

THE EFFECTS OF LEARNING AND READING STRATEGIES UPON SPANISH
VOCABULARY ACQUISITION AMONGST MIDDLE SCHOOL STUDENTS

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by
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ABSTRACT

Title: THE EFFECTS OF LEARNING AND READING STRATEGIES UPON
SPANISH VOCABULARY ACQUISITION AMONGST MIDDLE SCHOOL
STUDENTS

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This study is based on an investigation of the effect of contextual and non-contextual vocabulary strategies carried out among three different sections of middle school students in the researcher's own beginning level Spanish classroom. Although all students participated in the same textbook related classroom activities, students in Group 1 received explicit instruction on contextual (wrote novel sentences, used a bilingual dictionary and morphological analysis) and non-contextually based vocabulary strategies (cognitive and semantic processing); students in Group 2 used bilingual dictionaries, analyzed base words and affixes, and created novel sentences with the words; students in Group 3 did not receive explicit instruction on vocabulary strategies, but were encouraged to use whatever methods they chose. The vocabulary used included words obtained from student textbooks, and Spanish word families. Primary data sources included quiz and test scores, an open-ended questionnaire, and a vocabulary learning dialogue journal. Data analysis consisted of (a) statistical assessment of quiz and test data, and (b) qualitative assessment of an open-ended questionnaire that evaluated student test-taking strategies, and assessment of student self-report data gathered from the dialogue journals. Results of testing instruments indicated that students in the contextually based strategy group had improved in their test taking scores in a more

notable manner than the other two groups, and that students in the full-strategy group had achieved notable gains on the vocabulary quizzes. Qualitative analysis of the questionnaire showed the main strategy used by all participants on the vocabulary tests to be Spanish base word analysis. Assessment of the journals indicated a preference for rote and rehearsal strategies over cognitive and semantic processing among students in Group 1. The study suggests a combination of contextually based strategies entailing a focus on L2 base words and affixes may improve student vocabulary test taking scores.

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CHAPTER 1

INTRODUCTION

The objective of this study is to examine the vocabulary acquisition and vocabulary learning strategies among novice, adolescent learners of Spanish who have had little (learned basic vocabulary like numbers one to ten or colors by watching Sesame Street) or no previous exposure. Current research would suggest that although these students begin the process of second language learning (SLL) at an initial level of entrance, they do not enter this experience in a vacuum. This recent research indicates that even at this preliminary stage of second language (L2) development, rich conceptual and semantic systems already linked to their L1 have been developed that provide greater facility mapping new vocabulary word forms onto pre-existent conceptual meaning (Ellis, 2001). Young adolescent L2 learners are also at a relatively advanced stage of both physical and cognitive development having already gone through the process of learning their native language (Singleton, 1999), which has not only yielded them a thorough understanding of the L1 grammar and vocabulary, but also a structure of social meanings and relationships (Resnick, et al., 1991).

From the foregoing descriptive features associated with the cognitive and linguistic development of young adolescent foreign language learners, the assumption might be made that research on those aspects related to the L2 vocabulary learning traits of students in this age group would be quite extensive. However, a critical assessment of this literature will show that research on this large population of students has thus far been decidedly limited. In response to this lack of research, in this chapter, I introduce a

study that attempts to fill this gap as it relates to the Spanish vocabulary acquisition of middle-school L2 learners. Presentations of the various components that make up the chapter are put forward in the following manner. First, a description is given of the motivational features that led to the present study. This section is then followed by a description of the remaining chapters that make up the balance of the study.

1.2 The perceived need of the present study

My interest in implementation of this study was born of a number of observations I made as a Spanish language teacher. First, I was interested in finding a pedagogical approach that would assist a number of lower achieving Spanish language learners who expressed frustration at their lack of success on quizzes and tests. To address this issue, a review of the literature on foreign language vocabulary learning was made to research what methods or techniques were used by other foreign language teachers to deal with this problem. Throughout the literature the theme of vocabulary learning strategies (VLS) was given considerable attention. In particular, a large segment of these references suggested that memory techniques that utilized some form of mnemonic, where a link was made between an L1 and an L2 word would facilitate L2 word retention and recognition (Carter and McCarthy, 1988; Macaro, 2001; Nation, 1990, 2001; Rodriguez and Sadowski, 2000; Schmitt, 2000, 2001). Additional research posited that other methods that presented vocabulary items in a more contextual format, whereby students inferred an unknown word meaning by use of contextual clues, would provide greater awareness of a word's collocations and interrelated connections to other words within the text (Hatch and Brown, 1995; Hulstijn, 2000; Nassaji, 2004; Rieder, 2002). One of the approaches suggested was to have learners manipulate the vocabulary by creating new

and novel sentences (Pressley et al., 1987; Cohen, 1994). The use of this type of approach was cited as a contributory factor in increasing student recall of the words used in the exercise, and as establishing student focus on the semantic and syntactic features of the target language (Willoughby, et al., 2000)

Further exploration of the use of context led to an approach whereby new vocabulary could be introduced within the setting of a word family (Bauer and Nation, 1993; Grabe and Stoller, 2000; Nation, 2001; Nattinger, 1988). According to Schmitt (2000) this method maximizes vocabulary instruction as it helps to focus student attention on a base word to which can be added a variety of affixes. These affixes could be grammatical, as in verbal inflections or features that changed the word class of the base word, thereby creating a variety of derivatives. Through a periodic reinforcement of this technique, students would begin to view words and their derivatives as a matter of course.

In addition, students would also view word meaning in relation to a family of words as opposed to conceptualizing them as an individual unit of meaning. By explicitly directing student attention to bases and affixes students would be able to identify other words that shared the same base words or stems in a variety of contexts (O'Dell, 2001). Although word families are a specific linguistic term, they have psycholinguistic qualities as well, as some research would suggest that the mind may group sets of structurally and semantically related words as a unit (Schmitt and Zimmerman, 2002). The relevance of this research on word families to the current study was due to the short and economical methodology it supplied for teaching larger quantities of words that students could learn and identify over a period of time.

Studies of word families are for the most part limited to the learning of English (Nagy, et al., 2006; Nation, 2001; Schmitt, 2000). Only recently has research that explores this approach in association with other languages appeared in the literature. One such study is that of Morin (2003). Her research is relevant to the current investigation because of its focus on the use of Spanish base words and their derivatives among novice and intermediate level Spanish students. The pedagogical application and methodology used in her research, as well as the assessment instruments administered to analyze the effectiveness of the treatment supplied a framework with which to proceed with this study. Although I examine her study in greater detail in Chapter 2 (2.5), there was one limitation to her study that I felt needed further exploration. That limitation corresponds to the little information she gives on the students' perspectives toward the processes and the extra time that was required on their part to encounter Spanish word family vocabulary outside of class. Would an evaluation of the attitudes and perceptions held by the students to this extra work have supplied any suggestions for what may have worked and what did not? These questions are not addressed in Morin's study. As a means to fill this gap, in the present study I provide a more definitive response to these questions. The approach to be used will be the inclusion of two self-report instruments; an open-ended questionnaire and a vocabulary learning dialogue journal.

Not just studies focusing on word families, but much of the research dealing with VLS provided suggestions for use in a classroom where the L2 was English. While this extensive literature was feasibly applicable to other second language learning contexts, little of it had direct relation to a setting in which an English speaking population learned Spanish (Lafford, Collentine, and Karp, 2003). I found this discovery to be somewhat

surprising considering the fact that Spanish language courses continue to dominate World Language Programs in the United States with 70% of the enrollment in grades seven through twelve (Draper and Hicks, 2000). Although there have been recent attempts to fill this gap, as for example, studies on the use of Spanish base words (Morin, 2003), semantic mapping of Spanish vocabulary words (Morin and Goebel Jr., 2001), use of context based strategies with Spanish texts (Frantzen, 2003), and keyword mnemonics with concrete Spanish nouns (Sagarra and Alba, 2006) the majority of these and other related Spanish vocabulary learning studies were primarily focused on Spanish vocabulary acquisition at the university level (Ellis, 1997b).

Studies related to Spanish vocabulary learning that did involve younger learners generally described these learners as either preschool or elementary level. Thus, the interest in this research was focused on language learning at a prepubescent stage of cognitive development (McKay, 2006). While this research does provide much valuable information on L2 language processing at this early age, its scope does not reach beyond this level to that of young adolescents who are entering or have entered puberty. That is, there is a general lack of primary focus on young adolescents at a middle-school level of learning. Hence, research on those students who are “sandwiched” (Wormeli, 2001) between younger, prepubescent learners and high school to college age youth has been somewhat sporadic, presenting a need for a more extensive, and longitudinal investigation of VLS use among this age group in a Spanish language learning context.

Also, in some of the literature there appeared to be an appeal for research that examined the use of a cluster of strategies in contrast to a singular or particular technique (Macaro, 2001; Rodriguez and Sadowski, 2000; Schmitt, 2001). Ellis (1995) for example

argues that this type of approach would provide practical pedagogical implications for use in the L2 language classroom, and serve to augment vocabulary strategy research with evidence of a more integrated strategy approach. In addition, other sources claimed that a focus on a combination of strategies would be more efficient and beneficial to students as they would choose from a selection of strategies that connected best with their various learning styles and preferences within the language classroom (Cohen, 1998; Nunan, 2004). For me this question had practical application as it had direct relevance to the population of students I was teaching; young, middle-school age learners. It was practical in its potential application to students at this stage of cognitive development who have been posited to be at the preliminary phase of an emergence of more abstraction in their thinking (Stang and Story, 2005); that is, they are becoming metacognitively aware of how they think, learn, and prefer to approach learning (Kuhn, 2006; Muir, 2001), and also capable of deeper levels of cognitive processing (Met, 1999; Muir, 2001).

Central to this issue in my estimation was whether students at this level of cognitive development when offered a multiple approach to VLS would adopt strategies that required deeper levels-of-processing. My interest in these questions was linked to what appeared to be a disparity between two differing perspectives on the use of more elaborative and deeper processing strategies with middle-school age learners. On the one hand, this age group (a population ranging from 11-14 years of age) is cited as being quite capable of implementing sophisticated learning strategies and techniques for memory augmentation (Thomas, 1993). This position is based primarily on psychosocial and cognitive development research that maintains that learners at the start of puberty are

capable of complex thinking skills as well as social autonomy. This is often found to have a positive correlation with a student's ability to think about how he or she goes about learning a particular concept, per their given learning style, and the learning strategy preferences that they appropriate for their own use (Kuhn, 2006; Macaro, 2001; Nunan, 2004; Wormeli, 2001). However, most of the studies from which these assumptions were made dealt with data obtained from students engaged in L1 classroom learning tasks.

In contrast, studies of young adolescents occupied on tasks related to the learning of an L2 suggest that these learners tend to be attracted to less complex, shallower level strategies and that they are more prone to adopt rote and rehearsal techniques (Schmitt, 2001). In one such study, Schmitt (2001: 226) tallied the results of a Vocabulary Learning Strategy Survey distributed to a mixed age group of Japanese learners of English. Tallies elicited from this instrument indicated that there may have been developmental features at work in determining what strategies were selected by the different age groups in the study. While older adolescents and adults adopted more cognitively demanding strategies, these middle-school age learners were found to be less inclined to make use of them.

This would suggest that learners at this stage of cognitive development may be attracted to use shallower level strategies; those they perceive to be simpler and quicker in facilitating the learning of the vocabulary of a new language. One question of interest here would be whether this finding is related to a given population, as in Schmitt's case, Japanese learners, or that it may have more universal applications to learners at this stage of L2 language learning. One of the means that can assess this would be to elicit student report data related to what students consider their favored strategic approaches to L2

vocabulary learning. The approach used in the current study to explore this aspect of student preference is the already mentioned dialog journal used by students to record their perceptions and preferences of strategy use during the span of the two year study.

In this section, I have provided a review of the issues that led to the current study. This review began by introducing the steps taken to assist a number of students to be more successful on their vocabulary quizzes. An investigation of the literature suggested that one approach that appeared to provide L2 learners success was the use of VLS. In my perusal of the literature related to this theme it became clear that there were a limited number of studies related to middle-school age learners and VLS use. The present study is an attempt to fill that gap as it proposes to evaluate the use of a variety of VLS by middle-school age Spanish language learners and determine whether any benefit is derived from the introduction of them in the classroom over a two year period of time.

1.3 Framework and presentational format of the study

Having introduced the basic goals of the present study, I will now present an outline of its constituent parts as it is developed in the following pages. As the main focus deals with the learning and acquisition of Spanish vocabulary among middle-school age novice language learners, an examination of this process as derived from the literature is warranted. This section, Chapter 2, includes features such as what current L2 vocabulary research has determined to be the major characteristics of early L2 vocabulary learning, questions related to what this literature has determined to expedite and enhance this process, and what types of vocabulary have been found to promote an increase in the growth and improvement in L2 vocabulary learning.

Because this study involved the participation of three separate sections of middle-school students, the design of the study was influenced by factors such as arbitrary scheduling of students to different sections by the school administration, which would lead to numerically, non-equivalent groupings of students in each class. Chapter 3 outlines the research design of the study and examines how the investigation was conducted within those parameters, supplies information on the participants, the instruments used in the study and the data collection processes.

Chapter 4 presents an analysis of the results obtained from each of the three middle-school groups' quiz and multiple-choice test data. The findings obtained from these instruments help provide some indication of the benefit students derived from the vocabulary strategy treatments and whether any significant difference was determined to occur between the three groups. Subsequent to this analysis I also explore the student self-report data as gathered from the open-ended questionnaire students took immediately after concluding the multiple-choice tests.

In Chapter 5, I provide a discussion of the results of the study and their ramifications. Following this discussion, I examine some of the limitations of the study and supply some suggestions for future research. Finally, I give some concluding remarks and suggestions on the practical application of the results obtained from the present study to Spanish vocabulary learning pedagogy.

CHAPTER 2

THE ROLE OF VOCABULARY LEARNING STRATEGIES AND PEDAGOGY IN L2 VOCABULARY LEARNING

As indicated in the previous chapter, this study examines the acquisition of Spanish vocabulary by young adolescent participants enrolled in a middle-school Spanish language program (1.2). As such, it seeks to fill a gap in the literature on L2 vocabulary learning that tends to overlook middle-school students. In this chapter an attempt is made to identify universal and/or general characteristics of L2 vocabulary learning among novice L2 language learners that are relevant to the participants involved in the present study. My presentation of this material is according to the following sequence.

First, I examine some of the common traits found to correspond to the vocabulary learning of new L2 learners. This section serves to introduce those descriptive features associated with a novice learner's range of vocabulary. Upon completion of this section, I introduce a framework based on Coady (2000) that is used to examine L2 vocabulary acquisition through the use of contextual and non-contextual based strategies.

In this study context refers to the use of some form of text, whether it be a short phrase, sentence, or paragraph where the words-to-be-learned are either located in a real or imaginary context, or are arbitrarily placed by the learners into a variety of collocations and sentences (Coady and Huckin, 2001; Lee, 2002; Wang and Koda, 2007). While some vocabulary scholars have considered the morphological analysis of words; the analysis of their bases, stems, and affixes to be a non-contextual strategy (Wysocki and Jenkins, 1987), here, it is used as a contextual strategy which assisted the students in

discriminating between the grammatical features of nouns, adjectives, and adverbs and served to facilitate student attempts to place words correctly into sentences.

Non-contextual based strategies, on the other hand, are those methods that focus on individual or isolated word meanings. For example, Koren (1999) asserts that having learners focus on a specific word or words without the context of a text (phrase, sentence or paragraph) as isolated items is a non-contextual methodology. Specific VLS that are non-contextual in approach include cognitive processing and semantic elaboration strategies. Cognitive processing strategies would include, but not be limited to the keyword technique (De Groot and Van Hell, 2005; Van Hell and Mahn, 1997) and semantic elaboration techniques could relate to such methods as the use of semantic mapping (Cook, 1996; Morin and Goebel, 2001).

Although the above cited strategies have been extensively explored in the literature, in many studies the focus has been on one particular strategy at a time rather than on a cluster of strategies. Because the design of the present study made use of a combination of memory and contextual-based strategies among participants in the full-strategy combination group, a review of some of those studies examining combined approaches is also included here (Brown and Perry, 1991; Rodriguez and Sadowski, 2000; Van Hell and Mahn, 1997).

Following these sections I present the type of vocabulary that was introduced to participants in the study. In this section special attention is given to the introduction of word families, posited to promote high levels of vocabulary acquisition (Bauer and Nation, 1993). The combination of the foregoing elements provides the foundation for a

conceptual framework utilized in the present study from which were derived the research questions examined in the study.

2.1 What has research determined to be some of the characteristics of the vocabulary of novice L2 word learners?

According to descriptive accounts of the ACTFL Proficiency Guidelines (1999) proficiency levels of novice learners are limited to the recognition of isolated L2 words, many of which are perceived to share similarities in phonotactic and graphemic patterns between the native and target languages in the case of related languages (Ellis, 1994a; Shrum and Glisan, 1994), and the recognition of high frequency social conventions. This limited ability extends to all four language learning skill areas; i.e. reading, writing, speaking, and listening. In Table 1, I provide a summary of what ACTFL (1999) has determined to be the characteristics of novice level vocabulary abilities.

Table 1. ACTFL Proficiency Guidelines (1999) for novice low, mid, and high level learners

SKILLS	LEVELS	DESCRIPTORS
Oral/Speaking	Low	<i>Isolated words and some high frequency phrases.</i>
	Mid, High	<i>Simple, elementary needs and expressions of basic courtesies. 2-3 word phrases. Long pauses and need of several recasts.</i>
Listening	Low	<i>Occasional isolated words, cognates, borrowed words and high frequency social conventions.</i>
	Mid, High	<i>Understands some short learned utterances with contextually rich clues. Can respond to simple questions and phrases for basic personal information. Needs several recasts.</i>
Reading	Low	<i>Identifies isolated words and major phrases.</i>
	Mid, High	<i>Recognizes alphabet, with increasing number of highly contextualized words and phrases, cognates, and borrowed words. Focus on one word or sentence at a time. Needs to reread portions.</i>
Writing	Low	<i>Focus on some words, can copy and produce basic strokes.</i>
	Mid, High	<i>Copy and transcribes familiar words, reproduces from memory, but has no practical communicative skills.</i>

Note. Adapted from “ACTFL Proficiency Guidelines,” by Breiner-Sanders, et.al., 2000, *Foreign language annals*, 33. pp. 13-18.

The descriptors of the vocabulary acquisition process at the novice level as outlined by ACTFL depict an incremental continuum where an inchoate stage of L2 word learning dependent on memorized words, phrases, and chunks of L2 input is succeeded by ensuing stages of lexical development where those items become more controlled and accessible for use, and subsequent input is thereby able to be processed. This assessment is in agreement with other research on L2 vocabulary learning that has determined that this phenomenon is a continuum consisting of several levels and dimensions of knowledge (Coady and Huckin, 2000; Henriksen, 1999; Laufer and Paribahkt, 1998), and that new word learning is a gradual, and incremental process, requiring repeated exposures to the same word in various collocations and contexts (Gass, 1999). Aitchison (1994) categorizes the early phases of word learning as incorporating three aspects of word knowledge. These three components are linked to:

- (1) labeling, where the learner attaches a label to a particular object.
- (2) packaging, where a learner applies their knowledge to appropriate exact extensions of meaning relationships between words.
- (3) network building, where words are fitted together into semantic networks, and collocations.

In view of Aitchison's classifications it becomes apparent that the base level of word knowledge for novice learners is that of "labeling" in association with meaning. While a similarity does exist between beginning level L1 and L2 vocabulary knowledge, some major differences should be considered. For example, L1 learners who embark on learning an L2 have already tied conceptual meanings to the L1 labels in their mental lexicon (Singleton, 1999), and in many cases learning the vocabulary of the L2 is

accomplished by simply mapping this prior word knowledge to an L2 word equivalent (Ellis, 1994b, 2001). Thus the tendency to create translation equivalents (TRE) between the L1 and L2 is very prevalent at the early stages of SLA. Henrickson (1999) argues that this early stage be considered as “partial to precise” whereby a learner is able to translate an L1 word to its L2 equivalent, and to determine correct meanings of words on a multiple-choice test that requires the recognition and selection of a correct response amid three distracters.

In addition to the labeling and the ability to translate L2 to L1 equivalents, initial stages of L2 word learning also involve the extensive and systematic use of assimilated chunks of language to fulfill communicative needs. This phenomenon is generally a result of frequent rehearsal and repetition of these unanalyzed wholes, formulas, or prefabricated chunks which are eventually acquired in long-term memory (Myles, et al., 1998; Harwood, 2002; Jiang and Nekrasova, 2007).

During the preliminary months of L2 learning rehearsal and repetition of these prefabricated chunks occurs due to an emphasis placed on the exchange of personal information in the target language and to facilitate greater development of fluency (Myles, et al., 1998; Nation, 2001; Wood, 2006). Conveyance of this personal information generally necessitates frequent use of numerous prefabricated chunks of speech. For example, in Spanish these formulas could include phrases such as: *¿Cómo estás?*, *¿De dónde eres?*, *¿Cuántos años tienes?* These formulaic expressions have been found to facilitate entry into communication and thereby speed up production. The frequency of use of these formulaic utterances has been found to promote fluency in both a natural and a classroom setting (Ellis, 2001; Schmidt, 1983)

Ellis (2001) concludes that beginning level learners often manifest a target-like knowledge of a feature in a formula without having actually acquired the ability to use the features productively. Myles, et al., (1998) contend that as the communicative needs of the learner develop beyond the need for highly structured exchanges in the classroom; formulas eventually prove to be inadequate and are generally modified in a series of interactions allowing for hypothesis testing for further communicative exchanges. For example, in their study of student use of French expressions such as *j'ai*, *j'aime*, *j'adore*, and *j'habite* the first person subject pronoun *je* was modified in the learners' speech and used in conjunction with other phrases to create more communicatively comprehensible speech after a few months of language learning.

According to McKay (2006) as well, young learners tend to rely heavily upon formulaic chunks of speech to understand and get their meaning across. These chunks are generally learned receptively early on in the acquisition process, but are not analyzed grammatically until much later. Although helpful in supplying young learners with some basic components to begin communication their potential is somewhat limited. This limitation is linked to their being as Skehan (1998) suggests "context bound." *Context bound* here refers to the fact that prefabricated chunks have relevance in particular contexts, but not in others. According to this assessment, until L2 learners become more proficient in the target language the value of many of these phrases is limited to the contextual conditions in which they were learned.

In addition to the use of simple labeling, translation techniques and formulaic speech, novice learners' comprehension level tends to extend toward lexical items often perceived to have particular associations with the L1 (Ellis, 1994a). Studies of cross-

linguistic lexical influence between the L1 and L2 of beginning level learners reveal a dependency on those features perceived to be similar between the two languages. This dependency would suggest that the learning of new L2 vocabulary initially is highly “parasitic” (MacWhinney, 1997) on the L1 and is facilitated not only by semantic translation but also by those phonotactic and graphemic patterns that approximate the patterns learners have acquired in their L1 (Ellis, 1994b; Ellis and Beaton, 1993). In other words, novice learners initially approach L2 word learning as a transferal process, as they organize the new incoming information along the most stable criterion (L1 lexicon) they have available (Prince, 1996; Singleton, 1999; Sridhar, 1996).

As more and more focus is given this initial level vocabulary through repetitious rehearsal, implicit processes used to assimilate phonological and acoustical forms of the words recognized in the first language are transferred to assimilate phonological and acoustical features of words in the L2 vocabulary (Baddeley, et al., 1998; Ellis, 1994b). Rehearsal of new target language vocabulary reinforces verbal-short-term memory and encodes as well as maps mental representations of the new word forms onto the mental lexicon (Ellis, 2001; Gupta and MacWhinney, 1997; Trofemovich and Gatburton, 2006). Whereas initial attempts to learn the first fifteen or so words in the new language may have cost the beginning learner countless hours of attended study, within a few months, as the new sound system, and word shape patterns are acquired, the learning of a few hundred words is greatly accelerated (Hulstijn, 2000).

To sum up, studies of L2 vocabulary acquisition by beginning learners have revealed the following characteristics common for the learners:

- (a) Learners at the initial level are capable of labeling L2 words in their mental lexicons (Aitchison, 1999)
- (b) There is considerable use of formulaic chunks of speech (Myles, et al., 1998)
- (c) Beginning level L2 word learners have a strong tendency to translate L2 words based on L1 referents (Prince, 1996; Singleton, 1999)
- (d) There may be an initial parasitic dependency on features perceived to be phonotactically and graphemically similar between the L1 and L2 (MacWhinney, 1997)

While agreement is somewhat consensual among scholars on these preliminary features of beginning level L2 learners, how to best accommodate learners at this level has met with much debate. In the next section, I examine this question in light of what L2 vocabulary learning research has determined to facilitate the vocabulary learning process.

2.1.2 What has L2 lexical research determined to be the most efficient method of promoting beginning level L2 learner's vocabulary acquisition?

Thus far, this discussion has sought a more descriptive examination of the characteristics of the vocabulary of beginning level learners. This account has shown there to be a dependence on memorized words, phrases, and/or chunks of speech as well as a reliance on L2 lexical features perceived to share similar phonological and orthographical qualities in the L1. In this section descriptive determinates are reviewed in relation to research that has sought to determine “how” this process is best facilitated for new learners, so as to augment their L2 lexicon.

To accommodate this review I make use of a framework found in Coady (2000) where different approaches to L2 lexical pedagogy are viewed not as competing methodologies, but as a continuum of various stages of lexical development. This framework posits four different categories.

The first relates to context alone where it is argued that language proficiency can be enhanced and quantified by means of extensive reading and comprehensible input (Krashen, 1989, 1993, 2004; Stern, 1987). The second category maintains that oral and/or written context is important, but adds that further elaboration is required via instructional methods to accommodate student use of context for deriving meaning of unknown words (Wesche and Paribakht, 1999). The third category “development plus explicit instruction” views certain types of vocabulary in need of specific instruction (high frequency vocabulary items) so as to enhance the learner’s acquisition of these terms (Nation, 1990). The fourth position focuses on classroom activities and ancillary materials, that center in on isolated word meanings. In particular, communicative and individual word meaning activities that may incorporate settings of cooperative learning in such tasks as fill-in-the-gap, dialogues, role-plays, games, puzzles, etc.

Although this framework would appear to provide a seamless approach for the discussion that follows, not all components of the continuum are universally applicable to each pedagogical setting. For example, in consideration of the limited lexical capabilities of novice L2 learners, a context alone approach is seemingly irrelevant to the present study.

Its merit would be for studies with a focus on more advanced L2 language learners; thus, it is not considered in this discussion. In addition, there would also appear

to be some confusion between the line of demarcation said to exist between categories three and four where an overlapping of elements occurs. If *explicit* instruction is merited for the teaching of certain vocabulary (category three: development plus explicit instruction) wouldn't this also include the use of contextual and communicative activities (category four: classroom activities) that make use of explicit instruction? In keeping with this argument, I combine these two categories into one.

Thus, only two categories derived from Coady's framework are used to examine the following issues: (1) context plus explicit instruction on use of VLS, and (2) instruction plus classroom activities. These two hold more relevance for participants in this study and serve to introduce the main approaches incorporated here: (a) use of contextual methods, (b) a combination of both contextualized and isolated, semantic processing methods of vocabulary presentation, and (c) a focus on isolated word meaning, and rote-rehearsal techniques.

2.2 The use of context as a means to acquire new vocabulary

The term "context" involves numerous qualities that have been elaborated upon by vocabulary scholars. For example, at its most basic level, context has been defined as information that reduces uncertainty about the aspects of a text; it's conceptual and comprehensive meaning (Englebar and Theuerkaft, 1999). Further specification of what these informational features may be that facilitate meaning and reduce uncertainty of text has been linked to verbal and nonverbal categories. Following this interpretation, verbal categories would encapsulate concepts such as morphology, syntax, phonetic and semantic features; while nonverbal those with situation (location, time, speaker), subject (reader's personal knowledge) and, global features (extra-lingual knowledge brought to

the text) (Englebar and Theuerkaft, 1999). This perspective would argue that context is, to a degree, dependent upon the inter working of two different processes: (a) a process that is specific to focus on grammatical and morphological features operating at a more conscious level as a bottom-up strategy, and (b) a process that incorporates previous experiences, whether cultural, academic, and/or previous knowledge that facilitate comprehension and serve at a more implicit level as a top-down strategy (Hulstijn, 2001; Rieder, 2002).

This interpretation is held by McKay (2006) who argues that young, novice language learners approach context as a means to decode and understand words by use of bottom-up strategies and deciphering words in a textual context; while at the same time using their own expectations to understand the text. Although it may be that some activation of both processes occurs as a novice learner engages context, if text is the sole manner in which learners acquire the vocabulary of the target language the process can be short-circuited due to the large number of unknown words. Pichette (2006) argues that a singular reliance on context tends to overload short-term memory because novice learners unfamiliar with the vocabulary found in either written or oral sources alleviate this limitation by decoding the words letter-by-letter and focusing on morphological and grammatical features of the words, which subsequently impedes their ability to use top-down processes. In addition, Ur (2006) claims that the introduction of raw, unmediated new input in the form of authentic, contextual materials is often incomprehensible to new learners as it does not function as intake; as a result, little to no learning occurs apart from direct intervention on the part of the teacher.

Further examination of this issue is found in studies that have observed how L2 learners at differing levels of proficiency approach the use of text. For example, Gass (1999) used a questionnaire to elicit feedback from students trying to engage a sample of target language text. Responses obtained from the questionnaire indicated that students at each level of proficiency admitted to ignoring as many as half the words they could not identify, many of which were vital for comprehension of the text. However, more attention was given to deciphering meaning of unknown words in samples that had some relevant connection to the reader. These findings led Gass to conclude that student attitude toward the task, be it pleasure reading or task-oriented, had a strong bearing on the outcomes of how much vocabulary was learned. From this observation she determined that incidental learning is not a totally subconscious process, but one that involves student attention to new words and making a conscious effort to infer meaning from context. Laufer (2001) found similar results in a study where one section of learners was forewarned of an impending test to accompany the reading of a given text and a section given no warning. She argues that there was a greater tendency for students to pay attention to word meaning and inference strategies to guess unknown word meaning when there was an extrinsic motivation to learn them as compared with learning them to communicate with native speakers. She refers to these two conditions as “intrinsic” and “extrinsic.” *Intrinsic* here refers to the perceived need to learn sufficient vocabulary for communication with native speakers (NS), and *extrinsic*, as a need based on incentives introduced by the teacher (quizzes, tests, etc.).

In another study, Frantzen (2003) examined the factors that hindered students from properly using context to learn new words while reading a Spanish story. Her study

determined that one of the main hindrances for inexperienced learners in their use of context was due to textual vagueness and ambiguity. She found that only after some explicit teaching had been given to key points in the articles, and a focus given to inferring meaning of unfamiliar words, did improvement in new word learning occur.

These studies would suggest that context in and of itself does not guarantee student ability to acquire unknown word meaning, where student ability refers to L2 learners at a novice level of language development. This would suggest that there is merit in explicit instruction on how to approach target language textual samples. Nation (2001) writes that this approach can involve such strategic methods as matching a word to its collocations where a list of words found in a to-be-given text are matched with adjectives, adverbs, etc., on another text where the words have either been prepared by the teacher or are given by the students themselves. He also suggests that sentences found in the text be written on the board so that students can replace nouns, adjectives, verbs, etc., with other vocabulary they are familiar with. Sökman (2001) adds that these types of activities can be augmented with semantic or conceptual maps that are either distributed to students or are written on the board. These maps facilitate students to create conceptual links with a given concept or themes derived from the text and connect them to other vocabulary words. Support for this approach is found in studies such as that of Paribakht and Wesche (1999) where a study condition given only text was compared with a condition in which the text was accompanied by strategic instruction. One of the strategies used involved previewing the text by means of skimming and scanning to obtain a preliminary idea of the text's meaning. This process was found to facilitate the use of inferring strategies to determine unknown word meaning. Analysis of the retention

of the vocabulary via a pre- and posttest showed a slight increase in long-term retention of selected vocabulary found in the text.

Expansion of the use of vocabulary learning strategies to facilitate unknown vocabulary learning in context has appeared in studies where students were directed to focus on words already familiar to them and compare their features to unknown words to infer meaning (Huckin and Coady, 1999), where analysis of a word's base was used to infer meaning (Morin, 2003), where the inclusion of a picture, bold-face print or title was used to help students anticipate a text's meaning through skimming and scanning (Nassaji, 2004), and where a glossary or bilingual dictionary was used to help identify unknown word meanings (Frantzen, 2003; Fraser, 1999; Knight, 1994; Lomicka, 1998).

Although these studies would indicate that strategic intervention has potential validity for improving L2 vocabulary acquisition among novice learners, this is not to suggest an asymmetrical emphasis on bottom-up processing at the expense of implicit, top-down processes. Rieder (2002) argues that although beginning L2 learners tend to rely more on conscious attention to the form of individual words, they do associate these forms with previous knowledge that facilitates meaning and provides a global meaning of the text. The following stanza taken from the poem *Tengo los ojos puestos* by Lorca (1986) provides an illustration of Reider's model in relation to novice learners of Spanish:

*Tengo los ojos **puestos** en un muchacho, delgado de cintura, moreno y alto.*

The word *puestos* is highlighted as it presents an unknown word for new learners. Considering that the student has already mastered *tengo* by means of responding to questions such as, *¿Cuántos años tienes?* or *¿Cuántos hermanos tienes?* the difficulty

will lie in determination of the adjectival function of *puestos* with *los ojos*. As the learner approaches the word she notices that there is agreement between the noun phrase *los ojos* and the word *puestos*. This association activates previous knowledge which facilitates guessing that the word might be an adjective. From this the student can infer that the author is saying he or she has his/her eyes *puestos* on someone. Previous knowledge of the verb *poner* “to place or put,” derived from expressions such as “*Ella pone la mesa,*” or “*Pónganse de pie*” can further help the student guess that *puestos* refers to having one’s eyes “put” or “placed” on someone. In this example the inter working of a focus on the form of individual words and reliance on former knowledge are seen as major complimentary factors involved in L2 vocabulary acquisition through context.

In this section I have reviewed research in L2 contextualization as a means by which to acquire new L2 vocabulary. From this review it can be determined that for novice level L2 learners explicit instruction and strategic intervention should lead to an improvement in word knowledge derived from textual samples. It can also be posited that the use of context may be a more active and deliberate process that involves the active engagement of the learner with the text (Gass, 1999; Hulstijn, 2001; Paribakht and Wesche, 1999). However, this active engagement also entails features that relate to implicit, top-down processes where the learner makes use of previous knowledge and experiences to gain a more global understanding of the text.

In consideration of these findings, certain characteristics related to context can be extrapolated which have pertinence to this study:

- (a) Students directed to pay attention to new words, and make a conscious effort to infer their meaning from some form of context should be found to learn these

words more successfully than students who are not directed to do so (Gass, 1999; Laufer, 2001).

(b) Vocabulary tasks that facilitate student interaction between known and unknown words encountered in basic level context.

(c) VLS that incorporate mediating factors (previously acquired grammatical knowledge and general knowledge) to facilitate correct guessing of unknown words in context should provide greater long-term retention and recall of them.

(d) VLS found to be facilitative to learners approaches to unknown words encountered in context include, bilingual dictionaries to look up words in texts (Knight, 1994), and textual glosses (Watanabe, 1997).

The use of context has been suggested as the most productive method for expanding an L2 learner's vocabulary threshold (Nagy, et al., 1985; Nation and Waring, 2004). However, this implies that learners are capable of engaging context. Obviously, novice learners are in need of instructor assistance in the use of techniques for engagement with context. As previously stated reference to text as the only method by which to introduce new L2 vocabulary can be counter productive due to the large proportion of unknown words encountered and the tendency of novice learners to resort to bottom-up processing to determine word meaning (Pichette, 2006). Hence, methods that promote expediency to facilitate rapid vocabulary growth would appear to be beneficial at this level. In the next section, this issue is explored in relation to the use of L1-L2 translation equivalents.

2.3 The study of words in isolation

In this section, I review the individual or isolated word study position (2.1.1) whereby individual items, including paired-associates, are used to facilitate rapid vocabulary growth (Nation, 1990, 2003; Schmitt, 2000; Waring, 2003). While this method has been criticized from differing angles in the literature, research has shown that in certain circumstances, it does have some validity. This section examines various arguments for and against its use. The third component of Coady's (2000) framework applies to this discussion. As already indicated this framework would view L2 vocabulary learning as being deeply rooted in an explicit pedagogical intervention.

As seen in the previous section, commonly held discrepancies between incidental and intentional vocabulary learning are often untenable. Unless one maintains a narrow description of incidental learning to exclude any notion of conscious attention to new word learning (Krashen, 1989; 1994), the distinction between the two modes of learning would appear to permit some interface (Ellis, 1995) and in some cases considerable overlap (Groot, 2000; Rieder, 2002). Words acquired in the L1 generally occur in an incremental fashion due to such factors as frequency, saliency, and a diversity of contexts (Gass, 1999; Henriksen, 1999; Nation, 2001). In the L2 this process is nigh to impossible to simulate. Exposures to new vocabulary are less intensive and varied (Groot, 2000). Conjectures on how to solve this problem include the use of authentic materials and communicative tasks that will activate implicit processing so that incidental learning can occur similar to that in the first language (Garcia, 1994; Krashen and Terrell, 1983). Attractive as this approach may be, it may not be very realistic. For one thing, most authentic materials are not made for the benefit of non-native speakers (NNS) in need of

illustrative gimmicks to facilitate the understanding and usage of new L2 vocabulary, but rather for NS for whom those words are already familiar (Groot, 2000).

Due to these L2 lexical limitations numerous studies in vocabulary acquisition have begun to advocate for more explicit presentation of words out of context at early stages of language learning with subsequent focus being given to more elaborative and contextual based learning after a certain vocabulary threshold level has been attained (Coady, 2000; De Groot and Van Hell, 2005; Mondria, 2003; Nation and Newton, 2000; Prince, 1996; Waring, 2003).

Evidence of this argument is found in studies that have investigated the usage of context and translation equivalents (TRE) to determine efficiency in vocabulary learning. For example, Mondria (2003) investigated the conditions of meaning-inferred (context) and meaning-given (TRE) in relation to vocabulary teaching. Contrary to many expectations both methods led to similar levels of retention, leading Mondria to conclude that elaborate processing does not always lead to better retention. Given similar levels of retention the meaning-given method was found to be more efficient as it took 25% less time for the learner to memorize the words. Implications for L2 vocabulary teaching would suggest that if efficiency of VL is the main objective, the meaning-given method is to be valued.

Similarly, Barcroft (2002, 2003, 2004) has investigated numerous experimental conditions (writing, listening, responses to questions) in which treatment in semantic elaboration for learning new words was instituted with an experimental group and in a structural processing condition, i.e. translation equivalents. In one study, Barcroft (2002) investigated two hypothesis: the Transfer Appropriate Processing (TAP) model which

postulates that the memorization effect of a variable is dependent on the nature of the task performed during the study and testing phase and the Type of Processing Resource Allocation (TOPRA) model which predicts that lexical acquisition for semantic and structural features will show that as demands are sufficiently high in semantic processing, there is an increase in the learning rates for the semantic (conceptual) properties of words, while there is simultaneous decrease in the learning rates for the structural properties of words.

Further ramifications of these findings are found in Joe (1995; see also Joe, Nation, and Newton 1996) where receptive retrieval of word forms in a given context was impeded when form and meaning of particular words were simultaneously presented to the learners. These findings would suggest that justification for the use of word lists, flash cards, and word pairs which focus attention on form or structural aspects of new words does indeed exist for introduction of new words to students in the early stages of L2 language learning (De Groot and Van Hell, 2005; Ellis, 2001).

Although the findings cited above and arguments in favor of methods that use more repetitive and rote learning techniques suggest that L2 vocabulary learning can be enhanced by their use, they may not be viewed as a means to an end, but rather as a beginner's "props" (Prince, 1996), or "mechanized strategies" (Schmitt, 2000) which establish a starting point to build a "start-up L2 vocabulary that is further enhanced by context"(Nation and Waring, 2001; Waring, 2002).

Prince (1996) provides further support for this argument. He argues that the preferred strategy adopted by learners at the initial stages of language learning is to use translation equivalents (see also Ramachandran and Rahina, 2004). Translation

equivalents have been found to appeal to inductive approaches to word learning and can provide learners the motivation to control their own vocabulary gains as they make conscious note of words learned and in need of learning (Critchley, 1998; Nation and Waring, 2001; Waring, 2003). Further evidence for his theory is based on findings that the intentional learning of L2 vocabulary is strongly linked to L1 equivalents (Ellis, 1994; Koda, 1997; Swan, 2001). Beginning learners generally tend to view this approach as requiring less investment than methods that require more depth-of-processing (Ellis and Beaton, 1993; De Groot and Van Hell, 2005; Ramachandran and Rahim, 2004).

Prince's study investigated this phenomenon among an adult population of university students and involved two approaches; context and translation equivalents (TRE). Evaluation of the two approaches was based on a multiple-choice test and a translation test. The contextual approach presented 44 English words of average frequency by means of writing out L2 sentences which facilitated meaning in context, while the TRE condition presented translation equivalents for each of the 44 words. Results showed the TRE condition to have greater gains in improvement in vocabulary retention over the context group. These results supported Prince's original hypothesis, in that recall of new L2 vocabulary is better in a TRE condition rather than a contextual one.

Although Prince's study does show support for the use of TRE there is a caveat to this approach. In his study, Prince found that some learners made attempts to advance beyond a basal level and to adopt more depth-of-processing strategies, while others, coined as "weaker learners," showed a strong tendency to prefer use of these shallower strategies and that they tended to resist deeper level processing strategies. This latter group of learners was not limited to those who were at the novice level, but represented

participants from all levels of language learning. This finding would echo criticisms directed toward non-contextual approaches of vocabulary learning in that:

- (a) a tendency can be created whereby learners establish a translation dependency, and fossilize in that approach whereby only a mapping of one meaning of a word occurs (Jiang, 2002; Nation and Waring, 2001)
- (b) a lack of a sufficient cognitive hold or peg in long-term memory can occur if some form of semantic connections are not made (Van-Parren, 1986)
- (c) similarities in spelling and pronunciation between the L1 and L2 items (synforms) may provoke confusion in cued recall of the given stimulus word (Laufer, 2000; Terry, 2003).

Further criticism is found in that these methods are not applicable to all learners in their approaches to word learning (Cook, 1997; Gu and Johnston, 1996). While there is certain validity in each of these criticisms, the research as detailed in the studies previously reviewed (Barcroft, 2002; Mondria, 2003; VanPatten, 1982) would show that the beginning level of L2 vocabulary learning is supported by some form of focus on individual word forms such as word lists and flash cards. As learners become more adept at learning L2 vocabulary, more in-depth, semantic elaboration techniques can be introduced preventing fossilization (Jiang, 2002). Nation (2001) argues that the acquisition of new L2 words should be viewed as a continuum whereby a word is encountered once in a particular context or methodological setting and that further levels of meaning are encountered as the same word is met in other contexts and settings. Thus, initial use of isolated words does not impede vocabulary growth, but is more of a first stage, to be subsequently followed by other encounters and approaches. This argument is

even more salient in view of the lack of unanimity among vocabulary scholars as to when in-depth processing is posited to occur since there is no current means to draw the line between the moments a student uses shallower strategies, and when more contextually based ones are adopted (Carter and McCarthy, 1988; Ellis, 1995).

One approach to be considered in conjunction with non-contextual learning is semantic mapping (SM) (Svenconis and Kerst, 2000). SM has been defined as providing “a brainstorming association which a word has with other words and then diagramming the results into a visual model” (Sökman, 2001) and as a means to “visually integrate new words with old words while promoting deeper levels of processing” (Stoller and Grabe, 2000). The use of this strategy has met with considerable positive response from learners as assessed by interview and questionnaire data samples (Morin and Goebel, 2001; Zaid, 1995). Tinkham (1997) suggests that SM is best used when presented in a more thematic format as opposed to one that uses semantic categories. In other words, groupings of words such as “funeral, recipe and market,” that may refer to a theme about everyday happenings would promote greater retention than groupings such as “apple, pear, peach, and apricot” (Tinkham, 1997). Thematic in this argument often refers to topics, or propositions that can be explored in the language classroom. On the other hand, when words are grouped according to semantic categories the focus is often on the affinity the words share in their base words and affixes.

However, not all research would support this argument. For example, Svenconis and Kerst (2000) in a study using a hypertext/hypermedia environment that applied SM for teaching of new L2 vocabulary found that novice L2 high school students preferred learning new words in a tightly grouped setting, that is, where words were linked with

their family members, as opposed to a loosely grouped setting where words were grouped thematically. Part of the difficulty with Tinkham's argument has to do with his implicit suggestion that semantic and thematic categories are mutually exclusive of each other; when in fact there may be situations where semantic and thematic qualities are impossible to delineate between words (Margosein, et al., 1982).

Aside from an approach that exploits elaboration of word meaning at the semantic level per strategies such as semantic mapping, other research also suggests that new L2 vocabulary should be presented using formats that include more depth-of-processing. Meara (1995) for example, argues that depth-of-processing strategies provide stronger long-term memory links between L1 and L2 words. Here, depth-of-processing would refer to more manipulation and use of mental information by the learner to focus on semantic features of aspects related to words in the context of L2 language learning. Apart from his appraisal of word lists and flash cards to meet this objective, Meara considers the acquisition of L2 vocabulary to be somewhat *easily* attained through the use of the Keyword Method (KW).

The KW technique involves two stages that employ, (a) an L1 word, the KW, which is related to the target language word based on acoustic and/or orthographical similarity, establishing a stable association between the L1 word and its L2 translation, and (b) a visual image containing referents of both the L1 word and the L2 translation as produced by the learner (De Groot and Van Hell, 2005; Van Hell and Mahn, 1997). Although KW has provided significance in a number of studies, it is limited in that it works best with higher imageable words (concrete nouns, cognates, etc.) and is less effective with more abstract vocabulary (Ellis and Beaton, 1993; Gairns and Redman,

2001; Hulstijn, 2001). Apart from the numerous studies with KW in an experimental environment, when intervention studies using this strategy have been done in a classroom setting the results of its efficacy for recall have been mixed (Fuentes, 1976; Levin, et al., 1982). Although research on KW has suggested that the optimal age for presenting the technique to students is between ages seven and eight (Levin, et al., 1979), thus suggesting its applicability for use at the middle-school level (Hall et al., 1981), these studies have also indicated mixed results.

The long-term effectiveness of KW has also come under scrutiny (De Groot and van Hell, 2005; Wang, Thomas, and Ouellette, 1992). These studies investigated recall of the KW after a period of two days to a week after KW treatment, instead of testing recall immediately after strategy introduction. The findings showed that participants who used a more traditional rote-learning approach were able to retain the cued vocabulary items over a longer period of time than those in the KW groups. These results also indicate that the long-term recall effectiveness of KW is greatly diminished if students are supplied only a brief introduction to use of KW. In fact, semantic contextual strategies were found to be more significant after a 2-3 day delay than was KW (Thomas and Wang, 1996).

In this section, the validity of using non-contextual methods of vocabulary learning among novice learners has been reviewed. In particular, the use of TRE has been a major focus, as well rehearsal strategies (word lists, flash cards) that facilitate it. This review has shown that before a more contextual and semantically connected approach is instituted, there may be benefit derived from a more concentrated focus given to individual word form and meaning. As seen earlier (2.1.1) this would appear to dovetail in a more seamless fashion with early stages of language learning as it relates to the

natural tendency of learners at this level of language development. Arguments considered in this section have suggested the following elements pertinent to this study:

- (1). TRE is more efficient when the main objective is to expedite new learner vocabulary learning (Mondria, 2003)
- (2). because TRE focuses learner attention on the structural properties of new words, its application for novice learners would appear most beneficial (Barcroft, 2002)
- (3). because novice learners tend to seek the easiest means to learning new words. TRE is best at the initial level of word learning (Ellis and Beaton, 1993; Prince, 1999)
- (4). contextual strategies such as SM establish semantic links between words, and are pertinent to new word learning once a basic level of vocabulary has been acquired
- (5). use of KW for enhancing psycholinguistic links between L1 and L2 words has been found to be significant in some middle-school settings, and as such has relevance to the present study (see Hall, et al., 1981).

While the use of TRE and strategies that support it may be facilitative to learners at an initial stage of L2 word learning, a combination of context and individual word strategies has been found to be beneficial to L2 word learning. Consideration of this method is given in the next section.

2.4 What has research determined to be the validity of combining contextual and isolated vocabulary VLS and instruction?

A combinatory approach of contextual and non-contextual VLS has been proposed by various scholars in the field of lexical acquisition in both the L1 and L2 (Brown and Perry, 1991; Chin, 1999; Dycus, 1996; Hunt and Beglar, 1996; Jenkins, et al., 1989; Avila and Sadowski, 2000; Van Hell and Mahn, 1997).

Studies utilizing combined approaches in the L1 have examined the efficacy of acquiring word meaning inferred from context, compared with approaches that present word meanings in an isolated setting (Jenkins, et al., 1989; Nemco, 1984) and from context and mnemonic conditions in isolation as opposed to combinations of the two (McDaniel and Pressley, 1984; Pressley et al., 1987). The majority of these studies have shown that a focus on individual, isolated words or use of mnemonic VLS to determine recall on cued word recognition tests has proven to be more effective than a condition where subjects are given context alone. Certain studies that provide for the long-term effectiveness of given strategy conditions (after a delay of one to two weeks), show that more long-term recognition occurs in conditions where individual word and context strategy conditions are combined (Moore and Surber, 1992).

Apart from a few studies in L2 research that have examined the efficacy of combinations of mnemonic, semantic elaboration VLS, and contextual strategies (Brown and Perry, 1991; Chin, 1999; Moore and Surber, 1992; Rodriguez and Sadowski, 2000), the research on the effectiveness of combining VLS in cued recall experiments has been very limited (see Avila and Sadowski, 2000). This limitation is somewhat frustrating as some proponents of learning strategies appear to strongly suggest that a combination or

cluster approach to strategy use will promote greater improvement (Cohen, 1998; Ellis, 1995; Schmitt, 2001).

Those studies that have pursued this approach have shown mixed results. For example, Brown and Perry (1991) examined a KW condition, a semantic elaboration condition, and a combination of both. The semantic elaboration condition consisted of identifying a semantic connection between the target word and other known words, and the KW necessitated the appropriation of an imageable and acoustical link between L1 and L2 vocabulary items. The third condition included a combination of the methodologies used from the other two. An assessment of all three conditions was administered after four days of instruction. Results of this preliminary stage showed that KW promoted vocabulary learning for lower level proficiency learners in assessments immediately after treatment, whereas no effect was found to occur for those with higher levels of proficiency. A follow-up delayed recognition and cued recall test administered nine days after treatment showed that the combination of KW and semantic elaboration generated more learning than KW alone for participants in all levels of the study, while no significance occurred in the semantic condition.

Moore and Surber (1992) studied the effects of keyword and context methods on L2 vocabulary acquisition. Students enrolled in three different levels of German (I, II, III) were assigned to one of three vocabulary learning conditions: (a) keyword, (b) context, (c) combination of KW and context. A series of twelve concrete nouns and twelve verbs were used to ascertain condition effectiveness. Assessment of the effectiveness of the three methods was examined by means of an L2 to L1 test where students wrote the English equivalent for the German word given, and a fill-in-the-blank test that required

students to make use of contextual clues to guess the missing word in the sentence. Surprisingly, results showed that for participants in level I no differences were found to occur between the KW and Context conditions on either test. Only a slight difference in improvement occurred for students in level II in the Context condition on both measures. No significance occurred for students in level III as they had already developed their own approaches to vocabulary learning and made use of them no matter what type of treatment was introduced.

Chin (1999) examined a combinational approach that did not make use of a mnemonic strategy. Her study investigated the effects of context, word-form analysis, and a combination of the two. The study examined the influence of these VLS among college freshmen in an EFL class in Korea. Students in the context condition were introduced to 24 words in multiple meaningful contexts; three contexts per word. In the word analysis group the same 24 words were presented with formal instruction on deciphering meanings via use of corresponding prefixes, roots, and suffixes. The context/word analysis group received instruction that combined the elements of both context and word analysis. A series of fill-in-the-blank type quizzes as well as multiple-choice tests were used to assess recall after treatment intervention. Findings in this study were mixed in that the combined condition was found to promote greater gains on the fill-in-the-gap test, while no difference was found between groups in the multiple-choice tests. Chin reasons that these results would point to the semantic and syntactic production skills required for fill-in-the-gap activities that were reinforced in a combination strategy condition, whereas no syntactic knowledge was required to respond to the questions on the multiple-choice tests (Chin, 1999).

Rodriguez and Sadowski (2000) examined the effects of rote, context, keyword, and a combination of KW and context among high-school EFL learners in Venezuela. The rote condition consisted of students applying whatever VLS they chose to learn 15 obscure and concrete English nouns, the KW condition of creating an imageable and acoustical link between the L1-L2, and the context condition of writing a sentence to establish word meaning. Following treatment, an immediate recall test of the 15 items was given that showed that KW and rote rehearsal had similar effects in the learning of the items for students of average academic ability, whereas a follow-up test given one week later showed that participants in the combined condition retained between 1.5 to 4 times as many words as those in all the other conditions. In their estimation the context/mnemonic condition proved to be consistently superior to any other L2 vocabulary learning methods under varying circumstances, regardless of setting or design methodology (Rodriguez and Sadowski, 2000).

Results of these classroom intervention studies appear to provide evidence that long-term recall of L2 vocabulary can be improved in conditions where a combination of VLS has been implemented as compared to conditions where a single mnemonic or contextual based strategy is used. This would further suggest that a study of novice learners of Spanish using a combination of VLS would yield superior gains in comparison with conditions that use either a single strategy (context) or a condition where no VLS are introduced.

2.5 The word types used in the study

Palmberg (1987) suggests that L2 vocabulary knowledge consists of a continuum that begins with “potential vocabulary” and continues on to what he terms “real

vocabulary.” *Potential vocabulary* would refer to words in the target language that have not yet been encountered by the learner by means of spoken or written contexts, but are easily understood by the learner upon meeting them. *Real vocabulary* includes those target language words previously learned by the student at some stage of their language learning process and can either be recognized or both recognized and produced by the learner. One set of vocabulary found to relate to Palmer’s description of potential vocabulary for new learners is that of cognates. The use of cognates among less-experienced foreign language learners has been found to increase L2 vocabulary learning recall by 25% on receptive testing, and 50% during productive testing (De Groot and Van Hell, 2005).

Kroll and De Groot (1997) maintain that less fluent L2 learners tend to rely on lexical mediation or lexical translation to comprehend L2 words, whereas more proficient L2 learners are more reliant on conceptual meaning. Their research is based on a study of the cross-linguistic influence of cognates on L2 vocabulary learning. Due to the transparency at the lexical level, cognates are held to provide a means for less proficient learners to use the L2 prior to their ability to conceptually mediate the meanings of the L2 lexicon. Cognates have also been linked to quantifying a student’s vocabulary knowledge in the target language (Carter and McCarthy, 1988; Meara, 1993; Nation, 1992; Singleton, 1999). Although the use of cognates in early L2 vocabulary learning has been found to provide many positive benefits, there are some caveats to be considered in their employment. Odlin (2001) categorizes this pitfall to be that of “false friends,” and Laufer (2000) classifies them as representative of “deceptive transparency” whereby they share orthographical and phonetical similarities in both the L1 features and L2, but do not share

a common meaning. An example of this can be seen in such Spanish words as *éxito*, *sin*, and *embarazar* that appear to mean *exit*, *sin*, and *embarrass*, when in fact they actually mean *success*, *without*, and *to be pregnant* (Whitley, 1986). Notwithstanding this possible pitfall of too much dependence on use of cognates, Odlin (2001) suggests that a new learner's L2 lexicon will be facilitated by their careful implementation.

In addition to cognates, words held to be more concrete (providing imageable mediation) have also been found to translate faster than those words perceived to be more abstract. Suggestions for this phenomenon are linked to the perceptual referents concrete words share across languages and their ability to access similar subsets of conceptual features (De Groot, et al., 1994; Odlin, 2001). Abstract words in contrast, are more dependent on contextual interpretation and admit fewer lexical correspondents across languages (Schwaneflugel et al., 1988; Swan, 2001). To date, there is a very limited selection of studies that have examined the concreteness levels of Spanish words (see Algarabel, et al. 1988).

Another word type relates to the concept of word families. Much attention has been given this category of vocabulary due to the argument that L2 learners should have a sight vocabulary of at least 3000-5000 word families in order to understand 95% of most texts in the target language (Laufer, 2001; Nation, 1990, 2003; Schmitt, 2000, 2001). Word families are words built around a particular root, base or headword clustered together to establish associations and general meanings between them (Nation, 2001; Nattinger, 1988). To the base are attached either inflectional or derivational affixes. Inflectional affixes provide an extension or a change in the root to indicate case, number, gender, person or tense (Azevedo, 1994; Bauer and Nation, 1993). Inflectional changes

do not affect a word's syntactic category. Derivational affixes form new words that are semantically related to the base but form a different word often of a different syntactic category (Wysocki and Jenkins, 1987). These lexical forms belong to a single lexical family of words and do not represent different words when considering estimates of vocabulary size (Grabe and Stoller, 2000). An example of a word family is found in the derivations of the Spanish verb *nadar* that means *to swim*. The base root *nad-* can form other words by adding such suffixes as *-ador* which yields the noun *nadador* (a swimmer), or *-ante* to produce the adjective *nadante* (swimming). Other derivatives are found in the noun *natación* (sport or swim competition) where the /d/ of the base is replaced with a /t/, the adjective *natátil* (floating, bobbing up and down) and the adjective *natatorio* (swimming).

L1 research has found that students apply morphological knowledge to analyze unfamiliar words to derive meaning of unknown words encountered in context. The assumption that higher frequency terms are easier to recognize than those of lower frequency has been challenged on the basis of these findings (Nagy, et. al, 2006; Nation, 2001). For example, a word like *inactivity* occurs less than once in every hundred million words of school text, yet its relation to higher frequency words such as *active*, *activity*, and *activities* increases its frequency substantially making it much easier to be assessed as a member of a word family rather than assessed as an individual word (Nagy, et al., 1989). This has led some scholars to argue for a morphological generalization hypothesis that maintains that the rapid increase of vocabulary of adolescents is due more to morphological analysis than other factors such as context and comprehensible input (Nagy, et al., 2006; White, et al. 1989; Wysocki and Jenkins, 1987). Psycholinguistic

evidence would also suggest that the mind groups known members of a word family together to facilitate word learning confirming the important role of morphological analysis (Schmidt and Zimmerman, 2002). Some posit that word families maximize vocabulary learning in comparison to the simple introduction of individual word meanings (Schmitt, 2000). Schmitt (2000) further suggests that explicit vocabulary instruction include an introduction to other members of a word's family in order to enhance vocabulary growth and establish a habit on the part of students to view a word's derivatives as a matter of course.

Although an emphasis on word families has been found to promote success vocabulary development for L1 learners, it does not always appear to carry over for L2 word learning. Schmidt and Zimmerman (2002) found that knowing one member of a word family did not always facilitate a learner's receptive knowledge of other members of the family. For example, in the sentence *Los mexicanos son muy amigables y habladores* (Funston, et al., 2000) the words *amigables* and *habladores* are unknown to novice level learners, although they may have learned the headwords *amigo* and *hablar*. Without some form of instructional intervention to facilitate guessing the meaning of these words based on prior knowledge, students may struggle, or ignore opportunities to infer their meanings. This would suggest that more explicit attention be given to base word affixes and that new words be introduced in clusters of word family derivational forms at a much earlier stage of L2 learning (Schmitt and Zimmerman, 2001; Whitley, 2004).

One study that does this is that of Morin (2003) in which derivational morphological strategies were used to learn word families and the effect this strategy had

upon learning new vocabulary was assessed. Two questions were pursued in the study: (1) whether a noticeable difference could be ascertained between the proficiency levels of a beginning and a more advanced level group in their use of derivational affixes, and (2) if derivational morphology was a legitimate VLS for L2 vocabulary building. Control groups received vocabulary instruction in the context of semantic mapping, role-plays, interviews, and information-gap exercises, while those in the experimental group had the same instruction as well as further instruction on the use of word roots and frequently occurring suffixes. Students in the experimental group worked cooperatively to look up as many words as possible that shared the same base word in a bilingual dictionary. Each week of the intervention, two new verbs were added to the list. When students had successfully shown themselves capable of completing the exercise on their own, the assignment was given in the form of homework to be completed outside of class. At the end of the treatment, a three part test was administered. The first, a Vocabulary Knowledge Test, contained 569 Spanish words representing all types of morphological categories. Students supplied a translation equivalent. The second test, a Productive Knowledge Test, contained five Spanish verbs and required learners to list related nouns, adjectives, and adverbs derived from these words. The third test, Receptive Knowledge Test, consisted of a series of sentences in multiple-choice format requiring students to select the correct word out of four possible options to complete attending sentences. Results of all three measures showed there to be minimal variance between control and experimental groups. MANOVA showed that a greater variance was found between the proficiency levels of the first and second semester students, which provide an answer for the first research question, while the combined scores of students in the experimental

groups showed more gains than those in the control groups combined. Morin also found that although more proficient learners appeared to benefit most from more complex VLS, new learners in the experimental groups scored a 33% improvement in their ability to produce novel words in the productive test.

While Morin's study was primarily focused on proficiency discrepancies between first and second semester learners, its application to the present study would relate to the benefit, although somewhat limited, of instructing students to make use of base word analysis in their approach to new word learning. Subsequent relevance to the present study is found in student interaction with base words and determining word families based on use of cooperative collaboration with peers and bilingual dictionaries.

Additional relevance is found in Morin's operationalizing of the terms "receptive" and "productive" vocabulary knowledge. In Morin's study, *receptive* refers to whether or not a learner can recognize the member of a word family to complete a sentence in Spanish. *Productive* knowledge is interpreted as the ability of the learner to produce a member of a word family and its correct L1 equivalent in English on a quiz or test.

To sum up, the studies discussed here suggest that:

- (1) L1-L2 cognates provide a facilitative means by which to augment L2 vocabulary
- (2) Learners should be made aware of the potential pitfall of "false friends" in their use of cognates
- (3) Words perceived to be more concrete will be more easily acquired than those held to be more abstract (unless the latter are cognates).

(4) Concrete words would also provide imageable links between the L1 and L2 which can be strengthened by use of mnemonic strategies such as KW

(5) Word families provide learners a means by which to build up a large sight vocabulary in a relatively short time

(6) VLS that focus on morphological analysis have been found to be useful for new learners and can augment word family vocabulary

2.6 Concluding propositions that establish a conceptual framework for the present study

In this chapter, I have provided a descriptive account of those characteristics found in the literature that identify the L2 lexical level of a novice learner and a review of approaches to L2 vocabulary learning suggested in varying circumstances to be beneficial for beginning level learners of L2 vocabulary. Aspects of these approaches have been incorporated into the present study. One section of students received explicit instruction on the use of contextual VLS, where contextual included such techniques as inferring and guessing the meaning of unknown words in a given context, the use of bilingual dictionaries to look up unknown Spanish word meanings and members of Spanish word families, analysis of based words and affixes to assist in placing words in sentences, and using vocabulary to create new and novel sentences, as well as non-contextual VLS (in particular, KW and semantic mapping). This section was designated as the full-strategy group (FSG).

Participants in a contextual based VLS group were directed to use several of the weekly assigned word family and general vocabulary to create new and novel sentences just like the full-strategy group and were instructed to locate other members of Spanish

word families in bilingual dictionaries. Students in this group also analyzed words according to frequency of suffixes found to be linked to stems to assist in the placement and interpretation of words in sentences. Students in this group were designated as the context strategy group (CSG).

In addition to the above two groups, there was one section of students which did not receive any special VLS instruction. This group received the same instructional methodology as the other two groups with respect to the curricular objectives of the course and the textbook used, but did not receive any training from the researcher on the use of the VLS employed by the experimental groups. This group was identified as the non-strategy group (NSG).

Per the summative findings compiled and presented in the previous sections of this chapter, the following research questions (RQ) were posited to serve as the main features to be investigated in the present study:

RQ1: Does VLS instruction affect L2 vocabulary retention by middle-school students?

RQ2: If so, what types of strategies are most beneficial for middle-school students?

CHAPTER 3

METHODS

The present study ran for two school years, from September 2003 until June 2005. Its principal aims were two-fold: to rate the progression of vocabulary acquisition of three groups of classroom learners ages 12-14 during their first two years of Spanish language learning, and to explore whether the introduction of a cluster of vocabulary learning strategies with one group of students would provide greater improvement in vocabulary learning as compared with two other groups; one that received more limited treatment, and one that received no treatment. The study employed a combined or a mixed methodological approach that incorporated different research methods (Creswell, 2003). That is, elements derived from what is termed teacher-initiated classroom research (Richards and Lockhart, 1995), and those from a more empirically grounded (an experimental approach) were converged to provide a more comprehensive analysis of the effect of different vocabulary learning strategies on Spanish vocabulary acquisition.

Elements related to teacher-oriented research followed a sequence similar to that of action research having as its main referent a contextually defined setting; in this case, the classroom (Van Lier, 1990). Most often this research involves a smaller-scale study project in the classroom and consists of a number of phases that occur in a cycle of activities (Richards and Lockhart, 1995). The first step in this cycle is that of planning, that is, the identification of a problem in need of solving, which then leads to action, to observation of the action, and then to reflection on the behavior which often leads back to further planning (Ellis, 1997). This study followed a similar cyclical approach in that a problem was first identified (students needed to improve vocabulary learning), and a plan

of action was implemented to resolve the problem (introduction of vocabulary learning strategies). Observation of the implementation process was done by the teacher/researcher who assessed student use of the strategies. Additional information was elicited through self-report data from participants and included a short open-ended questionnaire, and student vocabulary learning journals.

Along with this approach, data gathered from quiz and test instruments were subjected to close, empirical analysis. The study incorporated elements derived from a more experimental approach whereby vocabulary quizzes and test data were submitted to statistical analysis. Although, these features shared many of the characteristics of an experimental approach, due to the impossibility of assuring the random selection of participants in the study (1.3), this aspect of the research was more akin to a “quasi-experimental approach” (Ellis, 1997). According to Brown and Rodgers (2002) this approach is more representative of real life language classroom experience as it is often too difficult to carry out educational research with human subjects (i.e., real students and teachers) that follows a pure experimental design.

In this chapter, I present the various methods employed to examine the research questions posited in chapter two (2.6). First, I present a description of the participants. In this section I provide a detailed description of the three groups; the process followed for inclusion in the study; gender, demographic information, sample sizes of subjects; and other relevant characteristics related to students who participated in the study. A description of the location of the study is also provided.

In the next section, I present a brief description of the overall design used in the study. Included in this section is an explanation of the data used to address the research

questions, methods of data collection, and analysis used for each data set. Subsequent to this I present an outline of the strategy treatment among the three groups from whom the data was collected.

Following this, an in-depth description of the materials and measurement instruments used in the study is presented. In this section I explain the purpose, testing method, scoring, and scoring ranges of instruments. Where relevant, reliability, and validity scores of the instruments are provided.

3.1 Participants

Participants in the study were 77 young adolescents (ages 12-14) learning Spanish as an elective Foreign Language in a middle-school located in an affluent suburb of Lancaster, Pennsylvania. Demographically, the study included students from African-American, Indian, Asian, Hispanic, and Caucasian backgrounds. According to the 2008 census report for the school district in which the study was conducted, most of the participants in the study came from homes where the socioeconomic status was above average. Permission to carry out the study in the school building was granted by the building principal. The study took place in the same classroom during the two years of the study.

Since the study involved the participation of minors, the proposed study was submitted to the Institutional Review Board (IRB) at Temple University to request a protocol review. The study was categorized as exempt as it did not go beyond normal curricular practices (Appendix A). The proposed study was announced at the school's Open House in early October of 2003, and all parents of eligible participants were then sent a copy of the Parental Consent Form composed according to the specifications of

IRB guidelines. Those parents who had not attended this event were contacted by phone prior to receiving the permission form.

Recruitment for participation in the study occurred immediately after approval by the IRB. This occurred almost simultaneously with the Open House and mailing of the permission forms. One to two class periods were devoted to informing students in each of the three seventh grade sections of my interest in studying whether certain vocabulary learning strategies would provide them greater facilitation in their attempts to master Spanish vocabulary. Strategies were explained as techniques, or learning tools that could help them achieve greater retention of these words on quizzes and tests, as well as providing them assistance on listening, reading, and speaking exercises where recognition of words is crucial for success. Students were told that their participation in the study was purely voluntary, and that they could withdraw at any time without penalty. The only incentive that was offered for their voluntary participation was the expectation that they would benefit from the use of vocabulary learning strategies, that is, that students would derive a potentially increased growth in their retention and recognition of Spanish vocabulary by using the strategies. Students were also told that although strategies would be introduced, they would not be coerced to use them. Directions were given that if they chose to participate in the study, they and their parents would be required to sign a permission letter stating that they were in agreement with what had been discussed in class.

3.1.2 Determinants for selection in the study

Subsequent to the recruitment procedures outlined above, selection of participants for inclusion in the study was based on the following three criteria:

- (a) students could not have had any previous extended exposure to Spanish,
- (b) students needed to have a permission form signed by a parent or guardian, and
- (c) students had to complete all the multiple test questions on the pre- and post-tests of vocabulary.

Item (a) was assured by means of a Student Language Learner's Survey (Appendix B). Information elicited from this survey supplied answers related to the language spoken at home, previous exposure to Spanish, and other languages spoken in the home. Students who came from a Spanish bilingual household or those who had had any previous extended exposure to Spanish were excluded from the study. Although three of the participants were of Hispanic heritage, Spanish was not spoken in the home, and according to further communication with parents they had not been exposed to Spanish prior to entrance in the class. Item (b) was accomplished by means of the Parental Consent Form (Appendices C and D) requiring the signature and approval of parent or guardian for participation. Students who did not receive permission were excluded from the study. Item (c) relates to the two comprehensive vocabulary tests administered at the end of the first and second year of the study. Since the vocabulary tests were of major consequence to the overall outcome of the study, participants were required to complete all 60 items found on each of the test instruments.

3.1.3 Assignment procedures for placement of students into the three groups

Seventy-seven students from three different sections of seventh graders met the criteria for participation in the study. Three students were excluded from the study, one who spoke Spanish at home, another who had had previous exposure to Spanish, and a third student who was not given permission to participate. As the study was conducted in

a public school setting replete with its own established guidelines for the scheduling of students, the researcher had no control over the number of students placed in the three different classes of seventh grade Spanish. Due to this limitation, two of the three sections consisted of similar numbers of participants, while the third class was significantly smaller. One of the classes consisted of 31 students, another of 29, while the third section had only 17. Since the study was designed to observe the benefit of a cluster of vocabulary strategies among a population of students, as compared with a group with only context-based strategy instruction, and a third with no VLS instruction, the class with the largest number of students was designated as the full-strategy study group (n = 31), the second largest class was designated as the contextual based strategy group (n = 29), and the smallest section (n = 17) as the group that would not receive instruction on the use of VLS. At no time over the course of the two-year study were the students aware of their group placement. The core classroom instruction and curricular objectives were the same for participants in all three groups (see section 3.2.2). Between years one and two of the study some attrition occurred as four of the students, moved out of the school district. This reduced the number of participants to 73 for the second year of the study. Although the school had been unable to control for an equal representation of students in each of the three groups, it did make every effort to ensure that those remaining students who had been in the study the first year, were scheduled into the same classes for the second year. A representation of the three sections of participants, assigned groups, gender, ethnicity, and attrition rate between the two years is shown in Table 2.

Table 2. Presentation of participants, assigned groups, and attrition rate in the study

Grade Level	Number of Participants	Gender		Ethnicity				Attrition
		Male	Female	African-American	Indian	Hispanic	Caucasian	
<i>7th</i>								
<i>No Strategy Group</i>	17	6	11	1			15	
<i>Context Group</i>	29	15	14		1	1	27	
<i>Full Strategy Group</i>	31	16	15			2	29	
<i>8th</i>								
<i>No Strategy Group</i>	16	6	10	1			15	2
<i>Context Group</i>	28	14	14		1	1	26	1
<i>Full Strategy Group</i>	29	14	15			2	27	1

Note. Numerical digits refer to actual number of student participants in each section.

3.1.4 Location of the study

The school district in which the study took place offers three world languages, French, German, and Spanish, as electives in both the middle and high schools. Classes in the middle-school follow a sequential curricular program so that after two years, students completing the course are encouraged to enter level two at the high school.

Eligibility for entrance into the Spanish language program is based upon a variety of criteria. Students must provide proof of English language proficiency, evidence of organizational skills, consistency in homework completion, and exhibit a positive desire to learn. English language proficiency is assessed by the Gates MacGinitie Reading Test (GMRT). Since World Language courses are considered electives, students whose

reading level is below the threshold of the sixth grade level are scheduled in remedial reading classes. In the school district where the study occurred, there are no screening categories for entrance in a World Language in the high school. Students who do not qualify to take a World Language in the middle school are encouraged to enroll during their high school years.

3.2 Research design

The study used a non-equivalent control group design that included a vocabulary learning strategy treatment with three levels:

- (1) no strategy instruction
- (2) contextual-based vocabulary learning strategies, and
- (3) context, and non-contextual based vocabulary learning strategies

The design sought to provide an answer to the research questions:

RQ1: Does VLS instruction affect L2 vocabulary retention by middle-school students?

RQ2: If so, what types of strategies are most beneficial for middle-school students?

The data used to investigate and assess these questions was obtained using the following instruments. First, a series of vocabulary quizzes were administered to participants that tested their ability to retrieve the target words learned during the week's lesson. The structure of most of these quizzes was such that students were required to provide an English translation equivalent for a word in the target language.

Vocabulary items used on these instruments were derived from a pool of some 800 Spanish words that students had learned throughout the course of the two years of

study. Words derived from this source were representative of several word classes, i.e. nouns, verbs, adjectives, adverbs, and conjunctions. Approximately 550 of these words appeared in the textbook, *En sus marcas* (EMC/Paradigm, 2000), that served as the classroom text. The other 240 were based on word family vocabulary that was introduced throughout the course of the study (2.5). A score of 1 was given for correct answers on the quizzes, and a 0 for those that were incorrect.

A second instrument, consisting of two comprehensive 60 item vocabulary multiple choice tests was used to assess the long-term retention of Spanish word family vocabulary, as well as other vocabulary from the student's classroom textbook. The first test was administered after the first year of the study, and the second after the last year of the study. Items included on these tests were primarily words selected from the word family vocabulary the students had learned over the first and second year of the study. Students were required to supply either the missing word in a sentence or the correct word in response to a question for which four possible choices were offered. Three of the choices were distracters while one was the correct answer. A score of 1 was given for correct responses and a 0 if incorrect. The assessment of these testing instruments was the same as that used to assess the vocabulary quizzes.

In addition to instruments that followed a more experimental approach of assessment, I also elicited self-report data from the students regarding the strategies they had used to complete the tests. This data was gathered by means of a short open-ended questionnaire that contained three questions that asked them to record any strategies or processes they had used to complete the test. After completion of the tests, students were asked to supply answers for the following questions:

1. I used the following strategy (or strategies) to complete this test.

a). _____ b). _____ c). _____

2. I was able to determine the answer for easier questions by ...

3. I was able to solve the answer for more difficult questions by ...

The student response data was then collected from these questions and coded according to vocabulary strategy categories whose descriptive characteristics were derived from the literature (3.3.3). Tabulation was then done so as to obtain a frequency of the use of the strategies students claimed to have employed. Percentages were then calculated for a strategies frequency of use, which was then used to rank the strategies from ascending to descending order of use.

In addition to the strategy use questionnaire that followed the comprehensive tests, students in the full-strategy group were asked to respond to prompts that asked them to describe their use, or non-use of the strategies introduced in class. These responses were vital in providing a more penetrative analysis of the personal experiences and insights of the students as they manipulated these strategies and adapted or rejected them according to their own personal preferences. The data derived from this resource was used as an observational tool providing a more intuitive descriptive analysis of student participation in the study (Allwright and Bailey, 1991; Cohen, 1998; Van Lier, 1990).

In Table 3, I summarize the primary elements of the methodological approach used to investigate the research question. The elements enumerated below include the design, the data collection mechanisms, and the data analysis methods. The designated

names of the groups represented under the design section of the table are reflective of the descriptive characteristics given to these groups in chapter two (2.6).

Table 3. Methodological approach used in the present study

Research Questions (RQs)	Design	Data Collected <i>Instruments used to assess RQs for all three study conditions</i>	Quantitative <i>Test and Quiz Analysis</i> (t-test)	Qualitative <i>Self-report Analysis</i> (percentages)
RQ1: Does VLS instruction affect L2 vocabulary retention by middle-school students? RQ2: If so, what types of strategies are most beneficial for middle-school students?	<i>Nonequivalent control group that consisted of three levels of treatment:</i>			
	<i>1).No Strategies: No Strategy Group(NSG)</i>	<i>Vocabulary quizzes 2 Comprehensive Tests Questionnaire</i>	(√) (√)	(√)
	<i>2).Contextual Strategies: Contextual Strategy Group (CSG)</i>	<i>Vocabulary quizzes 2 Comprehensive Tests Questionnaire</i>	(√) (√)	(√)
	<i>3). Context and Non-Contextual Strategies: Full Strategy Group (FSG)</i>	<i>Vocabulary quizzes 2 Comprehensive Tests Questionnaire Vocabulary Notebook</i>	(√) (√)	(√) (√)

Note. Symbols enclosed in parenthesis indicate that the instrument was used by the group.

3.2.2 Description of how the three levels of strategy treatment were implemented

Vocabulary instruction was carried out during each class period for all groups using a variety of instructional materials including role plays, interviews, picture descriptions, word puzzles, games, and information gap activities found in the students' textbooks. Apart from these curricular activities done in the classroom, the strategy treatment differed between the groups. Participants in the non-strategy group were required to "do something" outside of class with the vocabulary presented in class. Although there was no direct instruction given on the use of VLS to this group of

students, they were encouraged to select whatever approach they desired to study the weekly assigned vocabulary. Most of these students chose to use flash cards, word lists, and other rote memory techniques, i.e., rhymes, songs, etc. Each week a photocopied group of vocabulary was distributed. Students were required to learn the vocabulary, and their English equivalents for the weekly vocabulary quizzes.

Students in the context-based strategy group were not encouraged to use memory based strategies. Although some did choose to use flashcards and word lists outside of class, the emphasis of strategy instruction given to this group involved creating simple sentences with the words assigned from week to week. This was accomplished by having students work in dyads to write sentences for 2-3 of the words, and then share them with other students. Some of these samples were written on the blackboard for full class analysis. Following this activities, three to four more words were assigned to make sentences for the next class session.

Examples of some of these sentences would include:

“Hay mucha habladuría en la clase”

“El hablante habla muy rápidamente, ¿no?”

In addition to creating sample sentences, students in this group also located words that were members of a word’s family in bilingual dictionaries. In groups of three or four, students received a photocopy of words to be learned for the week. These words included a series of infinitives that served as the head-word for word families (Bauer and Nation, 1993). When a list of five to six words were compiled that pertained to a particular head word family, discussion ensued with regard to the meaning of these words and similarities in meaning between the head-word and the other members of its family.

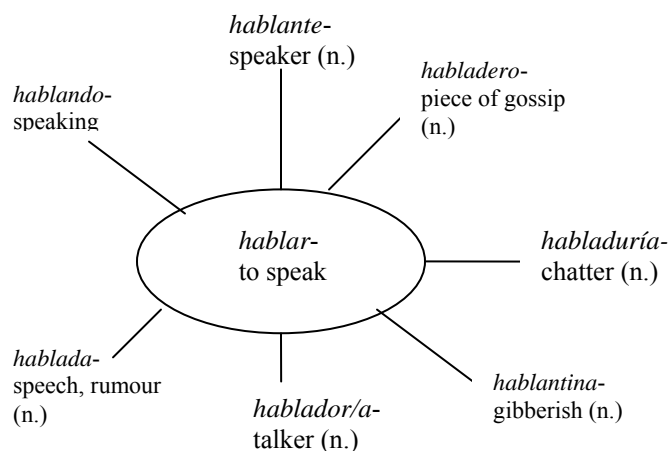
Students also analyzed the bases of word stems, and affixes of nouns, adjectives, and adverbs, to assist in their interpretation of word meaning, and to facilitate placing them into sentences. These words were assigned to be part of the quiz for the next week.

Students in the full-strategy group received the same instruction on contextualization in sentences, as well as on the use of a bilingual dictionary to look up words pertaining to a head word's word family as those students in the context based group. In addition, in class, activities for this section included exercises that focused student attention on shared word stems or bases, and frequently occurring suffixes in Spanish, to assist in the placing of words in sentences (Morin, 2003). As part of the discussion, special attention was given to some of the similarities and differences between Spanish and English suffixes.

In addition to writing out sentences and using bilingual dictionaries to locate word family vocabulary, and a focused attention on shared word stems or bases, students were also introduced to two memory techniques: (a) semantic mapping, and (b) the keyword method (2.1.3).

A web diagram was distributed to students working in dyads, and this diagram was used to create a semantic map of the word family vocabulary (Svenconis and Kerst, 2000; Sökmen, 2001). The head-word served as the main referent with members of its family filling the outlying spokes. As seen in the example in Figure 1, the infinitive *hablar* serves as the head-word, while the outlying spokes are filled with words sharing the same base. This base makes up part of the word family linked to the verb. Students would use this activity to make semantic maps of one to two word families per session each week and would use these semantic maps as a study tool for the quiz.

Figure 1. Semantic Map of the verb *hablar*



In this study, semantic mapping was used with both semantic categories as outlined above, and for thematic categories presented to the students in their textbooks such as family, foods, buildings, travel, etc.

The keyword method (KW) was also introduced to participants in this group. Keywords were selected from an 800 word corpus that students had learned throughout the course of the two year experiment. Words were derived from (a) the classroom textbook, *En sus marcas* (2001), and (b) the word-family vocabulary. From this corpus, thirty eight Spanish words were selected for the keywords (Appendix E). Keywords were selected from four different word classes:

- (a) imageable nouns (19),
- (b) infinitives (7),
- (c) adverbs and adjectives (12).

The criteria for keyword selection according to Hulstijn (2001) should be based on an L1 and L2 words chosen, first, because of the acoustic or orthographic similarity between the L1 word and the to-be-learned target language word; second, a strong phonological association that exists between the L2 word and the keyword that stimulates

an almost immediate recall of the keyword when it is seen or called to mind; and third, a visual image must be constructed which combines the elements of the keyword and the target word, sometimes in a salient, or bizarre manner so that its recall is increased.

Initially the introduction of this strategy was presented at the outset of the day's lesson during the fall of the first year of the study and involved an explanation of the technique, i.e., how to associate the sound of the target word to the English word and how this should lead to the generation of a mental image that related the KW to the English translation. At the close of the session, an instant recall quiz was administered to determine word retention (Kasper, 1993). Session I lasted 20 minutes. Subsequent lessons were given throughout the first week. These lessons were similar to those of the first lasting between 20-25 minutes.

Subsequently, these sessions required 10-15 minutes during the initial phase of the day's lesson. Actual results of this strategy were tabulated after two full weeks of trial and error and considerable practice (Chamot and O'Malley, 2001; Cohen, 1987; Hall, 1981; Zohar, 1994). Throughout the study student involvement was encouraged in the process of strategy instruction and implementation. Students were more than willing to share their ideas of which words would make good keywords, and in addition to those images supplied by the researcher (Appendices F and G) they generated a number of their own KW images for the class (Appendix H).

3.3 Materials and measurement instruments

The two main assessment instruments used to analyze whether any improvement had occurred between the groups were two comprehensive vocabulary tests and a series of twenty vocabulary quizzes. The two comprehensive vocabulary tests were developed

by the researcher and administered after the first and second year intervals of the study to determine the recognition of word family vocabulary and other vocabulary items derived from the students' classroom textbook. The two tests followed a multiple-choice format in that students needed to select the correct answer, from among the four choices (one correct answer, and three distracters) in order to complete a sentence. The rationale for this structure was based on the premise that use of a multiple-choice format where a Spanish sentence required the recognition of a choice between four possible responses would involve both lexical processing and real life use of the language by the learner (Cohen, 1994; Hughes, 2002). Similar test structures have been used in previous research that has dealt with base words and their derivations to determine vocabulary recognition by L2 learners (Morin, 2003; Schmitt and Meara, 1999; Schmitt and Zimmerman, 1997).

The first test provided base-line data for student vocabulary knowledge and VLS use after the first year (Appendix I). Although it does not meet the traditional criteria for what is considered to be a "pre-test" whereby a test is given at the outset of a study, it is here classified as such, because it provides base-line data following one year of treatment. Likewise, the second test is classified as a "post-test" as it provides data on the overall progress made after two years of VLS treatment (Appendix J).

The tests consisted of sixty items. In the pre-test, 20 words were related to vocabulary recognition (VR) and 40 to word family recognition (WFR), whereas in the post-test, 10 were VR, and 50 WFR. This change in word configuration was due to the fact that the students had been introduced to more word family vocabulary after the second year. As the structure of the test items employed a multiple-choice format where one correct answer was to be derived among four possible selections, Cronbach's α was

calculated for the internal consistency of the two tests. The consistency findings for the seventh grade test were .71, and, for the eighth grade test, consistency was found to be .74.

Validity for the two testing instruments was also based on findings related to the content of the instruments. The method employed to establish content validity was to submit the tests to a panel of experts to judge the degree to which the test items represented all other constituent parts of the test. The panel consisted of five teaching professionals known by the researcher (four Spanish teachers, one ESL teacher, with three of the five being native Spanish speakers). The teachers were requested to base their judgments on the validity of the test by means of a Likert scale that ranged from 1 (“strongly disagree”) to 5 (“strongly agree”) as they examined the test’s structure item by item. The Likert scale results were used to provide feedback on the level of appropriateness of difficulty for the participants, the correct grammatical structure used in each sentence, and whether each question provided a sufficient set of clues or clue to facilitate selection of the correct Spanish vocabulary or word family word. The level of appropriateness here refers to whether the panel felt that the structure of the sentences and the use of vocabulary or syntax would be comprehensible to the test takers. The grammatical structure refers to the composition of each of the sentences, as to whether they were grammatically correct in functions such as subject/verb agreement, noun/adjective agreement, and spelling. The members of the panel were provided a brief summary of the focus of the study, a copy of the vocabulary that had been used (Appendix K), and grammatical structures the students had learned throughout the course of the study. Each member was then given a copy of the tests and asked to submit their

own judgments on each test item based on the above mentioned criteria. The scores derived from panel were tallied to obtain a percentage of agreement between members for each question. The items that met an 85% approval rating between members of the panel were left intact, whereas those less than 85% were either revised for resubmission, or replaced.

The results from the administration of the pre-test after the first year of study showed a satisfactory reliability ($\alpha = .71$) with a Kuder-Richardson (KR 20) score of .57. The post-test results obtained from the administration of the test after the second year of study also showed a reliability rating ($\alpha = .64$), and a KR 20 score of .70. To complete the tests, the students read the sentences and selected the correct answer from among three distracters. A value of 1 was given to answers that were correct, and a 0 for those answered incorrectly. The scores elicited from the tests in each student group were tallied and used for quantitative analysis.

3.3.2 Quiz instruments used in the study

The data collected from the quizzes in the present study had a threefold purpose: (1) to provide an informal, brief, and non-rigorous assessment design documenting “a more natural and accurate progress report (Cohen, 1994)” of Spanish vocabulary acquisition among participants in all three groups, (2) to familiarize students with differing assessment designs in the preparation of the pre-and post-test constructs, and (3) to assess how many words were retained by the students in the three groups from week to week.

The preliminary quiz structures given at the start of both the first and second year of study followed a L2 to L1 translation construct (Appendix L). Most of the words found on these preliminary quizzes used concrete nouns, and verbs to determine the validity of this type of word as being more easily accessible to new learners than abstract words. On these initial quizzes, the students needed to supply an L2 equivalent of an English word.

As the study progressed through the first year, several quiz designs were tested so (Appendix M) as to prepare students for the structure they would encounter on the first comprehensive vocabulary test. Those designs that did not require the writing of an equivalent incorporated some form of matching an English word to an equivalent in Spanish, or the selection of a word from a word bank. The sample tests used during the second year of the study made use of the same design as those in the first year. This enabled the researcher to make comparisons of Spanish vocabulary retention during the first and second year of study and to substantiate the main research question. Since quizzes were used as an informal progress check of student vocabulary acquisition throughout the study, no piloting of these measures was done throughout the two year phase of the study.

3.3.3 Open-ended questionnaire

As previously discussed, this study incorporated both empirical and classroom research elements. My intention in using the open-ended questionnaire was to provide students with the opportunity to record the strategies or processes they had used to complete the two comprehensive vocabulary tests. My interest here was two-fold:

1. I wanted to determine whether any similarities or differences in strategy use existed between the groups as they took the tests.

2. As this study was based to some degree on the assertion that novice L2 learners tend to focus on the form of new vocabulary words (2.2), my interest was also directed toward how this factor would develop as students took the tests. Would their test-taking strategies show a tendency to use base words, i.e. suffixes in order to facilitate the selection of the correct choice among the three distracters?

The use of an open-ended format allowed students to speak for themselves and record what they had done instead of simply having them circle a predetermined set of possible strategies provided by the researcher (Dörnyei, 2003). To assess this I recorded the strategies students claimed to have used as listed under Question 1, Question 2, and Question 3 on the open-ended questionnaire (see 3.2).

My methodology in this task was more reflective of an *emergent* approach as I had no predisposition or bias as to the direction the student's test taking strategies would take. This particular approach permitted the categories to be established after a preliminary examination of the data had taken place. Since my goal was to determine how to classify the strategies the students used, my goal in searching the literature focused on the resources that supplied an established format for L2 vocabulary learning strategies.

Although Oxford (1990) has provided one of the most multifaceted studies of learning strategy use, as well as an index of strategy categories, i.e. Memory (MEM), Cognitive (COG), Metacognitive (MET), etc., Schmitt (2001) found her scheme to be somewhat limited in its delineation of L2 vocabulary strategies. Expanding on her categories Schmitt included another category, Determination strategies (DET), into his taxonomy that was specific to new vocabulary learning. Determination strategies refer to

the discovery of new words by students, and the processes used for consolidation of those words into long-term memory. In this study, three categories derived from both Oxford (1990) and Schmitt (2001) were found to have a correspondence with the strategies used by the participants in this study. These strategy categories included Memory (MEM), Metacognitive (META), and Determination (DET).

Once the data had been gathered from the questionnaires, a preliminary list of 30 strategies was obtained. Patterns of strategy use were tabulated by coding a 1 beside the strategy each time it was mentioned. The data was then coded by category types (Determination, Memory, Metacognitive, etc.). In order to prevent researcher bias in the categorization of the data, a second rater was asked to review the data using the same coding scheme and allotted categories. The second rater was a colleague of the researcher who taught the Gifted Program at the school where the research occurred. This individual was familiar with the literature on learning strategies since they formed an integral component of his instructional practices at the school.

This colleague was asked to follow the same procedure as mine, in coding the data and organizing it into one of the three strategy categories. After the coding was complete, a reliability agreement assessment on the coding process between my scheme and that of my colleague was carried out by means of Cohen's Kappa. Cohen's Kappa evaluates the proximity of agreement between two raters by indicating the strength of agreement to approximate 1.0, and no agreement between raters to that of 0 which indicates that there is no agreement other than what would be expected by chance.

The Kappa score for agreement between the two raters was .89 (weighted Kappa = 0.88), with the number of observed agreements being 28 (93% of the observations), and

the number of agreements expected by chance, 12.1% (40.44 of the observations). The 95% confidence interval was from 0.738 to 1.038, with the strength of the agreement being considered “very good (Field, 2005).”

The strategies were then organized by an ordinal rank order scale from ascending to descending order and the percentages of their frequency of use were calculated for each of the three study groups. The organization of the strategies in this manner supplied a detailed depiction of how each group approached the tests, and provided data to compare and contrast strategy use among participants.

3.3.4 Vocabulary Learning Journals

In addition to the open-ended questionnaire, students in the full-strategy group were asked to keep a dialogue journal to describe their perceptions, likes and dislikes, approaches, etc., to either tasks done in class or in relation to VLS instruction received in class. The procedure for journals sought specificity with regard to a particular strategy, or the individual preferences or perceptions students had to a given strategy or procedure introduced in the classroom. Students were given question prompts about these areas and requested to write a response. They were encouraged to respond anyway they wished, and told to be as honest as possible. The specificity helped to keep students focus their responses on the assigned topic limiting the surplus of data that had little relevance to the main features of the study (Chaudron, 1998; Cohen, 1998). The journal entries served as an instrument from which a number of variables relevant to the research were able to be obtained, and to provide some identifiable surface features, that could be collected, so that measurement and tabulation of the data could yield numerical comparisons between the recorded entries of the students (van Lier, 1990).

The anecdotal and subjective responses provided by students supplied numerous insights into the affective, motivational, and personal perspectives of the students toward the various strategies practiced in the classroom. My role in this process was to collect the journals on the assigned date, and provide feedback to the student's responses.

Some of these student entries supplied wonderful insights, and honest observation, while others were curt, and to the point.

Topics covered over the two years included prompts such as:

- How do you approach learning a new vocabulary word?
- Do you make use of mental images for vocabulary learning?
- How do you prepare for vocabulary quizzes?
- Do you focus on the form or on the meaning of new words learned in class?
- What has been your favorite VLS we have learned in class?
- What has been your least favorite VLS learned in class?

The responses obtained from these questions provided data on the intuitive feelings of the students as they were exposed to a number of vocabulary learning strategies. Included in this data were student reports of how they felt about the procedures, the strategies, and the perceptions they held as to the benefit or lack thereof of a particular technique. In some cases, student responses were tabulated so as to supply numerical data that was assessed by percentages so that a ranking of the likes, dislikes, and approaches used by students could be calculated and used to compare similarities and differences of strategy approaches between the two years of the study.

3.4 Summation of chapter

In this chapter, I have reviewed the methodological approach used to answer the research question. As explained, the elements used to carry out those objectives included three different groups of middle school beginning level Spanish language learners. The manner in which students were included in the study and the group to which they were assigned have been carefully detailed. Subsequent to this presentation, I have also explained the type of research design that was employed to answer the research question and the instruments that were used for the data analysis.

In the next chapter, I provide an analysis of the outcomes of the three groups as assessed by the data that was gathered from these instruments, and the results that were obtained from these measures.

CHAPTER 4

ANALYSIS OF THE DATA OBTAINED FROM QUIZ AND TEST INSTRUMENTS

In this chapter, my purpose is to analyze the outcomes of the three study groups by means of an investigation of the results of the test and quiz instruments used to assess student retention of the vocabulary used in class, and to analyze the student report data related to the strategies used by the students while they took the comprehensive vocabulary tests. As previously stated, these instruments were developed to determine whether a section of students classified as the full-strategy group, who were provided with a variety of contextual and non-contextual, cognitive processing VLS would show greater improvement on their quiz and test scores in comparison with a group given context based strategies, and one that had no explicit instruction on the use of VLS.

In section 4.1, I provide an analysis of the results on the two comprehensive test instruments. These instruments assessed student recognition of word family and to a lesser degree general vocabulary studied in class. To approach the test, students needed to use strategies that either helped them make an educated guess or entailed some form of inference or recognition technique in order to select the most appropriate word to complete the sentence correctly.

In section 4.2, the quiz data elicited from 20 quizzes that had been administered throughout the two years of the study are analyzed to examine vocabulary retention. My purpose in this section was to determine whether patterns found to occur during the implementation of the tests would be replicated on the week to week quiz assessments. In particular, if one of the groups was found to have improved in their overall test scores as

compared to the other two, would this same improvement be found to occur on weekly quiz assessments?

In section 4.3, I supply an analysis of the open-ended questionnaire (3.3.3). In this section, the student responses to the three questions intended to determine VLS use are examined. This analysis includes procedures for ranking the strategies according to the level of frequency of use by the participants.

4.1 Results of the two comprehensive vocabulary tests

As stated, the two comprehensive vocabulary tests investigated whether a combination of VLS would promote greater recognition and retention of vocabulary than a condition where context based strategies were introduced and one in which there was no VLS instruction. Both tests were administered at the end of the school year and indicate the level of improvement of the participants in the three study conditions (see 3.3). Students were instructed to read the sentences and to select one of the four possible word choices to complete the questions. They were asked to record their responses to the three questions found at the end of the test that sought their input on the strategies, or processes they had used to complete the tests.

The descriptive statistical data obtained from the pre-and post-tests was examined for normalcy of variance between the mean distributions using a Kolmogorov-Smirnov Test (K-S test). This test was used to determine whether there were any underlying differences between the distributions of the data.

In Table 4 the raw data results obtained from these two tests is presented. The table summarizes the maximum and minimum scores derived from the three study conditions as well as the mean scores and standard deviations per section. The results of

this initial analysis indicated that a normal distribution of the mean scores was not identified.

Table 4. Descriptive test of the normality of data.

<i>Tests</i>	<i>Total Test Score</i>	<i>Minimum</i>	<i>Maximum</i>	<i>Mean</i>	<i>Standard Deviation</i>
<i>Pre-test</i>	(60)				
<i>No Strategy</i>		27	43	33.75	4.78
<i>Context</i>		19	45	34.14	6.39
<i>Full Strategy</i>		16	42	33.16	5.66
<i>Post-test</i>	(60)				
<i>No Strategy</i>		23	43	32.75	4.78
<i>Context</i>		25	50	40.11	5.80
<i>Full Strategy</i>		26	50	36.65	5.48

Note. Values enclosed in parenthesis represent number of items included on each test.

Adapted from “Discovering Statistics Using SPSS,” by A. Field, 2005, *SAGE publications*, p. 282.

The lack of a normal distribution of the mean scores prevented the use of parametric statistics, i.e. ANOVA, and in its place a non-parametric analysis was used that did not require a normal population to test for the equality of population means among the three groups. The non-parametric statistic used in this study was a Kruskal-Wallis one-way analysis of variance (1).

(1) Kruskal-Wallis is a non-parametric counterpart to the one-way independent ANOVA. It is used when heterogeneity of variance is unable to be obtained from normally distributed data. This type of non-parametric test ranks the data by locating the lowest score, and giving it a score of 1, then finding the next lowest score and assigning a rank of two, etc. High scores are represented by large ranks and low scores by low ranks. When data has been ranked, the sum of ranks is assigned a value (R_1). Once the sum of ranks for each group is calculated, an equation is used to determine the test statistic (H). Its distribution is similar to that of a chi-square distribution. There is one value for the degrees of freedom which is one less than the number of groups ($k-1$). Although non-parametric tests have been criticized for making no assumptions about the distribution of the data, they in fact do make distributional assumptions, but are less restrictive than their parametric counterparts (Field, 2005).

The results of the K-W test assessment for the seventh grade test indicated that the mean scores did not differ at a statistically significant level between the scores for the three study groups ($H(2) = .401, .818, p < .05$).

Thus, the comprehensive vocabulary test measure used to assess vocabulary recognition after one year of strategy treatment did not show any differentiation among the scores of participants. However, a notable difference was found to occur after the second year of the study. The results of the K-W test assessment for the eighth grade test showed a difference at a statistically significant level between the scores for the three groups ($H(2) = 16.99; .000, p < .05, X_2 = 5.991$). A presentation of the differences between group scores for the seventh and eighth grade tests is shown in Table 5. The data includes the mean scores, standard deviations, asymptotic significance of the H statistic, and actual H statistic obtained from the two testing instruments.

Table 5. Results obtained from the comprehensive tests.

Source	df	Study Groups	Mean Rank	S.D.	Significance	H statistic
Seventh grade test (60)	2	Full-Strategy Group	36.56	5.727	.818	.401
		Context Group	40.04			
		Non-Strategy Group	37.22			
Eighth grade test (60)	2	Full-Strategy Group	36.29	6.057	.000*	.16.99
		Context Group	49.32			
		Non-Strategy Group	21.50			

Note. Items listed in parenthesis represent the total number of points for each of the testing measures.

Adapted from "Discovering Statistics Using SPSS," by A. Field, 2005, *SAGE publications*, p. 549.

* $p < .05$.

A review of these results would indicate a significant rise in the mean scores for students in the context group between the two years of the study, an almost identical score for the

students in the full-strategy group, and a notable drop in the mean scores for participants in the non-strategy group. This implies that there was a significant improvement that took place for those students in the context group.

In order to examine any further ramifications of these findings I submitted the data to an additional evaluation. As the design made use of three groups, I created two new variables in order to compare and contrast the two different treatment groups. The non-strategy group had served as the control group throughout the experiment because no direct strategy instruction had been given to this group throughout the two years of the study. The first research question (2.6) sought to determine whether any observable effect occurred between the groups that received VLS instruction and the group that had not. Thus, a variable that included a combination of the context and non-strategy groups was compared with a combination of the full- and non-strategy groups so as to address this question per the results of the eighth grade test data.

In order to ascertain where the variation between group scores as indicated by the K-W test occurred, Mann-Whitney tests (M-W tests) were used. M-W tests are a non-parametric *post hoc* procedure used to provide greater clarity as to where the main differences existed between the group scores. A *Bonferroni* correction (Field, 2005) was applied to the critical value to avoid Type I errors so that all effects are reported at a .025 level ($.05/2 = .025$).

M-W test analysis of the eighth grade data found a difference between mean scores at a significant level for both the control and context group ($U = .000$; $p > .025$), and the control and full strategy group ($U = .016$; $p > .025$). The effect sizes calculated for these two groups were found to present a large representation ($r = .58$) for the control and

context groups, and a slightly larger than medium effect ($r = .35$) for the control and full strategy groups. According to Field (2005), effect sizes provide an objective and standardized measure of the strength of the relationship between the variables manipulated throughout a given study. He defines a large effect as accounting for 25% of the variance at .50, a medium effect as accounting for 9% of the variance at .30, and a small effect for 1% at .10.

These findings would indicate that there was a statistically significant difference in scores attributable to the different strategy treatments in relation to the control group, i.e., the performance of both treatment groups was superior to that of the control group. However, the findings indicate that the greatest gain in long-term vocabulary retention occurred with the students in the contextual-based strategy group. The preliminary findings obtained from this initial analysis suggest that a contextual approach may provide greater success on a multiple-choice structured test as used with participants in this study. This question addresses one of the main focuses of this study, and is revisited in greater detail in the discussion chapter.

4.2 Analysis of the seventh and eighth grade quizzes

As previously discussed (3.6.2), students received weekly vocabulary quizzes that assessed their retention of vocabulary items studied during the previous week. Retention here refers to words students were able to either translate from Spanish to English, English to Spanish or match with a translation equivalent. Five different structural designs were used to examine student achievement during the first year: (a) L2-L1 translation (Quizzes 1, 2), (b) L1-L2 translation (Quiz 3), (c) matching (Quiz 4), (d)

multiple choice (Quizzes 6, 7, 8, 10), and (e) a combination of two different constructs (Quizzes 5, 9).

The first two quizzes examine student learning of the basic vocabulary found in their textbooks and are representative of student achievement during the first few months of the study. These initial two quizzes made use of words that were either concrete or cognates. The remaining quizzes are representative of a continuum of student progress in learning word family vocabulary which involved sample words taken from nouns, verbs, adjectives, and adverbs. The ten quizzes selected from the eighth grade battery were included based on the following criteria:

- (1) quizzes needed to have a construct that was similar to that of the seventh grade quizzes, and
- (2) quizzes needed to have been given at a similar period of time as the one with which it was compared for purposes of making cross-sectional checks of vocabulary growth throughout differing intervals of time.

For example, the translation structure of L2-L1 as found in quizzes 1 and 2 of the first year were matched with the eighth grade quizzes 11 and 12; each of these sets was given during the fall of both the seventh and eighth grade years; the L1-L2 translation quiz 3 matched with quiz 13 and was implemented approximately two to three weeks later, etc. The sequential order of quiz implementation was maintained by notes kept by the researcher during the two year study.

In this section I first examine whether a combined VLS condition shows greater retention of vocabulary in comparison with a context and a non-strategy condition. As indicated in the previous section, on the eighth grade test greater improvement of

vocabulary recognition was obtained from the group that had received more contextual based strategies in comparison with the other two groups. In this section, the retention of vocabulary as assessed from week to week is examined to determine if this same phenomenon would occur on quiz data.

4.2.2 Will students in a memory and contextual-based VLS condition demonstrate greater variation on vocabulary retention measures?

An analysis of the results of the quiz data provided a descriptive account of the three student groups' mean scores and the standard deviations. Each quiz had a maximum range of 20 to 30 possible points. A score of 1 was given for each correct answer and a 0 for those that were incorrect. Each group's mean scores and the reliability coefficients for each quiz were also examined in this phase of the analysis. A series of K-W tests on the quiz data found a difference between the scores at a statistical level on five of the seventh grade and five of the eighth grade quizzes. In Table 6 a presentation of the standard deviation, mean scores by group, quiz reliability scores and asymptotic significance of the *H* statistic for each of these quizzes is supplied.

Table 6. Results of the seventh and eighth grade quizzes

Source	d.f.	S.D.	<u>Means</u> <u>Scores</u> <u>No Strategy</u> <u>Group</u>	<u>Contextual</u> <u>Strategies</u> <u>Group</u>	<u>Full</u> <u>Strategies</u> <u>Group</u>	<u>Reliability</u> <u>Scores</u>	<u>H</u> <u>Statistic</u>
<u>Seventh Grade</u> <u>Quizzes</u>							
Quiz 2 (30)	2	2.0	20.0	21.0	26.0	.42	.000
Quiz 4 (20)	2	5.14	14.0	20.0	21.0	.78	.005
Quiz 7 (30)	2	5.23	26.1	26.0	26.4	.57	.000
Quiz 8 (25)	2	4.4	27.1	17.0	26.3	.40	.000
Quiz 9 (25)	2	3.09	18.1	19.6	21.4	.40	.000
<u>Eighth grade</u>							
Quiz 12 (30)	2	5.14	25.2	16.8	25.7	.42	.000
Quiz 14 (20)	2	3.61	27.1	26.4	29.4	.44	.002
Quiz 17 (30)	2	4.16	17.3	20.1	22.6	.72	.000
Quiz 18 (25)	2	4.70	25.6	19.6	18.0	.68	.000
Quiz 19 (25)	2	2.29	13.3	12.9	13.1	.69	.000

Note. Values enclosed in parenthesis represent total number of possible points per quiz. Adapted from "Discovering Statistics Using SPSS," by A. Field, 2005, SAGE publications, p. 549.

The quiz results from the two years of the study indicate that for the students in the full-strategy group, those students who had received a combination of cognitive and semantically based strategies, there was a more positive short-term benefit in their overall improvement on the weekly quizzes as compared with the context-based and non-strategy groups. For example, while there was a minimal difference between the context-based and non-strategy groups on three of the quizzes taken during the first and second year of the study (see quizzes two, nine, and seventeen), there was also a notable difference in the gains of the non-strategy group in their overall improvement in comparison with the context-based strategy group on three of the other quizzes (quizzes eight, twelve, and eighteen).

In contrast, the full-strategy group did notably better on five of the ten quizzes (quizzes two, four, nine, fourteen, and seventeen), and numerically better on two more (quizzes seven and twelve). Only on quiz eighteen was there any notable difference between the non-strategy and full-strategy groups, with the non-strategy group performing better. These findings would imply that there was a short-term positive benefit gained through the use of the cognitive processing strategies.

There were, then, notable gains obtained by the full-strategy group, which used cognitive processing and semantically based strategies in addition to contextual strategies in the classroom. These results suggest, however, that this improvement was limited to a short-term boost in the week to week quiz scores. Whereas students in this group achieved notable gains on these weekly measures, there was a more notable gain by students in the contextual-based strategy group on the comprehensive vocabulary test indicating that explicit focus given the context aspects of word learning provides a long-

term retention of vocabulary. The ramifications of these findings are examined in greater detail in the next chapter.

4.3 What VLS did students use while taking the comprehensive vocabulary tests?

Strategy use during the tests was elicited by means of a series of three questions that requested students to reflect upon what they had done to complete the questions on the test, and what procedures they had used to complete the test, and what procedures they had used to answer simple and difficult questions (see 3.2).

The three questions are listed below:

1). I used the following strategy (or strategies) to complete this test.

a). _____ b). _____ c). _____

2). I was able to determine the answer for easier questions by ...

3). I was able to solve the answer for more difficult questions by ...

A list of 30 different vocabulary strategies was obtained from the data provided by participants to these questions. Strategies included those associated with a focus on the form of a word, as for example, “I look at root words,” or “I looked at words inside of words.” Schmitt (2001) classifies these strategies as “Determinative strategies” because they relate to what learners do when they first encounter an unknown-vocabulary word as well as what they do as a follow up exercise to help maintain words previously learned.

Other strategies were related to some form of a memory based strategy. These strategies rely on such techniques as what a learner has previously acquired, as well as visual imaging of the meaning of a word. Samples of this strategy are found in student responses such as “I used my previous knowledge of the words,” “I looked for words I already knew,” and “I made a mental image of the words.” Another category that

emerged from this data incorporated features that are generally associated with inference strategies. However, in addition to the use of context to assist making an educated guess, there was something more involved. This *something more* included a preplanned or organizational approach to inferring word meaning. These strategies also entail processes that students use to determine how much they already know about the word and how to best organize their approach to a given task, such as a vocabulary test. Strategies found to represent this approach are found in samples such as “I skimmed the sentences for words I could recognize,” and “I looked for whatever made sense in the sentence.” Schmitt (2001) has argued that this particular category has a close affinity to “Metacognitive strategies” as it pertains to the need of the learner to pay selective attention to special aspects of a given task and requires that the learner evaluate or check his or her comprehension of a given context or activity that has been completed. As indicated above, this strategy type relates to a need for making an organized plan for further repetition, rehearsal, and review of the new and already-learned vocabulary for future use.

In response to the questionnaire, students were, in a sense, reporting on the strategies they used to determine or make an educated guess as to the meaning of the sentence. In Table 7 I provide a sample of the strategies obtained from student responses, and the categories to which they were assigned by the two raters. As indicated, three main strategy categories were found to represent the approaches the students used to complete the two comprehensive vocabulary tests.

Table 7. Student Test-taking Strategies

<i>Strategy Categories:</i>		
Determination (DET)	Memory (MEM)	Metacognitive (META)
<ul style="list-style-type: none"> *I looked at word roots *I used cognates *I eliminated wrong answers *I used word endings *I used gender of nouns *I looked for sentence clues *I translated *I looked for words inside of words *I looked at masculine and feminine markers *I looked at verb conjugations *I crossed out wrong answers *I looked for parts of speech *I used the word bases *I matched words with endings *I used word forms * I looked at the words around the words 	<ul style="list-style-type: none"> *I used previous knowledge *I looked for antonyms and synonyms *I looked for what made sense *I made a mental image of the words *I looked for word families I could identify *I looked for word groups 	<ul style="list-style-type: none"> *I reread the sentences to myself to see if I understood them *I put words in a blank and said them to myself *I sounded out the words to find out if I knew them *I skimmed the sentences to look for familiar words *I skipped what I didn't understand and focused on what I knew *I skipped unknown words and looked for those I could identify

Note. Adapted from “Vocabulary: Description, Acquisition, and Pedagogy” by N. Schmitt, and M. McCarthy, 2001, *Cambridge*, pp. 199-227.

After the strategies were coded and assigned to a strategy category, their frequency of use was tabulated to determine which strategy type was most prevalent among the participants in each of the three study groups (3.3.3). I first tabulated the strategies as derived from the seventh grade test instrument and then those obtained from the eighth grade test. The strategy categories were weighted for an analysis of the

frequency of use, and a score of 3 was given to DET strategies, a 2 to MEM, and a 1 to META.

My purpose in this analysis was to determine whether any changes in strategy preference had occurred during the two year period of the study and if there were any glaring differences in strategy use between the groups. I first examined the overall use of strategies in order to determine if there was a particular strategy that was used more frequently than another. The strategy types were then ranked for each of the three groups according to the percentage of frequency of use from the most to the least used.

The analysis of the strategy data indicated that there was a consistent pattern of use of determinative strategies as evidenced from Figures 2 through 7 below. This may be interpreted as evidence that when participants in the current study encountered sentences that contained a combination of previously-learned and lesser-known vocabulary items there was a strong tendency to rely on strategies that facilitated recognition of words or guessing unknown word meaning based on their knowledge of the structure of the language, the use of L1 cognates, and an analysis of base words and suffixes to complete the sentence with the correct word choice.

For the seventh grade data, the most frequently used strategy category was DET as students claimed to have used some form of guessing or recognition focusing on base word analysis, L1 cognates, or reliance on familiar words that surrounded unknown words to complete the test (Question 1) and for solving the answer for more difficult questions (Question 3). The findings show that overall over 70% of all strategies used to complete the pre- and posttests were related in some way to base word analysis, reliance on L1 cognates and/or other contextual clues to complete these tests.

The main exception to this finding was reliance on previous knowledge, i.e. MEM strategies (Question 2) for words that pertained to what students perceived to be “easier questions” on the pre-test. Although this particular strategy was preferred by all participants on the pre-test, student responses gathered after the posttest indicate that for those questions perceived to be “easier,” there was a diminished use of this strategy category during the posttest. Further analysis of the data obtained after the posttest show that determination strategies played a significant role for participants in completing the test (Question 1: DET 64%) and to answer more difficult questions (Question 3: DET 63%).

In Figures 2 through 7, below, I show an overview of these findings which highlight the most salient strategy that was applied by all participants from the three groups in response to the three questions after completion of the pre- and posttests. Figures 2 and 3 present the frequency of the three main strategy categories for each test.

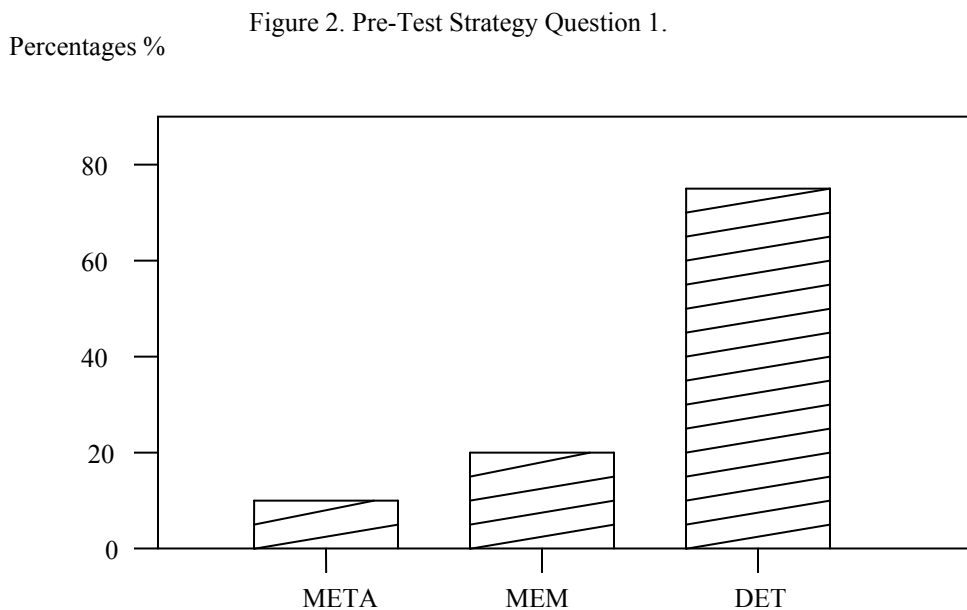
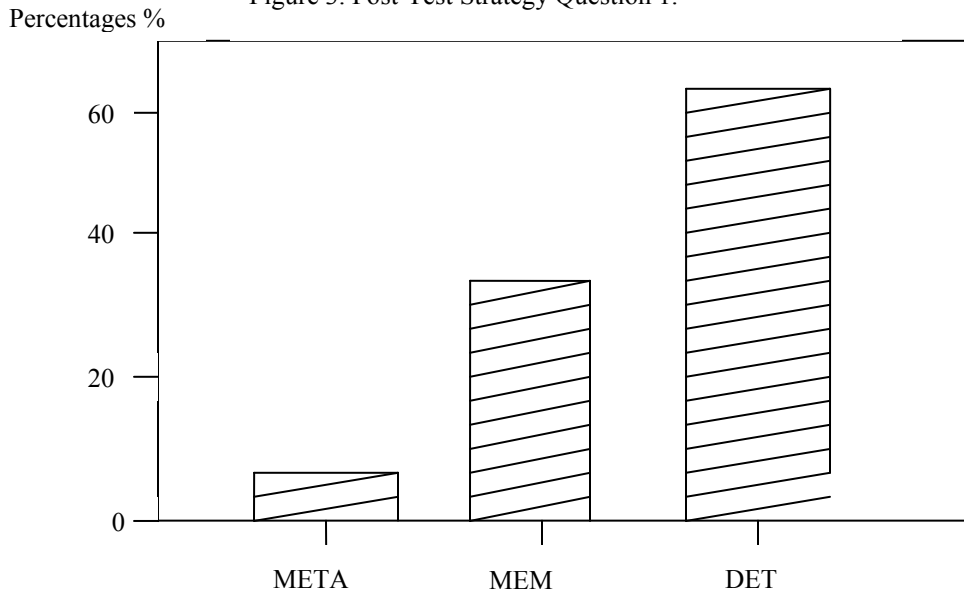


Figure 3. Post-Test Strategy Question 1.



A comparison of the strategies used to facilitate completion of the pre- and posttests as indicated in Figures 2 and 3 does indicate a major reliance on DET strategies to complete both tests. However, this comparison would also show that between the first and second year of the study there was also an increase in the frequency of MEM strategies and that the overall reliance on DET declined. For example, students claimed to have relied on MEM strategies only 20% during their taking of the pre-test and a stronger reliance on this strategy (40%) to complete the posttest. In contrast, DET strategies accounted for almost 80% of student strategy use on the pre-test, with a diminished use of it (60%) during the posttest. This may suggest that after considerable rehearsal and review of the words in class, students were more confident of their previous knowledge and comprehension of the words and sentence structures that they encountered on the posttest.

While the information provided in Figures 2 and 3, above, and Figures 4 through 7, below, show evidence of overall frequencies of strategy use by participants in all three groups, a more detailed breakdown of the data by individual groups in Tables 8, 9, and 10, seen below, highlights where specific differences of strategy use occurred.

Table 8. Ranking of strategies used by groups on Question 1

Groups	Pre-test (Q1)	Ranking of Most to Least Used Strategies	Frequency of Use by Percentage %	Mean	S.D.
<i>No Strategies Group</i>		DET	81.0	2.6	.69
		MEM	19.0		
		META	--		
<i>Contextual Strategies Group</i>		DET	68.0	2.81	.40
		MEM	22.0		
		META	10.0		
<i>Full-Strategy Group</i>		DET	61.0	2.67	.56
		MEM	29.0		
		META	10.0		
<i>No Strategies Group</i>	Post-test (Q1)	DET	62.0	2.63	.50
		MEM	38.0		
		META	--		
<i>Contextual Strategies Group</i>		DET	68.0	2.61	.63
		MEM	25.0		
		META	7.0		
<i>Full-Strategy Group</i>		DET	87.0	2.63	.49
		MEM	8.0		
		META	5.0		

One feature that becomes clear in this analysis is the apparent lack of any META strategies by the non-strategy group during the pre-and posttest. This would lead to the conclusion that students in this group did not apply any pre-planned or organized strategic approach in their attempt to complete the test. Thus, rather than attempting to

negotiate either easy or difficult questions with a predetermined methodology, they resorted to completing the test by dissecting the word choices into their constituent parts. This finding would agree with Pichette's (2006) claim that beginning learners tend to address words found in context by means of analysis of a word's formal features. In contrast, both students in the context-strategy group and those in the full-strategy group attested to at least some use of an organizational approach to the tests which facilitated their responses to test questions perceived to be easier and more difficult. Another comparison that may be made between groups as is evidenced from this data was a diminished reliance on DET strategies for members of the non-strategy group between years one and two of the study (pre-test: 81%; posttest: 62%). While this strategy diminished for the non-strategy group, there was an equal use of it by members of the context strategy group during both years of the study (pre-test 68%; posttest: 68%) and an increase in this approach for members of the full-strategy group (pre-test: 61%; posttest: 87%).

As seen in Figures 4 and 5, students claimed to rely to a larger degree on their previous knowledge of the words that were included in those questions that they considered to be "easier" than other questions on the pre-test (Question 2). Almost 60% of all the strategies used by the participants to address these easier questions on the pre-test were linked to some form of MEM based strategies. In contrast, this dependence on MEM was diminished during the posttest, as the frequency of this strategic category was found to only account for some 40% of the overall total. Although the students did in fact rely on their previous knowledge of the words on these easier questions, they also

claimed that they had relied on base word analysis, L1 cognates, and context clues to address these questions on the posttest.

Figure 4. Pre-Test Question 2.

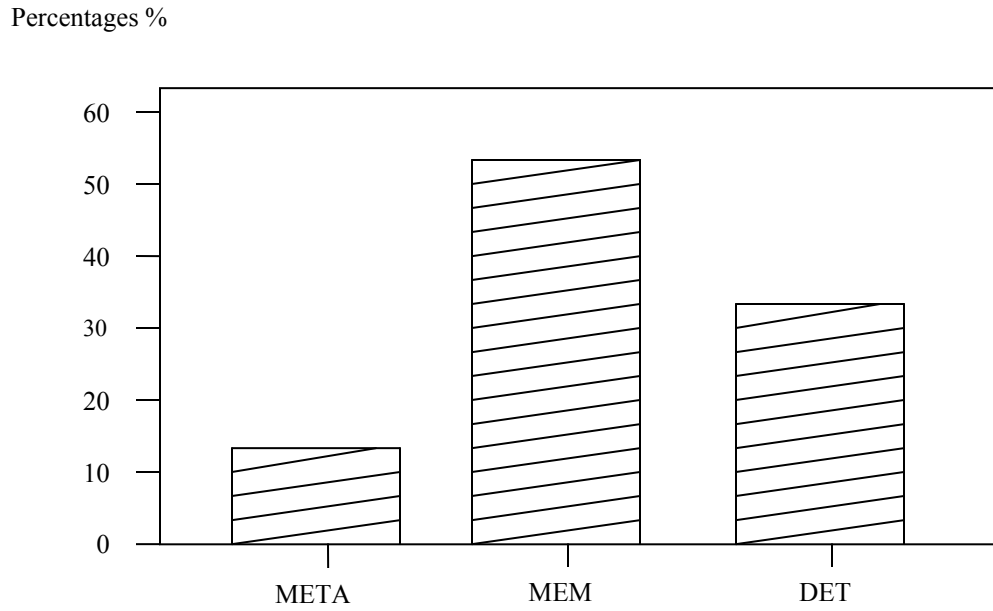
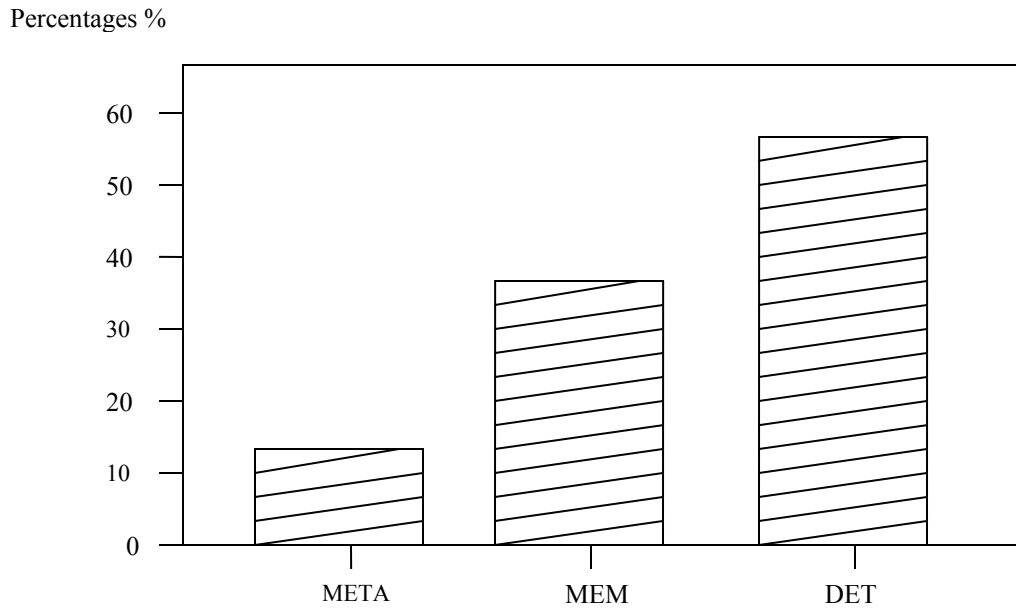


Figure 5. Post-Test Question 2.



The data gathered from the individual groups as shown in Table 9 exemplifies how each group claimed to have answered easier questions (Question 2). For the non-strategy and context strategy groups there was a higher frequency of the use of MEM strategies to complete the pre-test whereas there was an almost identical use of both MEM (44%) and DET (42%) by student members of the full-strategy group.

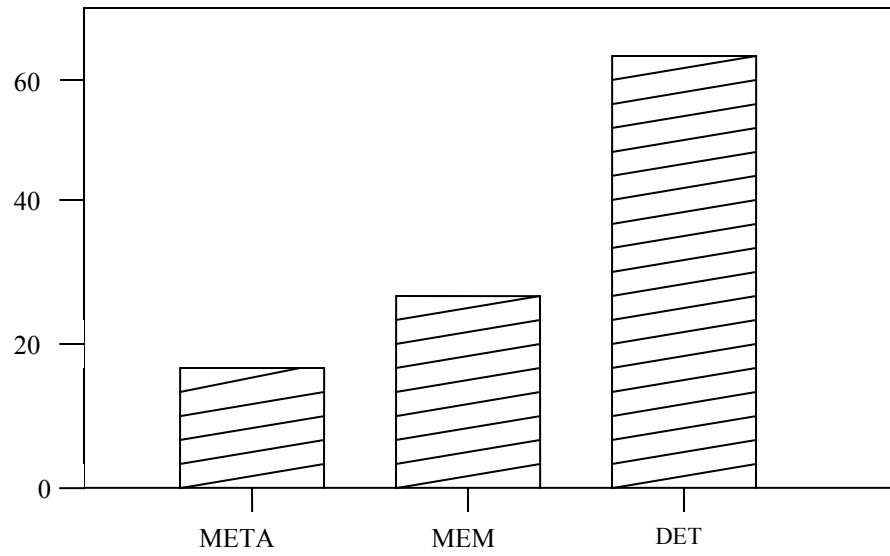
Table 9. Ranking of strategies used by groups on Question 2

Groups	Pre-test (Q2)	Ranking of Most to Least Used Strategies	Frequency of Use by Percentage		
			Mean	S.D.	%
<i>No Strategies Group</i>		MEM	2.14	.65	56.0
		DET			25.0
		META			19.0
<i>Contextual Strategies Group</i>		MEM	2.06	.68	57.0
		DET			29.0
		META			14.0
<i>Full-Strategy Group</i>		MEM	2.37	.63	44.0
		DET			42.0
		META			14.0
<i>No Strategies Group</i>	Post-test (Q2)	DET	2.75	.447	75.0
		MEM			25.0
		META			--
<i>Contextual Strategies Group</i>		DET	2.46	.693	57.0
		MEM			32.0
		META			11.0
<i>Full-Strategy Group</i>		DET	2.19	.74	47.0
		MEM			37.0
		META			16.0

Figures 6 and 7 show the data elicited from Question 3, which asked participants what strategy they had used to help them answer more “difficult questions.”

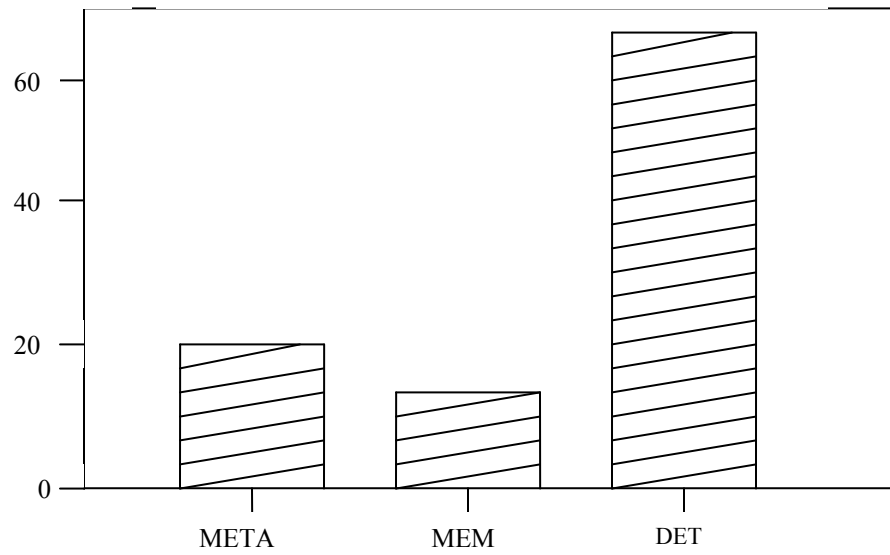
Percentages %

Figure 6. Pre-Test Strategy Question 3.



Percentages %

Figure 7. Post-Test Strategy Question 3.



Students in all three groups reported that they had depended on base word analysis, L1 cognates, and context clues to help them solve these questions. This category accounts for almost 65-70 % of the strategy use by all participants. Thus, when they had trouble identifying the structural properties of a word or sentence that pertained to a “more difficult” question, the students resorted to some form of word analysis, e.g. breaking the word down to its constituent parts, in order to make a possible inference of the word’s meaning, and its grammatical function in the sentence.

In addition to this strategy, the data also indicates that there was a slight increase in the frequency of META strategies between the two tests. Although this increase is minimal (2-4%), it may be indicative of a development in strategy use by students during the two years of the study.

A breakdown of the data by individual groups in response to questions perceived to be difficult as seen in table 10 shows that a strong dependence on word analysis (69%) was paramount for students in the non-strategy group to complete those questions perceived to be difficult.

Table 10. Ranking of strategies used by groups on Question 3

Groups	Pre-test (Q3)	Ranking of Most to Least Used Strategies	Frequency of Use by Percentage %	Mean	<u>S.D.</u>
<i>No Strategies Group</i>		DET	88.0	2.39	.74
		MEM	12.0		
		META	--		
<i>Contextual Strategies Group</i>		DET	54.0	2.88	.74
		MEM	32.0		
		META	14.0		
<i>Full- Strategy Group</i>		DET	57.0	2.37	.79
		MEM	26.0		
		META	17.0		
	Post- test (Q3)				
<i>No Strategies Group</i>		DET	69.0	2.55	.73
		MEM	19.0		
		META	12.0		
<i>Contextual Strategies Group</i>		DET	75.0	2.61	.74
		MEM	11.0		
		META	14.0		
<i>Full- Strategy Group</i>		DET	56.0	2.26	.90
		MEM	18.0		
		META	26.0		

There is also evidence that students in this group used some form of pre-planned, organized strategic approach (MET) to solve what they perceived to be more difficult questions. What is of interest here, is that the appearance of this strategy category only occurs in the data after the posttest, and that it was appropriated by these students to facilitate their ability to answer those questions they perceived to be “difficult.” The students in this group made some formal pre-planned effort in order to tackle these questions. Their use of this type of approach was almost equal (12%) to that of the context-based strategy group (14%).

For participants in the context and full-strategy groups, the frequency of DET strategies ranked them as being used the most. Both reported using some type of META strategies to complete these more difficult questions. In particular, there is an apparent increase in this strategic approach among members of the full-strategy group. The frequency of the use of this strategy category almost doubled between the two years of the study (pre-test: 17%; posttest: 26%).

The findings obtained from the pre- and posttest questionnaires would appear to suggest that students responded to questions perceived to be “easier (Question 2)” with a strong reliance on previous knowledge, and some form of determinative strategy. Those questions that students perceived to be more “difficult (Question 3)” were on the other hand approached with a stronger reliance on base word analysis, L1 cognates, or some form of context clues which helped students arrive at what they deemed to be the correct word choice.

4.4 Summary of the findings in this chapter

Analysis of the data indicated that students in the context group performed at a higher level than students in the full-strategy group. Both the full-strategy and the context group out-performed the non-strategy group as indicated by the Kruskal-Wallis test results, but the context group did so at a higher level. Also, and perhaps more importantly, as indicated by the results of the Kruskal-Wallis test, the context group improved significantly in their own overall results between years one and two, while the full-strategy group did not.

On the other hand, an investigation of the results obtained from the vocabulary quizzes indicated that there was a short-term benefit derived from the use of cognitive

processing and semantically based vocabulary learning strategies for students in the full-strategy group. Exploration of this data showed that on five of the ten quizzes there was a notable difference between student scores that implied that students in the full-strategy group had improved in their retention of the Spanish vocabulary assigned from week to week. The students in this group also performed well on two additional quizzes. They were outperformed by students of the other groups on only three of the ten quizzes.

An analysis of the strategies used by participants to complete the two tests suggests that although students used memory, that is, their former knowledge of the words learned in class to complete questions perceived to be easier, the most frequently reported strategy for all groups is some form of determinative word analysis. There was a strong dependency on determinative, or grammatical analysis by participants overall and to answer difficult questions during both years of the study. In this study, determinative analysis has been used as part of the contextual approach, by both context and full-strategy groups, to assist in the placement and interpretation of words in sentences. It is significant that reported attempts to use this strategy decreased overall and for the more difficult questions for members of the non-strategy group from year one to year two while for participants in the context and full-strategy groups it remains the same or increases from the pre- to the posttest. This suggests that these groups actually recognize that they are using this strategy to understand words in sentences. The students in the context group indicate that this approach, which was part of their contextual strategy, was used most for the most difficult questions. The full-strategy group reported increased use of META strategies for these questions.

Based on these results, there was evidence of a variegated use of strategies among all three study groups, but a more increased level of multiple approaches among students in the full-strategy group. Although there would appear to have been more openness and willingness on the part of the students in this group to use a variegated strategic approach to complete the two tests, they did not show greater improvement in their vocabulary recognition of the Spanish words on the posttest in comparison with the context-based strategy group.

In view of this discovery, a more descriptive analysis that explores why the full-strategy group that received a combination of depth-of-processing and semantic processing strategies along with base word analysis appeared to have less improvement on the post-test measure than students in the context-based group is warranted. In Chapter 5, I present a more delineated interpretation of these outcomes, as well as a summary of the limitations of the present study, implications for pedagogy, and some suggestions for future research.

CHAPTER 5

DISCUSSION AND CONCLUSION

The research questions investigated in this study sought to determine whether VLS instruction would affect the L2 vocabulary retention of middle-school students, and if so, which strategies would be found to be most beneficial (2.6). Exploration of these questions was accomplished by means of examining the effect of three differing forms of vocabulary strategy treatment among three different sections of students. The first group received a combination of contextual and non-contextual vocabulary learning strategies, that is, strategies linked to the placing of words in context in sentences and to the identification of word bases and morphologically related forms to assist in sentence placement, on the one hand, and memory techniques such as the keyword method and semantic processing, on the other; the second group received contextually based vocabulary learning strategies; the third group was not provided any explicit vocabulary strategy instruction. Assessment of the effect of the three treatment conditions included analysis of quiz and test scores, and examination of student self-report data elicited from an open-ended questionnaire and student responses to prompts in their learning journals.

In Chapter 4, I presented the results obtained from the quiz and test measures, and supplied an overview of the types of strategies participants in all three groups had reported to have used to complete the tests. In this chapter, I evaluate the resultant outcomes in relation to the full and context-based strategy groups. In my discussion of these findings I also provide numerous samples of the attitudes students in the full-strategy group reported in their language learning dialogue journals.

The results derived from the quiz and testing instruments indicated that after two years of vocabulary learning strategy treatment students in the full-strategy group had improved their Spanish vocabulary retention ($U = .016$; $p > .025$) in relation to the progress of the control group. This would suggest that there has been some benefit derived from the explicit exposure to multiple strategies that these students received over the two years of treatment. However, there was no overall improvement from the year-one (seventh grade) to the year-two (eighth grade) scores for this group. More significant results associated with the full-strategy approach were related to the improved gains on a number of short-term vocabulary quizzes.

Although these findings were somewhat positive, there was a higher level of improvement in vocabulary retention as measured by the tests for the context-based group in relation to the control group, where the differences between mean scores showed a greater level of statistical significance ($U = .000$; $p > .025$). The context group also improved markedly in its overall tests scores from the year-one to the year-two test. The outcomes indicate that a contextual approach limited in its scope to having students use the assigned target language words to create simple sentences, and that provided an implicit focus on Spanish derivative suffixes had a more positive long-term effect for the students in the current study. However, the short-term results were less positive than those of the full-strategy group.

Another finding of this research has to do with the test taking strategies used by students to engage the two comprehensive vocabulary tests. Analysis of the data elicited from student responses on an open-ended questionnaire given after the tests had been

completed indicated that participants in all three groups attested to a reliance on word and sentence analysis to help them negotiate questions encountered on the two tests.

In this chapter an attempt is made to provide a plausible explanation for the above findings. The layout of the chapter will follow this sequence. First, I attempt to provide an interpretation of the improved level of success on the posttest by students in the context strategy group. In this discussion I present the connection of this particular finding with the literature.

Secondly, I explore some possible explanations for why the results for the full-strategy group were not more positive. In this discussion I also examine some of the ramifications of the short-term benefit that students in this group experienced on the weekly quizzes. In particular, I compare these results with other studies that have made similar conclusions. Apart from these elements I also analyze some of the citations derived from the vocabulary journals kept by participants in the full-strategy study group. In this section particular attention is given to the intuitive reaction students exhibited to some of the strategies to which they were introduced. This information serves as a signpost of student feelings toward strategies and may suggest some reasons for their lower performance on the posttest measure.

Subsequent to these areas of interest I explore some of the limitations of the present study, make some suggestions for future research, and supply some concluding remarks as related to the practical implications this study may have for Spanish vocabulary learning and pedagogy.

5.1 What may have contributed to the improved level of success for students in the context-based strategy condition?

As reported on in a previous section (2.1), new learners of an L2 are heavily dependent on memory and rehearsal strategies to become more and more proficient in their second language learning. In particular, these tendencies have been linked to the tendency of new learners to focus primarily on the forms of the new words learned and to rely heavily upon quickly learned chunks of speech that promote acquisition of basic phrases and segments of the target language. Similarly, research would also indicate that there is a preference for new L2 learners to make use of approaches that promote expediency for the memorization of new words (2.1).

For students in the present study the implications of these considerations may provide some indication for the increased level of improvement on the posttest for students in the context strategy group. As previously stated (3.2.2), this group had two main strategic approaches they followed to master the vocabulary. First, the context group used their glossary or a bilingual dictionary to locate other members of a particular word family, based on the head-word, and then used several of these newly found words to make up creative sentences which were assigned as homework or class work. Time was then given to reviewing some of the samples and focus was given to such grammatical features as agreement between subject, verb, and adjectives. In addition, students looked for clues as for example noun markers and base word suffixes that helped them determine the correct structure of the sentences reviewed in class. Further elaboration of these activities was carried out as students collaborated with other students in dyads to use some of these words in sentences, in sentences in short role plays and

communicative activities. Qualitative research on learner collaboration and interaction with the target language has indicated that repetition of this type of context supplies a critical cognitive role in scaffolding, creating, and maintenance of language use and study which often leads to an improvement in the performance proficiency of those areas that have been rehearsed and to an attainment of language learning goals held by the learner (Antón, DiCamilia, and Lantolf, 2004).

Hence, the focus given in the classroom on the formation of sentences in a collaborative setting may have provided this group an effective analytical approach for word comprehension and basic sentence structures that were essential toward completion of the tests. Further elaboration of this theme is related to research that indicates that the writing of sentences to define a given set of new L2 vocabulary words can contribute to the overall maximized recall of those words and facilitate establishment of memory cues for their orthographical representation (Cohen, 1994; Thomas and Dieter, 1997; Willoughby, et al., 2000). According to Nation (2001) one important component for deepening a learner's L2 word knowledge and retention is by consolidating these words through repetition and associations with previously learned words and concepts. In a similar way, Borer (2007) adds that new L2 words learned in an environment where an additional focus is placed on more elaborative and semantic relationships between the related structures of words, as in for example, writing creative sentences, will over time, lead to a deeper and long-term retention of those words.

My approach in application of this more contextual approach was based on a framework that was grounded in both pedagogy and theory. It was pedagogical in that the establishment of language learning skills in the classroom was considered as an essential

tenet of my instructional practices. Viewed in this way, the repetition of the practice of sentence formation led to learner improvement in the quality of performance of that skill eventually leading to its becoming more automatic by the learners (Ellis, 1994a; Ur, 2007).

Apart from these pedagogical considerations, a more theoretical approach as derived from the literature would argue that formal instruction directed at relatively easy grammatical roles pertaining to the various components of Spanish subject and verb agreement as well as the agreement features between noun and adjectives leads to a more successful development of implicit knowledge of these forms (Ellis, 1997). In other words, students tend to focus on an analysis of the affixes and base words pertaining to the various word families learned and used in sentences as opposed to an isolated focus on verbal inflection, tense, and mood. Evidence of this in the current research appears in the strong tendency by students in the context-based strategy group to apply more determination strategies in their attempts to select the best perceived word choice while completing the vocabulary tests. The responses obtained from the students to the open-ended questionnaires after completion of the testing assessments indicates that students in this group utilized word-endings, suffixes, gender markers, and other strategies linked to this strategy category. The data shows that for participants in this group there was a consistent pattern of usage that accounted for between 60-70% of the strategies applied on almost all the responses to the questionnaire (see Tables 8-10 in section 4.3) and was particularly high in responses related to difficult questions. Application of a more focused approach to the grammatical features of the words used in the study, features such as shared bases and derivations, may have contributed to the student's ability to place the

correct word into the sentences based on what was perceived to be a specific semantical and/or grammatical relationship with the other words in the sentence.

Ellis (1999) also argues that the knowledge of these grammatical features can lead to the noticing of those features in the input by the learner, with the subsequent addition of acquiring them implicitly. He bases his argument on several studies that compared students who were overtly given feature-focused instruction on particular grammatical features and functions as compared to students who were not given this instruction. These experiments showed that students in a more overt instructional condition were found to do better on comprehensive test measures that assessed the features reviewed in class.

Repetition of these features can promote more long-term retention and proficiency of their use. Trofimovich and Gatburton (2006) have shown that the manner in which a word is initially encoded and subsequently rehearsed over an extended period of time plays a significant role in the acquisition and memory of that word and is a contributory factor in its greater availability for relearning at a future period of time.

In addition, repetition of a particular grammatical or vocabulary feature can also provide learners both a qualitative and quantitative means with which to increase their overall vocabulary knowledge of the target language (Nation, 2001). Here qualitative would refer to a strengthening of the learner's comprehension of the vocabulary, as the repetitive use of the most frequent affixes would solidify student recognition of the characteristics related to word class, and quantitative, as the acquisition of these features would provide a means with which to guess unknown word meanings that share the same affixes in a variety of contexts (see also O'Dell, 2001). Further support related to the benefit of a repetitive reinforcement of morphological analysis is found in Morin (2003).

She writes that initial gains in the productive knowledge of the words used in her study as assessed by test measures were minimal for first-semester students, but that there were notable differences in the gains between second-semester students in the control and experimental groups. Her findings suggest that the processing of morphological features; base words and their derivatives, requires a long-term commitment on the part of both the teacher and students. This long-term benefit has not always been factored in as a variable in studies that have compared cognitive and semantic strategy conditions. For example, in numerous studies where the keyword technique is compared to a contextual method students are tested immediately after the treatment (Wang and Thomas, 2000). After a brief period of treatment, these types of strategies that focus on isolated word meanings tend to show greater levels of retention. However, when testing is delayed over a longer period of time students in a contextual setting appear to benefit most (Borer, 2007).

Thus, the focus given to the use of words and grammatical features in the context of sentences with students in this particular learning condition may have consolidated the learning of these features and improved the overall improvement on the quiz and test assessments. The point to be made from this interpretation is purely conjectural at best and verification of it would require further exploration that would include other interactive language learning contexts. Such an exploration would perhaps shed more light on other factors that may have played a crucial role in the findings.

My overall goal with this group of students was not to establish nor confirm a particular theory built around the framework of practice as a learning skill, nor explore if those features reviewed in class were implicitly acquired. The premise of implicit acquisition of language features as a consequence of repetition and practice activities has

met with considerable debate in the literature (Paradis, 1994) and was beyond the scope of the present study. In contrast, my main objective was more pedagogically based following what Richards and Lockhart (1995) call a use of guided practice and rehearsal activities that can provide learners a degree of control over their performance through the use of exemplars and samples reviewed in class.

What is of most interest in this discussion is why a group that received this same focus on context and was additionally supplied a focus on both memory and more depth-of-processing strategies, was unable to achieve an even greater level of improvement on the comprehensive test given during the second year of the study. This question is explored in the next section.

5.2 What factors may have led to the more limited level of benefit found for participants in the full-strategy group?

As mentioned earlier (2.5) my expectation of the outcomes of this study was based primarily on earlier studies that have indicated that a combinational approach to strategy instruction would promote greater levels of vocabulary retention (see discussion in section 2.4). Although a number of these studies dealt with older learners, the mixed age-group design used by Rodriguez and Sadowski (2000) to analyze the effect of a combined strategy condition that included semantic processing and more in-depth processing strategies in comparison with rote-learning strategies to learn L2 vocabulary showed young adolescents using a combination of varied strategies experienced greater improvement in their vocabulary learning retention on testing instruments than students that belonged to the rote-learning condition. The fact that students in the full-strategy group achieved some level of improvement on the test measure and that they appeared to

have achieved notable gains on the vocabulary quizzes would indicate that something positive was indeed happening with their vocabulary learning, but that this was insufficient to promote longer-term retention of the word family words on the test.

As a consequence of these results, in this section, I explore some of the features that may have contributed to their limited level of improvement in long-term vocabulary retention. Of particular interest in this section is an examination of the student's attitudes toward the strategies and their application toward vocabulary learning as ascertained from the entries in the student dialogue journals.

5.2.2 What attitudes toward VLS did students convey in their language learning journals?

Borer (2007) argues that words decoded in short-term memory via shallow processing strategies (i.e., repetition of orthographic features) are poorly retained, whereas those processed semantically (where students must associate meaning with other words) are retained longer. Ellis (1995) supplies further support for this argument in his analysis of L2 vocabulary learning strategy research. He suggests a need for a distinction to be drawn between vocabulary learning strategies used to memorize isolated lexical items and those used to learn new words from context. According to his analysis, a combination of contextual and cognitive/semantically based strategies should promote greater gains for students on measures that assess both short-term (quizzes) and longer-term retention (tests) of L2 words. As a consequence of this premise, the question to be explored in this section pertains to why this proposed outcome did not occur for students in the full-strategy group.

Students in the full-strategy group were supplied the same degree of practice with creating sentences with word family vocabulary as participants in the context strategy group, as well as additional emphasis on base word analysis and extensive instruction and practice on “depth-of-processing strategies” (Schmitt, 2001). Although not encouraged for classroom use, a number of students in this group also prepared for vocabulary quizzes with flash cards and word lists. As I wanted students to focus more on using context and non-contextual strategies that involved a bit more processing I did not condone this approach.

A review of some studies of vocabulary learning strategies introduced in an L2 setting provides evidence of the positive effect of a cluster of VLS. However, one of the key variables implicit in these studies is the application of the strategies by the students who participate in the actual treatment group (Avila and Sadowski, 1996; Cohen, 1998; Ellis, 1995; Fan, 2004; Morin, 2003; Nation, 2001; Rodriguez and Sadowski, 2000; Schmitt and McCarthy, 2001; Zimmerman, 2000). When there is a limitation in the use of this variable or a reluctance to manipulate it by the strategy treatment group the study can at times be inconclusive.

For example, Chamot (2005), writes in her extensive review of strategy intervention studies that language students are generally willing to adapt or at least try out new strategies introduced in the language learning class, but in some cases exhibit a real hesitation and reluctance to use them in combination with what they are already doing to learn the target language. Further evidence of this tension is found in Sawyer and Ranta (2001) whose review of several intervention studies showed that in some cases learners resist what is perceived to be an extra burden or what they perceive to be a new or novel

strategy to learning the target language. Throughout the course of this study, my approach in trying to avoid these types of negative perceptions toward strategies was to introduce and then practice them until the students were comfortable with them. Students were supplied lots of positive feedback and encouragement. They were also encouraged to convey any frustrations or negative feelings that they may have had toward the strategies.

Although my intention was for them to utilize the strategies, I did not want there to be any overt pressure placed upon student behavior to the extent that they felt compelled to use them. This approach is in line with what Rodriguez and Sadowski (2000) call a “more relaxed condition” and is reflective of a language classroom where student learning styles and strategies are supported and encouraged.

The method employed to assess student reaction to the vocabulary strategy treatment was a learning journal in which students reported their opinions and reactions to a given strategy. These journals were maintained only by the students in the full-strategy group. Reports were often the result of a response to a series of prompts related to the strategies practiced in class (3.3.4). The typical format was to write a question prompt on the board or distribute a written directive that students were asked to address. Responses were collected on the assigned day and teacher feedback supplied on the comments received. At times these responses would lead to a larger discussion in the classroom. Although I did offer extra credit for completion of the journals and at times assigned them as homework, the return of these notebooks from students sporadic. For example, some students wrote extensively of their attitudes toward the strategies while others supplied a truncated phrase.

Perhaps one of the best examples relates to perceptions and attitudes of students toward their favorite learning strategies. Indicative of student sentiment at the end of the first and, later, at the end of the second year, the information supplies a number of features students identified as reflecting their personal approach to learning the vocabulary. The actual prompt from which this data was derived asked students to supply a response to the question, “*What has been your favorite VLS we have leaned in class?*”

Tabulation of the frequency of use of these strategies after the first year of the study revealed that the most frequently used strategies appropriated by students were the keyword method (31%), semantic mapping (28%), putting the words into sentences (13%), use of a bilingual dictionary (10%), and flash cards (10%). Other strategies mentioned by individual students showed a reliance on context, whereby the student skimmed over the words surrounding an unknown word, using an on-line translator, referral to the glossary in the textbook, using double-column notes, and asking peers to quiz them.

From the descriptions gathered over the first year a selection is given below which illustrates a student’s particular evaluation of certain strategic approaches. In the citations that follow, actual student names are replaced with a fictitious Spanish name in order keep the identity of the participants anonymous. For example, a number of students wrote out a description of their analysis of the keyword method. These selections reveal that there was both a positive, and at times, negative reaction to this approach:

Emilia: *“Who can ever forget any of the words with those silly images we learned in class?”*

Ignacio: *“I like keyword ‘cause it makes it easier for me to make a mental picture of the words.”*

Julio: *“I learn best when there is a picture that represents a word.”*

The student comments depicted here suggest that visual imagery and bizarre images supplied a valuable tool for these students to memorize the vocabulary associated with these images. For “Emilia” the identification and connection of certain words with “silly images” appears to have made a lasting impression.

In contrast to these more positive perceptions, some students felt that the keyword method distracted from their learning of the to-be-learned words. These responses suggest that visual images may not have been useful in supplying an acoustic link between the keyword and the to-be-learned-word.

María: *“Keyword doesn’t always make connections between the picture and the word meaning.”*

Claudia: *“Keyword can be a little distracting to word meaning.”*

Sergio: *“Keyword takes too much time to try and figure out.”*

In addition to the samples illustrating student perceptions of the keyword method, some students also reported on their attitudes towards semantic mapping. In most cases, students referred to this strategy as “word webs.” As found with the descriptions given about the keyword method, these descriptions reveal a positive and negative perception about this approach. In my presentation of these samples I supply some of the positive

comments first, followed by those that were less enthusiastic about the use of word webbing.

Mario: *“Word webs help me understand and make mental pictures of the associations between cognates, and other word family words.”*

Julia: *“This strategy makes it easy to put a group of words into a big web and study their familiar meanings all together.”*

These samples suggest that word webbing for some students facilitated the learning of multiple words and of a given word family because it supplied a visual format with which to make multiple connections and associations of the meaning of groups of words. This particular approach required time and effort on the part of the student to make these multiple associations and connections between words. Because of the extra effort needed to accomplish this some students were less enthusiastic about using a web to make connections between the words. For example:

Laura: *“This strategy was too time consuming.”*

Carlota: *“Semantic mapping doesn’t always provide an easy connection.”*

Héctor: *“Brainstorming to make connections between words requires hard work!”*

Given the extra effort that was required of students to either make a connection between a keyword and its to-be-learned equivalent or to make a word web with which to make associations some students indicated that they opted for strategies that required less time. In particular, the main approach that was used was making flash cards where the Spanish word was written on one side of a three by five card and the English meaning on the other. Apart from this approach some students just wanted to learn the words in their own way. Samples of these responses are illustrated in excerpts such as:

Amalia: *“I just study my flash cards.”*

Catalina: *“I review the flash cards and say the words to myself over and over. I like to do this before I go to bed so that the meaning sticks in my head better.”*

Lisa: *“If you want to just get to the meaning of a word, why go through all the stages to make a connection between a picture and a word’s meaning? Flash cards are so much more useful to get to the immediate meaning.”*

The personal approaches used by students are seen in the following excerpts:

Carla: *“I like to make up little jingles.”*

Sandra: *“I make up my own strategies, and like doing them on my own.”*

Carolina: *“I like studying in my room, and make up little jingles. I don’t need a picture or whatever to learn the words.”*

Ricardo: *“The easiest way to learn words is to just study your flash cards.”*

The student responses gathered during the first year of the study reveal that there were multiple approaches used by students in the full-strategy group to study vocabulary and make connections between the words reviewed in class. While some students chose to apply more depth-of-processing strategies and semantic processing, others opted for what they perceived to be simpler strategies or resorted to their own approaches to learn these words.

The use of multiple approaches to learn word meaning was also evident from the data gathered after the second year of the study. However, there is an indication that the initial enthusiasm toward such strategies as the keyword technique and semantic mapping had begun to wane, as they were replaced by approaches students considered to be easier and less time consuming. A review of the data gathered toward the end of the second year

suggests that students had become more independent in their preferences toward word learning and organized their learning according to what they perceived to be the simplest way to make connections with the words. The prompt again asked students to describe their favorite vocabulary learning strategy.

What is of most interest in review of this data is an almost complete reversal of the strategy use patterns that were indicative of the first year. For example, instead of a large percentage of students in the full-strategy group choosing the keyword method and semantic mapping as had been seen the previous year, there was an almost unanimous reliance on less in-depth strategies. This point becomes quite clear as flash cards were found to be of utmost importance among participants (43%) and a variety of repetition and rehearsal strategies accounted for another large portion of frequency of use (21%). These strategies included such rote-rehearsal techniques as repeating a word out loud, rewriting a word, making up a jingle, giving oneself a self-test, having parents test the student prior to the quiz, and studying a word list.

The frequency of use of the keyword technique was found to have diminished during the second year, with only 11% claiming to have used it, and only 7% to have used semantic mapping. Evidence of this limited use is found in some comments students supplied to the question prompt. Another feature that emerged from this data was a more open and honest description of the students in their attitudes toward the strategies that had been introduced in class. In some cases these comments are somewhat negative while in others the disfavor to them is framed in a more restrained manner. Presentation of this data follows the same format as that used with that reviewed in seventh grade. There were only a couple positive comments given by students on the keyword technique and

none provided on semantic mapping. I first present the positive comments on the keyword method and then those that were less enthusiastic to this approach.

Sergio: *“I like to make connections between pictures and words. It’s easy to visualize them during a quiz.”*

Rodrigo: *Keyword helps me remember words, and its fun. Anything fun helps me to learn better.”*

Amelia: *“Pictures, real or in my head help me make connections.”*

Julio: *“It depends on the word. If it sounds like an English word it is easier to make a mental picture to it, and if it doesn’t it is almost impossible to do it.”*

In contrast to these comments that are more positive in their overall assessment of the keyword technique there were other comments that were not as enthusiastic toward this approach or any other strategic method overtly introduced in the classroom. These comments suggest that students may have perceived these methods to have been somewhat intrusive to their own approaches to word learning. For example:

Carlota: *“I look for patterns in the words, and can visualize the words by myself, why do I need keyword?”*

Laura: *“I don’t like vocabulary learning strategies because they involve too much work, I mean all you need to do is use your flash cards and then you have it.”*

Catalina: *“I study my words everyday; I don’t need anything to distract me from that.”*

Paz: *“I just memorize the words and their meanings. I go through all the word cards, review their English side, and then their Spanish side and say them to myself. I mean, can anything be easier than that?”*

Mateo: *“Looking up an unknown word in a dictionary from time to time is no big deal. It’s easier than doing all that other stuff to learn a word.”*

Carolina: *“I just repeat the word over and over to myself.”*

Sandra: *“To me there’s no better way than to have your friends quiz you right before you take the test.”*

A comparison of the two sets of comments gathered from the first and second year of the study can be summarized in the following manner. The student attitudes and preferences toward the strategies introduced in class were to a certain degree positive in their assessment of these strategies after the first year of the study. This would be clearly seen in the initial attempts by many of the students to apply the strategies to assist them in their learning of the target language vocabulary. For example, the use of the keyword technique and semantic mapping accounted for almost 59% of the strategies students claimed to have appropriated for personal use to learn the words assigned in class.

In contrast, this positive view was met with a more critical assessment by the students after the second year. The data elicited after this period of time indicates that there was a reluctance to use the strategies amongst participants in this group. The preferable role allotted to more depth-of-processing strategies, especially keywords, and semantic mapping was replaced to a large degree by a preference for rote-memorization strategies (flash cards, word lists, rote-rehearsal, etc.).

Further evidence of this trend is found in student responses to another prompt that asked “how they prepared themselves for taking the weekly vocabulary quizzes?” Again, this particular prompt was given during the first and second years to determine whether any differences had occurred in quiz and test preparation strategies. Surprisingly, what

does not appear in this data is mention of those strategies that had been listed as having been the favorite for studying vocabulary. For example, during the first year, students overwhelmingly claimed that what they did the most when preparing for quizzes and tests was to use their flash cards (43%), to follow a routine of daily rehearsal (27%), to refer to various keywords (7%), to create semantic maps (7%), and to create sentences (7%). This would indicate that the role of the keyword technique and semantic mapping was less influential for actual quiz and test preparation than had been previously stated by students. What is of more value to students during this phase of word learning is a reliance on more rote and rehearsal strategies.

Samples obtained from the second year data would parallel those obtained from the assigned prompt given during the first year, in that rote and rehearsal strategies had become almost universal in application by means of word lists (51%), parental quizzes (29%), and use of flash cards (20%). Missing from this list is any indication of the use of the keyword technique or semantic mapping. Instead, these two approaches were eclipsed by a strong reliance on rote memory techniques, and repetition strategies.

What can be deduced from these data is that the students in the full-strategy condition did not consider using more depth-of-processing, nor semantic processing approaches when preparing for quizzes or tests during the second year of the study. Although they were listed as accounting for 59% of the strategies students counted as being their favorites during the first year of the study, when the students reflected on what they did to prepare for quizzes they did not mention them. Thus, the notable gains on the vocabulary quizzes (4.2.2) by the students in the full-strategy group may have been a consequence of the combination of rote-rehearsal strategies, to a lesser degree KW

processing and to an even lesser degree semantic mapping. The benefit obtained from this approach supplied students a short-term boost on the weekly testing assessments where a simple one word answer; translation equivalent sufficed (Borer, 2007; Ellis, 1995). The short-term benefit students in this group experienced supports other research where similar effects have emerged as a consequence of a more isolated approach to word learning (Barcroft, 2002; Prince, 1996; Ramachandran and Rahim, 2004).

The ramifications of these findings shed some light on an earlier question (1.2) that sought to determine whether young adolescent preference for “shallow processing strategies” had a universal application to students at this stage of cognitive development. In particular, this question is related to the findings that Schmitt (2001) discovered while researching the strategies used by Japanese L2 learners of English (1.3). Schmitt argues that the reluctance of the young adolescent students in his study to use more depth-of-processing strategies was due to the cognitive stage of development of these learners. The results obtained from the dialogue journals of participants in the full-strategy group indicate a positive correspondence to the population studied by Schmitt in their reluctance to use these types of strategies. However, the young adolescents in this study did not appear to refuse more depth-of-processing approaches because of developmental issues, but rather because they were looking for a simpler method that would meet the curricular goals of the course.

Another factor that may have played a role in the student’s preference for less demanding strategies may be linked to motivational features. Tseng and Schmitt (2008) argue that the correlation between L2 vocabulary learning and motivation has been limited in much of L2 literature and research. They claim that motivation should be

viewed more as a dynamic and fluctuating variable that is subject to the ebb and flow of the experiences of a L2 language learner. In particular, there is the strong tendency for an initial sense of enthusiasm to wane if the process of L2 vocabulary learning is perceived by the learners to require an extended amount of time and investment. The connection between this theoretical framework and the current study would be found in the apparent decline of enthusiasm learners in the full-strategy group had in appropriating strategies they perceived to require too much time and investment. Although no actual measures were taken on which to base this assumption, my own observation, and the feedback obtained from the dialogue journals substantiates that between years one and two of the study there was a noticeable decline in the use of depth-of-processing strategies.

While this study has provided several perspectives on the benefit of more contextual methods to new L2 vocabulary learning, the probing devices used to gather much of this information were somewhat limited. The information used to assess the strategy use of all students was related to the data gathered after the comprehensive tests and did not examine strategy use in other contexts or learning situations in the classroom. These and other issues are examined in the next section.

5.3 Limitations of the present study

The results obtained from the quiz and test data over the course of the two years of this study indicate that middle-school students can indeed benefit from explicit vocabulary learning strategy instruction. While the intent of the present study was to explore the outcomes of the proposed research questions within the framework of a mixed methodology, according to Creswell (2003), mixed studies tend to tilt either toward an experimental or an emergent approach. Some of the major tenets of the present

study were admittedly tilted more toward an experimental position (1.2). What was lacking with this concentrated focus on discrete-point measures was an exploration of other facets related to the learning of the vocabulary in the language classroom. For example, student interaction and collaboration in dyads with other members of their respective groups as they manipulated the language and performed language tasks in a social setting and the role social mediation may have played in this process were not examined. The lack of this information in the present study limits our understanding of whether the election of more “shallow-level strategies” by students in the full-strategy group was based on their personal and individual preference or may have been attributed to social interaction with other students and the pursuit of a common language learning goal to master Spanish word family vocabulary (Donato and MacCormick, 1996; Gillette, 1994). In addition, no systematic record of student performance in speech and writing was incorporated into the design of the study. Although there were indications of what students were able to do on quiz and test instruments throughout the different phases of the study, no substantial data related to student use of the language in communicative activities was provided.

Apart from these limitations another caveat is found in the lack of reference to features related to other learner variables. The inclusion of these essential aspects may have provided a clearer picture of the correlation between student performance and other variables such as gender, student GPA derived from the previous school year, course grade averages in Spanish from the seventh and eighth grade years, State educational assessments such as PSSA reading and verbal scores, and student self-report on the number of hours s/he spent each week to complete homework and prepare for quizzes.

Another limitation is related to the choice of the assessment instrument used to analyze the overall strategy treatment effect. Multiple-choice tests have been criticized in the literature because teachers often utilize them as a default testing instrument to gather results that can be quickly assessed (Cohen, 1994). Thus, the outcomes may be more general in their interpretation and application to the data rather than particular in pinpointing what the students could do with the words (Brown and Rodgers, 2004; Cohen, 1994; Hughes, 2002; Rupp, Ferne, and Choi, 2006). However, numerous examples of this type of testing format appear in the literature where strategies related to morphological analysis have been used (Cohen, 1994; Hughes, 2001; Morin, 2003; Nation, 2001; Schmitt and Zimmerman, 2002). Although numerous volunteers provided incalculable advice, insight, and help in the creation of the instrument used in this study (3.3), any errors that may have occurred are the sole responsibility of the researcher.

5.4 Suggestions for future research

In the preceding section I have examined several limitations of the present study. In that section special attention was given to the lack of reference to student performance in other areas of language learning and to correlations between student performance and learner variables. In this section I address whether the findings of this study are applicable to other projects that incorporate learners of differing backgrounds and at different levels of proficiency. Although the findings obtained from the present study indicate a positive correlation between explicit strategy instruction and students improvement in retention of L2 vocabulary, the implications are that this was a process that required an extended period of time. For example, it was apparent that after the first year of strategy treatment no real variation appeared between student scores on the pre-

test (4.1). In fact, it was only after two years of strategy intervention that any noticeable effects appeared. Thus, the application of this research to other L2 classroom vocabulary learning environments may be somewhat limited. While it could be posited that learners at an elementary, high school or college level may experience similar levels of success, further research would be required to verify it.

Another aspect to be explored relates to the correlation between strategy choices of the learners and their psycho-cognitive development. In other words, would a gifted child with a high language aptitude generally do better with one strategy while an average child in ninth grade with an average language aptitude do better with a different strategy? This type of developmental approach has been explored to some degree by Schmitt (2001), but in his study the focus is more on the construction of a taxonomy of strategies reflective of what learners at different age levels are already doing to learn vocabulary, rather than on the effects of a particular strategic treatment. Thus, a study that would investigate students at different stages of psycho-cognitive development and explicit strategy intervention would help teachers pinpoint to a much greater degree the unique matches between strategies and learners and how teachers might go about trying to find that individual combination to unlock the potential success for each learner.

In addition, future studies should incorporate some form of feedback on the beneficial effects that this approach has for the teacher (Macaro, 2001). In my own experience, as a result of the time spent in this research I have found a new openness toward the diverse methods used by students to go about learning vocabulary. Whereas previously there was a tendency on my part to view the teaching of vocabulary and grammar as distinct components of the language, I now consider them to be more

integrated. For example, I am convinced that beginning level L2 learners initially approach learning the target language vocabulary through translation equivalents (see 2.3). Due to the natural proclivity of these learners to use this approach, teachers should initially introduce large amounts of vocabulary closely associated with meanings and conceptual relations already latent in the student's native language. In this phase large doses of cognates and more concrete words can be presented. As students become more proficient and confident, subsets of words that are more abstract can be added. At this stage, teachers can begin to introduce students to the concept of word families and morphological analysis. In keeping with the curricular expectations within the school setting, as students are introduced to noun and adjective agreement, reinforcement of this analysis can occur as specific attention is given to grammatical features related to gender and number. For example, in Spanish, gender and number agreement between noun and adjective would include samples such as *el libro rojo* (singular, masculine), *los libros rojos* (plural, masculine), *la bandera roja* (singular, feminine) and *las banderas rojas* (plural, feminine). By adding the verb *ser* teachers can provide further augmentation of this limited form of context (*el libro es rojo, la bandera es roja, los libros son rojos, and las banderas son rojas*). Student focus on these grammatical and lexical aspects of language learning will be vital in equipping them to move beyond the preliminary stages of learning in the middle-school and onto higher level engagement with the language through communicative tasks at the high school level.

In this section I have identified the need for further research on the correlation between psycho-cognitive developmental stages and strategy use, as well as what implications this research may impart to the L2 language classroom. In the next section a

summary of the findings of the present study and some concluding comments on the overall ramifications of this study are given.

5.5 Conclusion

Evidence obtained from the quiz and test measures used in the present study shows that middle-school students do indeed benefit from explicit VLS instruction. These results indicate that this benefit is positive and that it does supply young, beginning level adolescents a short- and long-term aid in their retention of L2 vocabulary. Thus, in response to RQ1 the answer would be affirmative (2.6). In reply to RQ2, the most salient types of strategies found to be advantageous for middle-school learners include the use of bilingual dictionaries to locate words sharing similar bases and stems, the employment of base word analysis of word stems and affixes, and using assigned vocabulary to create new and novel sentences.

Further support for these conclusions are derived from the data gathered from student report instruments where the most frequently used strategic approach to complete the posttest was determinative strategies (base word analysis). This finding reflects that students in the full-strategy and contextual-based strategy groups were actively applying the strategy they had learned in class to understand the words in sentences (4.3). The dialogue journals which probed student attitudes and strategy preferences of the participants in the full-strategy group showed that these attitudes were positive toward the use of depth-of-processing strategies after one year of VLS treatment and that there was an overall decline in the use of these techniques after the second year. In place of these strategies rote and rehearsal strategies were employed.

In conclusion, this study provides a glimpse into the short- and long-term benefits that students in a Spanish language program in a middle-school setting were able to experience. As the design was based to a larger degree on an experimental methodology, subsequent research that incorporates other approaches that examine how these learners can improve their vocabulary learning and the correlations between student performance and other variables may supply other aspects of young, adolescent L2 vocabulary learning. Thus, this research presents an initial attempt in the exploration of methods that can enhance and improve foreign language learning by students in a middle-school classroom.

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**APPENDIX A
MEMORANDUM**

TEMPLE UNIVERSITY
A Commonwealth University

Institutional Review Board
Medical Intervention Committee

3400 North Broad Street (509-00)
Philadelphia, Pennsylvania, 19140
(215)707-3249 Fax: (215)707-8387
e-mail: rsmith@temple.edu

MEMORANDUM

To: Douglas W. Mast
Spanish/Portuguese

From: Ruth Solomon Smith, C.I.P., Manager
Institutional Review Board

Date: December 8, 2003

Subject: IRB Protocol #03-293: The effects of learning and reading strategies upon Spanish vocabulary Acquisition among middle school students

The Institutional Review (IRB) acknowledges receipt of the above listed protocol. After being reviewed at a meeting on November 21, 2003, the Behavioral/Social Sciences Committee determined the following:

The goal of this research does not go beyond normal curricular practices and therefore falls into the exempt category.

Protocol

1. The only suggestion that the Committee had was that 2 points be given to all participants, not just to some.

If you should have any questions, please don't hesitate to contact me at 215-707-3249.

APPENDIX B
PARTICIPANT LANGUAGE LEARNING HISTORY QUESTIONNAIRE
© Douglas Mast

Please answer these questions to the best of your ability.

I. General Background:

Date:

Student I.D. No. _____

Age:

Gender: Male/Female

Grade

II. Language Learning History:

What language do you speak at home? _____

Have you ever been exposed to another language besides English?

How long have you studied Spanish? _____

Reason(s) for interest in Spanish _____

III. Problem areas:

What are some of the problems you've encountered in learning Spanish?

How long do you study for class?

What strategies do you find helpful when you study? a) Flashcards b) Word families

c) Practice writing out vocabulary d) Other _____

APPENDIX C
PARENTAL INTRODUCTORY LETTER

TEMPLE UNIVERSITY
A Commonwealth University

College of Liberal Arts
4th Floor, Anderson Hall (022-34)

114 W. Berks Street
Philadelphia, Pennsylvania

Department of Spanish
And Portuguese

Consent Form

The Effects of Contextual and Non-Contextual Strategies on Spanish Vocabulary Learning among Middle School Students

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This study will determine the effects of learning and reading strategies upon Spanish vocabulary acquisition. The study will follow students enrolled in Mr. Mast's Spanish classes throughout their seventh and eighth grade years. Three experimental groups will participate in the study. Group One will be a case study group that will receive learning and reading strategy instruction over the course of their seventh and eighth grade years. Group Two will be introduced to reading strategies, and Group Three will receive regular classroom instruction. The data students will provide will be recorded anonymously, and student participation and audiotape recordings will be held in the strictest confidence.

I welcome your questions about the progress of the research at any time. Your child's participation in this study is on a voluntary basis, and your child may refuse to participate at any time without incurring any negative consequence as to their status in class.

Questions about your child as a research subject may be directed to Ms. Ruth Smith, Office of the Vice Provost for Research, Institutional Review Board, Temple University, 3400 North Broad Street, Philadelphia, Pennsylvania, 19140, 215/707-3249.

APPENDIX D
PARENTAL PERMISSION FORM

TEMPLE UNIVERSITY
A Commonwealth University

College of Liberal Arts
4th Floor, Anderson Hall (022-34)

114 W. Berks Street
Philadelphia, Pennsylvania

Department of Spanish
And Portuguese

Please print

Child's Name:

Date:

Address:

Phone:

Parent/Guardian Signature:

Relationship to Child: Child

cannot sign because:

but consents to be audiotaped under the **conditions described above.**

Witness Signature

Date

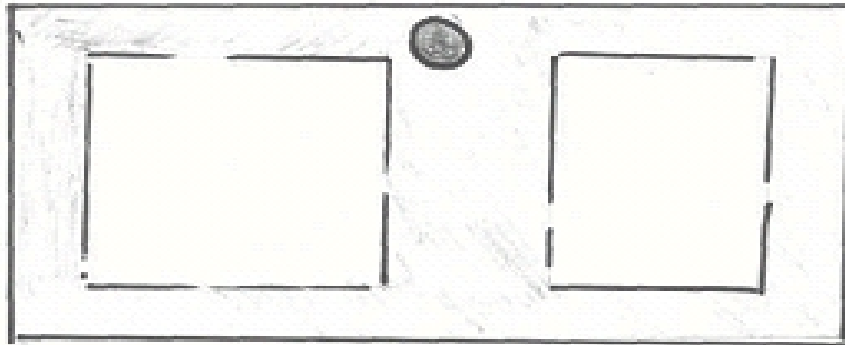
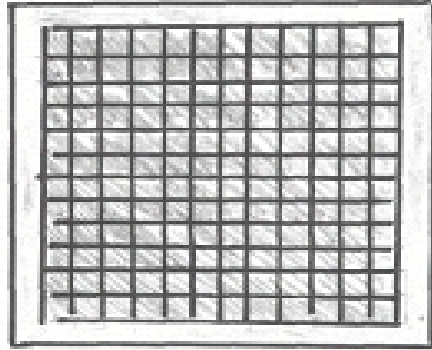
Witness Signature

Date

APPENDIX E
KEYWORDS USED IN STUDY

- | | |
|-------------------------------|-------------------------------|
| 1. llamativo- <i>stylish</i> | 21. comer- <i>to eat</i> |
| 2. miradero- <i>viewpoint</i> | 22. cantar- <i>to sing</i> |
| 3. lavadero-washer | 23. recibo- <i>receive</i> |
| 4. ¿cómo?- <i>how?</i> | 24. cantador- <i>singer</i> |
| 5. ¿cuándo?- <i>when?</i> | 25. bateador- <i>batter</i> |
| 6. ¿quién?- <i>who?</i> | 26. cantador- <i>singer</i> |
| 7. ¿qué?- <i>what?</i> | 27. abierto- <i>open</i> |
| 8. iglesia- <i>church</i> | 28. aquí- <i>here</i> |
| 9. tienda- <i>store</i> | 29. escribir- <i>to write</i> |
| 10. vivo- <i>live</i> | 30. llamar- <i>to call</i> |
| 11. batidor- <i>beating</i> | 31. lavar- <i>to wash</i> |
| 12. lavador- <i>washer</i> | 32. mirar- <i>to look at</i> |
| 13. corredilla- <i>race</i> | 33. batir- <i>to beat</i> |
| 14. correo- <i>mail</i> | 34. correr- <i>to run</i> |
| 15. bebible- <i>drinkable</i> | 35. beber- <i>to drink</i> |
| 16. lectura- <i>reading</i> | 36. mirador- <i>balcony</i> |
| 17. venta- <i>sale</i> | 37. vender- <i>to sale</i> |
| 18. llamador- <i>caller</i> | 38. comprador- <i>buyer</i> |
| 19. admitir- <i>to admit</i> | |
| 20. vendedor- <i>seller</i> | |

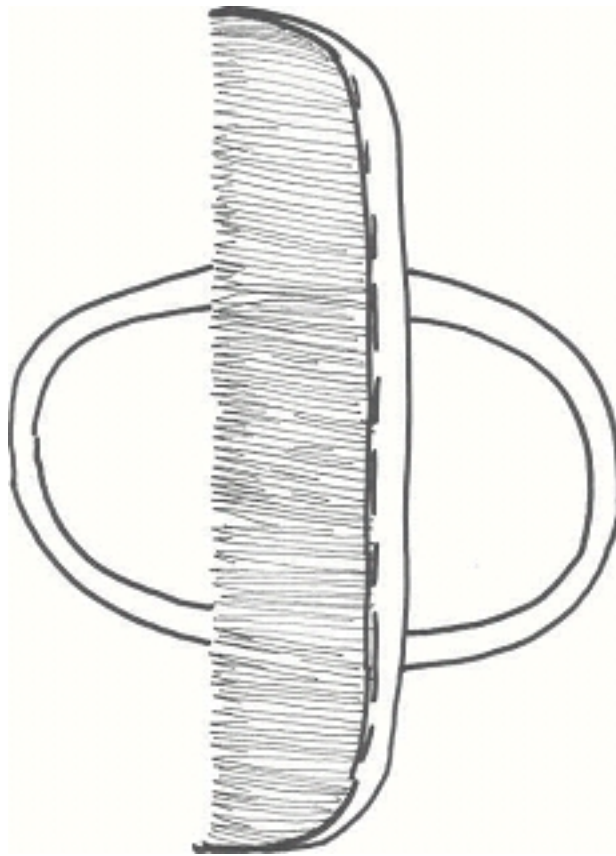
APPENDIX F
KEYWORD IMAGES: TEACHER SAMPLES
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vendedor- seller

Keyword: \$Vent\$

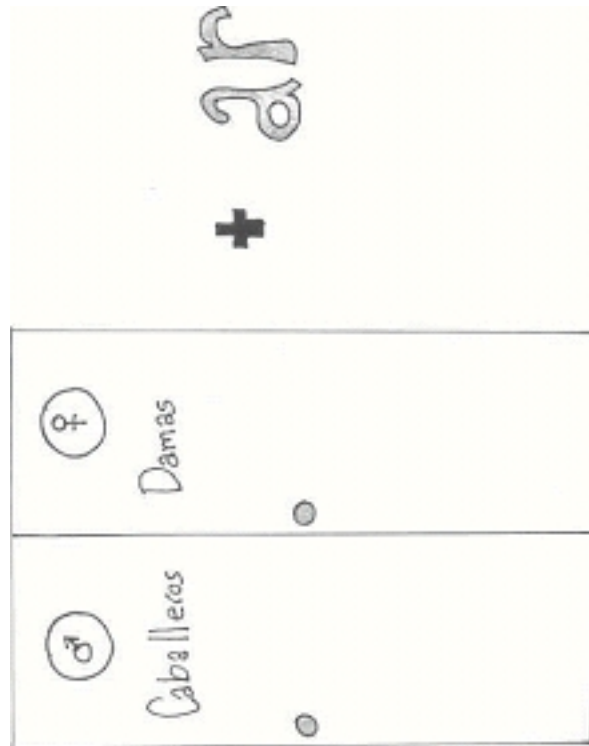
APPENDIX G
KEYWORD IMAGES: TEACHER SAMPLE
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¿cómo?-how?, what?

Keyword: Comb

APPENDIX H
STUDENT KEYWORD SAMPLE



lavar-to wash

Keyword: Lav

APPENDIX I
COMPREHENSIVE VOCABULARY PRE-TEST
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Nombre:

Fecha:

Examen de vocabulario

This test will require you to select the Word Family vocabulary word that best completes the sentence. An example for this test is given below.

*E.g. María está **b** con el libro que lee para su clase.
a). aburrada b). aburrida c). aburrir d). aburrición*

I. Choose the correct word to complete these sentences.

1. Yo siempre _____ bistec los viernes.
a). comes b). como c). comestible d). comida
2. Miguel y Mirta son _____ nuevos de la escuela.
a). estudiantes b). estudiosos c). estudios d). estudiar
3. ¿A qué hora _____ la clase de matemáticas?
a). terminas b). termino c). termina d). terminan
4. No es _____ leer todas las páginas.
a). necesita b). necesario c). necesidad d). necesito
5. Ella no _____ las preguntas de la tarea.
a). comprende b). comprendo c). comprendido d). comprenden
6. ¿Cuándo te gusta _____ las revistas de deportes (*sports*)?
a). leído b). leo c). leer d). lectura
7. En mi opinión el libro es muy _____.
a). aburrimiento b). aburridor c). aburrido d). aburrir
8. La camisa de Julio es muy _____.
a). vivida b). vividero c). viviente d). viva
- 9). ¿Quién es el _____ del libro?
a). escrito b). escritor c). escritorio d). escribir
- 10). Ella va a _____ la ropa (clothing) con el lavador.
a). lavar b). lavable c). lavadero d). lava

- 11). Me gusta ir al almacén (*Mall*) para buenas _____.
a). *comprable* b). *comprantes* c). *compras* d). *compradoras*
- 12). Yo prepara las lecciones en el _____.
a). *estudioso* b). *estudiantil* c). *estudiante* d). *estudio*
- 13). Las chicas _____ mucho en clase, ¿no?
a). *hablan* b). *habla* c). *hablante* d). *habladora*
- 14). La tarea es como un _____ muy fácil.
a). *trabajante* b). *trabajado* c). *trabjillo* d). *trabajador*
- 15). Tengo sed necesito _____ un poco de agua.
a). *bebido* b). *bebible* c). *beber* d). *bebo*
- 16). La puerta _____ es de madera (wood).
a). *abridero* b). *abierta* c). *abierto* d). *abrimiento*
- 17). Tengo mucha hambre debo (*I should*) _____ un poco.
a). *comestible* b). *comidilla* c). *comer* d). *como*
- 18). ¿A qué hora es el _____ esta noche?
a). *bailable* b). *bailador* c). *bailar* d). *baile*
- 19). No me gusta _____ fotos feos.
a). *mira* b). *mirado* c). *mirar* d). *miradero*
- 20). Se _____ español aquí.
a). *habla* b). *hablante* c). *hablas* d). *hablado*
- 21). Hay mucha _____ en la clase de hoy.
a). *hablador* b). *hablante* c). *hablado* d). *habladuría*
- 22). Mi hermana es muy _____ en la piscina (*swimming pool*).
a). *natación* b). *natátil* c). *nadadero* d). *nadadora*
- 23). Geraldo tiene un buen punto de _____.
a). *ver* b). *vistazo* c). *vista* d). *vistoso*
- 24). Nuestro _____ está en el patio.
a). *mira* b). *mirada* c). *miradero* d). *mirador*
- 25). ¡Caramba! Los pantalones (*pants*) de José son muy _____.
a). *llamativos* b). *llamadores* c). *llamamientos* d). *llamados*

26. Julio dice que (*says*) hay mucho _____ en la clase de español.
a). *trabajado* b). *trabajo* c). *trabajante* d). *trabajillo*
27. La _____ de esta ciudad es particularmente anticuada (*old*).
a). *usado* b). *uso* c). *usar* d). *usanza*
28. Voy a la tienda para comprar unos _____.
a). *comestibles* b). *comidillas* c). *comidas* d). *comido*
29. El libro de *Harry Potter* está _____ por los estudiantes.
a). *lectura* b). *lectora* c). *leer* d). *leído*
30. El presidente tiene mucha _____ con la gente (*people*) de su país (*country*).
a). *creído* b). *credulidad* c). *credo* d). *crédulo*
31. El _____ vale (*is worth*) mucho para ganar la vida (*to earn a living*).
a). *aprendizaje* b). *aprendido* c). *aprendedor* d). *aprendiz*
32. Tenemos muchos problemas con nuestra _____.
a). *bañadora* b). *bañado* c). *baño* d). *bañera*
33. El agua aquí no es muy _____.
a). *bebido* b). *bebedor* c). *beber* d). *bebible*
34. El cartero (*mailman*) nos trae (*brings*) el _____ todos los días.
a). *correr* b). *corrida* c). *correndilla* d). *correo*
35. En esta mala condición el carro no es _____.
a). *vendedor* b). *vendible* c). *vendido* d). *venta*
36. La luz que vemos en el cuarto es muy _____.
a). *vivienda* b). *vividor* c). *vividero* d). *vivida*
37. El profesor de matemáticas tiene un _____ inmenso en la clase.
a). *escritorio* b). *escritor* c). *escrito* d). *escribiendo*
38. ¡Ay María! La puerta tiene una _____. Por favor que la cierres rápidamente.
a). *abierta* b). *abridera* c). *abrir* d). *abrimiento*
39. En el libro hay mucho _____ unos dibujos (*pictures*) del autor.
a). *inclusión* b). *inclusivo* c). *incluso* d). *incluyente*
40. Pues, las _____ y vueltas de Marta y Matilde son muchas.
a). *idos* b). *idas* c). *yendo* d). *ir*

41. Silencio por favor, hay tanto ruido (*noise*) que parece como tambor (*drum*) _____.
 a). *batiente* b). *batidor* c). *batimiento* d). *batir*
42. La compañía acusa _____ de los paquetes.
 a). *recibo* b). *recibido* c). *recibir* d). *recepción*
43. Necesitas mucha _____ para aprender español.
 a). *repetido* b). *repitente* c). *repetición* d). *repite*
44. Mis hermanos _____ en el coro (*chorus*).
 a). *cantante* b). *cantan* c). *cantáis* d). *canta*
45. El suéter de Ana es muy _____.
 a). *usado* b). *usanza* c). *uso* d). *usa*
46. Hay un gran _____ de ropa en el almacén de Kohl's.
 a). *vendible* b). *venta* c). *ventana* d). *vendido*
47. A mi hermana le gusta _____ todos los días.
 a). *nadar* b). *natación* c). *nada* d). *nadadora*
48. Miguel huele (*smells*) mal necesita _____ esta noche.
 a). *bañar* b). *bañera* c). *bañado* d). *baño*
49. La _____ del cubismo (*Cubism*) es obvio en el arte de Diego Rivera.
 a). *influyente* b). *influjo* c). *influyente* d). *influencia*
50. El teléfono es una forma buena de _____ en el mundo español.
 a). *comuni3n* b). *comunicable* c). *comunicar* d). *comunica*
51. La estatua es buen _____ por el artista.
 a). *trabajada* b). *trabajadora* c). *trabajante* d). *trabaja*
52. Tengo _____ de fútbol después de la escuela.
 a). *practicar* b). *practicante* c). *práctica* d). *practicable*
53. Necesito _____ la tarea para la clase de español.
 a). *terminar* b). *terminaci3n* c). *termina* d). *terminado*
54. Christina Aguilera es una buena _____ latina.
 a). *cantante* b). *cantada* c). *cantable* d). *cantadora*
55. Para ser buen jugador de béisbol necesitas _____ mucho.
 a). *práctica* b). *practicante* c). *practicador* d). *practicar*

56. Mi hermano lee todos los días, él es considerablemente ____.
- a). *estudiante* b). *estudio* c). *estudiantil* d). *estudioso*
57. Yo ____ muchos libros durante el verano.
- a). *leído* b). *lectura* c). *leer* d). *leo*
58. No entiendo la pregunta, _____ por favor.
- a). *repite* b). *repitente* c). *repetición* d). *repetido*
59. Tengo dolor del estómago, ¿puedo ir a la ____?
- a). *enferma* b). *enfermero* c). *enfermera* d). *enfermar*
60. Gracias Señor, acuso ____ de su carta.
- a). *recibido* b). *recibir* c). *recepción* d). *recibo*

II. Test strategies: Please answer the questions below regarding any technique, or strategies you used during this test.

1). I used the following strategy (or strategies) to complete this test. *(Please list any strategies you used to help you complete this test)*

- a).
b).
c).
d).

2). I was able to determine easier questions by:

3). I was able to figure out more difficult questions by:

APPENDIX J
COMPREHENSIVE VOCABULARY POSTTEST
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Nombre:

Fecha:

Examen de vocabulario

In the questions below, try to make use of any strategy, or combination of strategies to determine the correct answer for the questions that follow. An example for the test is given below.

*E.g. María está **b** con el libro que lee para su clase.*

a). aburre b). aburrida c). aburrir d). aburrimiento

I. Choose the correct word to complete these sentences.

1. La compañía ____ de la mercancía.
a). el recibo b). de recibo c). acusa recibo d). recibir
2. Tengo que pagar mucho para conseguir (*to get*) ____ al partido de fútbol.
a). la admisión b). admitido c). admisible d). admitir
3. Creo que ese anuncio que veo en la televisión es muy ____.
a). aburrir b). un aburridor c). aburrido d). un aburrimiento
4. La profesora siempre dice las instrucciones de la lección ____.
a). la repetición b). repetido c). repetidamente d). repitente
5. La canción es muy ____, ¿no?
a). baile b).ailable c). bailador d). bailerín
6. Es más o menos una ____ a estadio de fútbol.
a). corrida b). correndilla c). correr d). correo
7. Todos los ingredientes de la receta están ____ en la tarjeta.
a). incluídos b). inclusos c). inclusivos d). incluyendo
8. Las ____ (*goings*) de Matilde me molestan (*bother me*) mucho.
a). idas b). yendo c). idas y vueltas d). vas
9. Miguel tiene mal olor hoy, necesita un ____.
a). baño b). bañera c). bañado d). bañador
10. El libro de Harry Potter es una buena ____ para los estudiantes.
a). lector b). releer c). lectura d). leído

11. De aquí hay una buena ____ de todo el campo.
a. visto b. vistazo c. vista d. vistosa
12. Hay una ____ de toros (*bullfight*) en el estadio a las cuatro y media.
a. correo b. corrida c. corre d. corro
13. Donald Trump busca un ____ para su trabajo.
a. aprendido b. aprendizaje c. aprendiz d. aprendedor
14. La ____ de baloncesto empieza a las tres en el gimnasio.
a. practicante b. practica c. práctica d. practicante
15. A mis padres les gusta escuchar los discos en su ____ .
a. tocante b. tocadiscos c. tocador d. tocado
16. Cuando estudio estoy muy ____ y no me gusta hacer nada más que estudiar.
a. pensador b. pensativo c. pensamiento d. pensar
17. Una ____ me ayuda hacer todos los quehaceres (*chores*) de la casa.
a. asistir b. asistencia c. asistenta d. asistente
18. Hay una gran ____ de ropa en el centro comercial de Park City.
a). vendido b). vendible c). venta d). vendedora
19. Para ____ español tienes que estudiar y practicar mucho.
a). aprendido b). aprendiz c). aprender d). aprendizaje
20. Cuando tengo sed necesito una ____ muy fría.
a). bebida b). bebible c). bebero d). beber
21. Después de su accidente, mi hermano estaba (*was*) muy ____.
a). debe b). debidamente c). débil d). debido
22. Yo no puedo ____ lo que (*what*) me dices.
a). crédulo b). credo c). credulidad d). creer
23. Yo no ____ la pregunta Señor Mast.
a). comprender b). comprendido c). comprendo d). comprendiendo
24. La ____ es muy importante para encontrar empleo (*work*).
a). educar b). educación c). educativo d). educadora
25. Mi madre va al mercado para comprar unos ____ .
a). comestibles b). comidos c). comidas d). comidillas

26. Voy a la tienda para hacer una _____.
a). *comprable* b). *comprante* c). *compra* d). *comprador*
27. ¿Es la ____ su pariente?
a). *señor* b). *señora* c). *señorea* d). *señoras*
28. Mi hermano sabe mucho porque es muy _____.
a). *estudio* b). *estudiantil* c). *estudiante* d). *estudioso*
29. El ____ está en el segundo piso de la casa.
a). *mira* b). *miradero* c). *mirada* d). *mirador*
30. No me gusta escuchar la ____ cuando trata de (*deals with*) mis amigos.
a). *habladuría* b). *hablante* c). *habladora* d). *hablada*
31. A mi hermana le gusta nadar mucho porque es muy _____.
a). *natación* b). *nadadero* c). *natátil* d). *nadadora*
32. Geraldo tiene un buen punto de _____.
a). *ver* b). *vistazo* c). *vista* d). *vistoso*
33. ¡Caramba! Los pantalones (*pants*) de José son muy _____.
a). *llamativos* b). *llamadores* c). *llamamientos* d). *llamados*
34. Los ____ de la computadora son muchos.
a). *usados* b). *usos* c). *usar* d). *usanzas*
35. A mi me gusta mucho ____ la música rock.
a). *cantante* b). *cantar* c). *cantado* d). *cantable*
36. La ropa está muy sucia (*dirty*) necesito buscar un _____.
a). *lavadero* b). *lavable* c). *lavar* d). *lavado de cerebro*
37. La puerta está _____, ¿puedes cerrarla?
a). *abridera* b). *abrir* c). *abierta* d). *abrimiento*
38. El cartero (*mailman*) nos trae el _____ todos los días.
a). *correr* b). *correo* c). *corrida* d). *correndilla*
39. En la clase el profesor tiene un _____ bien grande.
a). *escritor* b). *escrito* c). *escritorio* d). *escribiendo*
40. Pues, las _____ y vueltas de Juanita y Maritza son muchas.
a). *idos* b). *ir* c). *yendo* d). *idas*

41. Muchas veces en la mañana me siento (*I feel*) muy ____ .
a). *vivienda* b). *vivo* c). *vividero* d). *vivida*
42. Cuando tenemos una prueba (*quiz*) ____ los papeles para corregirlos (*correct*).
a). *cambio* b). *cambiante* c). *cambista* d). *cambiamos*
43. No puedo ____ que hay un examen mañana.
a). *crear* b). *credulidad* c). *credo* d). *crédulo*
44. El ____ de los niños ocurre (*happens*) muy rápidamente.
a). *creciente* b). *crecimiento* c). *creces* d). *crecederas*
45. Para ser buen deportista de deportes debe ____ mucho.
a). *práctica* b). *practicante* c). *practicador* d). *practicar*
46. En el arte de Diego Rivera hay mucha ____ de la cultura azteca.
a). *influyente* b). *influjo* c). *influir* d). *influencia*
47. Gracias Señor, nosotros ____ mucho placer por su negocio (*business*).
a). *recibimos* b). *recibir* c). *recibo* d). *recepción*
48. El ____ del coro (*chorus*) tiene mucho talento.
a). *cantable* b). *cantada* c). *cantante* d). *cantado*
49. Mi tío no puede ver porque él es ____ .
a). *ceguedad* b). *ceguera* c). *cegato* d). *ciego*
50. Los vegetales tienen un buen sabor (*flavor*) cuando están ____ .
a). *cocciones* b). *cocientes* c). *cocer* d). *cocidos*
51. Bueno Pablo, lo que te digo es puramente (*only*) ____, ¿me entiendes?
a). *burlador* b). *de burlas* c). *burlería* d). *burlar*
52. El baloncesto es muy ____ por todo el mundo de deportes.
a). *conocer* b). *conocimiento* c). *conocedor* d). *conocido*
53. ¡Son las vacaciones de verano! Me siento (*I feel*) bien ____ por no tener más tarea.
a). *descuidar* b). *descuidado* c). *descuitado* d). *descuido*
54. Muchas veces cuando tengo mucho sueño me siento como un ____ .
a). *dormido* b). *durmiendo* c). *dormilón* d). *dormir*
55. ____ al robo (*robbery*) del banco la policía no saben nada.
a). *tocado* b). *tocador* c). *tocante* d). *tocadiscos*

56. En la primavera, se puede ver el ____ de las plantas por todas partes. Es muy bonito.
a). brota b). brote c). brotar d). brotadura
57. Según (*according to*) la biblia la ____ es más importante que todo.
a). sabedora b). sabelotodo c). sabio d). sabiduría
58. Esa fecha de la reunión (*meeting*) no es ____ para nosotros.
a). conveniente b). conveniente c). conveniencia d). convenio
59. Cuando mi hermano tiene mucha prisa él está muy ____.
a). apuramiento b). apurado c). apuro d). apurar
60. Quiero ____ que lo que me dices es la verdad.
a). acertar b). acertador c). acertante d). acertadamente

II. Las estrategias: Please answer the questions below regarding any strategy, or combination of strategies you used during this test. Answer the question that pertains to your use of strategies.

- 1). I used the following strategy (or strategies) to complete this test.
a).
b).
c).
- 2). I was able to determine the answer for the easier questions by:
- 3). I was able to solve the answer for the more difficult questions by:

APPENDIX K
WORD FAMILY VOCABULARY USED IN STUDY
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Spanish

hablar – (verb)
el/la hablador, a- (adj.)
el/la hablante- (noun)
la habladoría- (noun)
hablado-(adj.)

English

to speak
talkative
speaker
gossip, chitter chatter
spoken

2). nadar- (v)
la natación -(n)
el/la nadador, -ra -(n)
nadadero -(n)
natátil-(adj.)

to swim
swimming
swimmer
swimming place
floating

3). bailar-(v)
el baile-(n)
bailable-(adj.)
el bailerín, la bailarina-(n)
bailador, -dora-(n)

to dance
dance
dancing
ballet dancer
Flamenco dancer

4). cantar-(v)
el/la cantante -(n)
cantado-(adj.)
cantable-(adj.)
la cantada-(n)
el/la cantador, ra-(n)

to sing
singer
sung
singable
cantata
Flamenco singer

5). estudiar-(v)
el/la estudiante (n)
el estudio-(n)
estudioso, -sa-(adj.)
estudiantil-(adj.)

to study
student
learning, studio
studious, scholar
of students

6). lavar-(v)
el/la lavador, -ora (n)
el lavadero-(n)
lavable-(adj.)
lavado de cerebro-(n)

to wash
washing machine, a washer
washing place
washable
“brain washed”

7). comprar- (v)	<i>to buy</i>
la compra-(n)	<i>purchase</i>
el/la comprador, -ra (n)	<i>buyer, purchaser</i>
comprable-(adj.)	<i>buyable</i>
comprante-(adj.)	<i>buying</i>
8). usar- (v)	<i>to use</i>
usado-(adj.)	<i>worn out, used</i>
el uso- (n)	<i>use, usage</i>
la usanza-(n)	<i>use, custom</i>
9). mirar- (v)	<i>to look at</i>
la mira-(n)	<i>sight, aim</i>
mirado,a (adj.)	<i>considerate, thoughtful</i>
el miradero-(n)	<i>view-point</i>
el mirador-(n)	<i>balcony, gallery</i>
10). trabajar- (v)	<i>to work</i>
trabajado, a -(adj.)	<i>carefully finished</i>
el/la trabajador, -ra-(n)	<i>worker</i>
trabajante-(adj.)	<i>toiling, working</i>
el trabajillo-(n)	<i>small job</i>
trabajo-(n)	<i>work, labor, toil</i>
11). llamar- (v)	<i>to call</i>
la llamada-(n)	<i>call</i>
el llamamiento-(n)	<i>calling, summons</i>
el/la llamador, a-(n)	<i>caller</i>
llamativo,a- (adj.)	<i>showy, flashy</i>
12). practicar- (v)	<i>to practice</i>
la práctica-(n)	<i>practice, training</i>
practicante-(adj.)	<i>practising</i>
el/la practicante, -dora-(n)	<i>practitioner</i>
practicable-(adj.)	<i>practicable, usable</i>
13). comer- (v)	<i>to eat</i>
la comida-(n)	<i>food</i>
la comidilla-(n)	<i>lightmeal</i>
14). leer- (v)	<i>to read</i>
leído-(adj.)	<i>read</i>
la lectura-(n)	<i>reading</i>
el/ la lector/a-(n)	<i>reader</i>

15. comprender -(v) comprendido-(adj.) comprendiendo-(adj.)	<i>to understand</i> <i>understood</i> <i>understanding</i>
16. creer -(v) creído-(adj.) crédulo/a-(adj.) la credulidad-(n) el credo-(n)	<i>to believe</i> <i>believed</i> <i>credulous</i> <i>credibility</i> <i>creed</i>
17. aprender -(v) aprendido-(adj.) el/la aprendedor/a-(n) el aprendizaje-(n) el/la aprendiz/a-(n)	<i>to learn</i> <i>learned</i> <i>learner</i> <i>apprenticeship</i> <i>apprentice</i>
18. bañar -(v) un baño-(n) el/la bañador/a-(n) la bañera-(n) bañado-(adj.)	<i>to bathe</i> <i>a bath</i> <i>bather</i> <i>bath tub</i> <i>bathed</i>
19. ver -(v) visto-(adj.) la vista-(n) el vistazo-(n) vistoso-(adj.)	<i>to see</i> <i>saw</i> <i>sight, seeing</i> <i>glance</i> <i>showy</i>
20. beber -(v) bebido-(adj.) el/la bebedor,a (n) bebedero/a-(adj.) bebible-(adj.)	<i>to drink</i> <i>drunk</i> <i>drinker</i> <i>drinking trough</i> <i>drinkable</i>
21. correr -(v) el correo-(n) la corrida-(n) la correndilla-(n)	<i>to run</i> <i>mail</i> <i>race</i> <i>short run</i>
22. vender -(v) vendido-(adj.) vendible-(adj.) el/la vendedor,a (n) la venta-(n)	<i>to sell</i> <i>sold</i> <i>saleable</i> <i>seller</i> <i>sale</i>

23). ir-(v)	<i>to go</i>
ido-(adj.)	<i>gone</i>
ida-(n)	<i>departure</i>
yendo-(adj.)	<i>going</i>
idas y vueltas-(n)	<i>comings and goings</i>
24). batir-(v)	<i>to stir, whip up</i>
batiente-(n)	<i>beating of a drum</i>
batidor, a- (n)	<i>beating</i>
batimiento-(adj.)	<i>shaking</i>
25). vivir- (v)	<i>to live</i>
vividero, a- (n)	<i>habitable</i>
vivido-(adj.)	<i>vivid, bright</i>
vivienda-(n)	<i>dwelling</i>
viviente-(n)	<i>living, alive</i>
vivo-(adj.)	<i>fresh, sharp</i>
26). escribir-(v)	<i>to write</i>
escritorio-(n)	<i>writing desk</i>
escritor, a-(n)	<i>writer, author</i>
escrito-(adj.)	<i>written</i>
escribiendo-(v)	<i>writing</i>
27). abrir-(v)	<i>to open</i>
abierto, a-(adj.)	<i>open</i>
un abrimiento-(n)	<i>an opening</i>
abridero, a- (adj.)	<i>easily opened</i>
28). incluir-(v)	<i>to include</i>
inclusivo,a-(adj.)	<i>inclusive</i>
la inclusión-(n)	<i>inclusion</i>
incluído-(adj.)	<i>included</i>
incluso (adj.)-	<i>enclosed</i>
incluyente-(adv.)	<i>including</i>
29). recibir-(v)	<i>to receive</i>
el recibo-(n)	<i>receipt</i>
la recepción -(n)	<i>reception</i>
de recibo-	<i>acceptable</i>
recibido- (adj.)	<i>received</i>
acusar recibo-(v)	<i>to acknowledge, receipt of</i>

30). aburrir-(v) aburrido-(adj.) un(a) aburridor,a(n) un aburrimiento-(n)	<i>to bore</i> <i>bored</i> <i>boring person</i> <i>annoyance</i>
31). admitir-(v) la admisión-(n) admisible-(adj.) admitido-(adj.)	<i>to admit</i> <i>acceptance</i> <i>admissible</i> <i>admitted</i>
32). repetir-(v) la repetición-(n) repitente-(adv.) repetido-(adj.) repetidamente-(adv.)	<i>to repeat</i> <i>repetition</i> <i>repeating</i> <i>repeated</i> <i>repeatedly</i>
33). acertar-(v) acertadamente-(adv.) acertador-(adj.) acertante- (n. m/f)	<i>to get right, to guess</i> <i>correctly, successfully</i> <i>right, correct</i> <i>winner</i>
34). saber-(v) sabedor, ra de -(n.) sabio-(adj.) la sabiduría-(n) sabelotodo-(n)	<i>to know (a fact)</i> <i>aware of, knowing</i> <i>wise, sage</i> <i>wisdom</i> <i>know-it-all</i>
35). tocar-(v) tocado, a-(adj.) tocador, a-(n) tocante-(adv.) el tocadiscos-(n)	<i>to play (instrument), to teach</i> <i>touched</i> <i>performer, player</i> <i>touching, concerning</i> <i>record placer</i>
36). ganar-(v) la gana-(n) ganable-(adj) el/la ganador,a-(n) ganancia-(n)	<i>to earn, to win</i> <i>wish</i> <i>gainable</i> <i>winner</i> <i>profit</i>
37). pensar-(v) pensador, a-(n) pensativo-(adj.) pensamiento-(n)	<i>to think, think over</i> <i>thinking, thinker</i> <i>pensive, thoughtful</i> <i>thought</i>

38). apagar-(v) apagador-(n) apagaincendios-(n) apagón-(n)	<i>to put out, extinguish</i> <i>extinguisher</i> <i>fire extinguisher</i> <i>blackout</i>
39). convenir-(v) convenible-(adj) conveniencia-(n) conveniente-(adj) el convenio-(n)	<i>to agree, be suitable</i> <i>docile, compliant</i> <i>agreement</i> <i>suitable</i> <i>pact, treaty</i>
40). crecer-(v) crecedero, a-(adj) las creces-(n) creciente-(adj) crecimiento-(adj)	<i>to grow</i> <i>growth</i> <i>increases, spurts</i> <i>growing</i> <i>growth, increase</i>
41). asistir-(v) asistente-(n) asistencia-(n) asistent(a)-n)	<i>to attend, be present</i> <i>attendant, helper</i> <i>attendance</i> <i>chair woman</i>
42). bajar-(v) la baja-(n) bajada-(adj) la bajeza-(n)	<i>to lower, take down</i> <i>fall, drop</i> <i>descent, slope</i> <i>humbleness</i>
43). deber-(v) el debe-(n) debidamente-(adj) débil-(adj) debido,a-(adj)	<i>duty, debt, homework</i> <i>debt</i> <i>duly</i> <i>weak</i> <i>due, owed</i>
44). convener-(v) convenible-(adj) conveniencia-(n) conveniente-(adj) el convenio-(n)	<i>to agree, be suitable</i> <i>docile, compliant</i> <i>agreement</i> <i>agreeable</i> <i>pact, treaty</i>
45). crecer-(v) crecedero,a-(adj) las creces-(n) creciente-(adj) crecimiento-(adj)	<i>to grow</i> <i>growth</i> <i>increases, spurts</i> <i>growing</i> <i>increase</i>

46. apurar- (v) el apuro-(n) apuramiento-(adj) apurado-(adj)	<i>to hurry, to speed up need, haste hurriedly hurried, rushed</i>
47. cambiar- (v) cambiante-(adj) el cambio-(n) el/la cambista-(n)	<i>to change, exchange changing change, exchange moneychanger</i>
48. depender- (v) el/la dependiente-(n) dependencia-(n) independencia-(n)	<i>to depend dependent dependence independence</i>
49. brotar- (v) la brota-(n) el brote-(n) la brotadura-(n)	<i>to bud, sprout bud, shoot shoot, outbreak budding, sprouting</i>
50. contestar- (v) la contestación-(n) la contesta-(n) el contesto-(n)	<i>to answer answer chat reply</i>
51. educar- (v) educativo-(adj) educación-(n) educador, a-(n)	<i>to educate educational education educator</i>
52. burlar- (v) burlador, -dora-(n) la bulería-(n) de burlas-(n) burlas aparte-	<i>to make fun of, deceive joker foolishness only in jest joking aside</i>
53. cegar- (v) ceguedad- (n) ceguera-(n) ciego, ciega-(adj)	<i>to go blind, be blinded blindness blackout blind</i>
54. cocer- (v) cocido, a-(adj) la cocina-(n) la cocción-(n)	<i>cook, boil cooked, stew kitchen baked</i>

55. conocer-(v)
conocedor, dora-(n)
conocimiento-(adj)
conocido, a-(adj)

to know (person)
judge, expert
knowledge
known

56. descuidar-(v)
descuidado, a-(adj)
descuido-(n)
descuidado, a-(adj)

to neglect, be careless
careless, negligent
carelessness
carefree

57. dormir-(v)
dormido-(adj)
dormilón, ona-(n)
durmiendo-(adj)

to sleep
slept
sleepy head
sleeping

APPENDIX L
QUIZ SAMPLE I
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Prueba de vocabulario (Unidad 2.3)

I. Definiciones: Define estas palabras a continuación.

1. el chico-
2. la amiga-
3. el alumno-
4. la grabadora-
5. la pantalla-
6. el maestro-
7. el número-
8. el/la estudiante-
9. la bandera-
10. la tarjeta de lotería-
11. el animal-
12. el alfabeto-
13. el calendario-
14. la taza-
15. la persona-
16. la letra-
17. la pintura-
18. las gafas-
19. la campana-
20. la televisión-

APPENDIX M
QUIZ SAMPLE II
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Prueba de los Word Families II.

I. Hay tres posibilidades para cada pregunta. Escriban el número al lado de la palabra.

- 1.1 comido
- 1.2. visto ____ drinkable
- 1.3. leído ____ read
- 1.4. bebible ____ seeing
- 1.5. la vista

- 2.1. ver
- 2.2. oye ____ orange
- 2.3. la lectura ____ listen
- 2.4. naranja ____ to see
- 2.5. bueno

- 3.1. comprender
- 3.2. releer ____ saw
- 3.3. visto ____ make
- 3.4. hacer ____ reread
- 3.5. calle

2. Escojan (Choose) la palabra que corresponde al significado de estas palabras.

- 1. Vamos a la tienda para comprar (buy) unos ____.
a). comestibles b). comidillas c). comidas d). comido
- 2. La ____ de este lugar (place) es muy bonita.
a). vistazo b). ver c). vista d). vistosa
- 3. La biblia es un libro bien ____ por muchos.
a). lectura b). leer c). leyendo d). leído