skills ... 12  
      2.1.2 Other conceptual issues ................................................................................ 14  
   2.2 Classification of learning strategies ...................................................................... 17  
      2.2.1 Most widespread classifications ................................................................... 17  
      2.2.2 Issues related to strategy classifications ....................................................... 19  
   2.3 Self-regulation ....................................................................................................... 20  
   2.4 Factors influencing strategy choice ...................................................................... 21  
      2.4.1 Learner factors ............................................................................................. 22  
      2.4.2 Social and situational factors ...................................................................... 24  
   2.5 The relationship between strategy use and proficiency ....................................... 27  
   2.6 Methods for investigating learning strategies ....................................................... 29  
      2.6.1 Qualitative and quantitative investigation methods ....................................... 29  
      2.6.2 Self-report .................................................................................................... 31  
      2.6.3 Assessment methods using self-report ......................................................... 32  
      2.6.4 Assessment methods without self-report ..................................................... 36  
      2.6.5 Multiple data collection procedures .............................................................. 38  
3 Methodology .................................................................................................................. 40  
   3.1 Instruments ............................................................................................................. 40  
      3.1.1 Dialang ......................................................................................................... 41  
      3.1.2 Strategy Inventory for Language Learning (SILL) ...................................... 44  
   3.2 Participants ............................................................................................................. 47
3.3 Data collection and analysis ......................................................................................... 48

4. Results .......................................................................................................................... 51

4.1 The results of the tests and the SILL ......................................................................... 51

4.1.1 Dialang vocabulary and grammar tests ................................................................. 51

4.1.2 Results of the Strategy Inventory for Language Learning .................................... 53

4.1.3 Economic English vocabulary and grammar tests ............................................... 55

4.2 Comparison scores of the Dialang and economic English test ................................. 56

4.2.1 Vocabulary ............................................................................................................ 56

4.2.2 Grammar .............................................................................................................. 58

4.3 Effect of strategy use on the test scores .................................................................. 59

4.3.1 Dialang vocabulary test ....................................................................................... 59

4.3.2 Dialang grammar test .......................................................................................... 60

4.3.3 Economic English vocabulary test .................................................................... 61

4.3.4 Economic English grammar test ........................................................................ 62

4.4 Effect of number of frequently used strategy categories on the test scores ........... 63

4.4.1 Dialang Vocabulary test ....................................................................................... 63

4.4.2 Dialang grammar test .......................................................................................... 64

4.4.3 Economic English vocabulary test .................................................................... 65

4.4.4 Economic English grammar test ........................................................................ 66

5 Discussion ................................................................................................................... 67

5.1 The test scores .......................................................................................................... 67

5.1.1 Dialang test ........................................................................................................... 67

5.1.2 Economic English test .......................................................................................... 68

5.1.3 Comparison of the two tests ................................................................................ 70

5.2 The SILL .................................................................................................................... 71

5.3 Effects of strategy use on the test scores ................................................................ 72

5.3.1 Effect of number of strategies used ...................................................................... 72
5.4 Implications for the classroom ................................................................. 77
6 Conclusion........................................................................................................ 79
7 Limitations of this study and suggestions for further research...................... 83
8 References ...................................................................................................... 85
9 Appendices .....................................................................................................
  9.1 Definitions ..............................................................................................
  9.2 The subdivisions of Oxford’s strategy classification .................................. iii
  9.3 The online SILL ....................................................................................... iv
  9.4 Results of the individual strategy statements ............................................. viii
  9.5 The correlations between proficiency and strategy use .............................. x

Word count: 31 100
List of figures

Figure 1: Terminology within skills and strategies domains (Kirby 1988) ............................................. 14
Figure 2: Diagram of the strategy system: overview (Oxford 1990:16) ..................................................... 18
Figure 3: The languages and skills that can be tested with Dialang ......................................................... 41
Figure 4: Example of a description of the abilities related to a score of B2 .............................................. 43
Figure 5: Vocabulary scores of the Dialang test .......................................................................................... 51
Figure 6: Grammar scores of the Dialang test ............................................................................................ 51
Figure 7: Reported use of each of the 6 learning strategy categories .......................................................... 53
Figure 8: Grammar scores of the Economic english test .......................................................................... 55
Figure 9: Vocabulary scores of the Economic English test ..................................................................... 55
Figure 10: Comparison of the vocabulary scores of the Dialang and economic English test ............... 56
Figure 11: Comparison of the grammar scores of the Dialang and economic English test scores ...... 58
Figure 12: Correlation between the reported strategy use and scores on the Dialang vocabulary test . 59
Figure 13: Correlation between the reported strategy use and scores on the Dialang grammar test .... 60
Figure 14: Correlation between the reported strategy use and scores on the economic English vocabulary test ................................................................................................................................. 61
Figure 15: Correlation between the reported strategy use and scores on the economic English grammar test ............................................................................................................................................... 62
Figure 16: Correlation between number of strategies used and Dialang vocabulary test scores ......... 63
Figure 17: Correlation between number of strategies used and Dialang grammar test scores .......... 64
Figure 18: Correlation between number of strategies used and Economic English vocabulary test scores ............................................................................................................................................. 65
Figure 19: Correlation between number of strategies used and Economic English grammar test scores ............................................................................................................................................. 66
Figure 20: Diagram of the Strategy System Showing Two classes, Six Groups, and 19 Sets. ............. iii

List of tables

Table 1: Attributes of Qualitative and Quantitative Paradigms ................................................................. 30
Table 2: Definitions of language learning strategies .................................................................................. iii
Table 3: Reported use the individual strategy statements ........................................................................ ix
Table 4: The correlation of the students’ test scores with the quantity of strategies used .................. x
1 Introduction

Noticeable in every language learning situation is that learners, notwithstanding the duration and difficulty of the language learning task, can vary greatly in their success when trying to master a second language. This diversity is attributed to the individual differences of these language learners i.e. characteristics that are different for each person. The area of individual differences is very appealing for research purposes because, as Dörnyei (2005:2) stated, individual differences “have been found to be the most consistent predictors of L2 learning success”. The exact nature and quantity of these differences is, however, subject to discussion. Almost all investigators seem to consider motivation and aptitude to be the most important ones; these two learner characteristics have been studied since the 1960s (Dörnyei 2005:6); personality and anxiety also appear in most lists. In the late 1980’s and beginning of the 1990s, language learning strategies and styles followed and are now considered key factors in the L2 field (Ibid.). Other, more contested, factors are: age, intelligence, gender, creativity, willingness to communicate, self-esteem, learner beliefs, working memory and cognitive and affective factors such as extroversion/introversion, risk-taking and field independence (Ellis 2008:644).

In this paper will be focused on one individual difference in particular i.e. language learning strategies. Strategies have traditionally been included in taxonomies of individual differences and are widely studied in the L2 field, since numerous studies have proven the effectiveness of strategy use on L2 acquisition (e.g. Ehrman and Oxford 1989; Oxford 1994; Tseng et al. 2006). However, some theorists dispute the classification of strategies as individual differences. Dörnyei (2005:162), for example, argued that strategies are no personal attributes of the language learner, they are simply aspects of the learning process. He pointed out that almost all definitions of language learning strategies describe them as actions or thoughts, which are not individual differences. Nevertheless, individuals might be more or less inclined or motivated to use learning strategies and they might differ in their choice of particular strategies and the frequency with which they employ them. Furthermore, some pointed out the possible existence of “a trait-like strategic potential” that makes certain learners more effective strategy users than others (Dörnyei 2005:163). This evidence supports the claim that language learning strategies can indeed be considered as individual differences in the same manner as, for example, motivation and language aptitude.

Countless studies have focussed on language learning strategies in an effort to identify what distinguishes successful from less successful language learners. Early studies that focussed on “the good language learner” revealed that the learner’s “active and creative participation in the language learning process through the application of individualized learning techniques” caused some learners to be more successful than others (Dörnyei 2005:167). Later studies confirmed this finding and, as Macaro (2001:264) concluded, “[o]ne thing seems to be increasingly clear and that is that, across
learning contexts, those learners who are pro-active in their pursuit of language learning appear to learn best”. Because the field of study is seen as such a promising one and because knowledge of what can make language learning more successful and enjoyable has besides purely theoretical also an abundance of practical benefits e.g. teachers can apply more successful teaching methods, language learning strategies are a widely studied subject. In order to fully grasp how far-reaching the concept of learning strategies really is and to prove the validity of various claims and the reliability of the proposed measurement instruments, additional research is needed to which this thesis can be a valuable complement.

The main objective of this paper is to investigate the relationship between language learning strategy use and proficiency. More specifically, the claim of various researchers that successful language learners use more language strategies overall and a greater variety of strategy categories than unsuccessful language learners will be examined. A slightly adapted ESL/EFL version of Oxford’s SILL is used to question the students about their preferred strategy use. This reported use will be analysed in section 5 in order to find out whether students preferred particular strategy groups, as identified by Oxford (1990), over others and possible explanations for this will be offered. The students’ English proficiency was measured by two separate English grammar and vocabulary tests, one conducted at the beginning of the semester and the other at the end. The results are presented in section 4. Detailed information about the participants, the research instruments and the analysis can be found in section 3. The focus of this paper was to investigate the language learning strategies already used by the language students and not how the use of learning strategies can be trained. Nonetheless, some classroom implications of the results found in this investigation will be discussed briefly section 5.4.

When analysing the findings, particular attention will be paid to the correlation between the students’ preference for particular strategy groups and their test results. The hypothesis is that the students who made use of the most learning strategies and the greatest variety of them will have obtained higher scores on both tests than the students who reported lower frequencies of and variation in strategy use. This study is not the first one to investigate the relationship between proficiency and strategy use, others e.g. Green and Oxford (1995), Park (1997), Bremner (1999) and Hong-Nam and Leavell (2006) have conducted similar investigations. However, the investigation conducted in this paper is unique in that it compares the effect of strategy use on the students’ proficiency in two different language skills i.e. vocabulary and grammar. Furthermore, it will provide insights in the strategy use of a particular group of language learners i.e. Flemish first-year students at Ghent University that get educated in English from an economic point of view.

Before presenting and analysing the results of this investigation, I attempted to provide a complete picture of the concept “language learning strategy” and to frame my research into the existing
theoretical framework (section 2). A detailed description of the exact nature of language learning strategies as they are considered in this paper is necessary since the concept is a very polemical one and agreement is missing about even the most basic issues. I attempted to elucidate some of the conceptual fuzziness surrounding the concept by first of all trying to come to a definition of the term “strategy” and to make a distinction with similar terms such as “technique”, “tactic” and “process” in chapter 2.1.1. Afterwards I discussed the various existing definitions and classifications of language learning strategies, as well as the issues related to those (in sections 2.1.2 and 2.2). In section 2.3, I also briefly introduced a related concept: self-regulation. Next, in section 2.4, the most influential and widely discussed individual factors which might influence the learner’s choice of a particular learning strategy were discussed, and in section 2.5 we investigated the relationship between strategy use and one individual factor that is of particular importance for this investigation i.e. language proficiency. Proficiency will be discussed both as an influencing factor and as an outcome of strategy use. Lastly, as learning strategies can be measured via a wide array of methods, a useful oversight discussing the advantages and disadvantages of each method will be provided in section 2.6.
2 Literature study

2.1 Defining language learning strategies

Language Learning Strategies became a point of interest in the field of second language learning in the late 1970’s as part of studies about the good language learner (e.g. Rubin 1975 and Naiman et al. 1978). Awareness grew that some learners were more successful than others when it came to learning a second language and it was believed at the time that an understanding of the strategies employed by the more successful learners could help other students to improve their learning as well. In the 1990’s, books published by O’Malley and Chamot (1990), Oxford (1990), and Wenden (1987) showed that the concept entered the L2 field (Dörnyei 2005:166). The earliest studies tried to list effective learning strategies presumed to be effective for all good language learners. Later researchers attempted to construct classification systems. Nevertheless, even though language learning strategies have been the subject of study in the field of second language acquisition as well as in psychology for some time now, the various researchers active in the field have not yet arrived at a consensus regarding a universal definition and, as Ellis put it in 1994, “[D]efinitions of learning strategies have tended to be ad hoc and atheoretical” (p.533) and this still holds today.

A first issue, raised by Dörnyei (2005:164) is that it is difficult to differentiate “strategic learning” from “ordinary learning”. He clarified this issue with an example related to vocabulary learning: when learners memorize vocabulary just by looking at a list of words, this is viewed as a normal learning activity. When learners start highlighting certain words to indicate difficulties or unknown words, this is then viewed as strategic learning. The question remains, however, what the difference is between the two. Is it the simply the use of a colour code or are there other aspects to be reckoned with? A possible solution is to look at the level of appropriateness, as proposed by Riding and Rayner (1998, as cited in Dörnyei 2005:165). In their view, an activity is strategic when a particular learner deems it to be appropriate, in contrast to other learning activities. Strategic learning thus entails that the students chooses and employs the learning strategies that will enhance the effectiveness of their learning. As Dörnyei (Ibid.167) pointed out, however, this explanation raises new problems. First of all, the term “appropriateness” is not easy to define and, secondly, what is appropriate differs for each individual learner. To date, no conclusive solution is provided for this problem as for the numerous other issues related to learning strategies that will be discussed below.

Macaro (2006:325) identified no less than eight unresolved issues that add to the definitional fuzziness related to language learning strategy research: what the difference is between a strategy and a skill or process, whether strategies occur inside or outside of the brain, whether they consist of knowledge, intention, action or a combination of the three, what language strategies do i.e. whether they are
always effective and facilitating or not, whether strategies survive across all learning situations and tasks, whether they are integral or additive to language learning, how strategies lead to language learning and skill development in the long term and, finally, whether they can be divided into subcategories or not. Additionally, he pointed out the problem that definitions of learning strategies in the literature are often comprised of vague, undefined terminology. Moreover, the line between language use and language learning strategies is ill defined and some researchers seem to include both in their concepts of language learning strategies, while others focus exclusively on learning strategies. Most of these issues will be addressed one by one in the following section.

As Ellis (2008:704) pointed out, a distinction is frequently made between 3 types of strategies: production strategies, communication strategies and learning strategies. Tarone (1980, as cited in Ellis 1994:530. My emphasis) regarded the first two of these as language use strategies, while only the last one is considered to be a language learning strategy. Cohen (1990, as cited in Cohen 1998:4-5) considered the term “second language learner strategies” to encompass both “language learning strategies” and “language use strategies” because they are both steps the learner takes to improve in a second language. Oxford (1989, in Dörnyei and Skehan 2003:608) agreed with this view because “language use leads to language acquisition”. This opinion, which is not supported by Dörnyei and Skehan (2003), is illustrated by her incorporation of compensation strategies in her taxonomy (infra). In this thesis, “language learning strategy” will be perceived as including language use strategies, supporting the opinion of Cohen (1990) and Oxford (1989) that using a language is also a method of acquiring L2 proficiency and thus needs to be incorporated in the definition of the concept.

2.1.1 The distinction between strategies, techniques, tactics, processes and skills

Having established that second language learning strategies will serve as an umbrella term for both language learning and language use strategies, we need to have a closer look at the term “strategy” and distinguish it from other operational terms such as “technique”, “tactic”, “skill” and “process”. To begin, Stern (1983, in Ellis 1994:531) distinguished between “strategies” and “techniques”. He was of the opinion that strategies are “general tendencies or overall characteristics of the approach employed by the language learner” while techniques are more “particular forms of observable learning behaviour” mostly used in the areas of vocabulary and grammar learning (Ellis 1994:531). Not all investigators, however, have made this distinction. Dörnyei and Skehan (2003) seem to have equated the terms “strategy” and “technique” when they talk about learning strategies as “the student’s own active and creative participation in the learning process through the application of individualized learning techniques” (p.608, my emphasis). The term “technique” appears to be a popular one because it is rather general and thus saves researchers from the dilemma of needing to specify whether language strategies are actional or behavioural, as will be discussed more in detail further in this paper (section 2.1.2).
Another important terminological distinction is the distinction between “strategies” and “tactics”. Schmeck (1988:5) stated that the distinction is a subtle, but important one. He pointed out the origins of the word “strategy” as a military term used to describe plans for executing military operations. The more specific steps taken in the execution of those plans were called “tactics”. According to Oxford (1990:7), the two concepts are not completely different but share some basic implied characteristics such as: planning, competition, conscious manipulation, and movement towards a goal. Seliger (1984), on the other hand, relied on the distinction between conscious vs. unconscious when distinguishing strategies from tactics. He saw strategies as “basic abstract categories of processing by which information perceived in the outside world is organized and categorized into cognitive structures as a part of a conceptual network”, while tactics are “variable and idiosyncratic learning activities, which learners use to organize a learning situation, respond to the learning environment, or cope with input and output demands” (in Ellis 2008:704).

Schmidt (1994, as cited in Cohen 1998:11) operates in a similar manner when he distinguishes “processes” from “strategies”. He argued that learning strategies can be either in the focal or in the peripheral attention of the learner. When the behaviour is unconscious to the point that the learner cannot identify the strategy he used, it is a process; otherwise it is a strategy. Hence, in Schmidt’s view, “strategy” is the conscious act, whereas Seliger (1984, in Ellis 1994: 532) identified strategies to be the unconscious one. We have to bear in mind, however, that not all researchers make that distinction on the basis of consciousness and the terms are often used to refer to conscious as well as unconscious acts (Ibid:532).

Lastly, Kirby (1988: 230-231) differentiated between “tactics” and “strategies” on the one hand, and “skills” on the other. He defined skills as the abilities that a person acquired through practice and that can be expressed in behaviour at any time. Skills can be used both intentionally and automatically, but when the learner consciously chooses to employ a skill, tactics and strategies are involved. Thus, “skills are things we can do; strategies and tactics involve the conscious decisions to implement those skills” (in Schmeck 1988:5-6). Furthermore, Kirby divided cognitive processes into two domains: the skills domain and the strategies domain. The skills domain includes skills and abilities, the latter of which he sees as a pre-existing level of potential that puts a limit on the level that can be attained as well as the speed by which that happens. The strategies domain consists of tactic, strategy and style. Choice and decision making are key aspects here. The decision to implement a certain skill is seen as a tactic, while a combination of tactics or a choice among them is a strategy. A style is the regular use of a particular class of strategies. The two domains depend on one another and interact constantly, influencing each other (Kirby 1988:230-231).
In conclusion, we can state that, although many researchers have attempted to differentiate between two or more of the terms discussed above and to posit a clear definition of the concept “strategy”, in practice many of the concepts appear to be interchangeable. Cohen (1998:10) noted that the term strategy has been used to denote general as well as specific approaches and suggested that a solution would be to refer to all of these approaches with the term strategies, “while still acknowledging that there is a continuum from the broadest categories to the most specific or low-level”. And as Oxford and Crookall (1989:404) remarked, it is not important how they are called, what matters is that they make learning more efficient and effective.

2.1.2 Other conceptual issues

Apart from the uncertainty surrounding the content of the term “strategy”, the definitional fuzziness is further enhanced by a lack of agreement concerning some of the essential concepts in the field. Most researchers investigating language learning strategies formulate their own definition of language learning strategies and, comparing those, it immediately becomes clear that there is a lack of consensus related to almost all aspects of strategy use and that several researchers compose rather vague definitions in order to evade those problems altogether. In this section will be focussed on several major issues that have frequently been subject of debate in the language learning strategies field, i.e. whether those strategies involve conscious or unconscious processes, whether they are behavioural, mental or both and, lastly, what the effects are of the use of language learning strategies on the acquisition of a second or foreign language. A table with the definitions that will be compared below can be found in the appendices (section 9.1).

To begin with, one of the major issues concerning language learning strategies is whether they are conscious and intentional processes or unconscious ones. As Ellis (1994:531) remarked, many definitions simply avoid dealing with the issue. Also, as we have seen earlier, some researchers differentiate between conscious and unconscious processes by assigning them a different name, thereby claiming them as different concepts altogether. Cohen (1990, in Cohen 1998:4), on the other hand, claimed choice to be a distinguishing element of language learning strategies. Later on Cohen (1998) and Schmeck (1988:6) unequivocally declared learning strategies to be conscious and intentional. Chamot (1987) and Skehan (1998) seemed to agree with them by describing strategies respectively as “deliberate actions” and “intended”. Ellis (1994:532) occupied the middle ground and poses that they are “conscious or at least potentially conscious actions which learners employ...
intentionally”. Wenden (1987:8) added that strategies “can become automatized and remain below consciousness”. She explained that when something new is being learned, it is still conscious and you can e.g. correct or rehearse it. However, when a certain facility is obtained in the use of that strategy, it becomes an automatism and the learner may forget that he is using a strategy. In this paper, Wenden’s point of view is followed and therefore it is important that researchers keep in mind that only the strategies that are consciously used can be investigated via the learner’s self-report.

A second problem that surfaces when having a closer look at the definitions is that there appears to be no accordance on the subject of whether language learning strategies are behavioural or mental processes or possibly both. Here as well, numerous definitions ignore the issue and describe the process simply as “operations, steps or routines” (Rubin 1987), “techniques” (Rubin 1975; Chamot 1987 and Wenden 1987) or “procedures” (Schmeck 1988), leaving in the middle whether those are behavioural or mental. Weinstein and Meyer (1986, as cited in Ellis 1994:531), on the other hand, clearly counted both “behaviours” and “thoughts” as strategies and this is how it will be viewed in this thesis as well. Remarkable is that Weinstein and Meyer (1994, in Dörnyei and Skehan 2003:610) also claim that language learning strategies include “emotions”, and so do Weinstein et al. (2000, as cited in Dörnyei 2005:189). Moreover, the latter also included “beliefs”. Many investigators, among which Dörnyei (2005) and Tseng et al. (2006), are puzzled by these opinions, since thoughts and behaviours are considered to be separate aspects in human psychology and “from a scientific point of view a phenomenon is highly unlikely to be both behavioural and cognitive in nature” (Tseng 2006:80).

Oxford (1989) seemed to consider only “behaviours and actions” as strategies, similar to Wenden (1987) and Chamot (1987), and excluded mental processes. As Dörnyei and Skehan (2003: 608) pointed out, nonetheless, Oxford did include strategies that involve mental processes in her taxonomy of language learning strategies. In 1990, however, she resolved this issue by replacing “behaviours and actions” with the more general “steps taken by students” (p.1), thereby avoiding the dilemma altogether. The same strategy can be observed in the work of O’Malley and Chamot (1990) who at first included thoughts as well as behaviours in their definition and thereby expanded Oxford’s definition with a cognitive aspect. Comparable to Oxford (1990), however, they adjusted their definition some years later and replaced “thoughts or behaviours” with a broader “methods and techniques that individuals use” (1994, in Dörnyei and Skehan 2003:609). In brief, the investigators only seem to agree that language learning strategies cannot be solely cognitive processes but need to be acted upon in order to deserve to be called “strategies”.

Having looked in detail at the processes involved in strategy use, it is time to consider what they do, i.e. the effects they have on language development and why language learners use strategies in the first place, be it consciously or unconsciously. According to Ellis (1994:529), the type of strategy that a
learner chooses influences the rate as well as the level of achievement. Learning outcomes are both higher and are accomplished faster when a learner makes effective use of strategies. The majority of the researchers (Rubin 1987, Chamot 1987, Oxford 1990 and Dörnyei & Skehan 2003) agreed that the use of strategies facilitates learning i.e. that it makes learning more successful and effective; an opinion that is shared in this paper. In addition, Oxford (1989, 1990) even included “enjoyable” and “self-directed” to her definition. Another point of discussion is whether these effects are direct or indirect. Rubin (1987 in Ellis 1994:532) and Wenden (1987) claimed that learning strategies have a direct effect on language development. Other researchers such as Seliger (1984, in Ellis 1994:532) on the other hand, deemed it to be a more indirect one. Data is provided to the learner by the use of strategies, but this data still needs unconscious processing.

Due to this controversy over even the most basic issues of language learning strategies, some researchers abandoned the attempt to come up with a conclusive definition and decided to make lists of the most essential characteristics instead. Ellis (1994:532), for example, listed 8 characteristics used in the studies of the most prominent researchers in the field, such as Rubin, Oxford and Chamot. Macaro (2006:325) proposed a different solution; he identified three underlying propositions of learning strategies and declared that stating these at the beginning of a study may help the reader understand what position the researcher takes in the discussion. First of all, he suggested that learning strategies should be described “in terms of a goal, a situation and a mental action”. Next, he claimed that strategies are “the raw material of conscious cognitive processing, and that their effectiveness or non-effectiveness derives from the way they are used and combined in tasks and processes” and lastly, he underlined the importance of making a clear distinction between strategies and related terms such as processes, skills, plans and styles and to distinguish them from subconscious activity.

Following Macaro’s advice, we will clearly state what we understand under the concept “language learning strategy” in this thesis. First of all, as Cohen (1998:10) suggested, the term “strategy” will be regarded as enveloping all meanings ascribed to “techniques”, “tactics”, “skills”, etc., while acknowledging the existence of a continuum from the broadest categories to the more specific ones. Moreover, strategies will be investigated so far as they are related to language learning, although language use will be included as well since that is, in certain contexts, also a means to acquire language proficiency. Language learning strategies are used to facilitate the acquisition of a new language and make learning more successful. They can be applied in all learning situations, be it in the classroom or in more informal language learning settings. Furthermore, strategies are both mental and behavioural since the actions undertaken by the learner are reflections of the mental processes and decisions of the learner and they are for the most part consciously deployed. Nonetheless, as Wenden (1987:8) explained, the use of a strategy can become automatized in time which means that the learners will no longer be consciously aware of their use of that strategy.
2.2 Classification of learning strategies

2.2.1 Most widespread classifications

The classification of language learning strategies is another point of concern. When researchers of learning strategies began to investigate wide ranges of strategies for different aspects of language learning, such as vocabulary strategies, social strategies and cognitive strategies, and when various new strategies were discovered, the need for a classification system emerged. One of the first taxonomies of language learning strategies was developed by Rubin in 1981. Rubin distinguished between learning strategies, communication strategies and social strategies (Rubin 1987:15). Learning strategies, the strategies that directly contribute to the development of the learner’s language system, were further divided into direct strategies, which contained strategies for clarification and verification, guessing and inductive inferencing, deductive reasoning, practice, memorization, and monitoring, and indirect strategies, containing strategies to create opportunities for practice as well as production tricks (Hsiao and Oxford 2002:370). Other researchers, such as Naiman et al. (1978), Oxford (1990) and Ellis (1994), quickly followed with their own taxonomies. Each taxonomy implies a theory concerning the nature of second language learning strategies e.g. creating a separate category for affective strategies implies that affect plays an important role in second language learning (Hsiao and Oxford 2002:268).

The most widely applied, and equally extensively scrutinized, classification systems for language learning strategies, however, were those of Oxford (1990) and O’Malley and Chamot (1990). Oxford (1990:8) defined communicative competence as the main goal of the language learner and distinguished 6 main categories of language learning strategies: cognitive, memory-related, compensation, metacognitive, affective and social strategies. The first three, she classified as direct learning strategies and the other ones as indirect learning strategies, as is visualized in figure 2. Cognitive, memory-related and compensation strategies are direct strategies because they “directly involve the target language in the sense that they require mental processing of the language” (Ellis 1994:539). Metacognitive, affective and social strategies, on the other hand, “provide indirect support for language learning through focussing, planning, evaluating, seeking opportunities, controlling anxiety, increasing cooperation and empathy and other means” (Oxford 1990:151). Oxford (1990:16) stated that a natural overlap exists between the categories and she divided the six subcategories into a total of 19 strategy sets, as depicted in figure 20 (part 9.2 of the appendices). These 19 sets were divided even further. For example, social strategies were divided into: asking questions, cooperating with others and empathizing with others. Asking questions was subdivided into asking for clarification or verification and asking for correction. Oxford’s concept of language learning strategies goes beyond the cognitive and includes social and communicative processes.
Oxford’s taxonomy gave rise to substantial criticism. First of all, the addition of compensation strategies in her taxonomy indicates that she includes, besides language learning, also language use in her concept of language learning strategies. As discussed earlier, this inclusion of language use passes the boundaries generally set between language learning and language learner strategies, although the line between the two concepts is ill defined. Oxford argued, however, that “language use leads to language acquisition” and should therefore be included (1989, in Dörnyei and Skehan 2003:608).

Considerable criticism is also directed towards her inclusion of a separate category for memory strategies, which is in general regarded as a subclass of cognitive strategies and not, as depicted by Oxford (1990), as a class in its own right. Lastly, Oxford (2001, in Rose 2011:93) pointed out that the boundaries between the different categories of her classification are fuzzy, since learners can employ more than one strategy at a time.

O’Malley and Chamot (1990) tried to come up with a solution for these issues and created an inventory that closely resembles Oxford’s one. O’Malley and Chamot agreed with Weinstein and Mayer (1986, in O’Malley and Chamot 1990:43) that learning strategies have learning facilitation as their main goal and distinguished between metacognitive, cognitive, and social/affective strategies. Metacognitive strategies are “higher order executive skills” (p.44) and include selective attention, planning, monitoring and evaluation. Cognitive strategies “operate directly on incoming information, manipulating it in a way that enhances learning” (p.44), this is a larger category that consists of rehearsal, organization, inferencing, summarizing, deducing, imagery, transfer and elaboration. Lastly, the social/affective strategies category, which is a “broad grouping that involves either interaction with another person or ideational control over affect”, consists of cooperation, questioning for clarification and self-talk (1990:46). O’Malley and Chamot’s taxonomy seemed to resolve the issues related to Oxford’s one; there is a distinct category for memory strategies and they did not incorporate language use. Nonetheless, their taxonomy was not free from criticism either. Dörnyei and Skehan (2003:609) remark that their last, miscellaneous, category is clearly used to incorporate all strategies that do not fit in the first two and Hsiao and Oxford (2002:377) proved that social and affective strategies are as
distinct from each other as the other categories and, consequently, cannot be placed together into one category.

Dönyei and Skehan (2003:609) came up with an inventory that, according to them, resolves all possible problems with the ones by Oxford and by O’Malley and Chamot. They excluded communication strategies, combined Oxford’s cognitive and memory classes and divided O’Malley & Chamot’s social/affective category to come up with the following division:

1. **Cognitive strategies**: “involving the manipulation or transformation of the learning materials/input”;
2. **Metacognitive strategies**: “involving higher-order strategies aimed at analyzing, monitoring, evaluating, planning, and organizing one’s own learning process”;
3. **Social strategies**: “involving interpersonal behaviours aimed at increasing the amount of L2 communication and practice the learner undertakes”;
4. **Affective strategies**: “involving taking control of the emotional (affective) conditions and experiences that shape one’s subjective involvement in learning” (p.609).

Nevertheless, Oxford’s taxonomy remains the most widely applied classification of language learning strategies, mainly due to the significant amount of research conducted by Oxford herself and by other researchers using her taxonomy and her Strategy Inventory for Language Learning (infra). Additionally, Hsiao and Oxford (2002:378), when comparing fifteen strategy classifications with confirmatory factor analysis, found that Oxford’s six factor model was the one that was most in agreement with the learners’ reported strategy use.

### 2.2.2 Issues related to strategy classifications

Notwithstanding the popularity of Oxford’s classification, the abundant variety of existing classification schemes adds to the definitional fuzziness surrounding the concept of language learning strategies. Nevertheless, remarkable tolerance was shown in the L2 field for these inconsistencies and shortcomings, considering that learning strategies were seen as “one of the most promising topics in the broader field of educational psychology in the 1980s” (Dönyei 2005:169). Also, theorists active within the field, such as Skehan (1989, as cited in Dönyei 2005:170), initially believed that, before long, systematic categorization schemes and solid theoretical constructs would emerge. Nearly 30 years later, however, this is still not the case.

According to Rose (2012:137-138) it has, consequently, become increasingly difficult for new researchers to choose a framework in which to conduct their research about language strategies. Additionally, researchers can be discouraged to enter the area of strategy investigation because of future uncertainties related to new models that may arise and a lack of research conducted within these models. Furthermore, the conflicting methodologies resulted in a lack of hard results in the field of
language learning strategies. The growing criticism regarding invalid research instruments and definitional fuzziness caused researchers such as Skehan (1998) and Dörnyei (2005) to call for a re-theorization within the field. Dörnyei (2005) satisfied this need by creating a new model of strategic learning based on the concept of self-regulation. Learning strategies were, as a consequence, marginalized for research purposes.

2.3 Self-regulation

Self-regulation is a more dynamic concept than strategy and “refers to the degree to which individuals are active participants in their own learning” (Dörnyei and Skehan 2003:611; Dörnyei 2005). Furthermore, Self-regulation helps the learners to “transform their mental abilities into task-related academic skills” (Zimmerman and Schunk 2001:1) and it does so through “specific beliefs and processes” (Zimmerman and Risemberg 1997:105). Self-regulation offers a wider perspective on language learning than learning strategies do, since it comprises of a whole series of interrelated concepts, among which goal setting, self-motivational beliefs, receiving and processing feedback, action plans and action schemata (Winne and Perry 2000, as cited in Dörnyei 2005:192). This demonstrates that learning strategies are by no means the only tool accessible for the students when learning a language, nor are they the most important one.

Maybe the most essential distinction between learning strategies and self-regulatory mechanisms is, however, that the latter do not focus on the products of strategic language learning i.e. the particular learning strategies employed, but on the processes involved with language learning and the capacities underlying it (Dörnyei 2005; Tseng et al. 2006, my emphasis). This shift was triggered by an increasing awareness that the exact nature or quantity of the strategies employed by the language learner is of less importance than the fact that they use them in the first place. By shifting the emphasis from the product to the process, the investigators have created more margin for themselves (Dörnyei and Skehan 2003:612). A problem in one area does not prevent researchers to make progress in others (Dörnyei 2005:191).

Self-regulation is related to motivation, considering that they both deal with the antecedents of enhanced learner achievement. Dörnyei (2005:112-113) draws on this link when he offers a new model of strategic learning based on the concept of self-regulation and put into the framework of motivational control strategies. This 5-category models was based on Kuhl’s (1987) and Corno and Kanfer’s (1993, both cited in Dörnyei 2005) taxonomy of action control strategies. The categories identified by Dörnyei are:

1. **Commitment control strategies**: help to preserve or increase the learner’s goal commitment;
2. **Metacognitive control strategies**: monitor and control concentration and restrain procrastination;
3. **Satiation control strategies**: eliminate boredom and add attraction to or interest in the task;

4. **Emotion control strategies**: help to manage disruptive emotional states and generate emotions that help executing one’s intentions;

5. **Environmental control strategies**: eliminate negative environmental influences and transform environmental influences into an aid for the pursuit of goals.

Nevertheless, researchers such as Rose (2011:96) warned against the dangers of replacing an old model too quickly with another one “that is still in its infancy in terms of research conducted within its paradigms”. Furthermore, Gao (2006:615) responded to Tseng et al.’s marginalization of language learning strategies in favour of self-regulation and proposed that the two constructs, rather than replacing one another, could complement each other. Self-regulation and strategy use are clearly compatible constructs, since the first examines the forces that drive students to learn a language whereas the latter examines its outcomes. Combining the two models could lead to the acquisition of a broader perspective on learner’s strategic learning.

### 2.4 Factors influencing strategy choice

Language learners can vary significantly in both choice of particular learning strategies and frequency with which they employ them. This individual choice is influenced by a wide range of factors, as identified by numerous studies (e.g. Oxford and Nyikos 1989; Oxford 1989; Oxford 1994). Nevertheless, no agreement exists about the exact nature of those factors. Oxford (1989), for example, distinguished no less than 16 different factors, that, in her eyes, had an influence on the learner’s choice of a particular language learning strategy. Some years later, however, Oxford (1994:3) provided a much shorter list comprising of 8 factors i.e. motivation, gender, cultural background, attitudes and beliefs, type of task, age and L2 stage, learning style, and, remarkably, tolerance of ambiguity.

The most well-structured list is, possibly, Ellis’ one (2008:711-713). His list consists of 9 factors, divided into 2 categories: learner factors and social/situational factors. The factors considered to depend on the learner are: age, motivation, learner style, learner beliefs and the learner’s experience with language and/or language learning and strategy use. The language being learned, setting, task type and gender of the learner, on the other hand, were identified as social/situational factors. This list is not an exhaustive one. Ellis does not include factors such as aptitude, career orientation, proficiency, personality type and the social and cultural context in which the learning takes place, notwithstanding the evidence provided by various investigations (among which those of Green and Oxford 1995; Oxford and Nyikos 1989; and Nikoopour and Farsani 2010) that proved their influence on the learner’s strategy choice. These factors, together with the ones mentioned by Ellis (2008), will be discussed below. Language proficiency will be discussed separately in the next section.
2.4.1 Learner factors

Motivation is without doubt one of the most important factors related to strategy choice. Oxford and Nyikos (1989:294), when investigating foreign language students at a university in the US, found that the motivation expressed by the students to learn the language had the most powerful influence on strategy choice. Both the specific kind of strategy used and the overall frequency with which they were employed were influenced (Ibid: 295). Furthermore, they suggested that motivation and the use of strategies are in a cyclical relationship to one another. Not only do highly motivated students use more learning strategies, students who use more learning strategies also become more motivated. The enhanced proficiency due to the use of strategies enhances the learner’s self-esteem, which in turn leads to higher motivation and, consequently, the use of more strategies and so on. Moreover, MacIntyre and Noels (1996:383) reported that, not only do higher motivated students use language learning strategies more often, they also “report knowing more strategies, find them easier to use, and consider them to be more effective than students who are less motivated”. More specifically, he linked motivation to learn with increased use of cognitive, metacognitive, compensation, memory and social strategies. Lastly, Nikoopour et al. (2012:1281) observed a difference between the influence of intrinsic and extrinsic motivation on the choice of learning strategies of Iranian EFL learners. Intrinsic motivation was proven to have an influence on the learners’ use of cognitive and metacognitive strategies, whereas extrinsic motivation had no clear influence.

Oxford and Nyikos (1989:296) related motivation to yet another variable: number of years of language study. They discovered that students who studied the same language for at least 5 years, used more functional practice strategies than students with less experience. On the other hand, Radwan (2011:140-141), when investigating students majoring in English at the University of Oman, found a curvilinear relationship between study duration and strategy use. Freshmen students were found to use more learning strategies than the juniors, seniors and sophomores in the study. Additionally, O’Malley et al. (1985:34-35) provided evidence of a difference in strategy use between beginning and intermediate ESL students. Metacognitive strategies, for example, were found to be used more by intermediate than by beginning level students. However, no sharp differences were noted in frequency of strategy use between students of various advancement levels in English.

Career choice or orientation is a third variable that is strongly related to motivation and Oxford and Nyikos (1989; Ehrman and Oxford 1989 and Oxford 1989) found that this variable has a strong influence on the selection of learning strategies. Career orientation can imply field of specialization, usually university major, or current job position (Oxford 1989:242). Oxford and Nyikos (1989:296) discovered that the students’ university major had a direct influence on the student’s strategy use. Students majoring in humanities/social or in science/education used other groups of strategies, e.g. functional practice strategies, more frequently than did students with other majors. When investigating the difference in use of language learning strategies by professional language trainers, teachers and
students at the Foreign Service Institute, Ehrman and Oxford (1989:8) revealed that teachers preferred to use more authentic language than students, but less than professional language trainers. In all other aspects, teachers and students used similar strategies. Professional language trainers used more language learning strategies because they were more aware of and proficient in them and because they were proven to be more intuitive.

Strategy choice also is found to differ in accordance with the age of the language learner. Not only do children use different strategies than adults, young children’s strategy use differs from older children’s strategy use and the same goes for younger and older adults. Young children use their strategies in a task-specific way, whereas older children and adults use more generalized strategies (Brown et al. 1983, as cited in O’Malley and Chamot 1990). Touron and Hertzog (2004:308), in turn, discovered a difference in the strategy choice of younger and older adults. Older adults, for example, showed less confidence to use memory retrieval strategies in order to retrieve accurate information. Similarly, Lemaire et al. (2004:478) discovered that, although some strategies were favoured by young and older adults alike, age-related differences in strategy distribution could be found.

Additionally, although Ellis (2008:711) claimed that there is little support for the hypothesis that personality type plays a role in the choice of strategies, Oxford and Nyikos (1989) and Ehrman and Oxford (1989) proved otherwise. Ehrman and Oxford (1989:9-10) identified seven psychological types, namely, extraverts, introverts, intuitive, sensing, thinking and feeling, judging, and perception and they found significant differences between the learning strategy choice of learners belonging to the various personality types. For example, extraverts used more visual and affective strategies than introverts did and judges had a preference for general study strategies. A study with Iranian EFL learners (Nikoopour and Farsani 2010:94) also revealed the influence of personality type on strategy choice. They found, among other things, that sensing and intuitive personality types favoured affective strategies, whereas learners with a thinking personality type employed above all memory and social strategies. Additionally, Nikoopour and Farsani (2010:94) claimed that looking at the learner’s preferred strategy use can serve as a reliable predictor for the learners’ personality type. When investigating the link between learning strategies and personality types, however, we need to take into consideration that these associations might be context dependent (Liyanage and Bartlett 2013:606).

The learning style of the student is another factor that needs to be taken into account when discussing strategy choice. As Wharton (2000:209-210) remarked, various investigations, such as Ehrman & Oxford 1990 and Rossi-Le 1989 (as cited in Wharton 2000) have suggested that strategy use is determined by it. Furthermore, there exists a wide array of learning styles that differ according to the learner’s cultural and language background (Reid 1987, as cited in Wharton 2000). Additionally, Green and Oxford (1995:292) declared that “[s]tudents with different learning styles (e.g., visual, auditory, and hands-on; reflective and impulsive; analytic and global; extroverted and introverted)
often choose strategies that reflect their style preferences.” There is, however, not always a clear distinction between learning styles and personality types, as discussed in the previous paragraph, and Ehrman and Oxford (1990:324) seem to equate the two concepts.

Aptitude is a contested factor, Ellis (1994:541) clearly stated that “aptitude does not appear to be strongly related to strategy use” and quoted Bialystok (1981, in Ellis 1994) who found that learner beliefs were far more influential than aptitude. He admitted, however, that learning strategy use might be influenced by “that part of language learning aptitude shared with a general intelligence factor”. Even so, in the second edition of Ellis’s book (2008), no mention is made of aptitude in his list of influential factors whatsoever. On the other hand, Oxford and Ehrman (1995:379-380) found clear links between the use of certain strategies and the aptitude of the language learner e.g. learners with lower aptitude were found to use more compensation strategies and students whose performance was principally aptitude-based used more cognitive strategies.

Lastly, Yang (1999:515) discovered a strong relationship between strategy use and the learners’ beliefs. Especially self-efficacy beliefs were found to have a strong influence on the use of all kinds of learning strategies and the students’ beliefs concerning the nature and value of spoken English influenced the use of formal oral-practice strategies. Additionally, Yang proposed that the relationship between strategy use and learners’ beliefs should be looked upon as a cyclical rather than a unidirectional process, similar to the relationship of motivation and the use of learning strategies. Also, Wenden (1987, as cited in Ellis 1994:712) discovered that learners who believed that learning is the most important, favoured cognitive strategies, whereas learners that emphasized the importance of language use preferred communication strategies. Moreover, Dahl et al. (2005:268) identified 4 kinds of beliefs: beliefs how thoroughly knowledge is integrated in networks, beliefs about how fixed the ability to learn is from birth, beliefs about how certain knowledge is and, lastly, beliefs concerning how quickly learning can be expected to occur. The first two were found to contribute significantly to the reported strategy use, in contrast to the last two types.

2.4.2 Social and situational factors

Probably the most widely discussed social factor is gender. Numerous investigations have provided evidence for the claim that the use of language learning strategies is influenced by gender differences and, moreover, that women have a higher overall strategies use than men (Oxford 1994:3, Green and Oxford 1995:285, Oxford and Nyikos 1989:296). This in spite of Oxford’s (1994:3) remark that women can be surpassed by men when it comes to the use of a particular learning strategy and Green and Oxford’s (1995:285) claim that individual strategy use may differ from that of the general group. Women are proven to use more general strategies, authentic language use, searching, communication, and self-management strategies (Ehrman and Oxford 1989:7), and they make greater use of conversational input elicitation strategies and formal-rule based strategies (Oxford and Nyikos
On the other hand, some studies found no significant overall differences in the strategy use of females and males (El-Dib 2004: 93, Radwan 2011:143, Wharton 2000:233), although a tendency to use different strategies can be observed (El-Dib 2004:93) and, in one case, male students were reported to use more social strategies than females (Radwan 2011: 143). Lastly, Wharton (2000:233) observed that men made significantly more often use of a greater quantity of strategies than females at the specific item test, and Tercanlioglu (2004:190) found that, in Turkey, men used the most strategies. Possibly female students possess lower self-esteem in reporting strategy use in the male-dominated Turkish society.

This brings us to a second factor that is closely entwined with gender, namely the social and cultural background of the language learners. As gender is a social and cultural construct, the society in which the participants of a particular investigation live will have an influence on the language learning strategy use or the reported use of the students. Oxford and Nyikos (1989:296) explained the difference between women’s and men’s strategy use in our western culture by their different social orientation and the spheres in which the two sexes exert their influence. Men’s influence tends to be public, whereas women’s influence generally lies in the private sphere. Furthermore, the use of more general study strategies and formal rule-related strategies by women can be explained by the women’s desire to obtain good grades and their need for social approval. Also, it may be a sign of women’s greater verbal capacities. Lastly, women’s strategy use might be influenced by their greater willingness to conform to social norms. Gender expectations are by no means peculiar to western societies. El-Dib (2004:93), showed that, in the Arabic Gulf, the gender sensitive society differentiated men’s and women’s strategy use significantly. In conservative societies, women might use learning strategies with greater frequency in the classroom because it is the only place where they can use them, since they are not allowed to socialize with English speakers in real life.

Chamot et al. (1988:200) also found that learners match strategies to the specific task at hand. For example, when performing vocabulary tasks, learners used the metacognitive strategies self-monitoring and self-evaluation and the cognitive strategies resourcing and elaboration, whereas for reading they used the metacognitive strategies self-monitoring and self-evaluation and the cognitive strategies translation, deduction, inferencing and elaboration. Bialystok (1981:26) found that strategies like monitoring one’s errors were found to be more useful for writing than for reading or speaking tasks. Furthermore, Oxford et al. (2004:35) discovered that the interaction between proficiency level and task difficulty had a significant effect on the use of reading strategies. Also, Ghout-Khenoune (2012:778) investigated the use of communication strategies by Algerian EFL university students and found that the learning task did have significant effects on the quantity, but not on the quality of the communicative strategies used. Lastly, Abraham & Vann (1987 and 1990, as cited in Hsiao and Oxford 2002:369) stated that less successful language learners “grab for various strategies in a seemingly desperate, random way and do not pay sufficient attention to the relevance of a strategy to
the task at hand”. This proves that it is very important to choose the strategy that is most appropriate for a given task if one wants to become a successful language learner.

There is evidence that suggests that the language being learned influences strategy choice as well. Chamot et al. (1987:49), for example, found that high school students of Spanish used a different percentage of cognitive, metacognitive and social/affective strategies than college students of Russian and also that the total number of strategies varied for the two groups of language learners. Wharton (2000:228), when studying bi- and multilingual university students learning Japanese and French as a foreign language in Singapore, discovered that the learners of French used overall more learning strategies than learners of Japanese although both language courses used the same teaching methodologies and syllabus. She suggested that a difference in motivation might be causing this difference, since more students of Japanese indicated that they believed they would need the language for their future careers.

Finally, there may be a difference in the use of language learning strategies in classroom settings and more informal settings and, also, between second or foreign language classroom settings. Wharton (2000:209) posited that learners in SL learning settings make more frequent use of strategies than learners in FL learning environments. Additionally, she found that classroom learners showed a lower preference to use affective strategies than SL learners. Furthermore, Green and Oxford (1995:291) remarked that in a study of foreign language learners, as conducted by Nyikos and Oxford (1993, as cited in Green and Oxford 1995), naturalistic language is not used frequently because the foreign language classroom setting in which the students were placed did not require the use of authentic language intended for daily communication.

To conclude, it is evident that the choice of a particular learning strategy as well as the frequency with which each of these types is used, is influenced by various factors. These factors can be related to the language learner or to the social and situational context. Furthermore, in many cases the learner’s choice of a particular learning strategy does not depend on merely one factor, but rather is the effect of a joint influence of several of them. In many cases, such as motivation and career choice and gender and social/cultural context, these factors cannot be considered separately. Lastly, as Ellis (2008:713) remarked, these findings suggest that there is not one set of language learning strategies that is used by the “good language learner”. Instead, learning strategies that can be considered “good language learning strategies” differ according to the learner, context, specific language task, etc. These findings have important implications for language instruction in classrooms.
2.5 The relationship between strategy use and proficiency

Despite the lack of consensus concerning most of the conceptual and instrumental elements related to language learning strategies, agreement does exist between most of the researchers within the language learning field on the benefits of the use of strategies on language acquisition i.e. that it enhances the learners’ proficiency in the language they are learning. In the words of Tseng et al.:

“[S]trategy specialists believe that learners with strategic knowledge of language learning, compared with those without, become more efficient, resourceful, and flexible, thus acquiring a language more easily. The suggestion is that if learners can develop, personalize, and use a repertoire of learning strategies, they will be able to achieve language proficiency in a much facilitated manner” (2006:78-79).

Some disagreement exists, however, regarding the exact nature of the relationship between proficiency and strategy use, more specifically the nature and direction of the causality. As Bremner (1999:504) remarked, strategy use and proficiency can be related in three different ways. The relationship between the two variables can be uni-directional and language learning strategies can be either the outcomes of proficiency or they can increase the learners’ proficiency. The third way of looking at the relationship is as bi-directional i.e. strategy use both results from and leads to increased proficiency (MacIntyre 1994, as cited in Bremner 1999:494). Green and Oxford (1995: 288) suggested that a causal, bi-directional, relationship exists between language learning strategy use and proficiency.

The relationship between the two variables can be best visualized as “an ascending spiral in which active use strategies help students attain higher proficiency, which in turn makes it more likely that students will select these active use strategies”. On the other hand, some claim that the relationship is a linear one (Park 1979; Green and Oxford 1995), others found it to be curvilinear (Green and Oxford 1995; Hong-Nam and Leavell 2006; Radwan 2011), and some even remarked that a correlation between the two variables does not necessarily prove the existence of a causal relationship at all, in any particular direction (Skehan 1989 and Rees-Miller 1993, both cited in Bremner 1999).

By many, language proficiency is considered to be an individual factor influencing the learners’ choice of learning strategies. As Green and Oxford (1995:292) stated, “People at different levels of proficiency are likely to use different kinds of strategies, partly because they are dealing with various kinds of materials and situations”. Radwan (2011:144) proved that proficiency had an effect on the overall strategy use and also that the more proficient students favoured three specific categories i.e. cognitive, metacognitive and affective strategies. El-Dib (2004:93) on the other hand, when analysing a set of data from the Arabic Gulf, found out that less proficient students in his study preferred affective strategies because these helped them to overcome the tension and anxiety related to foreign language learning. In general, although the particular strategies favoured by successful language
learners can vary, studies investigating the relationship between the use of language learning strategies and proficiency found that the most proficient students employed the greatest number of strategies (Oxford and Nyikos 1989; Green and Oxford 1995; Oxford and Ehrman 1995; Park 1997). This finding was consistent across all education levels (Magogwe and Oliver 2007:350).

Language learning strategies can also be seen as a tool to increase proficiency level. It has generally been claimed that successful language learners use more learning strategies than unsuccessful ones (Chamot and Kupper 1989; Green and Oxford 1995; Park 1997). Additionally, they are believed to possess and use, overall, a greater variety of language learning strategies (Chamot and Kupper 1989; Oxford and Nyikos 1989; Ehrman and Oxford 1990; Green and Oxford 1995; Park 1997; Radwan 2011). If we use Oxford’s classification system, this means that learners should use strategies from as many categories possible. Moreover, good language learners use these strategies with great frequency and in as many situations as possible (Chamot and Kupper 1989; Ehrman and Oxford 1990; Green and Oxford 1995). Also, Oxford (1994 and Ehrman and Oxford 1995:69) pointed out that successful language learners tend to choose strategies that work together in an orchestrated way. “The number of strategies may be less important than the learners’ orchestration of them: many unsuccessful language learners use a vast number of strategies but in an unorchestrated, random way” (Vann & Abraham 1989, as cited in Ehrman and Oxford 1995:69).

Nevertheless, use of a great number and variety of learning strategies as frequently as possible and in an orchestrated way alone does not make a language learner successful. Also of paramount importance is that learners select those strategies that are most appropriate for their individual learning styles and personalities and for the particular learning task at hand (e.g. Naiman et al 1978; Chamot and Kupper 1989; Oxford and Nyikos 1989; Ehrman and Oxford 1989; Van and Abraham 1990; Oxford 1994). Some investigators even claimed that appropriateness was the sole variable that influenced the learners’ success rate. Van and Abraham (1990:179), in a study comparing the strategy use of successful and unsuccessful language learners in an academically oriented intensive English program, found that unsuccessful and successful language learners tended to use the same strategies, the difference lay particularly in the degree of flexibility shown by the students when they had to choose particular learning strategies and also how appropriate these strategies were for the task at hand. As Bremner (1999:494) remarked, these findings question the validity of the claim that successful language users are the ones who have a larger repertoire of language learning strategies and make the most frequent use of them.

Nonetheless, it is plausible that not one factor, but a complex relationship between various or all of the features discussed above contribute to enhanced language competences of the learner. Park (1997:216), for example, suggested a relationship between the variety of learning strategies learners have at their disposal and their appropriate use of those strategies, depending on various learner
characteristics such as purpose for language learning and the learner’s beliefs about language learning. After all, learners must have knowledge of a wide array of strategies from which they can select what they deem to be the most appropriate ones for the task at hand. In sum, successful students use “learning strategies more often, more appropriately, with greater variety, and in ways that helped them complete task successfully” (Chamot and Kupper 1989:17).

2.6 Methods for investigating learning strategies

Language learning strategies can be investigated by using an extensive variety of assessment methods. Each of them has its advantages and disadvantages and is useful in different situations. Before starting an investigation, the researcher has to give cautious thought to what method is advisable in the situation or for the group or specific task that needs to be investigated and also what kind of information he wants to obtain. Cohen (1998:24) listed six variables that influence the researcher’s selection of a particular assessment strategy: what you intend to investigate, whether you want to investigate receptive or productive language skills, the learning environment, concerns about the reliability and validity of the various instruments, time limitations and, last but not least, budgetary considerations. These six variables are not universal, however, other researchers such as O’Malley and Chamot (1990:86) have listed other elements which include, for example, the level of training a participant needs in order to be able to provide reliable information and whether you investigate individuals or groups. One or several of these variables can be decisive when the investigator has to make a selection.

2.6.1 Qualitative and quantitative investigation methods

Methods used to investigate learning strategies, and SLA in general, can be subdivided into qualitative and quantitative methods depending on what kind of information is obtained and how. Qualitative methods are generally ethnographic studies where the researcher lets himself be guided by the information provided by the informants rather than trying to prove pre-established hypotheses. A quantitative study, on the other hand, is intended to test a hypothesis and provide objective data that can be statistically processed (Larsen-Freeman and Long 1991:11). Reichardt and Cook (1979, as cited in Larsen-Freeman and Long 1991:11) have made a useful summary of the characteristics of both paradigms (Table 1). Qualitative paradigms, in SLA research this is often a case study, are characterized, among other things, by uncontrolled observation because the researcher has no predetermined hypothesis and the focus can change in the course of the investigation. The investigator’s proximity to the informants makes this method also more subjective. Additionally, it is oriented towards the process rather than the outcomes and it provides rich data which are, however, difficult to generalize. Quantitative research methods, on the other hand, are controlled measurements that provide objective data which are outcome-oriented, reliable and generalizable.
Reichardt and Cook (1979) pointed out the common idea that researchers must choose one of the two paradigms over the other and, accordingly, use different methods of investigation. Larsen-Freeman and Long (1991:14), however, were of opinion that investigation methods, although in many cases clearly compatible with one of the paradigms, should not exclusively be associated with them. Furthermore, they stated that the choice of investigation methods should depend on the research question rather than the choice of “a priori paradigms”. To illustrate their point of view, they made a comparison between a case study and a cross-sectional approach. It is clear that a case study is compatible with the qualitative paradigm because it is naturalistic, process-oriented and ungeneralizable, whereas a cross-sectional approach has many characteristics of the quantitative approach because it is obtrusive, uses controlled measurement, and is problem-oriented and generalizable. However, as Larsen-Freeman and Long (1991:12) remarked, “there is nothing inherent in either approach to prohibit it being practised in a way consistent with the alternative paradigm”. For example, an investigator can combine data obtained through a case study with data obtained by means of a controlled and obtrusive language task.

<table>
<thead>
<tr>
<th>Qualitative paradigm</th>
<th>Quantitative paradigm</th>
</tr>
</thead>
<tbody>
<tr>
<td>Advocates the use of qualitative methods.</td>
<td>Advocates the use of quantitative methods.</td>
</tr>
<tr>
<td>Phenomenologism and verstehen: ‘concern with understanding human behaviour from the actor’s own frame of reference’.</td>
<td>Logical positivism: ‘seeks the facts or causes of social phenomena with little regard for the subjective states of individuals’.</td>
</tr>
<tr>
<td>Naturalistic and uncontrolled observation.</td>
<td>Obtrusive and controlled measurement.</td>
</tr>
<tr>
<td>Subjective.</td>
<td>Objective.</td>
</tr>
<tr>
<td>Close to the data; the ‘insider’ perspective.</td>
<td>Removed from the data; the ‘outsider’ perspective.</td>
</tr>
<tr>
<td>Grounded, discovery oriented, explanatory, expansionist, descriptive, and inductive.</td>
<td>Un grounded, verification-oriented, confirmatory, reductionist, inferential, and hypothetico-deductive.</td>
</tr>
<tr>
<td>Valid; ‘real’, ‘rich’, and ‘deep’ data.</td>
<td>Reliable; ‘hard’ and replicable data.</td>
</tr>
<tr>
<td>Ungeneralizable; single case studies.</td>
<td>Generalizable; multiple case studies.</td>
</tr>
<tr>
<td>Holistic.</td>
<td>Particularistic.</td>
</tr>
<tr>
<td>Assumes a dynamic reality.</td>
<td>Assumes a static reality.</td>
</tr>
</tbody>
</table>

Table 1: Attributes of Qualitative and Quantitative Paradigms (Reichardt and Cook (1979:10) in Larsen-Freeman and Long 1991:12)
Lastly, instead of a rigid distinction between the two paradigms and an absolute assignation of all of the investigation methods to one of them, they proposed a continuum with the two paradigms at the poles and the methods arranged along it. The method closest to the qualitative pole is introspection, followed by participant observation and non-participant observation. Focussed description is placed in the middle, followed by the more quantitative pre-experimental and quasi-experimental methods. The experimental approach is considered to be the most quantitative method.

2.6.2 Self-report

Quantitative and qualitative assessment methods can be further divided into methods that make use of self-report and methods that do not. Several of the most popular methods employed to investigate the use of learning strategies, both quantitative and qualitative ones, involve self-report. Before entering in a detailed description of those methods, it is therefore advisable to have a detailed look at the concept itself, especially since it is an often criticised one. Self-report is “the learners’ descriptions of what they do, characterized by generalized statements about learning behaviour” (Cohen 1998:34). It is thus a type of information gathering that depends very much on the informant’s willingness to cooperate and ability to provide sufficient and relevant information.

The use of self-report data is so popular because it has several advantages over other assessment methods. First of all, observation alone cannot give the researcher insight into the cognitive factors involved with the use of learning strategies; only the language learners themselves can shed light on the processes that take place in their minds while learning a language or completing a particular task. Secondly, self-report can take place immediately after or even during the instance of strategy use, which makes it less likely that important details are forgotten by the informant before this information can be passed on to the researcher.

Nevertheless, self-report is a practice that gives rise to considerable criticism as regards the validity, as well as the reliability of the data collected in this manner. The validity is a point of concern because, as Ellis (1994:674) has put it, “the extent to which learners are sufficiently aware of their affective states and cognitive processes to report on them” is questionable. As discussed earlier, the use of language learning strategies is at least in part an unconscious process. Additionally, O’Malley and Chamot (1990) expressed their doubts that verbal reports correspond with genuine underlying mental processes and paraphrase Seliger (1983, in O’Malley and Chamot 1990:96), who argued that the informant reports solely on the products of his mental processes and that those processes themselves remain inaccessible. Cohen (1998:37) proposed, as a possible solution for this problem, to make the learner more consciously aware of his strategy use. Ellis (1994:674), on the other hand, simply advised the researchers to use the self-report data, while acknowledging the limits and possible incompleteness of
it. This incompleteness can, however, be helped by using the data as a complement to data gathered with other means of research (Cohen 1998:39).

A second issue remains: the reliability of the information provided by the language learner. As Seliger (1983, in O’Malley and Chamot 1990:94) remarked with good reason, the questions asked by the investigator may have an influence on the mental process of the learner. It is therefore the task of the investigator to compose questions that do not direct the informant towards a particular answer. Also, the informants may report on what they think they should have done, rather than what they have actually done (Ellis 1994:674). Additionally, the response may be influenced by the learners’ cultural background and his or her background knowledge about the type of investigation performed (Cavalcanti 1984, in Cohen 1998:37). Moreover, Cohen (1998:37) remarked that when the language of the learning task and the language in which the learner reports to the investigator differ, memory limitations of the learner can cause loss of information or the translation can be inaccurate. Reliability may also be at stake when the informant deliberately chooses to supply the researcher with incorrect information. Nevertheless, this is unlikely if the informants have consented to participate in the investigation and when the researchers stress that the information gathered will be considered under full confidentiality. Self-report data can be made more reliable and reflecting mental processes by training the informants on how to report. That way they know what is expected regarding the type and quantity of information needed. O’Malley and Chamot (1990:91) recommended informant training especially for think-aloud procedures; nevertheless, it could be useful for all types of assessment which involve self-report.

2.6.3 Assessment methods using self-report

Notwithstanding all the concerns and criticism, Chamot (2005:113) claimed that, up to now, no better method for investigating the language learners’ mental processes and techniques has been invented than self-report. This explains the popularity of language learning investigation methods making use of it, such as think-aloud tasks, interviews, questionnaires, diaries and dialogue journals.

Think-aloud tasks

One of those methods is the use of think-aloud tasks. This method requires the informants to report on the learning strategies while employing them for a particular learning task. The researcher may ask the learner open-ended questions while he is performing the task in order to trigger responses. This method has as its advantages that it does not put much strain on the learner’s memory, since not much time goes by between the act and the report. According to Oxford and Burry-stock (1995:2), this method provides researchers with the most detailed information and, furthermore, it may be the only way to develop a clear understanding of the learner’s mental processes (Chamot 2005:114). Also, it does reveal information about processing, rather than about planning and evaluation (O’Malley and Chamot 1990).
Despite these advantages, think-aloud tasks have several disadvantages as well. Other than the disadvantages already discussed for self-report in general, think-aloud tasks in particular require a lot of time to conduct, since they are usually performed with only one informant at a time. Secondly, Ellis (1994:535) remarked that they may give more information about skill learning than about language learning strategies. Also, some learners may not be able to successfully combine the performance of the task with thinking aloud. In order to overcome this problem, Ellis (1994:535) suggested that researchers ask the learners to work in pairs.

**Interviews and questionnaires**

Oral interviews are another means by which a researcher can obtain information about the learner’s strategy use. They require learners to recall either what they did to complete a specific learning task or about their use of learning strategies in general. Interviews can provide an enormous richness of description and in-depth information about the learner’s use of strategies that would be difficult to obtain using other methods (O’Malley and Chamot 1990:94). They ascribe this to the motivation of learners to respond in an interview due to feelings of flattery that someone takes a personal interest in their learning progress and also in their willingness to help other students become better language learners in the future with the help of the information the researcher has gathered. Moreover, interviews may allow learners to provide the information in their own words (Oxford 1990:197). Oral interviews are often recorded, and if needed also transcribed, so that the researcher can listen to them as much as necessary. This practice, however, is rather time-consuming.

Questionnaires are very similar to interviews, except that they are not oral but in writing. This quality makes it one of the most popular assessment methods since it makes them inexpensive and time-saving. Furthermore, they can be administered under complete confidentiality, which makes them non-threatening for the learner, and they can offer a general evaluation of each learner’s strategy use across a variety of tasks (Oxford and Burry-Stock 1995:2). One of the most frequently used questionnaires is the Strategy Inventory for Language Learning (SILL) developed by Rebecca L. Oxford in 1986. The questionnaires, as well as the interviews, can be conducted shortly after the learning task or some time later, they can be highly structured or offer the respondents some freedom in their responses, held individually or with large groups and can be formal or informal. Each of these types of interview has its advantages and disadvantages.

When the interview is conducted immediately after the completion of the language learning task or only a short time afterwards, this has the advantage that the loss of important details due to memory limitations is minimal. Nevertheless, it can sometimes be useful to postpone the interview until months or even years after the task. According to Cohen (1998:44), this course of action has several advantages. The time distance may result in a more objective account from the learners and they are more likely to remember the language experience as a whole and can thus provide an overall summary
without being overly burdened by details. Additionally, the learner may get some important personal insights about their language learning behaviour. Furthermore, Oxford and Burry-stock (1995:2) suggested that this method generally unites language learning strategies with other aspects of learning, such as motivation and learning styles, thus providing a wider view on the language learning process. Disadvantages are that, inevitably, details will be lost. Also the participants will have the inclination to generalize and there is the possibility of the learner interpreting his learning experience in a creative way.

Interviews and questionnaires can be highly structured or offer the participants some freedom in the form of open questions. The higher the degree of structure, the more influence this has on the content of the gathered information (O’Malley and Chamot 1990:93). Highly structured interviews require the learner to answer yes or no questions or require Likert-scale responses e.g. always true to me, sometimes true to me, etc. An example of this last type of questionnaire is Oxford’s SILL (see section 3.2.2). A specific set of questions is to be answered in a specific order and the learners are often not permitted to explain their answers, which makes the answers easy to process statistically (Cohen 1998:27). A disadvantage of this method is that the responses, because the learner cannot elaborate on them, are often simplistic. Also, ambiguities in the question may lead to misinterpretations by the respondent and cause them to provide incorrect information. When researchers make their questions too explicit, on the other hand, this threatens the objectivity of the instrument, since it may motivate the student to select a particular response (Ibid: 28).

Similar to highly structured interviews, semi-structured interviews or questionnaires offer the participant a question which needs to be answered. The shape of this answer, however, may take any form and is not predetermined. This format of questioning has the advantage that unforeseen and possibly very interesting information might turn up. This information can later be used in more structured interviews or questionnaires. Nevertheless, the freedom that students have when answering this type of questions results in an increase of the volume and individuality of the data. This can make it difficult to process and analyse the data for overall patterns (Cohen 1998:28).

A third variable that a researcher has to determine when composing an interview is the number of participants. As O’Malley and Chamot (1990:95) remarked, this issue only arises with interviews, since questionnaires are usually conducted in groups, while diaries and journals are usually composed by individuals. Performing a case study, i.e. a qualitative investigation, has the advantage that the researcher can go into great detail about a particular person’s strategy use. As discussed earlier, however, information gathered via qualitative methods is difficult to generalize. This problem may be overcome by doing several case studies and searching for agreements between them (Cohen 1998:29). Nonetheless, this course of action is very time consuming. The large number of respondents in group investigations is more effective in cost and time and, additionally, can give a more complete picture of
strategy use in a population. Disadvantages here are that the responses might be affected by social desirability, since the other group members can hear the responses, and that the strategies used by students who are more outspoken may seem to be the strategies most used by the whole group (Cohen 1998:29). Moreover, it is difficult to relate the strategies to the individual learners.

Lastly, as Cohen (1998:29-30) observed, the degree of formality used when asking the questions and also of the setting is important and might influence the rate by which learners are able to provide accurate and honest answers. Formality is independent of degree of structure; a highly structured interview can be conducted in a very friendly and relaxed manner, whereas an unstructured interview might be conducted very formally. Both manners have their advantages and disadvantages. Being too informal might be unfavourable because it can cause loss of objectivity due to a loss of distance between investigator and learner. Too much formality, on the other hand, may result in unwillingness by the informants to provide in-depth information about their social and affective strategies.

**Diaries and journals**

Apart from questionnaires, there are other methods of retrospective strategy assessments in written form: diaries and journals. Different from questionnaires, they are usually employed to assess individuals. In a diary, learners write about their reflections related to language learning. Oxford (1990:198) expanded this to “their thoughts, feelings, achievements, and problems, as well as their impressions of the teachers, fellow students, and native speakers”. Dialogue journals are similar, but with an important addition; there is a reader, usually the language teacher or supervisor, who comments on the learner’s writing. As the content of the diary and journal are of the student’s own choosing, it can cover a broad range of issues and is often unstructured (Cohen 1998:40).

Cohen posited that the researcher may be able to obtain self-revelational data about the learners from these diaries and journals. This data informs primarily about the learner’s affective state and how this influences language learning (Ellis 1994:534). Cohen (1998:41) suggested that the best way to act is that the students take notes during the language learning task and then, later that day, transcribe them in diaries or journals. That way the students may be able to transcribe accurately what they thought when doing the learning task. Another method could be that the learner composes the writing task on one side of the journal while, at the same time, taking notes on the other side about any difficulties that may arise e.g. a word that does not immediately come to mind, doubts regarding the correct tense of a verb, etc. This way, no information or details are lost.

Diaries and dialogue journals are very useful to find out what is important for the language learners. This data may be inaccessible through other methods for investigating language learning strategies. Another advantage is that they can be “kept everywhere and by everyone” and can be helpful to gather information about the use of strategies in less structured environments (Cohen 1998:41). Furthermore, the learners themselves may benefit from them. Rubin (2003, in Chamot 2005:114) suggested that
using diaries and journals in instructional settings may help students increase their metacognitive awareness regarding their strategy use and learning processes in general. Also, contrary to group interviews and questionnaires, they provide in-depth information about strategy use by individuals. Oxford (1990:199) also advised the teachers to provide guidance with regards to subject matter or style; this makes the diary or journal less personal but might make the learners more willing to share their writing. Also, since a diary is often considered to be private, a student should be warned beforehand that the teacher is going to read it.

On the other hand, diaries and journals can be difficult to analyse because of the large quantity of volume produced by the learners, far more than is needed for analysis, and the random nature of the entries (Cohen 1998:42). They may contain little information that is of use (O’Malley and Chamot 1990:94) and it is even possible that the learner does not mention the use of learning strategies at all. This problem can be helped by guiding the students and instruct them to write about particular topics. This practice, on the other hand, can make the students less keen on cooperation than when they are let free to write about whatever they like (Cohen 1998: 42). Lastly, the open-ended nature of the responses typical of diaries and journals may make it difficult to compare the strategy use of various learners (Oxford and Burry-stock 1995:2).

2.6.4 Assessment methods without self-report
To avoid all the criticism and problems associated with self-report, there are also some methods for investigating learning strategies that operate without it, such as observation and computer tracking. Nonetheless, a great disadvantage here is that it is much harder, if not impossible to deduce the underlying mental processes involved with the use of strategies.

Observation
Observation in classroom or in more informal settings is a relatively popular method for the investigation of language learning strategies. This method requires one or several investigators to observe the behaviour of the learners performing language learning tasks. Researchers can also take part in the activities themselves; this is then called “participant observation”. Participant observation requires the investigator to take notes immediately after the learning activities, whereas non-participant observation leaves the investigator free to take notes during the observation (Larsen-Freedman and Long 1991:15-16). It is possible that the investigator comes to the observation with some pre-determined ideas. Nevertheless, often this is not the case and the observer takes notes on everything that happens in order to find out patterns later on.

The investigator who plans to do an observation needs to consider various factors. First of all, it is necessary to determine the number of participants and observers. As Cohen (1998:31) remarked, observing an entire class may prove to be more profitable than observing an individual because one person may not provide much useful data. The use of multiple observers may be useful as well
because that way the chance that interesting behaviour is overlooked decreases. Nevertheless, this is not a problem if the observer tapes the behaviour. Secondly, Cohen stated that the frequency and duration of the observations is of importance. Possibly the observer needs to observe the same group several times in order to obtain meaningful data. Thirdly, the researcher has to decide how to collect and analyse the data. An observer can be present live or videotape the event. Also, the researcher has to choose between taking notes only on relevant data for a specific learning strategy or taking extensive notes of everything that occurs. The use of a checklist is also a possibility. This way the observer loses less time writing things down, but may lose information about behaviour that was unanticipated and therefore not included in the checklist (Ibid 30-33).

An advantage related to observation is that the data collected are prone to be more uniform, since they are gathered by the same observer (Cohen 1998:33). This quality makes it easier to analyse and process the obtained data statistically, although both participant and non-participant observation are placed more on the qualitative than on the quantitative side of the continuum, as discussed earlier. Additionally, Cohen (1998:33) claimed that, although qualitative methods are by definition subjective, data obtained through observation tends to be more impartial and objective than information provided by the learner himself. This is, when the observer has no intimate connection to the informants. Furthermore, Larsen-Freedman and Long (1991:16) stated that studies relying on observation are often seen as hypothesis-generating, since many researchers do not restrict the scope of their perspectives. Instead they generate hypotheses after having analysed varied data they collected for patterns. They do not arrive at the observation with presumptions and hypotheses which they seek to be proven or shown erroneous.

Notwithstanding these advantages, most researchers, among which Ellis (1994:533), are very sceptical about the possibility to obtain reliable information about learning strategies via observation. Ellis stated that the mental processes of the learner remain hidden for observation and that a formal setting such as a classroom does not stimulate learners to display behavioural strategies. Nevertheless, he gave notice of the possibility that observation may work with young children, since they are more open in their behaviour than adults are. On the other hand, the information gathered through observation can never be complete, given that mental strategies such as reasoning and analysing remain unrevealed. The researcher can only look for clues that indicate the use of a certain learning strategy e.g. the use of flashcards, whether students write down everything the teacher says or only a few main points, etc. Processes that only take place inside the learner’s heads, such as connecting words with mental pictures or trying to find patterns cannot be observed.

Furthermore, Cohen (1998:33) pointed out that the majority of the information will be gathered from the most verbal students. Additionally, the observer can be affected by prior expectations and thus might fail to notice unexpected data that are nevertheless of importance. Also, observational studies
take a lot of time to complete and the results obtained via this method are hard to generalize (Larsen-Freedman and Long 1991:17). Another very important issue is the observer’s paradox, identified by Labov (1972:113). He stated that “[t]o obtain the data most important for linguistic theory, we have to observe how people speak when they are not being observed”. It is inevitable that the presence of an observer will cause the language learners to behave differently. Even the presence of a video camera might have this effect. Cohen (1998:33) suggested that this problem, although not entirely avoidable, could at least be diminished by making students accustomed to the presence of an observer or video camera by repeated sessions.

**Computer tracking**

Cohen (1998:44-46) introduced an additional and more modern method for investigating learning strategies: computer tracking. This method can be carried out with or without the learner’s awareness and consent. The last possibility would remedy the problem that frequently occurs with observation, namely that students alter their behaviour when they know they are being observed. Computer tracking can provide information about the use of resource functions and the language strategies associated with that and can inform about the strategies learners use when they have to produce written language when lacking sufficient linguistic knowledge. For example, it can be traced whether they use a thesaurus or online dictionary or whether they look up verb conjugations or the use of specific tenses and expressions. Cohen (1998) even stated that it is possible to observe which strategies students use to form concepts and hypotheses. Also very important is that the computer is not human and thus reliable and objective research tool which eliminates human inaccuracy or unawareness.

Nevertheless, computer tracking as a method to investigate the use of language learning strategies is not without its shortcomings. First of all, you can only monitor the use of strategies for which the participants use a computer and more specifically, a resource function on that computer (Cohen 1998:44-46). If a participant decides to use a paper dictionary or make notes on paper while using the computer, this remains untraceable, as are all strategies use which takes place inside the learners’ heads. Additionally, as Cohen (1998:46) remarked, the results obtained by means of computer tracking will be strongly influenced by the participant’s comfort and ability to work with computers and also the lack of commercial availability of certain programs and the, possibly, unusable resources they contain may have a negative effect on the learner’s willingness to use the program which may cause them to use other ones or look up the needed information online.

**2.6.5 Multiple data collection procedures**

It has become clear that every existing method for investigating language learning strategies has its advantages and disadvantages and that the researchers have to consider several aspects of their investigation, as well as the type of results they want to obtain and in what form. Nonetheless, no
matter how carefully elected, none of the methods will be without faults. To overcome this, it has become quite common to use a combination of methods. That way, the shortcomings of the first method can be compensated by the second and vice versa. Also, O’Malley and Chamot (1990:95) noted that “the strategies reported depend on the data collection methodology”, using multiple data collection procedures remedies this issue.

A researcher can for example combine observation with a questionnaire so as to obtain objective information without having to depend solely on self-report, and on the other hand acquire information about mentalistic processes which cannot be obtained through observation alone. Ellis (1994:535) also pointed out the advantage that you can combine retrospective and introspective information e.g. by combining the information acquired by means of interviews and accounts regarding specific tasks. However, the strategies that you identify with each method may vary considerably (O’Malley and Chamot 1990:95). Also, some methods may produce quantitative data while others produce qualitative data, which makes the results difficult to compare.
3 Methodology

The current study was set out to investigate the relationship between the strategy use of a group of students of economics (N= 242) following an English language course at Ghent University and one specific variable, i.e. their language proficiency. Other individual variables that can influence the use of learning strategies such as gender, motivation, personality type, etc. were not taken into consideration. The relationship between strategy use and proficiency will be considered to be bidirectional as Green and Oxford (1995) suggested i.e. the use of strategies helps students to become more proficient and the increased proficiency leads in turn to more strategy use. The method of investigation chosen in this thesis is, however not designed to confirm causality in any particular direction. What we can do is investigate whether there are significant correlations between the frequency of use of certain strategy categories and the participants’ proficiency level i.e. their tests scores on two different vocabulary and grammar tests.

3.1 Instruments

For the purpose of this investigation one survey and two types of tests were used. First, the students of economics were asked at the beginning of the academic year 2014-2015 to complete the Dialang test in order to determine their proficiency level in the English language at that point. The language skills evaluated were: reading, writing, listening, grammar and vocabulary. The results of this diagnostic test were presented to them for each of these categories separately and in line with the six levels of the Common European Framework of Reference for Languages (CEFR) (Alderson 2005:29). In December 2014, those same students were asked to complete a slightly adapted online version of Oxford’s ESL/EFL version of the SILL in order to acquire detailed information about their use of strategies when it comes to language learning. The students had to report the frequency with which they used 49 language learning strategies subdivided into 6 categories.

Lastly, they completed a half-term evaluation in November/December 2014 assessing their English proficiency related to the course of Economic English I they took during the first semester. This test consisted of 40 multiple-choice questions which intended to test the student’s knowledge of vocabulary, grammar and a third, miscellaneous, category: skills, spelling and the use of resources. This last section contains, among other things, the knowledge of communicative functions such as idioms to express agreement and disagreement and fixed expressions used in letters, and the ability to successfully use a dictionary. Since this last category has no counterpart in the Dialang test and because the Intermediate test of English does not test the student’s skills in writing, reading and listening, vocabulary and grammar will be the only skills investigated in this paper. Lastly, it is important to bear in mind that the grammar examined in this second test was a repetition of knowledge obtained prior to the course of Economic English I, whereas the vocabulary was new and situated
specifically in the domain of economics. This in contrast to the general knowledge of vocabulary interrogated via the Dialang test.

3.1.1 Dialang

Dialang is an online diagnostic language assessment system developed by several European higher education institutions and run free of charge from 17 October 2006 onwards from a server at Lancaster University.¹ Dialang offers diagnostic rather than proficiency tests, which means that it is intended to inform users about their own language competence. Dialang also helps the learner to enhance his or her language skills by exposing their strengths and weaknesses and offering advisory feedback. The program offers tests and instructions in 14 European languages: Danish, German, Greek, English, Spanish, Finnish, French, Irish, Icelandic, Italian, Dutch, Norwegian, Portuguese, and Swedish and targets teenagers and adults who wish to have their foreign language skills diagnosed and evaluated, independent of any formal education system. As it is developed as a diagnostic tool for the language learner, it does not issue certificates.

The program offers learners the possibility to test five aspects of their language knowledge: listening, writing, reading, grammatical structures and vocabulary. These skills are further divided into several sub-skills e.g. sub-skills for reading are the ability to distinguish between the main idea of a text and the details, to have a literal understanding of the text and to make appropriate conclusions. Results on these sub-skills are reported separately and for the skills in general. This course of action helps the language learners to notice immediately where their strengths and weaknesses can be found. The program offers no overall result for the entire test; the results of each language competence test are provided separately (Alderson 2005:30).

The procedure that learners have to follow to complete the Dialang program is very straightforward and every step is clearly explained. After having chosen the language in which the learner wants to receive instructions and feedback and a language that he or she wants to be tested in, a Vocabulary Size Placement Test (VSPT) is presented to the learner. The test consists of 75 verbs about which the

¹ www.lancaster.ac.uk/researchenterprise/dialang/about, accessed on 09/02/2015
learner is asked to identify which ones are existing words in the test language and which are pseudo words. The learner does not know the number of correct and incorrect verbs. After completion of this placement test, immediate feedback is given and the learner is categorized into one of six groups describing their language abilities, ranging from “very low” to “indistinguishable from a native speaker”. The VSPT is optional; the learner can skip it and proceed immediately to the language competence tests. This is not advisable though and the learner is warned against doing so because this test is necessary to determine the competence level of the users and to determine which level of test is presented to them. Skipping the test can cause the program to offer the users a test that is either above or below their competence levels.

The VSPT is but one of the two placement procedures that determine the test level that is to be presented to the learner. Before initiating a reading, writing or listening test, the learner is given the opportunity to complete a self-assessment test. The self-assessment test contains 18 statements for each skill inquiring about the capacities of the user to which the user has to respond “yes” or “no”. Having completed this procedure, users can proceed to the actual test, after which the result of the self-assessment test is presented and compared with the test results. Self-assessment tests are not offered before the vocabulary and grammatical structure tests, “since the CEFR itself does not contain any language-specific self-assessment statements” (Alderson 2005:33). This placement test is also non-mandatory, although skipping it is also not advised.

After having completed or skipped the placement procedures, the user can proceed to the actual language skill test. These tests come in three difficulty levels: easy, intermediate and difficult, although the program is technically able to accommodate any number of levels of difficulty (Alderson 2005:33-34). The level of test that is to be presented to the learner depends on the results of both the Vocabulary Size Placement Test and the self-assessment tests. When one of the tests is skipped, solely the result of the other test is used to determine which level is appropriate. If both placement procedures are skipped, the medium level test is presented to the user. Only 4 test item formats are available: multiple-choice, drop-down menus, text-entry and short-answer questions. Questions have to be completed in the order presented, you cannot go back to change answers, nor can you skip ahead to answer later questions first.
Next, Dialang offers two types of feedback. First, as we have discussed earlier, feedback is presented on the difference between the self-assessment of the user and their test performance. Additionally, the learner is given advisory feedback on how to enhance their language competence to the next level. Users can also see feedback if they did not complete the entire test, although in that case they can only see a review of the items completed before quitting and are given feedback about their self-assessment. Dialang offers no numerical scores, but assessments based on the CEFR. The results are provided according to the six levels of the CEFR: A1, A2, B1, B2, C1 or C2; A is considered to be the basic user level, B that of the independent user and C of a proficient user. The learners are also given a brief description of the abilities related to these levels.

![DIALANG Test Results](image)

Figure 4: Example of a description of the abilities related to a score of B2

Dialang is a fairly new program and is run free of charge and on a voluntary basis, which accounts for some remarks. First of all, little research has been published on the program’s psychometric qualities such as reliability and validity (Zhang and Thompson 2004:293). Second, speaking is not tested at all and writing only indirectly because automatic scoring of speaking and writing would be difficult and expensive to develop (The website of Lancaster University 2015). Alderson (2005:238) pointed out, however, that there are interesting developments in this area such as e-rater and Phone-Pass, which might make the testing of speaking and writing possible in the near future. Additionally, as discussed earlier, Dialang has only three levels of tests for each competence and does not have a large store of items. Consequently, it is possible that a learner receives the same test as before when taking it in the same language and skill. Fourthly, a correct answer to the short-answer questions may be marked wrong because Dialang only accepts the most common correct answers that were discovered during the test phase. Correct answers that were not detected in this phase may be not accepted because they
were not pre-programmed. Also, misspelled answers might be accepted. These issues can be resolved when more data is gathered (Zhang and Thompson 2004:292). Lastly, because Dialang is only available as an online test, users who lack some degree of computer skills may be left out (Ibid: 292).  

3.1.2 Strategy Inventory for Language Learning (SILL)

The Strategy Inventory for Language Learning (SILL), created by Rebecca L. Oxford in 1986 and first published in 1990 in her book *Language Learning Strategies: What Every Teacher Should Know*, was initially developed in order to assess the frequency with which students at the Defense Language Institute in Monterey, California used language learning strategies. Now it has become one of the most widely used strategy scales around the globe. Oxford developed two different versions of the questionnaire: one for native speakers of English learning a foreign language and one for students learning English as a second or foreign language. The former consists of 80 items and the latter of 50. The ESL/EFL version of the SILL, which is the version used to gather the information for this thesis, has been translated and used in 11 languages among which: Arabic, Chinese, German and Portuguese. Since the participants of the study conducted for this thesis were expected to possess sufficient knowledge of English, the questions and instructions of the SILL were given to them in English.

The remarkable success of the SILL is partly due to the advantages of self-report scales in general. According to Oxford (Oxford and Burry-stock 1995:2), they are easy to administer, economic in time and means and provide a general consideration of the use of particular learning strategies by a student across a variety of possible tasks. Additionally, they provide the researcher with the possibility of offering the participants anonymity, which makes the investigation almost completely nonthreatening to the students. Moreover, the SILL is especially useful for students who want to discover more about their own learning practices. The SILL offers the possibility of self-scoring and immediate learner feedback. In these respects it is similar to the Dialang program discussed above. Despite these qualities, however, the SILL, similar to strategy scales in general, also has the disadvantage that it does not provide in-depth information about the use of learning strategies for particular learning tasks. Moreover, as discussed in section 2.5.3, questionnaires such as the SILL involve self-report. This may cause some doubts concerning the reliability of information obtained via this method (Oxford and Burry-stock 1995:2). Additionally, Dörnyei (2005: 167) remarked that the SILL’s responses cannot be converted into a numerical form because it measures frequency of strategy use instead of degree and the scale items are not in linear relationship to one another, and stated that this is not psychometrically justifiable.

---

2 For more detailed information regarding the advantages and disadvantages of the use of Dialang to test the mastery of English in higher education, I recommend the dissertation of Elodie Delhomme (2014-2015) “Toetsing van de taalvaardigheid Engels via DIALANG in het Hoger Onderwijs”
Lastly, as Tseng et al. (2006:83-84) remarked, the usefulness of the SILL as an instrument to assess language use strategies may be questionable because it assesses the quantity instead of the quality of the strategies used. Not using particular strategies identified by Oxford as memory strategies, for example, does not make a student a bad memory strategy user in general. More important than the use of as many learning strategies as possible is that the learner makes good use of those strategies. As Yamamori (2003:384) stated: “Low reported strategy use is not always a sign of ineffective learning. Also, reportedly high frequency use of strategies does not guarantee that the learning is successful. [...] Studies relying solely on frequency data miss this point”. He identifies four possible reasons for the lack of use of particular strategies. First, it is possible that the learner simply is not aware of the existence of that strategy. Secondly, the learner may not be motivated to use a particular strategy or, thirdly, may think that another strategy is more useful for his cause. Lastly, Yamamori pointed out that strategies can be used so frequently that they become automatized and subconscious and are therefore no longer recognized as being strategies. Bearing this in mind, it is clear that researchers might not get a complete picture about the strategy use of language learners when they depend solely on the frequency of those strategies used. Nonetheless, frequency of strategy use is one of the main topics that will be investigated in this thesis, which makes the SILL an ideal research instrument.

Despite the possible disadvantages, the SILL continues to be a valuable and much used tool for language learning strategy assessment. It is straightforward and requires little effort from the language students to complete. For each question, students can choose between 5 Likert-scale responses: never or almost never true of me, generally not true of me, somewhat true of me, and always or almost always true of me. These statements are represented by the numbers 1 (never or almost never true of me) to 5 (always or almost always true of me). The options were based on the response options of the Learning and Study Strategies Inventory described by Weinstein et al. (1987, as cited in Oxford and Burry-stock 1995:4). The questions are organized in 6 groups, according to the strategy groups Oxford identified: memory strategies, cognitive strategies, compensation strategies, metacognitive strategies, affective strategies and social strategies. As discussed earlier in section 2.2.1, there is considerable criticism about this division, mainly because memory strategies are considered by many to be a subcategory of cognitive strategies, whereas here they are depicted as 2 separate categories. Additionally, the inclusion of compensation strategies gave rise to criticism because these are expressions of language use rather than of language learning. For the purpose of this paper, however, these six categories are maintained. The categories are not represented by an equal number of questions. The group of memory- and metacognitive strategies contains 9 items, cognitive strategies 14 and compensation-, affective- and social strategies only 6. Oxford explained this unequal division of questions by saying that cognitive strategies possess the greatest variety (Oxford and Ehrman 1995:380). Furthermore, Oxford pointed out that her taxonomy is related to the “whole learner” rather than covering just the mental aspects of language learning (Oxford 1996:27).
For the purpose of the research conducted in this paper, some of the questions have been altered slightly in order to make them less ambiguous and one question “I try to find as many ways as I can to use my English” is completely left out because it was considered to be too vague. This leaves the metacognitive category with 8 instead of 9 items. The fourth and sixth questions of the cognitive part were altered slightly to make them more specific and unambiguous. In “I use the English words I know in different ways”, “ways” was replaced by “contexts” and “I watch English language TV shows spoken in English or go to movies spoken in English” became “I watch English language TV shows or movies spoken in English without Dutch subtitles”. Several questions in the social strategies category proved to be too vague as well and needed some adaptation. To the question “I practice English with other students”, I added “outside of the classroom” in order to obtain more specific results, “I ask questions in English” became “I ask questions related to the acquisition of English in English” to stay in the language learning context and, lastly, “I try to learn about the culture of English speakers” became more specifically “I try to learn about the cultural contexts in which English is used around the world”.

Besides the questions divided into 6 subcategories, the original SILL also included a set of directions to the teacher and student, a sample item, a scoring worksheet on which students can calculate their averages for each subscale and in general, a summary profile that shows the student’s results and helps them self-evaluate their strategy use and even a graph to visualize the results. In particular the possibility of self-evaluation makes the SILL such a success. It helps to provide the language learner with a more in-depth knowledge of their use of learning strategies and thus can be a help for the student to improve their language learning. Additionally, Oxford (1990) included a background questionnaire to document variables such as age, sex, motivation and language experience. She intended these worksheets and evaluation forms to be handed to the students in paper form, however, I have digitalized the questions in order to save paper and so that the students could answer the questions at a time and place most convenient to them without needing to gather them all in one auditorium. Also, the directions were altered and instead of a scoring worksheet and a summary profile, short instructions were provided to the students on how to calculate and interpret their results. The SILL as administered to the participants of this study is included in the appendices (section 9.3).

Oxford (1996:30) claimed that the SILL was developed because the previous existing instruments did not have any published reliability or validity data. Additionally, Oxford claimed that the former tests, among which those of Bialystok (1981), Politzer (1983), McGroarty (1987) and Chamot et al. (1987) (in Oxford and Burry-stock 1995:3), do not systematically represent all the strategies involved with language learning. The SILL was developed to provide researchers with a more comprehensible and complete scale for measuring strategy use among ESL and EFL students. In Oxford’s words “the SILL appears to be the only language learning strategy instrument that has been extensively checked for reliability and validated in numerous ways” (Oxford and Burry-stock 1995:4). This is due partly by its
popularity among researchers. Between its publication and 1996, an estimate of 10,000 language learners have been involved in studies, dissertations and theses which made use of the SILL (Oxford 1996:27). This number will be even higher today and probably will keep growing.

Oxford (1995 and 1996) did investigate and describe the psychometric qualities, consisting of utility, reliability and validity, of both of the versions of her SILL. Oxford & Burry-stock (1995:6) define utility as “the usefulness of an instrument in real-world settings for making decisions relevant to people’s lives” and according to them the ESL/EFL version scores high on this quality. It has been very useful to researchers all around the globe. Also the reliability, “the degree of precision or accuracy of scores on an instrument”, scores generally high. They remark, however, that the reliability is slightly lower when the test is administered in English instead of in the respondents’ mother tongue. Lastly, validity: “the degree to which an instrument measures what it purports to measure” proves to be satisfying. One of the indicators for validity is fake-ability, because if the respondents answer dishonestly under the influence of the desirability bias, the material, and consequently all conclusions drawn from that material, loses its validity. A test was executed by Yang (1992 and 1993, cited in Oxford and Burry-stock 1995:11) with 505 Taiwanese students of English as a foreign language to investigate whether students faked any answers on the SILL and she found no evidence of this practice.

3.2 Participants

The participants in this investigation are first year students of Economics at Ghent University in Flanders. The majority of them are of Flemish origin and have already received 4 or 6 years of English education in secondary school. During their first semester this academic year, they took the subject Economic English I as part of their education in Economics, which makes them learners of a foreign language with an ESP-profile (English for Specific Purposes). This means that they already have some proficiency in English and are now learning the language in order to acquire specific, job related, skills. Therefore, the focus rests on English in a particular context, in this case Business English.

Economic English I, according to the online brochure3, has as its purpose to make students skilled in communicating in English in an economic or business environment. Reading and listening skills are enhanced and practiced, using economic texts and general speaking and writing skills are trained. Everything is addressed from an economic point of view and is designed to equip students with the necessary tools to function in an international business context. The student’s vocabulary relating to economic subjects is expanded and they learn how to give a presentation and how to actively participate in meetings.

Of all students taking the subject Economic English I, 369 completed the Dialang test at the beginning of the semester. 14 of them, however, took the test several times, each time resulting in a different score, and had to be excluded from the results. Also, 5 students received multiple CEFR scores. They were excluded from the investigation as well. Additionally, 107 students who completed the test did not fill in the SILL, therefore their results could not be used either. Also, of the 360 students who completed the SILL, 91 had not participated in the Dialang test. 12 students completed the survey more than once, in that case only their last entry was used. Lastly, the intermediate test of Economic English I was completed by 483 students. Results of the students who did not participate in one of the previous tests were excluded, however, since it is paramount to have results of both tests and of the survey in order to be able to make a comparison. This leaves us with 242 students who participated in all of the tests and whose results will be used in the investigation conducted in this paper.

The students come from various educational backgrounds. Only a minority (19%) studied Latin and/or Greek in secondary school. The majority of them focussed on maths (75.6%), sciences (38%) and economics (28.9%) in secondary school. Nonetheless, the participants already have an upper-intermediate proficiency in English since, on average; they have been studying English for 5.6 years. None of the participants have had less than 4 years of English study; the largest group (40.9%) has had 6 years of English study. Additionally, although the vast majority (97.52%) are native speakers of Dutch, 1 student indicated to have English as a mother tongue. Among the students there is also a speaker of Turkish, one of Russian, one speaking Albanian, one Indonesian and one French speaker. Five students claimed to speak English at home as a second or third language.

3.3 Data collection and analysis

Taking into consideration the large sample size (N= 242) of this study, the SILL was digitalized so the students could complete the survey at home at a time convenient to them over the course of a couple of weeks. Both the professor of their course Economic English One and I addressed the students and explained the importance of their truthful report of their habitual strategy use.

For the analysis of the data, I was assisted by Dr. Ludovic de Cuypere who made the statistical figures in Ggplot 2 and aided with their interpretation. The discussion of the results and the comparison with other studies were conducted by me. First of all I will discuss the results of both tests; vocabulary and grammar will be looked at separately. The Dialang test represents the student’s beginning language proficiency and the economic English test their end proficiency for this study. The student’s reported strategy use will be analysed thoroughly as well. Next, the results of the two tests will be compared in order to evaluate whether the students of economics increased their English language proficiency during the course of the semester or not. After that, we will look for possible correlations between the tests scores of both tests (and that for vocabulary as well as grammar) and the use of the six categories
of learning strategies i.e. compensation, memory, cognitive, metacognitive, social and affective strategies. Lastly, it will be examined whether there is any correlation between the number of language learning strategy categories that are used frequently (reported use of more than 2.5) and the scores of both tests.

We will look only very briefly at the student’s reported use of the individual statements e.g. “to understand unfamiliar English words, I make guesses”. Instead, we will take the average of these responses and consider each of the six strategy categories as a whole. These averages will be interpreted as Oxford (1990) proposed, i.e. an average between 1 and 1.4 means that the strategy group in question is never or almost never used, between 1.5 and 2.4 it is generally not used, between 2.5 and 3.4 the group is sometimes used, a score between 3.5 and 4.4 is an indication that the group is usually used, and, finally, when the average is higher than 4.5 the strategy group is considered to be always or almost always used. A table of the results at the individual item level can be found in the appendices.

The findings of this investigation will be compared with the initial hypothesis i.e. that proficiency and the use of language learner strategies stand in a bi-directional causal relationship to one another; more proficient students are expected to make more frequently and varied use of learning strategies and vice versa. Thus we expect to find that the varied and abundant use of language learning strategies has a positive correlation with the learners’ test scores. Moreover, we hypothesise that the effect of each strategy category is related to the particular language skill e.g. it appears likely that the students will be aided more by the use of memory strategies when learning vocabulary than when learning grammar. Furthermore, we will try to find out whether students who frequently employ language learning strategies have improved their language skills in the course of the semester and whether there is a difference between the use of strategies of the six groups.

The statistical analysis and comparison of the test results was made difficult by their varied nature; the score of the Dialang test is expressed in CEFR levels (From A1 to C2) and that of the economic English test as a numerical score on 10, for vocabulary, and 20, for grammar. The CEFR levels are a categorical variable, whereas the scores of the second test are continuous. As a result, we could not use the same statistical comparison methods used by similar studies.

Results of this study will also be compared with those of similar studies investigating the relationship between strategy use and proficiency e.g. Green and Oxford (1995) who investigated the strategy use of students at three different course levels at the University of Puerto Rico, Park (1997) who looked at whether there is a relationship between the use of language learning strategies and L2 proficiency in a group of intermediate to advanced university students learning English in Korea, Bremner (1999) who did the same in Hong Kong; Shmais (2003) in Palestine; Hong-Nam and Leavell (2006) with ESL students with differing cultural and linguistic backgrounds enrolled in a college Intensive English Program and Radwan (2011) in a group of students majoring in English at the University of Oman.
Ehrman and Oxford (1995) examined the relationships of a variety of individual difference variables to end-of-training proficiency ratings in speaking and reading of adults in intensive training in a wide range of languages at the U.S. Department of State.
4. Results

The results of every analysis will be discussed separately for each test and will be divided further into the results for vocabulary and grammar. First the results of the Dialang test will be presented and discussed. The vocabulary results will be looked at first, followed by the grammar results. Next, we will look at the results from the SILL survey. The last results that will be presented are those of the economic English test. Here as well, we will first look at the vocabulary test and then at the grammar test. After having discussed the results of the tests and the survey in section 4.1, we will compare the results of the two tests and look for a relationship between the two. Last, in section 4.3 we will investigate the relationship between the students’ strategy use and their language proficiency, which is the main objective of this thesis. It will be examined whether there is any correlation between quantity and variety of strategy use and the students’ proficiency. An extensive discussion of the possible causes and implications of the results presented here will be given in section 5.

4.1 The results of the tests and the SILL

4.1.1 Dialang vocabulary and grammar tests

Figure 5 shows the distribution of the students’ scores according to the Common European Framework of Reference for Languages (CEFR) on the Dialang vocabulary test they completed in September. The y-axis shows the percentage of students, from a total of 242, which achieved a particular CEFR level, as placed on the x-axis. Most students scored remarkably high on the Dialang vocabulary test. The vast majority (61%) scored B2 and 27% scored even higher and obtained a score of C1 or C2. Only 3% of the students scored lower than B1.

Figure 6: Grammar scores of the Dialang test

Figure 5: Vocabulary scores of the Dialang test
The grammar test (depicted in figure 4) shows similar results, although the scores are slightly more distributed among the CEFR-scale. Here as well, the majority of the students (44%) scored B2, followed by students who received the score C1 (33%). Remarkable is that not one student scored A1 on this part of the test.

If we compare the distribution of the grammar test scores with the vocabulary test scores, then we notice that fewer students obtained the score of B2 but the number of students who scored C1 is 9% higher. Also, more students obtained a score of C2 than on the vocabulary test, although there is only a difference of 1%. None of the students scored A1 on the grammar test compared to 1% on the vocabulary test. On the other hand, 5% of the students scored A2, which makes the number of students who scored below B2 on the grammar test 2% higher than on the vocabulary test.
4.1.2 Results of the Strategy Inventory for Language Learning

The above box plot diagram visualises the students’ reported use of the six categories of learning strategies identified by Rebecca Oxford (1990). The students were given the choice between 5 Likert-scale responses ranging from 1, which stands for “never or almost never used” to 5, which means that the particular strategy is “always or almost always used”. The students were asked to report their use of 49 separate strategies but in order to make the results more manageable for statistical analysis we looked at the results at the category level. In order to do this, the average was calculated of each student’s reported use of the strategies belonging to the separate categories. This explains why the results can lay anywhere between 1 and 5, rounded off to two decimal places, even though the students could only answer: 1, 2, 3, 4 or 5.

Very few students reported to use one of the six strategy categories “never or almost never” (1 to 1.4) or “always or almost always” (4.5 to 5). The median of all six strategy categories is placed between 2.33 and 3.21 on the Likert-scale. Cognitive strategies are the most popular strategies (median = 3.21), followed by compensation strategies (3.17) and metacognitive strategies (3). These three categories are, thus, generally reported as “sometimes used”. The difference between the uses of the three most used strategies is rather low. Affective (2.33), memory (2.44) and social (2.5) strategies are the least preferred strategies. The category of the direct strategies is thus slightly favoured over the indirect
strategies, since 2 of the three most used strategies come from this group. The affective and memory strategies are “generally not used” and social strategies are “sometimes used”.

Lastly, although the box plot only looked for correlations at the category level, there is also a difference noticeable at the individual item level. The mean use for each of the statements of the cognitive category is generally high. The least preferred cognitive strategy is “I make summaries of information that I hear or read in English” (mean = 2.31) and the most preferred is “I watch English language TV shows or movies spoken in English without Dutch subtitles” (mean = 3.76). Nevertheless, this was not the most used strategy overall, this was the compensation strategy “If I can’t think of an English word, I use a word or phrase that means the same thing” (mean = 4.2). Affective strategies were reported as the least preferred strategy category. Nevertheless one statement “I encourage myself to speak English even when I am afraid of making a mistake” (mean = 3.60) had a relatively high frequency of use. The least preferred affective strategy was “I write down my feelings in a language learning diary” (mean = 1.24). This was also, overall, the least preferred learning strategy. More detailed information concerning the use of each individual statement can be found in the appendices (section 9.4).
4.1.3 Economic English vocabulary and grammar tests

The above diagrams show the students’ results on the economic English test. For vocabulary, the students received a score between 1 and 10. It immediately becomes clear that almost every student performed extraordinarily well on this part of the test. The average score is 8.6 and 227 of the 242 students (94%) scored 7 or higher. No less than 50% scored 9 or 10.

The scores on the grammar part of the test are more dispersed. Nevertheless, here as well, the majority (79%) passed the test. The average score is 12.2 out of 20 and the median is 12. The minimum score is 3 and one student even obtained the maximum score of 20. This is not visible on the bar chart, since a histogram only shows general tendencies and not the details.
4.2 Comparison scores of the Dialang and economic English test

4.2.1 Vocabulary

Figure 10 visualises the relationship between the students’ scores on the vocabulary part of the Dialang test and the vocabulary part of the economic English test. The CEFR levels are placed on the x-axis and the vocabulary scores on the y-axis. The purpose of this diagram is to investigate whether the students have improved their English language proficiency over the course of the semester or not and to see which group improved the most. To be expected was that the students who scored low on the Dialang test at the beginning of the semester would score higher on the second test, but still lower than the students who proved to possess more English proficiency at the beginning of the semester. If this were the case, then we should be able to see a diagonal line on the figure beginning in the lower left corner and advancing to the upper right one. On the other hand, the knowledge of vocabulary needed for this specific test is entirely new and related to one specific domain i.e. economy. Furthermore, specific attention was paid to this vocabulary in the course Economic English I, contrary to the vocabulary tested with Dialang. Students who scored low on the vocabulary Dialang test, where general knowledge of vocabulary was tested, might thus obtain higher scores on this test. Also, it was expected that students who scored low on the first test would show greater improvement, since
obtaining the maximum score at the beginning of the semester would not leave much room for improvement.

The expectations were proven false. Students who scored high on the Dialang test, and thereby proved to possess considerable knowledge of English, did not obtain higher scores on the economic English test. Additionally, the students did not achieve higher scores when specific vocabulary was tested than when their knowledge of English vocabulary in general was assessed. There appears to be no significant correlation between the vocabulary results of the two tests. The median is consistently found to be 9; regardless of the student’s score on the Dialang test i.e. a horizontal line is visible instead of the expected diagonal one. No statistical evidence was found for the effect of the CEFR level on the Vocabulary scores (Kruskall-Wallis test: X² = 4.4, df = 5, P-value = 0.49). A clear difference between the figures is that the quartiles that show the correlation between the economic English test scores and the B2 and C2 scores of the Dialang test are significantly greater. An explanation for this is that, as discussed in section 4.1.1, these two levels were the ones that were obtained by the greatest number of students. 61% of the students scored B2 and 24% C1. Only 1% of the students scored A1, which explains the absence of quartiles for that box plot.
4.2.2 Grammar

Here the relationship between the grammar parts of both tests is visualised. The expectations were the same as for the vocabulary tests i.e. that those students who scored low on the Dialang test at the beginning of the semester would achieve lower scores on the economic English test as well. The grammar knowledge tested with Dialang and in the economic English test was in both cases knowledge acquired previous to the Economic English I course, although the grammar tested in the economic English test was revised in class. If the expectations would be correct, we should be able to see a diagonal line going from the lower left corner to the upper right one. This is clearly not the case. Remarkable is that, there appears to be a diagonal line going slightly in the other direction, from the upper left corner to the lower right one. There seems to be a negative correlation between the results of the grammar Dialang test and the grammar economic English test. Students who received the lowest score on the Dialang test scored the highest on the economic English test. Nevertheless, this correlation is a small, non-significant, one (Kruskall-Wallis test: $X^2 = 1.77$, df = 4, P-value = 0.77).

Figure 11: Comparison of the grammar scores of the Dialang and economic English test
4.3 Effect of strategy use on the test scores

4.3.1 Dialang vocabulary test

The above box plots are a visualisation of the correlation between the students’ reported strategy use on the SILL and their scores for the vocabulary part of the Dialang test. The students’ reported strategy use is placed on the y-axis and their scores on the vocabulary part of the Dialang test on the x-axis. Separate box plots are given for each of the six strategy groups. Similar to the previous figures, a diagonal, ascending line would indicate a positive correlation between the informants’ reported use of each strategy category and their test score. A horizontal line indicates that there is no correlation whatsoever and a descending line proves the existence of a negative correlation between the two variables.

The use of social and memory strategies is positively correlated with the test scores, although not very substantial. The use of the other four strategy categories appears to show no correlation whatsoever with the test scores of the participants. The median of the students’ scores stays more or less the same, independent of what the students reported about their use of these strategy categories.
4.3.2 Dialang grammar test

These figures show the correlation between the students’ reported strategy use on the SILL and their scores on the grammar part of the Dialang test. No significant correlation is found between these variables. However, slight differences can be noted. The use of affective strategies appears to have a minimal positive effect on the test scores. The same tendency can be noted for memory, social and metacognitive strategies, but to an even lesser extent. The use of compensation strategies appears to have a very small negative effect on the test scores. The median for the students who scored A2 on the Dialang grammar test is higher than that of the students who obtained the maximum score of C2. The higher the students’ proficiency, the less compensation strategies they use. Cognitive strategies appears to not correlation with the students’ scores on the grammar part of the Dialang test.
4.3.3 Economic English vocabulary test

The above scatter graphs show the correlation between the reported strategy use on a scale from 1 to 5 and the student’s scores on the economic English vocabulary test, which is a score from 1 to 10. The vocabulary scores are placed on the y-axis and the reported strategy use on the x-axis. The trendline drawn on the scatter plot indicates the general tendencies. When this line rises, this is an indication of a positive correlation of the results. A descending line is a sign of a negative correlation. The correlation can also be null, in which case a horizontal line should be visible.

These particular scatter plots show that three of the strategy categories are correlated with the students’ performances. The strongest influence is exercised by the cognitive strategies; their use is proven to have a substantial positive correlation with the students’ scores on the vocabulary part of the economic English test. The trendline shows a small but clearly visible increase. Social strategies, and to a lesser extent affective strategies, have a modest negative effect on the performances. Compensation, metacognitive and memory strategies exert no noteworthy influence on the students’ learning whatsoever. The trendline of those scatter plots is nearly horizontal.
4.3.4 Economic English grammar test

These scatter graphs need to be interpreted similar to the previous ones. Similar to the previous graphs, these graphs are visualisations of the correlation between the reported strategy use and the student’s scores on the economic English test. The only difference is that, here, the variable presented on the y-axis is the scores of the grammar part of the economic English test.

Just as is the case for the vocabulary tests, the frequency of cognitive strategies used has a strong positive effect on the students’ test scores. The trendline is characterised by a steady rise. The use of compensation strategies has a comparable effect, but to a lesser extent. Additionally, the frequent use of affective strategies exerts a clearly noticeable negative influence on the students’ performance on the grammar test. The negative effect is stronger than it was for the vocabulary part of the test. Also, in contrast to the results of the vocabulary test, no influence is detected of the frequency of social strategies on the student’s learning outcomes, be it positive or negative. The trendline is almost perfectly horizontal. Metacognitive and memory strategies seem to have no effect on the test scores as well.

Figure 15: Correlation between the reported strategy use and scores on the economic English grammar test
4.4 Effect of number of frequently used strategy categories on the test scores

4.4.1 Dialang Vocabulary test

The above bar charts show the correlation between the number of strategy categories that are frequently used and the Dialang vocabulary scores of the participants. Frequently used categories are the categories which the students reported to use more than 2.5 on the Likert-scale. These are the categories that range from “sometimes used” to “always or almost always used”. The number of students is placed on the y-axis. The bars of the B2 vocabulary scores are significantly higher than those of the other scores. This is because, as discussed earlier, most students obtained B2 on the Dialang vocabulary test.

Not much can be said about the correlation between students who scored A1 on the vocabulary Dialang test and the number of strategy categories they reported to use frequently. This is because only 1% of the students obtained this score. The same goes for students who scored A2. For the students who scored B1, the correlation is a slight positive one. The positive correlation between the students who scored B2 and their frequently used categories is much higher. Most students who
obtained this relatively high score used 5 of the 6 categories frequently. A similar number of students who score B2 use 6, 4 and 3 strategy categories. The number of students scoring B2 which used only 1 or 2 categories is substantially lower, which indicates that there is a positive correlation between the quantity of strategy categories used, i.e. the variety of strategies used, and the test scores. The two highest scores show positive correlations as well. In general, we can observe that the students who scored the highest on the vocabulary test are also the ones that make frequent use of the greatest variety of learning strategy categories.

4.4.2 Dialang grammar test

Figure 17: Correlation between number of strategies used and Dialang grammar test scores

Figure 17 shows the correlation between the number of strategy categories that are frequently used by the students and their Dialang grammar scores. One look at the chart suffices to see that the overall tendency is the same as for the vocabulary Dialang test. The darkest colours i.e. the students who scored highest on the test, are located on the right which means that they make use of the greatest variety of language learning strategy categories. The lighter colours are located more to the left and thus use fewer learning strategy categories. Overall, we can speak of a positive correlation between the two variables.
4.4.3 Economic English vocabulary test

![Box plots showing the correlation between number of strategies used and economic English vocabulary test scores](image)

Figure 18: Correlation between number of strategies used and economic English vocabulary test scores

The above box plots show the correlation between the quantity of strategy categories used and the students’ scores on the vocabulary test. When students indicated that they used a strategy with a certain frequency i.e. a score on the Likert-scale of 2.5 or higher, the strategy was considered to be “used”. A comparison is then made between the number of strategy groups that are used and the score on the vocabulary test. The expectation was that.

In accordance with the expectations, students who used only one strategy group frequently received the lowest test scores. The median score of this group is found to be 1 point lower than the other groups. However, no significant statistical effect can be perceived of number of strategy groups used on the test scores of the students (Kruskal-Wallis: $X^2 = 3.9$, df = 5, P-value = 0.55). The hypothesis was students who used fewer strategy categories would obtain lower scores and vice versa and vice versa i.e. that we would observe a diagonal line moving upwards from the lower left corner of the diagram to the upper right. This is not the case. The results for the use of 2,3,4,5 and 6 strategy groups are nearly identical. The median score of the 5 box plots is consistently found to be 9.
4.4.4 Economic English grammar test

The results of the number of strategy categories that are frequently used by the students on the grammar scores are a bit more varied than for the vocabulary part of the test. Here also, no significant statistical evidence of a correlation between the two factors is found (Kruskal-Wallis: $X^2 = 4.9$, df = 5, P-value = 0.43) and the scores of the students who use only one strategy group with a certain frequency are lower than the other 5. Remarkable, however, is that a curvilinear relationship can be noted here. A descending line is visible in the diagram beginning from the frequent use of 3 learning strategy categories. It seems that, beginning from 3 categories used, the more strategy groups are frequently employed by the student, the lower the scores on the grammar test are. This is the opposite of what we had expected to find.

Figure 19: Correlation between number of strategies used and economic English grammar test scores
5 Discussion

In this section, possible explanations will be offered for the results presented in the previous section and the implications will be discussed. First, possible explanations will be offered for the students’ scores on the different tests and for the absence of a correlation between the scores of the two tests. Next, we will discuss the students’ strategy use. After that, explanations will be provided for the existence or non-existence of correlations between the quantity and the variety of strategies used by the students and their test scores. Moreover, the results will be compared with the finding of other studies. Lastly, the classroom implications of the results of this study will be discussed.

5.1 The test scores

5.1.1 Dialang test

We found that most students scored exceptionally high on the Dialang test. The majority of the students scored B2 on the vocabulary test and 27% scored C1 or C2, which were the highest scores that could be obtained. The grammar test results were very high as well, here 44% of the students scored B2 and 37% of them scored C1 or C2.

The level that students are expected to have mastered when leaving secondary school is set at B1 for listening and speaking, and B2 for reading and writing for the third grade of ASO. For the third grade of KSO and TSO, the expected level is B1 for all skills. As discussed in section 3.2, almost all of the students who participated in the investigation conducted in this paper (91.32%) are ASO students who focussed primarily on maths, sciences and economics. The other 8.68% indicated “other” when asked what their field of study was in secondary school. It is possible that these students come from technical education programmes. Nevertheless, we can safely assume that almost all students graduated from a Flemish secondary school and, thus, that they should have reached the achievement levels set by the Flemish government for English in the third grade of secondary school in all Flemish education systems.

A considerable percentage of students participating in this study thus exceeded the expectations. 27% of the students scored higher than B2 on the vocabulary test and for the grammar test this was 37%. That 12% of the students scored below the expected competence level for vocabulary and 20% for grammar is possible, since no language requirements need to be fulfilled in order to enrol in a bachelor programme at Ghent University. A diploma of a Flemish secondary school suffices. In order to enter

a master programme of Ghent University some evidence is required that the student has reached level B2⁶.

Nonetheless, these results are not very surprising. As Delhomme (2015:53) pointed out, various studies (e.g. by GlobalEnglish and the English Proficiency Index of Education First, as cited in Delhomme 2015:53), investigating the English proficiency level of students around the world, found that Belgium was placed considerably high on the rankings when compared with other countries. The students’ high scores on English proficiency are thus in line with previous findings. Nevertheless, it needs to be taken into account that the English language tests of Dialang are possibly easier than the tests for other languages (Delhomme 2015:161) and that this might explain the remarkably high scores. Schut (2011, as cited in Delhomme 2015:168), for example, has proven that the degree of difficulty of the Spanish test is lower than that of the Dutch language test. The same could be possible for the English language test. A B2 score of English might thus not be comparable to a B2 score in another language.

5.1.2 Economic English test
Similar to the Dialang test, we found that the students had, overall, very high results on the Economic English test. The average score on vocabulary was 8.6 and 50% of the students scored 9 or 10. The average score on the grammar test was lower (12.2 on 20), but the vast majority (79%) passed the test.

These good scores can have five possible explanations. First of all, Flemish students tend to be more proficient in English than in other languages (Delhomme 2015:161). As was found by the First European Survey of Language Competences (2012:91), a survey designed to collect information concerning the language proficiency of students in the last year of lower secondary education or the second year of upper secondary education, even in education systems in Europe where English is not the first target language the performance tends to get a higher score for English than for the other languages. The ESLC (2012:93) found that, in the Flemish community of Belgium where English is usually the second target language, the vast majority of the secondary school students scored B for the three skill investigated; 80% scored B for reading, 87% for listening and 72% for writing. Of the fifteen language communities investigated, the Flemish community of Belgium was ranked the highest in the table listing proficiency in the second target language. This has various causes varying from the use of the language in class by the teacher, the perception of usefulness of the language, the degree of exposure through media, for example, by watching subtitled movies or television programmes in English, the presence of a virtual language learning environment, etc. (Ibid:71-89).

A second possible explanation is the composition of the particular test group of this paper. Since the students started a Bachelor programme at Ghent University, it is appears safe to assume that these are

the students who also obtained good grades in secondary school. On the other hand, as mentioned above, no language requirements need to be fulfilled in order for a student to be permitted to enrol in a bachelor programme at Ghent University. Also, the students do not have to take an entrance exam to enter a programme at the faculty of economics of Ghent University. Furthermore, it is common knowledge that a considerable percentage of students drop out after the first or second semester of the first year bachelor programme at a Flemish university. Reasons for this are e.g. maladjustment to the academic situation, or emotional maladjustment, previous experiences, discontentment with the chosen programme or the distance between school and home, personal interests and expectations of the student (Cobert 2009:14). The exam results during the first year also influence the students’ decision to drop-out (Gerdes & Mallinckrodt 1994, as cited in Cobert 2009:14). Since the results of this study were gathered during the first semester of the first year of the participants’ university education, it is possible that some of the students will find out that the university programme they chose does not match their competences. Nevertheless, these factors would exert a negative influence on the results, not a positive influence. Consequently can be concluded that the influence of these factors, if existent at all in this particular test group, is almost non-existent.

In addition, the participants in this investigation are students of Economy and have thus not chosen to pursue an academic career in languages and, as we have discussed earlier, the vast majority of the students did not focus on languages in secondary school either. Nevertheless, the English course they took during the first semester was oriented entirely towards the students’ chosen career i.e. economics and it is safe to assume that most students understand the advantages of this course and the importance for their future careers. Also, when completing the SILL, the students were asked how important it was for them to become proficient in English. They could choose between 3 possible answers: very important, important and not so important. The first two options were chosen by 48.35% of the students each and the last one by only 3.3%. Clearly the students comprehend the importance of becoming proficient in English. Hence, the third explanation for the high scores obtained by the students is that they were aware of the importance of English proficiency in general and for future career purposes and, consequently, we can assume that they have put an effort into the study of the subject material of the course.

The fourth and fifth possible explanations are the high quality of the instruction offered to the students at Ghent University and the level of difficulty of the tests of Economic English. As discussed earlier, the students already proved to possess considerable proficiency of English at the beginning of the semester. Nevertheless, the instruction received by the teachers of the course Economic English One helped the students to obtain the particular knowledge needed for the test at the end of the semester. Especially for vocabulary, the influence of the English lessons is very important, since this vocabulary was entirely new for the students and situated specifically in the domain of economics. The grammar discussed in the course was primarily a repetition of knowledge acquired in secondary school. On the
other hand, it is also a possibility that the extraordinarily high test results are due to a low difficulty level of this second test. In order to state something about this, however, further research is needed. The students can, for example, be asked whether they perceived the test as difficult or not. Probably combinations of several, if not all, of the factors described above contribute to the high scores obtained by the students in this investigation.

5.1.3 Comparison of the two tests

A comparison of the two tests, the Dialang test and the economic English test, was problematical. The scores of the Dialang test are presented according to the CEFR levels, which are categorical values, whereas the scores of the economic English test are numerical. Due to this difficulty, the results could not be analysed the same way as they were in other studies (e.g. Green and Oxford 1995; Park 1997; Bremner 1999 and Hong-Nam and Leavell 2006) which used analysis of variance (ANOVA) to determine significant variation between the results. Instead, box plots were created in order to find out whether correlations existed between the two tests.

Expected was that the students who scored higher on the Dialang test would score high on the economic English test as well and that students who scored low on that first test would score lower on the second test. Although progress was expected due to the instruction received over the course of the semester. On the other hand, for vocabulary, specific vocabulary related to the domain of economics was interrogated in the economic English tests, in contrast to the general vocabulary questioned in the Dialang test. The students were instructed in the use of this vocabulary in the course Economic English One. It is thus plausible that students who scored low on the vocabulary part of the Dialang test would obtain higher scores on the vocabulary part of the economic English test.

None of these expectations were proven to be true. No substantial correlation was found between the two variables. Independent of the students’ scores on the Dialang test at the beginning of the semester, they all scored very high on the second test. Students who scored A1 on the Dialang test did not obtain lower scores on the economic English test than students who scored C2. As a consequence, no conclusions can be drawn about the students’ progress in the course of the semester. Possibly the students’ high scores at the beginning of the semester did not leave much room for improvement. Also, as was the case in the study conducted by Oxford and Ehrman (1995:359), the statistical restrictions of range due to the sophisticated nature of the learners in the test group lowered the correlations. Another explanation could be the difficulty level of the second test administered by Ghent University, as discussed above. For grammar there appears to be a slight negative correlation between the two test scores. Students who scored low on the initial Dialang test obtained higher scores on the economic English grammar test. This can be explained by the instruction given to the students in the course of the semester. However, we expected to find this negative correlation for the vocabulary part of the test, not for grammar.
5.2 The SILL

The students reported to use cognitive strategies more frequently than any other strategy category. This contrasts with the findings of other studies which concluded that metacognitive strategies (Park 1997; Shmais 2003; Hong-Nam and Leavell 2006; and Radwan 2011) or compensation strategies (Ehrman and Oxford 1995; Bremner 1999; and Alptekin 2007) were the most frequently used strategy categories. If we look at the top 3 of most used categories, however, then it is clear that all studies discovered, to a certain extent, similar results, since the 2nd and 3d preferred categories reported in this study were compensation and metacognitive strategies. On the other hand, Ehrman and Oxford (1995) and Hong-Nam and Leavell (2006) found social categories to be one of the three most used strategies in their study. In this investigation, it is the fourth least used category.

The least preferred strategies as reported by the participants in this study are affective strategies, followed by memory and social strategies. These finding are very similar to those of the other studies. Affective strategies are generally found to be the least preferred strategy category (Ehrman and Oxford 1995; Park 1997; Bremner 1999; Hong-Nam and Leavell 2006 and Alptekin 2007), followed by memory strategies (Ehrman and Oxford 1995; Bremner 1999; and Hong-Nam and Leavell 2006). Radwan (2011) found that memory strategies were reported as being used the least, followed by affective strategies. In Shmais’ study (2003) the participants, surprisingly, reported to use compensation strategies the least.

In sum, we can state that, although minor differences can be found when comparing the studies conducted over a time span of 16 years and in six different countries (Puerto-Rico, Korea, Hong-Kong, Turkey, Oman and Palestine), the general tendency is that students report high frequencies of use of the metacognitive and compensation categories, whereas affective and memory strategies are the least preferred ones. Six of the studies we compared the results of this study with were also conducted with university students. Hong-Nam and Leavell (2006) worked with students who enrolled in a college Intensive English Program, which is an institute for pre-admissions university ESL students, and Ehrman and Oxford (1995) investigated adults in intensive language training at the U.S. Department of State.

The high preference for cognitive strategies in the test group of first year students of economics was surprising, considering the results of similar studies where the students favoured metacognitive or compensation strategies. When we have a look at the individual strategies belonging to the cognitive category, however, an explanation can be found. The most popular strategy belonging to that category is “I watch English language TV shows or movies spoken in English without Dutch subtitles” (mean = 3.76) and, as is generally known, young adults regularly watch American movies. This happens more and more online, where subtitling in Dutch is not always available. Other popular cognitive strategies
were “I say or write new English words several times” (3.65), “I look for words in my own language that are similar to new words in English” (3.43) and “I try to talk like native English speakers” (3.42).

Compensation and metacognitive strategies were popular as well. Hong-Nam and Leavell (2006:408-409) related the use of metacognitive strategies to the students’ instrumental motivation for learning English. The two metacognitive behaviours efficient planning and self-monitoring are considered to help the students achieve their goal of acquiring English proficiency and thus obtaining a high score on the exam. The students in this study might not be as motivated as the test group of Hong-Nam and Leavell, which consists of students who voluntarily enrolled in a college Intensive English Program but, as we have discussed earlier, they are well aware of the importance of acquiring English proficiency. Additionally, the students might be motivated by the desire to pass this exam so they would not have to do it again in August. Pintrich and Garcia (1994, as cited in Hong-Nam and Leavell 2006:409) also remarked that “[m]etacognitive knowledge and increases in academic performance go hand in hand”. Considering the high performance level of the students on both tests, it is not surprising that metacognitive strategies are one of the most used strategy categories.

The least popular strategies were affective and memory strategies. The only affective strategy that was usually used was “I encourage myself to speak English even when I am afraid of making a mistake” (mean = 3.6). Bremner (1999:503) concluded in his study that learners have less need for affective strategies when they have become more proficient, which might be an explanation for the low preference for affective strategies in this test group. We have established that all participants in this study showed remarkably high levels of proficiency. The low preference for memory strategies contrasts with the intuitively felt assumption that students, especially when learning the vocabulary of a second or foreign language, will make regular use of rote memorization techniques i.e. learn by heart lists of words and their translation. On the other hand, as Hong-Nam and Leavell (2006:409) pointed out, the least preferred memory strategies in their study had nothing to do with rote memorization. Similar results were found in this study. Possibly strategies such as acting out new vocabulary and using rhymes are more popular with younger children (Ibid.). Strategies such as thinking about the relationship between the new knowledge and things they already knew and using new words in a sentence were more popular.7

5.3 Effects of strategy use on the test scores

5.3.1 Effect of number of strategies used
The purpose of the comparisons made between the students’ strategy use and their tests scores was to test the widely believed assertion of researchers such as Chamot and Kupper (1989:17) and Green and Oxford (1995:265) that the more successful language learners use more learning strategies than less

7 The means of the reported strategy use of each individual strategy can be found in section 9.4
successful learners. To investigate the truthfulness this claim we looked for correlations between the use of language learning strategies from each of the six categories separately and the students’ language proficiency i.e. their test scores. The results of the use of different quantities of language learning strategies on the students’ test scores are also placed together in an easily accessible table in the appendices (section 9.5).

The use of social and memory strategies was found to have a positive effect on the test scores of the Dialang vocabulary test. No substantial correlation was found between the test scores and the other four categories. That the use of memory strategies has a positive influence on vocabulary students, so that students who use more of them score higher on the vocabulary test, was to be expected. Learning the vocabulary of a second or foreign language typically involves rote memorization of lists of new words together with their translation or explanation. Popular memory strategies such as, using new words in a sentence (M= 2.79), making a mental picture of a situation in which the word might be used (M= 2.86) and remembering where they first saw it e.g. on a street sign (M= 3.51), are also good ways to memorize new words and their meaning. The positive effect of the use of social strategies on the scores of the vocabulary test was unexpected. Social interaction does not coincide with the image of the students sitting alone memorizing vocabulary lists. On the other hand, one of the social strategies that was reported as being used most frequently was “I ask English speakers to correct me when I talk” (M= 2.95). This can also include the correction of words when used incorrectly or in a wrong context. Also conversing with native speakers of English can help students to enhance their vocabulary.

The use of social and memory strategies also has a positive effect on the students’ scores on the grammar part of the Dialang test, together with the use of affective strategies. The positive effect of the use of memory strategies is surprising, since popular memory strategies like using new words in a sentence and remembering where you first encountered a new word refer particularly to the memorization of vocabulary, not grammar. Nevertheless, some grammatical rules and constructions need to be learned by heart as well. Additionally, the second most popular memory strategy “I think about the relationships between what I already know and new things I learn” (M= 3.20) is a very good technique to memorize grammar. The positive effect of social strategies on the grammar test scores can be explained similarly as for vocabulary. Other people can point out grammatical mistakes in the utterances of the language learners, which helps them to improve themselves. The finding that the use of affective strategies is positively correlated with the test scores seem surprising. On the other hand, even highly proficient English speakers can feel anxiety or have fear to make mistakes when having to speak English e.g. when they have to address a large group of people. Lastly, the slightly negative correlation between the use of compensation strategies and the test scores appears to be remarkable at first but can be easily explained. The more proficient language learners become, the less need they have to compensate for lack of knowledge. They do not need to guess or make up new words anymore
or reformulate their sentence because they doubt the correctness of a particular grammatical construction.

When we look at the correlation between the use of learning strategies and the results of the economic English test, a different picture emerges. The use of cognitive strategies has a substantial positive effect on the scores of the economic English test, on the vocabulary as well as on the grammar part. A possible explanation for this is the influence of American movies and TV shows. The students reported that their most favoured cognitive strategy was “I watch English language TV shows or movies spoken in English without Dutch subtitles” \((M=3.76)\). This habit can facilitate the students’ acquisition of new words and expressions, as well as their correct pronunciation and the conjugations of verbs. Repeating the new words they heard and writing them down \((M=3.65)\), the second most preferred cognitive strategy, further aids the memorization of those words and expressions. For the grammar part of this test we also found a positive effect of compensation strategies, albeit to a lesser extent. This contrasts with the findings of the grammar part of the Dialang test, where compensation strategies were negatively correlated with the test scores. This can be explained by looking at the proficiency levels of the students for the grammar parts of both tests. As we discussed earlier, the students performed extraordinarily well on both tests. Nonetheless, the scores on the Dialang test were somewhat higher than on the economic English test. This explains why students profited more from the use of compensation strategies on that second test.

Affective strategies were found to be negatively correlated with both the vocabulary and grammar part of the economic English test. This is remarkable, since we found that the use of affective strategies had a positive effect on the score of the grammar part of the Dialang test. This does, however, agree with Bremner’s (1999:503) statement that learners have less need to use affective strategies when they have become more proficient. It appears logical to assume that language learners will feel less nervous or tense or be less afraid to make mistakes when having to address someone in English when they are beginning language learners than when they have become more experienced and proficient language learners. Additionally, the use of social strategies is found to be negatively correlated with the students’ scores on the vocabulary part of the economic English test. This contradicts the findings of the Dialang tests, where social strategies were found to have a positive effect, not only on the vocabulary, but also on the grammar part of the test. Possibly the specific knowledge required for the economic English test could not be acquired through social interaction.

The findings of the grammar part of the economic English test are similar to what Bremner (1999:499) found when investigating the relationship between proficiency and strategy use in a group of English learners in Hong Kong. He also discovered significant correlations between proficiency and three strategy categories. Cognitive and compensation strategies were positively correlated with proficiency and affective strategies negatively. Additionally, Green and Oxford (1995) found cognitive and
compensation strategies to show significant variation as well, together with metacognitive and social strategies. Moreover, they observed that almost all of the strategies used more frequently by more successful language learners involve active language use (1995:288). The students in their study preferred to practice their English in natural or naturalistic situations and they stated that, in general, “[t]he successful learners in this study reported using a number of strategies more often than other students” (Green and Oxford 1995:289).

Different from the other studies, this investigation compared the effect that the use of learning strategies had on the students’ proficiency in two different skills: vocabulary and grammar. As discussed above, here also the results varied greatly between the two tests. For vocabulary, we found that two strategy categories significantly correlated with the test scores of the Dialang test. Social and memory strategies had a positive effect on the scores. The scores of the economic English test were correlated with cognitive, social and affective strategies. Cognitive strategies had a positive effect, whereas the other two categories had a negative effect on the students’ test scores. The results of the analysis of the Dialang test are most in line with the expectations. One would expect that memory strategies would be the most useful strategy category when it comes to learning vocabulary. For grammar, the expectations were to find that metacognitive or cognitive strategies had the strongest positive influence. The ability to think about their own progress in learning English and to notice their mistakes would undeniably be useful when it comes to learning grammar. These expectations were only partially fulfilled. For the Dialang test, metacognitive strategies only had a minor positive effect on the test results. Of much greater influence were affective, memory, social and compensation strategies. The last one had a negative effect. For the economic English test, we found positive correlations between the use of cognitive and compensation strategies and a negative effect of the use of affective strategies.

Remarkable about the findings, both of the vocabulary and of the grammar test, is that some strategy categories are negatively correlated with proficiency. These observations contradict the claims of researchers such as Chamot and Kupper (1989:17) who claimed that successful language learners are those whose use language learning strategies more often than other learners. It appears that this statement needs some hedging. The use of some learning strategy categories more often makes language learners more successful. Which categories those are depends on the learner, the situation and the skill that needs to be acquired. As Oxford (1994:3) stated “certain strategies or clusters of strategies are linked to particular language skills or tasks”. This might prove the truthfulness of the claim of researchers such as Van and Abraham (1990) that it is very important for learners to select those strategies that are most appropriate for the task at hand. Possibly affective strategies were not appropriate for the completion of the economic English test.
However, it is difficult to come up with a conclusive explanation for this negative correlation of the use of particular groups of learning strategies with the students’ performances and to debate about which strategies would be more appropriate, since the participants were questioned about their language learning strategy use in general and not about their strategy use when learning for and completing the specific tests used in this study. In addition, maybe it is more logical in this case to look at the strategy use of the students as the output of proficiency instead of instruments to enhance language proficiency. Language learners, once they have reached a certain proficiency level, have less need for particular strategies and thus make less frequent use of them e.g. more proficient students have less need of compensation strategies.

To conclude, the results of the investigation revealed that an effect can be perceived of the use of certain amounts of language learning strategies on the students’ language proficiency. However, this effect is minimal and not always positive. Furthermore, the effects vary according to the type of test and the skill tested i.e. vocabulary or grammar. Also, considerable differences could be observed between the effects of the various strategy categories. These findings do not entirely correspond with the findings of other studies. For example, the study of Park (1997:215), investigating the relationship between language learning strategies and L2 proficiency by university students in Korea, revealed high correlations between the two variables and discovered that all six of the strategy categories were significantly related to the students’ scores. Nevertheless, she also found that the majority of the influence on the students’ proficiency was caused by only two strategy categories, in this case cognitive and social strategies.

**5.3.2 Effect of variety of strategies used**

Not only quantity of strategy use was claimed to make language learning successful, variety of language learning strategies is also important (e.g. Chamot and Kupper 1989; Oxford and Nyikos 1989; Ehrman and Oxford 1990). To examine this claim, we investigated the correlations between the students’ proficiency and the number of strategy categories that were used with a certain frequency i.e. the categories the students reported to use sometimes, usually or always or almost always. Variety of language learning strategies was interpreted here as the use of a variety of learning strategy categories. If the allegations of the above researchers are correct, then we should find a positive correlation between the frequent use of various strategy categories and the students’ test scores. The more different categories they reported to use frequently, the higher their scores should be.

For the Dialang test, a clear positive effect could be perceived. The students who obtained the highest score on the vocabulary test, C2, were the ones that used at least three strategy categories frequently. None of these students used only one or two strategy categories. The same results could be observed for grammar. The positive effects of the use of a great variety of learning strategies is not that clear on the economic English test. For vocabulary, hardly any effect could be noted at all, only students who
made frequent use of merely one strategy category scored lower than the others. For the grammar part of this test, a curvilinear relationship could be perceived between the test scores and the use of learning strategies. The test scores of the students who frequently use three strategy categories are the highest. They are remarkably higher than the scores of the students who use only one or two categories and, surprisingly also of the students who use more than three categories. Nonetheless, this drop is not very substantial and, overall, the correlation between the two variables was not very significant (P-value = 0.43).

In sum, the positive effect of the use of a great variety of learning strategy categories was clearly proven to be correct when we look only at the Dialang test. Students who used more strategy categories scored higher on both the vocabulary and grammar part of this test. This positive effect was not equally apparent on the second test. There, no substantial effect could be noted on the scores for the vocabulary test and a minor negative effect existed when students used more than three categories. Nonetheless, since we found no evidence for a substantial negative effect of a great variety of learning strategies, we can conclude that the allegation of Chamot and Kupper 1989, Oxford and Nyikos 1989 and any other researcher who believed in the positive influence of the use of a variety of learning strategies is proven to be correct.

Nonetheless, one last issue needs to be taken into consideration. As Ehrman and Oxford (1990: 312) observed “[m]ore proficient learners appear to use a wider range in a greater number of situations than do less proficient learners, but the relation between strategy use and proficiency is complex”. The relationship is complex because number and variety of language learning strategies used by the participants are not the only factors that can influence language proficiency. As discussed in section 2.4, it is also important that learners use the strategies at their disposal in an orchestrated way and that they select those strategies that are most appropriate for the task at hand. These were factors that could not be investigated in this study, however, since the learners were not used to report on their strategy use related to specific language learning tasks. The SILL asked the students to report on their general strategy use. Additionally, the SILL is designed to assess the quantity and not the quality of the strategies used (Tseng et al. 2006:83-84). This makes it an ideal tool to investigate the influence of number of language learning strategies used on proficiency level, but not of appropriate use.

5.4 Implications for the classroom

Strategy instruction or training is a subject that is not discussed in the literature study of this thesis, nevertheless the findings of the investigation entail some implications for the classroom that need to be considered. As has become obvious throughout this paper and as the results of this investigation confirmed, the frequent and varied use of language learning strategies can help to make language learning more successful. Consequently, as Oxford (1996:41) stated, “[a]ppropriate learning strategies
should be among the first considerations of any ESL/EFL teacher or researcher who wants to enhance student learning”.

A first consideration of the language teacher should be to make students aware of the existence and usefulness of language learning strategies. The teacher can help the language learners to become aware of the strategies they already use and of the existence of other, possibly useful, strategies they do not use. This way, the language learners can acquire a larger number and variety of strategies from which they can select the most appropriate ones for each learning task. Also, teachers could inform themselves about which strategies are proven to have a positive effect on language proficiency and which ones are not (Oxford 1996:40). However, it is important that the teachers do not impose their personal learning style on their students. A teacher should give suggestions and then let the students make their own choices (Hong-Nam and Leavell 2006:412).

Furthermore, it is important that teachers are aware that some language learners benefit more from the use of a particular learning strategy than others. Which language learning strategies are suited for a learner can depend on various individual factors such as their personality type, motivation, gender, age and aptitude. Additionally, as we have discovered, the effect that the use of a particular learning strategy has can also depend on the particular learning task and also on the skill tested. Strategies that had a positive influence on the Dialang test could have a negative influence on the economic English test and vice versa. The same difference could be observed for the two skills i.e. vocabulary and grammar. Moreover, as Green and Oxford (1995:292) pointed out, students who are at different levels of proficiency tend to use different learning strategies. A teacher should be aware of the existence of all these factors so that he can understand the character of the individual differences present in the classroom. Consequently, lessons can be planned so that the personal needs of every student are taken into consideration.

The SILL can be a useful tool for both the teacher and the language learner himself to learn about his own, possibly unconscious, use of language learning strategies. First of all, the SILL makes language learners and teachers aware that there is also a social and affective side to learning (Oxford 1996:40). Additionally, the profile page that Oxford included with her survey helps students to become aware of their own strategy use. After having calculated their average scores for each strategy category with help of the worksheet, the students are given a profile which tells them which strategies they use when learning English and what the results imply. Additionally, the students are given the opportunity to visualise their results by drawing a graph of their SILL averages. This way students can see which strategies they use with a high, medium or low frequency and, consequently, on which areas they can improve themselves. There might be some strategies in the groups that are used with low frequency which students were not aware that existed. Oxford (1990) advised the students to ask their teachers about these.
6 Conclusion

As discussed in the literature study of this investigation (section 2) the area of language learning strategy investigation is a promising one, since it is generally found that the use of language learning strategies results in improved proficiency and, thus, that it makes language learning more enjoyable and successful (Oxford 1990:8 and Oxford 1994:3). Before setting out to test this claim, however, a first objective of this paper was to provide a clear and complete picture of the concept language learning strategy. This was necessary because the theoretical fuzziness related to the concept discouraged new researchers to enter the field (Rose 2012:137-138). Furthermore, the increasing criticism on the abundant definitional and instrumental uncertainties even lead some researchers to call for a re-theorization within the field which resulted in a marginalization of the concept learning strategies in favour of a more process-oriented concept i.e. self-regulation (Ibid.). As Gao (2006:615) argued, however, self-regulation and learning strategies are compatible constructs and can exist together, complementing each other. This can result in the acquisition of a broader perspective on the learner’s strategic learning.

Language learning strategies clearly remain an interesting and useful research topic. In order to be able to conduct a research about learning strategies, however, some of the definitional fuzziness needed to be resolved first and a framework needed to be established in which this particular study could be conducted. After having listed and discussed the opinions of various researchers, a clear definition of the concept of language learning strategies as considered in this paper was provided. The term “strategy” is regarded as enveloping all meanings ascribed to “techniques”, “tactics”, “skills”, etc., while acknowledging the existence of a continuum from the broadest categories to the more specific ones. Language learning strategies are both thoughts and behaviours that are consciously or unconsciously used by the language learner in order to facilitate the acquisition of a new language. The use of language learning strategies can become automatized in time, at which point their use can no longer be reported. Consequently, only the consciously employed strategies can be investigated. Furthermore, language use is included in the definition of language learning strategies since, in certain contexts, language use can lead to language acquisition. Also, Oxford’s (1990) classification of strategies into six categories i.e. cognitive, memory-related, compensation, metacognitive, affective and social strategies is considered as the model that is most in agreement with the students’ reported strategy use. Lastly, the SILL was considered to be the most appropriate research tool for this particular investigation.

Having established the framework in which this investigation was set to take place, we could commence with the second and main objective of this paper i.e. to investigate the relationship between the strategy use of a group of Flemish first-year students at Ghent University that get educated in English from an economic point of view and their language proficiency. To begin, we described the
students’ language proficiency and their variation in use of the six strategy categories. Nonetheless, the main purpose of this study was to investigate Oxford and Green’s (1995:265) allegation that in “studies conducted in a wide variety of geographical and cultural settings, students who were better in their language performance generally reported higher levels of overall strategy use and frequent use of a greater number of strategy categories”, a claim also made earlier by Chamot and Kupper (1989:17). This study can be considered as an addition to other studies investigating the relationship between strategy use and proficiency in other countries and with various test groups (e.g. Park 1997; Bremner 1999 and Hong-Nam and Leavell 2006). Additionally, since Oxford (1994:3) claimed that the use of appropriate language learning strategies results not only in improved overall proficiency, but also in specific skill areas, we investigated the correlations between the students’ use of strategies and their proficiency in two different language skills: vocabulary and grammar.

To gather the results of the students’ general strategy use, an adaptation of the EFL/ESL version of the SILL was used. The economy students were asked to report the frequency with which they used 49 language learning strategies, belonging to 6 categories. They could choose from 5 Likert-scale responses ranging from 1 (never or almost never used) to 5 (always or almost always used). Information about the students’ proficiency was gathered by two different tests. A Dialang test they completed at the beginning of their first semester at university and a second test conducted at the end of the semester by the university itself, in function of an English course related to economics. The two tests and the strategy survey were completed by a total of 242 students.

A first finding of this study is that the students scored extremely well on both tests and for both language skills. Different possible explanations could be found for these high scores. First off all, various studies and surveys found that the English proficiency level of Flemish students tends to be very high. Also, the test group of this study was comprised of university students, which makes it safe to assume that these are the students that performed best in secondary school as well. Thirdly, the difficulty level of both tests could have exerted some influence on the results. Specifically for the second test some additional explanations could be found. A question in the questionnaire administered to the students together with the SILL revealed that the students were well aware of the importance of English proficiency in general and for their future career purposes, which makes it more likely that they have put an effort into mastering the specific knowledge required for the second test. Also, the quality of instruction provided at Ghent University might have helped the students to excel.

Furthermore, no substantial correlations could be found between the students’ scores on the two tests. Possibly the students’ high scores at the beginning of the semester did not leave much room for improvement. Also, as was the case in the study conducted by Oxford and Ehrman (1995:359), the correlations were lowered because the sophisticated nature of the learners resulted in a statistical
restriction of the range of proficiency outcomes. As a result, no conclusions can be drawn about the students’ progress in the course of the semester.

Additionally, we found that there is a substantial difference in the students’ use of the six strategy categories. Cognitive strategies was reported to be the most used strategy group, whereas affective strategies was the least preferred group. These findings coincide more or less with the findings of similar studies, although metacognitive and compensation strategies were frequently found to be the most popular strategies. Possibly the very popular cognitive strategy “I watch English language TV shows or movies spoken in English without Dutch subtitles” caused this category to achieve a high mean score. The low popularity of affective strategies can be explained by the high proficiency level of the economy students. As Bremner (1999:503) remarked, learners have less need for affective strategies when they have become more proficient.

Fourthly, this study proved the existence of a small correlation between the use of language learning strategies and the students’ proficiency. For the Dialang test, we found that the use of social and memory strategies had a positive effect on the students’ scores on the vocabulary test. Affective, memory, social and metacognitive strategies were positively correlated with the scores on the grammar test. For the economic English test, we found that the use of cognitive strategies was positively correlated with the students’ scores on the vocabulary part of the test and the use of cognitive and compensation strategies was positively correlated with the results on the grammar part of the test. In general, these finding prove the importance of quantity of strategy use on language proficiency. The higher the use of certain strategy groups, the higher the students’ test scores. Nevertheless, the results varied greatly depending on the kind of test, i.e. the Dialang test or the economic English test, and the skill tested: vocabulary or grammar.

A remarkable finding is that the use of particular learning strategies is negatively correlated with the students’ proficiency. The use of compensation strategies was negatively correlated with the students’ scores on the grammar part of the Dialang test. For the economic English test, we found that the use of social and affective strategies had a negative effect on the test scores on the vocabulary part, whereas for the grammar part of the test we found only affective strategies to exert a negative influence. This finding appears to contradict the popular claim that the use of larger numbers of learning strategies results in improved proficiency. Additionally, it might indicate that researchers such as Van and Abraham 1990 were right when they claimed that appropriateness is very important. The use of affective strategies, for example, appeared to be not appropriate for the economic English test. However, in this case it appears to be more truthful to look at strategies as the output of proficiency instead of tools to enhance language proficiency. Language learners, once they have reached a certain proficiency level, have less need for particular strategies and thus make less frequent use of them e.g. more proficient students have less need of compensation strategies.
A fifth finding of this study is that the number of frequently used strategy categories had a clear effect on the students’ proficiency. Students who reported to use a larger number of categories, achieved higher results on the vocabulary and grammar part of the Dialang test. This finding proves the claims of researchers such as Chamot and Kupper 1989; Oxford and Nyikos 1989 and Ehrman and Oxford 1990 that the use of a variety of learning strategies contributes to successful learning. Additionally, as Park (1997:216) remarked, the variety of learning strategies language learners have at their disposal might be a precondition for their appropriate use of language learning strategies, which is also considered to be of paramount importance for the successful language learner (e.g. Naiman et al 1978; Chamot and Kupper 1989; Oxford and Van and Abraham 1990). Nevertheless, the results of this study are not conclusive. Correlations between variety of strategy groups used by the students and proficiency were not equally visible for the economic English test.

In conclusion, evidence was found to support the claim that quantity and variety of language learning strategy use is positively correlated with proficiency. The higher the students’ reported strategy use and the more strategy categories used, the higher their test results were. Nonetheless, this correlation was not a very substantial one. However, since the range of proficiency outcomes of the students was very restricted, it was statistically unlikely that a higher correlation would be found. Therefore, it is interesting that a correlation could be found at all. Nonetheless, the results varied greatly depending on the kind of test, i.e. the Dialang test or the economic English test, and the skill tested: vocabulary or grammar. Furthermore, a negative correlation could be found between the use of particular strategy groups and proficiency. This discovery might indicate that quality and variety might not be the most important variables to guarantee successful learning. Possibly more important than the number and variety of strategies used is which strategies they use and how they use them. A language learner has to select the strategies that are most appropriate for the particular task at hand. Nevertheless, the variety and number of language learning strategies that a learner has at their disposal, remains very important. Only when a language learner has a wide array of strategies at their disposal they can they select the most appropriate ones for the situation.
7 Limitations of this study and suggestions for further research

To conclude, I want to address the limitations of this paper as well as some problems that arose during the investigation and analysis due to the chosen topic and methodology. Furthermore, I will suggest an alternative mode of action for researchers planning to do a similar investigation. First of all, although a relationship between the strategy use of the participants in the investigation and their proficiency could be found, the methods used in this investigation were not suited to determine the direction of this causality i.e. to find out whether the use of language learning strategies leads to increased proficiency or whether students with higher proficiency levels use more language learning strategies. A third option, and one that we intuitively supported, is that the two variables stand in a bi-directional causal relationship to one another. The use of language learning strategies leads to increased proficiency, which in turn leads to the use of more language learning strategies, and so on. Nonetheless, other techniques than used in this study are required to prove this claim right or wrong.

In addition, the two tests that were used to gather information concerning the participants’ proficiency level complicated the analysis of the results. First of all, the different nature of the test scores made it difficult to compare the tests and to process them statistically. The Dialang test scores were presented according to the CEFR levels, which are categorical variables that cannot be converted into a numerical form, whereas the tests scores of the economic English test were numerical, and thus continuous variables. This problem could have been avoided by letting the students complete two similar tests. The students could have taken the Dialang test again at the end of the semester or a test similar to the economic English test at the beginning. That way a straightforward comparison could have been made between the scores at the beginning and the end of the semester and we would have had a clear indication of the progress, or not, made by the students in the course of the semester. This progress could then have been compared with the students’ strategy use to draw conclusions concerning the usefulness of each strategy category.

On the other hand, objections can be found to this course of action as well. First of all, certain disadvantages are related to the use of the Dialang test. Since the results are divided into six categories, i.e. the CEFR levels, a loss of nuance can be noted compared to the results of the economic English tests, which was divided into 10 and 20 categories for vocabulary and grammar respectively. There might be a difference between one student obtaining the score of B2 and another, but this is not reflected in the scores and can thus not be analysed. Also, completing the Dialang test is rather time-consuming, which can cause students to quit the test before completing it or to not put all their effort into it, especially when they are aware that the results will not be taken into account for their exam scores. Furthermore, the most important objection for using the Dialang test twice is that, as we
discussed earlier (section 3.1.1), Dialang offers tests in only three levels of difficulty and has a limited store of items. As a consequence, it is possible that a learner receives the same test as before when taking it in the same language and skill. Although some months would go by between the first and the second test, it is possible that students would have remembered some of the questions and answers, especially those they had wrong the first time, and this could have influenced the results. The second tests, administered by Ghent University, might also not have been an ideal assessment method for this study. The remarkably high scores of the students on the test might indicate that the difficulty level of the test was too low, causing the study to be underpowered. A more difficult test might have produced more varied results. Besides these remarks, it was also decided to use the results of the two different tests as not to ask too much of the students. These students would have been asked to complete these two tests anyhow. Nevertheless, I strongly recommend a repetition of this study with other, possibly better, tests.

Additionally, this study investigated the claim of researchers such as Chamot and Kupper (1989) and Green and Oxford (1995) that successful language learner use learning strategies more often and with a greater variety than unsuccessful learners. However, high frequencies of strategy use is no guarantee for successful language learning, nor is low use of learning strategies an indication that the learner is unsuccessful (Yamamori 2003:384). Furthermore, as discussed in section 2.4, quantity and variety of strategy use are not the only factors that can make learners successful language learners. It is also important that learners can select the learning strategies that are most appropriate to the learning situation. This requires the learners to have a great variety of strategies at their demand, but that alone does not guarantee that the learner is able to select and use the most appropriate one. Furthermore, Oxford (1994) pointed out that successful learners also tend to use their learning strategies in an orchestrated way. These factors were not investigated in this paper, since the students were asked to report about their general strategy use and not in relation to a particular learning task.

Finally, as discussed in section 2.3, a wide variety of factors can have an influence on language learning strategy use. The factors can be learner ones e.g. motivation, career choice, age, learning style and aptitude or social and situational ones e.g. gender, the task at hand and the language being learned. Investigations such as those of Oxford and Nyikos (1989); Ehrman and Oxford (1989) and Green and Oxford (1995) studied the relationship between the use of language learning strategies and several of these factors. Ehrman and Oxford (1989), for example, investigated the relationship between the use of language learning strategies and gender, career choice and psychological type. The study conducted in this investigation, on the other hand, focuses on the relationship between learning strategies and one single variable, language proficiency, neglecting all others. This course of action might lead to an incomplete picture. When interpreting the results of this study it is, therefore, recommended to keep in mind that the students’ choice of learning strategies might be influenced by other factors than proficiency e.g. motivation, gender and cultural influences.
8 References


Rubin, Joan. 1975. What the good language learner can teach us. *TESOL Quarterly* 9(1). 41–51


Yamamori, Koyo et al. 2003. Using cluster analysis to uncover L2 learner differences in strategy use, will to learn, and achievement over time. IRAL 41(4). 381-410.


www.lancaster.ac.uk/researchenterprise/dialang/about.htm, assessed on 09/02/2015

https://prd.oasis.ugent.be/studiekiezer-web/brochurescan/43742329, assessed on 14/02/2015

www.ugent.be/nl/studeren/masteropleidingen/toelating/master/taal.htm, assessed on 01/04/2015

## 9 Appendices

### 9.1 Definitions

<table>
<thead>
<tr>
<th>Source</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rubin 1975</td>
<td>“By strategies, I mean the techniques or devices which a learner may use to acquire knowledge.” (p.43)</td>
</tr>
<tr>
<td>Stern 1983</td>
<td>“general tendencies or overall characteristics of the approach employed by the language learner” (in Ellis 1994:531)</td>
</tr>
<tr>
<td>Weinstein and Meyer 1986</td>
<td>“Learning strategies are the behaviours and thoughts that a learner engages in during learning that are intended to influence the learner’s encoding process” (in Ellis 1994:531)</td>
</tr>
<tr>
<td>1994</td>
<td>“thoughts, emotions, and behaviours that facilitate the acquisition of knowledge and skills, or the reorganisation of one’s knowledge base” (in Dörnyei and Skehan 2003:610)</td>
</tr>
<tr>
<td>Chamot 1987</td>
<td>“Learning strategies are techniques, approaches or deliberate actions that students take in order to facilitate the learning, recall of both linguistic and content area information” (in Ellis 1994:531)</td>
</tr>
<tr>
<td>Wenden 1987</td>
<td>“Strategies refer to specific actions or techniques, some of which may be observable, others will not, and they are problem oriented. They will be used to refer to language learning behavio[u]rs that contribute directly at learning, how learners use their linguistic repertoire to communicate and what they do to create opportunities to learn and use the language. Sometimes they may be consciously deployed and sometimes they can become automatized. They are behavio[u]s that are amenable to change.” (p.7-8)</td>
</tr>
<tr>
<td>Source</td>
<td>Definition</td>
</tr>
<tr>
<td>-----------------</td>
<td>-------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Rubin 1987</td>
<td>“Learning strategies includes any set of operations, steps, plans, routines used by the learner to facilitate the obtaining, storage, retrieval and use of information” (after O’Malley et al 1983 and Brown et al 1983) (p.19)</td>
</tr>
</tbody>
</table>
| Schmeck 1988    | “ a learning strategy is a sequence of procedures for accomplishing learning, and the specific procedures within this sequence are called learning tactics.” (p.5)  
“Strategies and tactics are conscious and intentional.” (p.6) |
| Oxford 1989     | “Language learning strategies are behaviours or actions which learners use to make language learning more successful, self directed and enjoyable.” (p.235)  
“learning strategies are specific actions taken by the learner to make learning easier, faster, more enjoyable, more self-directed, more effective, and more transferrable to new situations” (p.8) |
| Cohen 1990      | “learning processes which are consciously selected by the learner. The element of choice is important here because this is what gives a strategy its special character. These are also moves which the learner is at least partially aware of, even if full attention is not given to them” (in Cohen 1998:4)  
“language learning and language use strategies can be defined as those processes which are consciously selected by the learners and which may result in action taken to enhance the learning or use of a second or foreign language, through the storage, retention, recall, and application of information about that language. “(p.4) |
O’Malley and Chamot 1990  
“The special thoughts or behaviours that individuals use to help them comprehend, learn, or retain new information” (p.1)

Ellis 1994  
“Production sets that exist as declarative knowledge and are used to solve some learning problem” (p.533)

Skehan 1998  
“concerned with activities which are intended by the learner to lead to longer-term development” (as opposed to communication strategies) (p.27)

Dörnyei and Skehan 2003  
“the learner’s active contribution to enhancing the effectiveness of his or her own learning” (p.607)

| Table 2: Definitions of language learning strategies |

### 9.2 The subdivisions of Oxford’s strategy classification

<table>
<thead>
<tr>
<th>Direct Strategies</th>
<th>Indirect Strategies</th>
</tr>
</thead>
<tbody>
<tr>
<td>I. Memory strategies</td>
<td>A. Centering your learning</td>
</tr>
<tr>
<td>A. Creating Mental linkages</td>
<td>B. Arranging and Planning your learning</td>
</tr>
<tr>
<td>B. Applying Images and sounds</td>
<td>C. Evaluating your learning</td>
</tr>
<tr>
<td>C. Reviewing well</td>
<td>II. Metacognitive strategies</td>
</tr>
<tr>
<td>D. Employing action</td>
<td>A. Lowering your anxiety</td>
</tr>
<tr>
<td>A. Practicing</td>
<td>B. Encouraging yourself</td>
</tr>
<tr>
<td>B. Receiving and Sending messages</td>
<td>C. Taking your emotional temperature</td>
</tr>
<tr>
<td>C. Analyzing and reasoning</td>
<td>III. Social strategies</td>
</tr>
<tr>
<td>D. Creating Structure for Input and output</td>
<td>A. Asking Questions</td>
</tr>
<tr>
<td></td>
<td>B. Cooperating With others</td>
</tr>
<tr>
<td>III. Compensation strategies</td>
<td>C. Empathizing With others</td>
</tr>
<tr>
<td>A. Guessing intelligently</td>
<td></td>
</tr>
<tr>
<td>B. Overcoming Limitations In speaking And writing</td>
<td></td>
</tr>
</tbody>
</table>

Figure 20: Diagram of the Strategy System Showing Two classes, Six Groups, and 19 Sets. (Oxford 1990:17)
9.3 The online SILL

Strategy inventory for language learning (version for ESL speakers)

This form of the Strategy Inventory for Language Learning (SILL) is for students of English as a second or foreign language. You will find statements about learning English. Please read each statement and choose the response (1, 2, 3, 4 or 5) that tells HOW TRUE THE STATEMENT IS FOR YOU.

1. Never or almost never true of me
2. Usually not true of me
3. Somewhat true of me
4. Usually true of me
5. Always or almost always true of me

NEVER OR ALMOST NEVER TRUE OF ME means that the statement very rarely applies to you
USUALLY NOT TRUE OF ME means that the statement is true less than half of the time
SOMewhat TRUE OF ME means that the statement is true of you about half of the time
USUALLY TRUE OF ME means that the statement is true more than half of the time
ALWAYS OR ALMOST ALWAYS TRUE OF ME means that the statement is almost always true for you

Answer in terms of how well the statement describes you. Do not answer how you think you should be, or what other people do. There are no right or wrong answers to these statements. Your SILL results will be kept in complete confidence and will not affect your grade.


If you want to get to know your language learning profile in order to find out more about yourself as a language learner and how you can make your learning more effective, write down your responses on a piece of paper. Instructions about how to interpret your answers will be given at the end of the survey.

Start

a. Full name
b. Age  ☐ 16 ☐ 17 ☐ 18 ☐ 19 ☐ 20 ☐ 21 ☐ 22 ☐ older
c. Sex  ☐ Male ☐ Female
d. Mother tongue

e. What language(s) do you speak at home?
f. How long have you been studying English? (in years)
g. How do you rate your overall proficiency in English as compared with the proficiency of other students in your class?  ☐ Excellent ☐ Good ☐ Fair ☐ Poor
h. How do you rate your overall proficiency in English as compared with the proficiency of native speakers of the language?  ☐ Excellent ☐ Good ☐ Fair ☐ Poor
i. How important is it for you to become proficient in English? ○ Very important
   ○ Important ○ Not so important
j. Do you enjoy language learning? ○ Yes ○ No
k. What other languages have you studied or are you currently studying?

1. I think about the relationship between what I already know and new things I learn in English.
   ○ 1 ○ 2 ○ 3 ○ 4 ○ 5
2. I use new English words in a sentence so I can remember them.
   ○ 1 ○ 2 ○ 3 ○ 4 ○ 5
3. I connect the sound of a new English word with a picture of it in my head to help me remember the word.
   ○ 1 ○ 2 ○ 3 ○ 4 ○ 5
4. I remember a new English word by making a mental picture of a situation in which the word might be used.
   ○ 1 ○ 2 ○ 3 ○ 4 ○ 5
5. I use rhymes to remember new English words.
   ○ 1 ○ 2 ○ 3 ○ 4 ○ 5
6. I use flashcards to remember new English words.
   ○ 1 ○ 2 ○ 3 ○ 4 ○ 5
7. I physically act out new English words.
   ○ 1 ○ 2 ○ 3 ○ 4 ○ 5
8. I often review English lessons.
   ○ 1 ○ 2 ○ 3 ○ 4 ○ 5
9. I remember new English words or phrases by remembering their location on the page, on the board, or on a street sign.
   ○ 1 ○ 2 ○ 3 ○ 4 ○ 5
10. I say or write new English words several times
11. I try to talk like native English speakers.
12. I practice the sounds of English.
13. I use the English words I know in different contexts.
15. I watch English language TV shows or movies spoken in English without Dutch subtitles.
16. I read for pleasure in English.
17. I write notes, messages, letters, or reports in English.
18. I first skim an English passage (read over the passage quickly) then go back and read carefully.
19. I look for words in my own language that are similar to new words in English.
20. I try to find patterns in English.
21. I find the meaning of an English word by dividing it into parts that I understand.
22. I try not to translate word-for-word.
23. I make summaries of information that I hear or read in English.

24. To understand unfamiliar English words, I make guesses.
25. When I can’t think of a word during a conversation in English, I use gestures.
26. I make up new words if I do not know the right ones in English.
27. I read English without looking up every new word.
28. I try to guess what the other person will say next in English.
29. If I can’t think of an English word, I use a word or phrase that means the same thing.

30. I notice my English mistakes and use that information to help me better.
31. I pay attention when someone is speaking English.
32. I try to find out how to be a better learner of English.
33. I plan my schedule so I will have enough time to study English.
34. I look for people I can talk to in English.
35. I look for opportunities to read as much as possible in English.
36. I have clear goals for improving my English skills.
37. I think about my progress in learning English.

38. I try to relax whenever I feel afraid of using English.
39. I encourage myself to speak English even when I am afraid of making a mistake.
40. I give myself a reward or treat when I do well in English.
41. I notice if I am tense or nervous when I am studying or using English.
42. I write down my feelings in a language learning diary.
43. I talk to someone else about how I feel when I am learning English.
44. If I do not understand something in English, I ask the other person to slow down or say it again.
45. I ask English speakers to correct me when I talk.
46. I practice English with other students outside the classroom.
47. I ask for help from English speakers.
48. I ask questions related to the acquisition of English in English.
49. I try to learn about the cultural contexts in which English is used around the world.

Thank you for taking the time to answer this survey!

How to find out your language learner profile:

- Make the sum of your responses for each part.
- Divide the number by the number of questions in each part to get the average.

Each part of the SILL represents a group of learning strategies. The averages of each part show which groups of strategies you use the most for learning English.

Part A: Remembering more effectively
Part B: Using all your mental processes
Part C: Compensating for missing knowledge
Part D: Organizing and evaluating your learning
Part E: Managing your emotions
Part F: Learning with others

If you have a very low average on one or more parts, there may be some new strategies in these groups that you might want to use.
### 9.4 Results of the individual strategy statements

<table>
<thead>
<tr>
<th>Strategy category</th>
<th>Strategy statement</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Memory strategies</strong></td>
<td>I think about the relationships between what I already know and new things I learn.</td>
<td>3.20</td>
</tr>
<tr>
<td></td>
<td>I use new English words in a sentence so that I can remember them.</td>
<td>2.79</td>
</tr>
<tr>
<td></td>
<td>I connect the sound of a new English word with a picture of it in my head to help me remember the word.</td>
<td>2.36</td>
</tr>
<tr>
<td></td>
<td>I remember a new English word by making a mental picture of a situation in which the word might be used.</td>
<td>2.86</td>
</tr>
<tr>
<td></td>
<td>I use rhymes to remember new English words.</td>
<td>1.79</td>
</tr>
<tr>
<td></td>
<td>I use flashcards to remember new English words.</td>
<td>1.62</td>
</tr>
<tr>
<td></td>
<td>I physically act out new English words.</td>
<td>1.90</td>
</tr>
<tr>
<td></td>
<td>I often review English lessons.</td>
<td>2.51</td>
</tr>
<tr>
<td></td>
<td>I remember new English words or phrases by remembering their location on the page, on the board, or on a street sign.</td>
<td>3.51</td>
</tr>
<tr>
<td><strong>Cognitive strategies</strong></td>
<td>I say or write new English words several times</td>
<td>3.65</td>
</tr>
<tr>
<td></td>
<td>I try to talk like native English speakers.</td>
<td>3.42</td>
</tr>
<tr>
<td></td>
<td>I practice the sounds of English.</td>
<td>3.31</td>
</tr>
<tr>
<td></td>
<td>I use the English words I know in different contexts.</td>
<td>3.19</td>
</tr>
<tr>
<td></td>
<td>I'm not afraid to start a conversation in English.</td>
<td>3.41</td>
</tr>
<tr>
<td></td>
<td>I watch English language TV shows or movies spoken in English without Dutch subtitles.</td>
<td>3.76</td>
</tr>
<tr>
<td></td>
<td>I read for pleasure in English.</td>
<td>2.57</td>
</tr>
<tr>
<td></td>
<td>I write notes, messages, letters, or reports in English.</td>
<td>2.62</td>
</tr>
<tr>
<td></td>
<td>I first skim an English passage (read over the passage quickly) then go back and read carefully.</td>
<td>2.67</td>
</tr>
<tr>
<td></td>
<td>I look for words in my own language that are similar to new words in English.</td>
<td>3.43</td>
</tr>
<tr>
<td></td>
<td>I try to find patterns in English.</td>
<td>3.14</td>
</tr>
<tr>
<td></td>
<td>I find the meaning of an English word by dividing it into parts that I understand.</td>
<td>3.14</td>
</tr>
<tr>
<td></td>
<td>I try not to translate word-for-word.</td>
<td>3.34</td>
</tr>
<tr>
<td></td>
<td>I make summaries of information that I hear or read in English.</td>
<td>2.31</td>
</tr>
<tr>
<td><strong>Compensation strategies</strong></td>
<td>To understand unfamiliar English words, I make guesses.</td>
<td>3.05</td>
</tr>
<tr>
<td></td>
<td>When I can’t think of a word during a conversation in English, I use</td>
<td>3.18</td>
</tr>
<tr>
<td>Metacognitive strategies</td>
<td>I notice my English mistakes and use that information to help me better.</td>
<td>3.55</td>
</tr>
<tr>
<td>--------------------------</td>
<td>------------------------------------------------------------------------</td>
<td>------</td>
</tr>
<tr>
<td></td>
<td>I pay attention when someone is speaking English.</td>
<td>3.83</td>
</tr>
<tr>
<td></td>
<td>I try to find out how to be a better learner of English.</td>
<td>3.25</td>
</tr>
<tr>
<td></td>
<td>I plan my schedule so I will have enough time to study English.</td>
<td>2.81</td>
</tr>
<tr>
<td></td>
<td>I look for people I can talk to in English.</td>
<td>2.38</td>
</tr>
<tr>
<td></td>
<td>I look for opportunities to read as much as possible in English.</td>
<td>2.38</td>
</tr>
<tr>
<td></td>
<td>I have clear goals for improving my English skills.</td>
<td>2.81</td>
</tr>
<tr>
<td></td>
<td>I think about my progress in learning English.</td>
<td>3.08</td>
</tr>
<tr>
<td>Affective strategies</td>
<td>I try to relax whenever I feel afraid of using English.</td>
<td>3.16</td>
</tr>
<tr>
<td></td>
<td>I encourage myself to speak English even when I am afraid of making a mistake.</td>
<td>3.60</td>
</tr>
<tr>
<td></td>
<td>I give myself a reward or treat when I do well in English.</td>
<td>2.06</td>
</tr>
<tr>
<td></td>
<td>I notice if I am tense or nervous when I am studying or using English.</td>
<td>2.43</td>
</tr>
<tr>
<td></td>
<td>I write down my feelings in a language learning diary.</td>
<td>1.24</td>
</tr>
<tr>
<td></td>
<td>I talk to someone else about how I feel when I am learning English.</td>
<td>1.59</td>
</tr>
<tr>
<td>Social strategies</td>
<td>If I do not understand something in English, I ask the other person to slow down or say it again.</td>
<td>3.62</td>
</tr>
<tr>
<td></td>
<td>I ask English speakers to correct me when I talk.</td>
<td>2.94</td>
</tr>
<tr>
<td></td>
<td>I practice English with other students outside the classroom.</td>
<td>1.84</td>
</tr>
<tr>
<td></td>
<td>I ask for help from English speakers.</td>
<td>2.44</td>
</tr>
<tr>
<td></td>
<td>I ask questions related to the acquisition of English in English.</td>
<td>2.39</td>
</tr>
<tr>
<td></td>
<td>I try to learn about the cultural contexts in which English is used around the world.</td>
<td>2.48</td>
</tr>
</tbody>
</table>

Table 3: Reported use the individual strategy statements
### 9.5 The correlations between proficiency and strategy use

This table brings together the effects of the use of strategy categories on the scores of all the tests. A + indicates a positive correlation between the two variables, - a negative one and = indicates that the use of language learning strategies exerts no noteworthy influence on the students’ test scores.

<table>
<thead>
<tr>
<th>Test</th>
<th>Strategy category</th>
<th>Correlation</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Dialang test: vocabulary</strong></td>
<td>Memory strategies</td>
<td>+</td>
</tr>
<tr>
<td></td>
<td>Cognitive strategies</td>
<td>=</td>
</tr>
<tr>
<td></td>
<td>Compensation strategies</td>
<td>=</td>
</tr>
<tr>
<td></td>
<td>Metacognitive strategies</td>
<td>=</td>
</tr>
<tr>
<td></td>
<td>Affective strategies</td>
<td>=</td>
</tr>
<tr>
<td></td>
<td>Social strategies</td>
<td>+</td>
</tr>
<tr>
<td><strong>Dialang test: grammar</strong></td>
<td>Memory strategies</td>
<td>+</td>
</tr>
<tr>
<td></td>
<td>Cognitive strategies</td>
<td>=</td>
</tr>
<tr>
<td></td>
<td>Compensation strategies</td>
<td>- (very minimal)</td>
</tr>
<tr>
<td></td>
<td>Metacognitive strategies</td>
<td>+ (minimal)</td>
</tr>
<tr>
<td></td>
<td>Affective strategies</td>
<td>+</td>
</tr>
<tr>
<td></td>
<td>Social strategies</td>
<td>+</td>
</tr>
<tr>
<td><strong>Economic English test: vocabulary</strong></td>
<td>Memory strategies</td>
<td>=</td>
</tr>
<tr>
<td></td>
<td>Cognitive strategies</td>
<td>+</td>
</tr>
<tr>
<td></td>
<td>Compensation strategies</td>
<td>=</td>
</tr>
<tr>
<td></td>
<td>Metacognitive strategies</td>
<td>=</td>
</tr>
<tr>
<td></td>
<td>Affective strategies</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>Social strategies</td>
<td>-</td>
</tr>
<tr>
<td><strong>Economic English test: grammar</strong></td>
<td>Memory strategies</td>
<td>=</td>
</tr>
<tr>
<td></td>
<td>Cognitive strategies</td>
<td>+</td>
</tr>
<tr>
<td></td>
<td>Compensation strategies</td>
<td>+ (minimal)</td>
</tr>
<tr>
<td></td>
<td>Metacognitive strategies</td>
<td>=</td>
</tr>
<tr>
<td></td>
<td>Affective strategies</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>Social strategies</td>
<td>=</td>
</tr>
</tbody>
</table>

Table 4: The correlation of the students’ test scores with the quantity of strategies used