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The L1 Context Embedding Method in Foreign Language Vocabulary Instruction: A Comparative Study with the Keyword Method

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Abstract
The L1 Context Embedding Method that has been proposed and tested by Zi-Gang (2015), consists of inserting target L2 vocabulary, with translations in brackets, into an L1 story text. It has been demonstrated by Zi-Gang (2015) to be more effective than rote memorization. This current study tested the L1 Context Embedding Method against the Keyword Method (Atkinson, 1975) to see if the two methods are comparable. Sixteen university students from an Elementary Spanish class were taught 10 novel Spanish words using each method in a counterbalanced presentation order. They were administered an immediate posttest for each set of 10 words according to each method, then a combined delayed posttest a week later. The test scores showed that the two methods are comparable, since outside factors affected the scores more than the methods themselves. The results also indicated that the L1 Context Embedding Method was slightly more effective in the immediate posttest, but the Keyword Method was moderately more effective in the delayed posttest.

Keywords
foreign language teaching, vocabulary teaching, deep level processing, keyword method, context embedding, story contexts

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Introduction

Two important subjects of language instruction are grammar (syntax) and vocabulary (incorporating morphology, semantics, and phonology). Vocabulary may be defined as "the words of a language, including single items and phrases or chunks of several words which convey a particular meaning, the way individual words do" (Lessard-Clouston, 2013, p. 9). In many second language classrooms, which are descended from the Grammar-Translation method, explicit grammar instruction dominates class time and practice drills, while vocabulary instruction tends to hold an inferior position. Utilizing this approach, language instructors naturally put more work into grammar instruction, abandoning students to learn vocabulary primarily by rote memorization or by drawing on any strategies they may have severally (Brown, 2001; Fazal, Majoka, & Ahmad, 2016). However, many linguists and educators believe that vocabulary instruction is actually more urgent than grammar, for, as one author states, "While without grammar very little can be conveyed, without vocabulary *nothing* can be conveyed" (Wilkins, 1972, p. 111). From the latter perspective, it is clear that research into the most effective methods of vocabulary instruction is of great value.

Literature Review

Importance of Vocabulary Instruction

Two authors, Norbert Schmitt (2000) and Michael Lessard-Clouston (2013), both explain the importance of vocabulary in language acquisition. Schmitt (2000) notes initially that both explicit and incidental learning are necessary and should be regarded as complementary. He writes, "Reliable intuitions of collocation can only come from numerous exposures to a word in varied contexts, which suggests incidental learning as an acquisition vehicle" (Schmitt, 2000, p. 122). Incidental acquisition can only occur with exposure by one of two avenues: spoken language and written language. If we reduce the

context of second language instruction to *foreign language instruction* (i.e., teaching a language in an environment where it is not commonly spoken), which is the emphasis of this study, the need for vocabulary instruction only increases. This is simply because it is less probable that foreign language students have meaningful, face-to-face interactions in the target language, so they must rely more heavily on reading as an acquisition vehicle (McQuillan, 2016). Other tools that provide language input such as films and videos have a similar function to reading in that they all provide authentic input but do not allow for negotiation of meaning. In other words, the individuals are not able to interrupt the language input and ask for clarification.

The need for vocabulary instruction in the classroom is then underscored because some amount of previous explicit study is required before one can acquire language incidentally through reading. If a student did not have any vocabulary knowledge there could be no comprehension of the text and thus no comprehension of the novel vocabulary. There would be no acquisition of the target language. Therefore, some explicit vocabulary instruction, and most likely more than is common, is necessary to achieve a threshold of knowledge that enables a student to benefit from incidental learning through reading (Schmitt, 2000).

In this way, vocabulary knowledge and reading form a type of upward spiral; they are mutually beneficial. Cohen and Johnson (2011) express this concept: "While a good vocabulary base is needed to comprehend the text one reads, the more reading an individual does, the better his/her vocabulary becomes" (p. 358). Vocabulary instruction in the classroom makes incidental learning through reading possible, and reading helps students acquire even more vocabulary needed to become proficient in the language. The students can then progress to more and more difficult texts, similar to the process of learning to read in an L1.

Lessard-Clouston (2013) takes a similar position to Schmitt (2000) on the importance of vocabulary instruction. He writes, "Part of a teacher's job is to incorporate deliberate vocabulary teaching into classes to help students develop the breadth and depth of vocabulary knowledge required so that they can use it both receptively and productively" (Lessard-Clouston, 2013, p. 12). He essentially argues that language learners need to know more vocabulary, and that they need to know their vocabulary better. So, the ultimate goal of language acquisition is to know language productively.

Nonetheless, receptive knowledge is learned first. In order to recognize and learn a definition of a novel word, a student must be familiar enough with its context to understand the communicative intent of the message. Then the novel word itself can be understood in context. By repetition the ability to recognize the word becomes solidified, and by multiple exposures in a variety of contexts, the full definition is acquired (Tosuncuoğlu, 2015). When this full knowledge of a word is solidified enough in a student's brain that it can be retrieved at any given time to express an original utterance, the student is said to have productive knowledge of the word. The purpose, then, of learning vocabulary is to retain words in one's long term memory, so that they can be easily

retrieved and used when needed (Zi-Gang, 2015). Explicit vocabulary instruction may be a means to an end, whereby the instructor's only objective is that the students achieve a receptive knowledge of the novel word so that they are later able to incidentally acquire productive knowledge as they interact with the language.

Deep Level Processing

In order to accommodate for a more vocabulary heavy approach to language education, as described above, or even an approach where vocabulary and grammar have equal priority, multiple methods have been proposed, refined, and tested with the aim of increasing vocabulary retention (Sagarra & Alba, 2006). These methods include vocabulary acquisition through reading (Aiping, 2016; McQuillan, 2016; Reynolds, 2015), the Keyword Method, and other mnemonic based approaches (Atkinson, 1975), visual aids (Cohen & Johnson, 2011), semantic mapping or word webbing (Sagarra & Alba, 2006), contextual inference (Tsae & Jia, 2010), project-based learning (Reisi & Saniei, 2016), grouping (Akpınar, 2015), utilizing games (Mohd Tahir & Tunku Mohtar, 2016), and context embedding (Zi-Gang, 2015). Each of these methods seeks for vocabulary to be learned and retained through a deep level of cognitive processing. The underlying belief is that "In the case of vocabulary, the more one engages with a word (deeper processing), the more likely the word will be remembered for later use" (Schmitt, 2000, p. 120). If students simply read or hear a new word, or even repeat the word with its translation many times (i.e., rote memorization), they will be unlikely to remember it for long, because the level of cognitive processing in this case is shallow (Lessard-Clouston, 2013).

The efficacy of deep-level processing on vocabulary retention has been confirmed by many researchers (Nemati, 2013; Sagarra & Alba, 2006). In studies, groups that were taught with methods incorporating deep-level processing regularly retained significantly more of the vocabulary than their counterparts who used rote memorization or personal memorization strategies (Nemati, 2013; Prince, 2012; Sagarra & Alba, 2006). However, other studies have found that greater cognitive involvement may not necessarily produce higher retention when the amount of time given is considered (Keating, 2008; Webb, 2005). It is my belief, due to greater scholarly support and my personal experience, that deep-level processing does indeed lead to higher retention.

For example, many novel L1 vocabulary words such as *ambivalence*, *trepidation,* and *aloof* were taught to me in 8th grade using a type of mnemonic method. For the word *ambivalence*, the class was given a story of a person named *Val*, who is in an *ambulance* about to give birth (the word *ambivalence* looks like the word *val* in the middle of *ambulance*). Val was having birth pains and ready to go in the ambulance, but she also wanted her husband, who was on his way, to go with her. So, Val could not decide whether to go or to wait a few more minutes. She was *ambivalent*. The ridiculousness of the story added to the other students' and my ability to remember the word, and I was able to retain these words and each of the others from the first day they were presented to me. They were locked into my long-term memory through deep-level processing.

Though many of the methods with deep level processing that are mentioned above are intriguing, explaining each in depth is outside of the scope of this study. I will focus on perhaps the most reputable and widely studied method, the Keyword Method (Atkinson, 1975), along with a much less studied method which I have called the L1 Context Embedding Method. I will submit the Keyword Method as a type of champion for the established methods of vocabulary instruction, against which to pit the L1 Context Embedding Method and see if it merits the attention of foreign language instructors.

The Keyword Method

As originally conceived by Richard Atkinson (Atkinson, 1975) the Keyword Method is a two-step process of learning L2 vocabulary which involves associating the novel L2 word with an L1 keyword that is acoustically or orthographically similar, and then connecting the L1 keyword with the translation of the novel L2 word (Pressley, Levin, & Delaney, 1982; Sagarra & Alba, 2006). For example, the L2 word *bandera* means "flag." *Bandera* looks and sounds like the L1 word *band*, so we may employ the word *band* as the keyword and create this sentence which evokes an image: "The marching *band* carries *flags* of many different countries." The vocabulary word, translation, and sentence can also be accompanied by a sample image that the sentence may elicit in one's mind.

The Keyword Method is one of many types of mnemonic methods. As Pressley, Levin, and Delaney (1982) note, "Atkinson did not really invent the keyword method, similar ideas date way back, but he named it and jump started a lot of the research" (p. 62). Therefore, it is similar to the method from my personal experience related above, except that it is usually considered a tool for learning vocabulary in an L2. I use the Keyword Method in this study as opposed to other mnemonic methods because of the high commendations it has received and the wealth of research available on it.

Since Atkinson's original work on the Keyword Method, researchers have compared its effectiveness with many other vocabulary learning techniques. It has been shown to be far superior to rote memorization (Rodriguez & Sadoski, 2000; Sadoski & Avila, 1996; Sagarra & Alba, 2006; Van Hell & Mahn, 1997). It has also proven more effective than other methods incorporating deeper level processing: it has excelled over visual imagery (Levin, McCormick, Miller, Berry, & Pressley, 1982), imagining the word's meaning (Pressley, Levin, Kuiper, Bryant, & Michener, 1982). semantic mapping (Sagarra & Alba, 2006), and presenting vocabulary in an L2 context (Brown & Perry, 1991; Moore & Surber, 1992; Pressley, Levin, & Miller, 1982; Rodriguez & Sadoski, 2000).

The Keyword Method does have some weaknesses. It is most efficient with high imageability words and concrete, rather than abstract, vocabulary (Sagarra & Alba, 2006; Wei, 2015). It also lacks the ability to provide context for the student. As such, the student may effectively learn the novel word but may not have enough knowledge of its collocations to use it proficiently (Sagarra & Alba, 2006). To account for this, I have attempted in this study to select target words which I have judged to be appropriate for both methods.

L1 Context Embedding Method

The second method that I test in this study is the L1 Context Embedding Method. Context embedding in the L2 is quite popular and has also been researched considerably. It is based on the realization that providing students with a story or an interesting context for novel words increases their interest and engages their memory to aid in acquisition (Prince, 2012). The context or story improves students' retention (Shu, Anderson, & Zhang, 1995; Tarakçıoğlu, 2014) and provides them with better collocations to understand the full extent of target vocabulary (Bowen & Marks, 1994; Penno et al., 2002). As much as possible, instructors should present and teach novel words in spoken and written context (Lessard-Clouston, 2013; Prince, 2012; Tarakçıoğlu, 2014).

However, definitions should also be provided, since, "Successful inferencing has been shown to depend heavily on learners' prior knowledge as well as their ability to make effective use of extratextual cues" (Nassaji, 2003, p. 648). Not all language learners have this ability to successfully inference the definition of a novel word from the text. The effectiveness of embedding target vocabulary in an L2 context is also contingent on the student's prior proficiency in the second language. Schmitt (2000) states that a threshold of around three to five thousand word families is necessary in order to begin reading authentic texts written for native adult speakers. This prerequisite of advance vocabulary knowledge has been affirmed by research (Nassaji, 2003; Schmitt, 2000).

Instead of contextual vocabulary instruction in general, in this study I focus specifically on the L1 Context Embedding Method, which to my knowledge has only been described and studied from a linguistic perspective once (Zi-Gang, 2015). With all the previous discussion and research in mind, researcher Zi-Gang tests for the first time the effectiveness of teaching vocabulary by embedding target words in an L1 context (Zi-Gang, 2015). Zi-Gang compares the L1 Context Embedding Method with rote memorization and demonstrates that the L1 Context Embedding Method is more effective. Yet, as has been shown, many methods of deep level processing have proven more effective than rote memorization. In this study, I try to remain close to Zi-Gang's method, (although I am compelled to have smaller groups of participants and use English as the L1 and Spanish as the target language), but instead test it against the much more prestigious Keyword Method. The L1 Context Embedding Method has been shown to be superior to rote memorization (Zi-Gang, 2015), but how would it compare to the Keyword Method? I hypothesize that the Keyword Method would produce higher retention in both the immediate and delayed posttests, regardless of the order of instruction.

Method

To answer this question, a quantitative, microlinguistic study was created and realized. The testing was performed with 16 participants from a university-level Elementary Spanish class in two out-of-class sessions. Nine females and seven males volunteered without receiving any compensation from me, though their professor did offer them extra credit. The participants were placed into two groups of eight to each learn two sets of vocabulary words, one via the Keyword Method and the other via the L1 Context Embedding Method.

The presentation order was counterbalanced: each group was presented with the same words, but Group A was taught the first half with the L1 Context Embedding Method and the second half with the Keyword Method, while Group B was taught with the two methods in reverse order.

Material

Word lists

Each vocabulary set contained 10 words, which were selected according to three criteria. First, words were selected based on the likelihood that elementary Spanish students would not already be familiar with them. *A Frequency Dictionary of Spanish: Core Vocabulary for Learners* (Davies, 2006) was consulted to determine word frequency, and the 1,300 most frequent words were excluded. The most common vocabulary word among the target vocabulary in the study was *ciego* (blind), followed by *escoger* (to choose) and *bandera* (flag). Second, words were chosen which were suitable to both methods. The L1 Context Embedding Method requires target vocabulary that can be tied together in a story context, so the words used were restricted due to this requirement. The Keyword Method is well known to be most efficient with concrete or highly imageable target vocabulary, also restricting possible words. Finally, words were selected in order to equalize the words in each set. The study required set one of words 1-10 to be as comparable as possible to set two of words 11-20. Each set of words consisted of seven nouns, two adjectives, and one verb. Appendix A lists the final target vocabulary chosen. The appropriateness and parity of these words were checked and affirmed by a fellow student of Spanish and Linguistics.

Story contexts

Stories in English were created as a vehicle to present the target words 1-10 in context for Group A, and words 11-20 for Group B. Zi-Gang (2015) notes that "Stories can provide learners with a network of associations of the target words… stories provide contextual clues to language learners" (p. 256). Prince (2012) agrees and states that the story context "acts as an aid to recall" (p. 110). In this study anecdotes were selected and created so that they would grab the participants' attention and maintain their interest, while also being short enough to present in 10 minutes. Words 1-10 were embedded in a famous anecdote about the Spanish poet Francisco de Quevedo, while words 11-20 were in an anecdote of the origin of the idiom, "to turn a blind eye." In order to remain true to Zi-Gang's original study, I attempted to format the texts of the anecdotes in the same way. The Spanish target words were embedded in a series of English sentences with their English translations provided in brackets next to them (Zi-Gang, 2015). Each text was then transferred to presentation slides along with a few images relating to the anecdote. The story texts are included in Appendix B.

Keywords and sentences

For the Keyword Method, a keyword and a sentence relating it to the translation of the target word were created by the researcher. Some research has claimed that instructor-provided keywords either aid retention more than student-generated keywords (Hall, Wilson, & Patterson, 1981), or equally as student-generated keywords (Cohen, 1987; Wei, 2015); however, research on this aspect of the Keyword Method has produced mixed results (Sagarra & Alba, 2006). For the purpose of this study, the keywords were created by the researcher in order to conserve instruction time and equalize the results. Each sentence was then put on a presentation slide, the keyword being in bold text and the translation in italics. Accompanying each sentence was a photo that visualized the keyword. Samples of the keywords and sentences used in this current study are included in Appendix C.

Procedure

Instruction procedure

Groups A and B were each actually tested in four groups of 1-3 individuals in order to find times which were available to the participants. However, I created and followed a speaking script and timed the sections of each session to assimilate the instruction that each participant received. Instruction and testing for each group occurred during two sessions a week apart, the first lasting for about an hour and the second for 15 minutes.

During Session 1, participants were welcomed and instructed to not write anything down during the session, and the two methods of study were explained. The participants were also asked to attempt to use the given methods when studying each set of words, rather than relying on any personal strategies they may have had. Then the participants were given a pretest including the 20 target words to ensure that they were all novel words. After this, words 1-10 were presented for a total of 10 minutes by means of the proper method according to whether the participants were in Group A or B. With the L1 Context Embedding Method, participants were read the anecdote, including the target vocabulary words and their translations, by the researcher, and then received a copy of the text to read and study on their own for the remainder of the time. With the Keyword Method, each slide and target word was presented and explained by the researcher, then the slides were cycled through a second time for the remainder of the 10 minutes. After 10 minutes the texts were removed or the slides were taken down and the participants were given a three-minute break before having five minutes to take the immediate post-test. This same procedure was then repeated with words 11-20 and the second method. At the end of Session 1 the participants were requested to not discuss the nature or details of the testing with their classmates who had not yet undergone the study.

Session 2 only consisted of a delayed post-test. Participants had 15 minutes to recall the translations for as many of the 20 target words as possible. Participants were thanked for their assistance and reminded that their data would be kept confidential and that the researcher would share the results of the study with them.

Testing procedure

Each of the tests, the pre-test, immediate post-tests 1 and 2, and the delayed post-tests, assessed receptive, rather than productive, vocabulary knowledge. This is because receptive knowledge is the first step in vocabulary acquisition. Formal instruction seeks to introduce novel vocabulary to students and familiarize them with the words enough so that when they hear or read the words in an authentic text, they will understand the meaning and be able to benefit from the input. A deeper and fuller understanding to be able to control the word in multiple contexts will only result from much authentic input, but recognition of the vocabulary (receptive knowledge) is the first step.

Each of the tests consisted of the target Spanish words plus 10 distractor words which were similar in appearance to the words the participants were taught. This resulted in 20 words for both immediate post-tests and 30 words for the delayed post-test, which were then ordered randomly. The 10 distractor words ensured that the participants were able to recognize the entire word, and not just the first few letters, which is more realistic, since students learning a language will hear and read many words that sound or appear similar. The participants were reminded before each test of how many words they were looking for, and told that they could leave the rest that were not taught blank, and that they simply had to write an English translation for each target word that they remembered. The pre-test, immediate post-tests, and delayed post-test are included in Appendices D through G.

Scoring procedure

For each test, participants were scored based on how many of the 10 words taught with each method were correct. No partial points were awarded; every answer received either full credit or was marked incorrect based on whether the answers were judged to exhibit understanding of the word connotation. First, any answers of nouns without the article *the* or verbs without the preposition *to* were considered correct, as well as obvious misspellings such as “to chose” instead of *to choose*, “boquet” for *bouquet*, “bling” for *blind*, “flat” for *flag*, and “causeous” for *cautious*. Second, answers that conveyed the same or similar meaning but were the wrong part of speech were also given credit: “caution” for *cautious*, “to bet” instead of *bet*, “to make fun of” instead of *mockery*, and “decision” instead of *to choose*. Finally, in the case of answers that indicated that the participant understood the meaning of the target word but could not retrieve the exact English word, points were also awarded. This includes “eyeglass” and “looking glass” for *spyglass*, “boat (group of boats/ships)” for *fleet*, “age or century” for *century*, and “can’t walk” for *crippled*. On the other hand, answers that were close, but not quite the same as the proper translation were not given credit: “flower” for *carnation*, “flower” for *bouquet*, “boat” for *fleet*, “surrender” for *retreat*, and “gambling” for *bet*. Answers for any of the distractor words were simply ignored. The pre-tests, two immediate post-tests, and the delayed post-tests were graded according to these criteria and organized into the tables in the following section.

Results

Data from each of the posttests were collected and organized in the following tables. *Table 1* shows the mean scores for the pre-test, immediate post-tests, and delayed post-test, by group, word set, and the method used.

Table 1. Mean scores on all tests

Group	Words / Method	Pretest	Immediate Posttest	Delayed Posttest
A	1-10 / CEM	0.00	8.875	4.00
A	11-20 / KM	0.00	9.00	6.00
B	1-10 / KM	0.00	9.00	5.75
B	11-20 / CEM	0.25	9.375	7.875

This data does not indicate that either method is significantly more effective than the other. *Table 1* shows that in both the immediate and delayed post-tests, Group B, using the Keyword Method, retained more of the vocabulary words 1-10 than Group A, using the L1 Context Embedding Method. However, Group B also retained more of the vocabulary words 11-20, with the L1 Context Embedding Method, than Group A, with the Keyword Method. This proves that the method used was not the most significant factor in this study.

Although I attempted to minimize any other factors, the data shows that either the intelligence of the participants and/or the order in which the methods were used had a greater effect on the amount of vocabulary retained. Because of the limited number of participants, their intelligence or memory may have had a significant effect on the results. The participants in Group B as a whole may simply have had a greater ability to remember and retrieve the vocabulary items from their memory. Since each group was taught a set of words with each method, the order of instruction may also have had a significant effect. *Table 1* shows that both groups retained more of the target vocabulary from words 11-20 than from words 1-10. In the immediate post-test this was not as substantial (a mean difference of .125 for Group A and .375 for Group B), but in the delayed post-test the mean difference was much more noteworthy (2.00 and 2.125, respectively). Another possibility is that words 11-20 were simply not as difficult to learn as words 1-10. It appears more likely, however, that the order in which the sets of words were presented was the greater factor because of this disparity between the mean differences in the immediate posttest as compared to the delayed posttest. Since an immediate post-test was given after presenting each set of words, it is understandable that there was not much of a difference between the amount of target vocabulary retained from words 1-10 and words 11-20. In the delayed post-test, however, it is likely that the participants were better able to recall the words which they had learned last during the session a week earlier – words 11-20.

Nonetheless, the data can still adequately inform the research that one method is more effective than the other. Although neither method unambiguously outperformed the other, this data shows that the L1 Context Embedding Method is slightly more effective for immediate retention, and the Keyword Method is moderately more effective for longer term retention. *Table 2* displays the improvement for each group in the mean amount of target vocabulary retained from words 1-10 to words 11-20, and *Table 2* displays the increase in words retained from each set from Group A to Group B.

Table 2. Improvement by percentage from Words 1-10 → Words 11-20

Group	Immediate Posttest	Delayed Posttest	Words 11-20 Method
Group A	+1.41%	+50.00%	Keyword
Group B	+4.17%	+36.96%	L1 Context Embedding

Table 3. Improvement by percentage from Group A → Group B

Word Set	Immediate Posttest	Delayed Posttest	Group B Method
Words 1-10	+1.41%	+43.75%	Keyword
Words 11-20	+4.17%	+31.25%	L1 Context Embedding

On the immediate post-tests, each group retained more vocabulary from words 11-20 than words 1-10, and Group B retained more of the words from both sets than Group A. However, both improvements were greater when switching to the L1 Context Embedding Method: a difference of a 2.76% improvement in each. Taken together, this data indicates that the L1 Context Embedding Method is slightly more effective than the Keyword Method in regard to immediate or very short term retention of words.

The results of the delayed post-tests display a greater difference between the two methods. Again, each group retained more vocabulary from words 11-20 than words 1-10, and Group B retained more of the words from both sets than Group A, but both improvements were greater in this case when moving to the Keyword Method. The difference in the case of the delayed post-tests were much greater in favor of the Keyword Method over the Context Embedded Method, than the difference in the immediate posttest. For this reason, I say that the data shows the L1 Context Embedding Method is *slightly* more effective for immediate retention, but the Keyword Method is *moderately* more effective for longer term retention.

Group A was able to retain 50% more of the target vocabulary from words 11-20 using the Keyword Method than from words 1-10 using the L1 Context Embedding Method.

Comparatively, Group B only retained 36.96% more of the target vocabulary from words 11-20 with the L1 Context Embedding Method than from words 1-10 with the Keyword Method. This results in a 13.04% difference of improvement when going from the L1 Context Embedding Method to the Keyword Method, rather than from the Keyword Method to the L1 Context Embedding Method, indicating that the Keyword Method is more effective in delayed vocabulary retention.

Similarly, Group B was able to retain 43.75% more of the target vocabulary from words 1-10 using the Keyword Method than Group A using the L1 Context Embedding Method. With words 11-20, Group B only retained 31.25% more of the target vocabulary with the L1 Context Embedding Method, than Group A with the Keyword Method. This results in a 12.5% difference of improvement when switching from the L1 Context Embedding Method to the Keyword Method, as opposed to the reverse. From both of these figures it is reasonable to conclude that the Keyword Method is moderately more effective than the L1 Context Embedding Method in improving long term vocabulary retention.

Discussion

In summary, the results of this study add two small pieces of evidence to the ongoing discussion of which methods of vocabulary instruction are the most effective. First, this research indicates that the difference in effectiveness between the Keyword Method and the L1 Context Embedding Method is not as significant as the difference between the groups of 8 chosen randomly. Second, although the L1 Context Embedding Method was shown to be slightly more effective on the immediate post-tests, the Keyword Method appears to be moderately more effective on longer term retention. However, more study is required to confirm this finding, since neither method unequivocally outperformed the other.

Implications

This data is relevant for both foreign language educators and learners. With more extensive research, this study can aid educators in determining which methods of explicit vocabulary instruction to employ in the classroom. This research can also guide foreign language learners in their own language learning strategies, allowing them to be confident that they are using methods which have been proven to be effective.

It is also important to note that multiple methods can be complementary. Educators should integrate multiple approaches to provide their students with the most benefit (Prince, 2012). Since this research has shown the L1 Context Embedding Method to be comparable to the Keyword Method, instructors should combine both. It is likely that each method is more effective to a particular type of learner, for, as Tosuncuoğlu (2015) states, “Vocabulary acquisition is highly idiosyncratic and depends largely on the learner and her or his individual learning styles and cognitive abilities” (p. 1). However, more research would be required to confirm this.

Limitations

Because of time constraints and the size of my university, this study was most severely limited in the number of participants. Groups of 8 are more easily skewed by the natural variation of intelligence and memory capacity among individuals. A larger number of participants, such as the 60 in Zi-Gang's original study (2015), would produce more reliable data. Another limitation was the L2 usedSpanish. If I had a knowledge of Chinese I would have been able to recreate Zi-Gang's study (2015) more faithfully.

Future Study

This study could be replicated and improved with a more equal set of words and larger groups to determine more accurately which vocabulary instruction method is more effective. A larger group of participants would ensure more reliable results that are due to the factors being researched – the instruction methods, and provide a buffer against results that are the outcome of learner variation. A more equal set of target vocabulary could be created by spending more time balancing the sets of words and having them reviewed and confirmed by multiple linguists or educators.

Studies could also be performed to determine whether either method is more effective when used by particular types of learners. Participants could be placed into groups according to their learner styles or even personality and the results compared. Research into this area would have great implications for foreign language educators and their ability to create differentiated explicit vocabulary instruction.

Conclusion

In conclusion, this paper has reviewed the importance of explicit vocabulary instruction in the foreign language classroom and the significance of deep level processing in aiding long-term retention. Two of these methods, the L1 Context Embedding Method and the Keyword Method, were tested in this study and shown to be comparable. The results show that the Keyword Method, however, appears to be moderately more effective when it comes to longer term retention. More research would be beneficial to confirm these findings and to increase the scientific knowledge of the L1 Context Embedding Method.

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Appendix A: Target Vocabulary

Set 1:

1. *Calambur* (pun)
2. *Siglo* (century)
3. *Apuesta* (bet)
4. *Osado* (brave)
5. *Coja* (crippled)
6. *Mofa* (mockery)
7. *Escoger* (to choose)
8. *Ramo* (bouquet)
9. *Dádiva* (gift)
10. *Clavel* (carnation)

Set 2:

11. *Ciego* (blind)
12. *Flota* (fleet)
13. *Cauto* (cautious)
14. *Bandera* (flag)
15. *Señal* (signal)
16. *Desarrollo* (progress)
17. *Humo* (smoke)
18. *Derrota* (defeat)
19. *Retirarse* (to retreat)
20. *Catalejo* (spyglass)

Appendix B: Anecdote Texts For Context Embedding Method

The Most Famous *Calambur* [pun] from Spanish – Group A
The most famous *calambur* [pun] of Spanish history is attributed to a poet and writer from the 17th *siglo* [century] named Francisco de Quevedo. It is said that Quevedo made an *apuesta* [bet] with some friends that he was *osado* [brave] enough to tell Queen Elizabeth of France to her face that she was *coja* [unable to walk]. (The Queen in the 17th *siglo* [century] actually was *coja* [unable to walk] in one leg and any sort of *mofa* [mockery] about her disability made her very angry.) Quevedo's friends did not think he was *osado* [brave] enough, since in that time the Queen had the power to imprison someone simply for making a *mofa* [mockery] of her, so they took the *apuesta* [bet].

To understand the *calambur* [pun] and the rest of the story, you need to know one more Spanish word: *escoger* [to choose]. In a respectful imperative (command form) using *usted*, the conjugation is *escoja* [choose].)

So Quevedo bought two *ramos* [bouquets] of flowers, one of white *claveles* [carnations], and one of red roses, as a *dádiva* [gift]. Then he presented himself before the Queen, bowed, extended his arms with one *ramo* [bouquet] in each hand, and said, "*Entre el clavel y la rosa, Su Majestad* ***escoja***" ["Between the carnation and the rose, you, Your Majesty, choose"]. What the Queen didn't realize, however, is that at the same time he was saying, "*Entre el clavel y la rosa, Su Majestad* ***es coja***" [Between the carnation and the rose, Your Majesty is unable to walk"]. So the Queen accepted the *dádiva* [gift] and Quevedo won the *apuesta* [bet].

"To Turn a Blind Eye" – Group B
The English idiom, "to turn a blind eye to" is attributed to an incident in the life of Admiral Horatio Nelson, who was *ciego* [blind] in one eye. It is said that during the Battle of Copenhagen between British forces and Danish and Norwegian forces, Nelson was leading the attack but his ship and the entire British *flota* [fleet] was under the overall command of a *cauto* [cautious] Admiral named Sir Hyde Parker.

In those days military orders were transmitted by raising various *banderas* [flags] so the other ships could see the *señal* [signal]. Admiral Parker was not able to see the *desarrollo* [progress] of the battle due to the amount of *humo* [smoke] from the guns, but he could see the distress *banderas* [flags] from two of the other ships. Since Admiral Parker was such a *cauto* [cautious] commander, and afraid of a *derrota* [defeat], he decided to order the *flota* [fleet] to *retirarse* [retreat].

When Nelson's flag captain saw the *bandera* [flag] through his *catalejo* [spyglass], he informed Nelson. Nelson, who was winning the fight but knew that Admiral Parker could not see the *desarrollo* [progress] due to the *humo* [smoke], lifted his *catalejo* [spyglass] to

his eye that was *ciego* [blind] instead of his good eye, and said, “I really do not see the *señal* [signal]!”. So the *HMS Elephant* and the other ships with him did not obey the *señal* [signal] to *retirarse* [retreat] but continued to attack. Nelson’s actions ended up leading to a victory and the Danish and Norwegian forces suffered a major *derrota* [defeat].

Appendix C: Sample Keyword Sentences

La bandera – *flag*.
The marching **band** carries *flags* of many different countries.
La señal – *signal*
I'll **send y'all** a *signal* when it's all clear.
Osado – *brave*
The little boy is **sad** because he isn't brave enough to jump into the water.
La dádiva – *gift*
No one knows what to buy their **dad** for Christmas, so we give them classic dad *gifts*.

Appendix D: Pretest

Name: _____ Group: ____

Vocabulary Pretest

Give an English translation for any of the following Spanish words that you know.

1. El siglo: _____
2. El ramo: _____
3. La dádiva: _____
4. La apuesta: _____
5. El calambur: _____
6. La mofa: _____
7. El clavel: _____
8. Cojo/a: _____
9. Osado: _____
10. Escoger: _____
11. La bandera: _____
12. La señal: _____
13. El humo: _____
14. La derrota: _____
15. El desarrollo: _____
16. La flota: _____
17. El catalejo: _____
18. Ciego: _____
19. Cauto: _____
20. Retirarse: _____

Appendix E: Immediate Posttest, Words 1-10

Name: _____ Group: ____

Vocabulary Immediate Posttest (Words 1-10)

Give an English translation for any of the following Spanish words that you know.

1. La mofa: _____
2. Escoger: _____
3. Oscuro: _____
4. El daño: _____
5. La apuesta: _____
6. El cloro: _____
7. Osado: _____
8. Cojo/a: _____
9. La moda: _____
10. Estorbar: _____
11. La dádiva: _____
12. Cosido: _____
13. El calambur: _____
14. El siglo: _____
15. El clavel: _____
16. La altura: _____
17. El ramo: _____
18. El cazador: _____
19. El sifón: _____
20. El rasgo: _____

Appendix F: Immediate Posttest, Words 11-20

Name: _____ Group: ____

Vocabulary Immediate Posttest (Words 11-20)

Give an English translation for any of the following Spanish words that you know.

1. La semilla: _____
2. El catalejo: _____
3. La bandera: _____
4. Calvo: _____
5. Celoso: _____
6. El humo: _____
7. El cantante: _____
8. Retirarse: _____
9. La flauta: _____
10. El desarrollo: _____
11. La derrota: _____
12. La despedida: _____
13. La harina: _____
14. La flota: _____
15. El delito: _____
16. La señal: _____
17. Recogerse: _____
18. Cauto: _____
19. La ballena: _____
20. Ciego: _____

Appendix G: Delayed Posttest

Name: _____ Group: ____

Vocabulary Delayed Posttest

Give an English translation for any of the following Spanish words that you know.

1. El Cariño: _____
2. Cauto: _____
3. La bandera: _____
4. La flota: _____
5. Oblongo: _____
6. La señal: _____
7. La herida: _____
8. La mofa: _____
9. La derrota: _____
10. El catalejo: _____
11. El ramo: _____
12. Ciego: _____
13. Escoger: _____
14. El humo: _____
15. La apuesta: _____
16. El bastón: _____
17. La sisa: _____
18. El sepulcro: _____
19. El mosto: _____
20. La dádiva: _____
21. El siglo: _____
22. Retirarse: _____
23. La rabia: _____
24. Reanudarse: _____
25. El calambur: _____
26. El clavel: _____
27. El desarrollo: _____
28. Cojo/a: _____
29. Osado: _____
30. Ceñido: _____