

The Effects of Frontloading and Chunking Vocabulary Instruction
with Second Language Learners

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Abstract

The purpose of this research study was to determine if students retained more vocabulary using the chunking method versus being taught with the frontloading method. In this study, vocabulary retention was measured using academic achievement on a vocabulary test. Measurement tools were a posttest developed by the researcher. The design of this study is a pre-experimental and consisted of two different classes from a middle school in Baltimore County, Maryland. Results of the study showed stronger vocabulary retention with students that received the chunking intervention. It would be beneficial to continue research in vocabulary retention with second language learners to explore more beneficial ways to improve student vocabulary.

CHAPTER I

INTRODUCTION

Overview

In foreign language classrooms today, teachers struggle with getting students to memorize vocabulary, contextualize grammar, and develop oral proficiency skills all while creating lessons that are real-world applicable and authentic. Vocabulary development is the keystone of learning a foreign language because, without it, you have no grammar, speaking, or any communication skills at all, in terms of standard language. A large struggle lies in the way students perceive and then process information such as vocabulary. Too many students are studying for the test and then weeks later losing track of prior vocabulary knowledge, never having stored their vocabulary information into long-term memory (McColley, 2014).

The organization of American Council of the Teachers of Foreign Language has provided a myriad of studies that suggest evidence of the most successful ways to get students to surely process vocabulary into their long-term memory. Vocabulary retention skills such as chunking, scaffolding, visual cues, and connecting prior knowledge are excellent strategies to foster a student's second language vocabulary retention (Zheng, 2012).

In second language teacher conferences across the nation, a topic of concern is students' ability to successfully increase their vocabulary. The issue is a challenging one in which teachers must decide between a variety of strategies in their instructional methods.

As a foreign language teacher, the researcher daily witnesses the struggles that students have when learning a language, in particular with vocabulary retention. Various techniques have been used in the researcher's classroom, but the direct comparison between two classes with two different vocabulary retention techniques in order to assess and analyze the outcome has not been

done before. Some never struggle with memorizing vocabulary, but it is imperative to discover which techniques will better help students who don't "click" right away with languages. Previous studies have worked with cognitive abilities and mastering metacognition, but the current study, seeks to determine whether students will perform better if they are given a list of 20 vocabulary words taught all at once with visuals or whether chunking those 20 words into four sets with only contextualization of the word is more effective in creating long term memory storage.

Statement of Problem

The purpose of this study is to examine the effects of vocabulary pedagogy and to analyze which techniques are more effective in storing vocabulary into long-term memory.

Hypothesis

The null hypothesis is that there will be no difference in academic performance between students who are receiving the frontloading, a traditional vocabulary methods instruction (i.e. control group) and students who receive the chunking with visuals (i.e. the treatment group).

Operational Definitions

The independent variable is student performance. The student performance will be measured with a vocabulary test that is the same for both the pre- and posttest.

The dependent variable is the instructional method. Two instructional methods will be utilized: chunking and front-loading. Chunking entails dividing the vocabulary into parts that makes it easier for students to associate the words in groups. The animals will be chunked by the habitat they live in. Front-loading will have all the words instructed on the same day, all at once, and then the students will work with the vocabulary in various activities.

Posttest

Students will be asked to write the English equivalent of the vocabulary and/or draw a picture of the vocabulary. They will be given the same test before and after the vocabulary has been taught

Une vache

Un ours

Un hibou

Un Mouton

Un renard

Une Aigle

Un cheval

un oiseau

Un singe

Un serpent

un chat

Un papillon

Un crocodile

Un requin

Une chèvre

Un poisson

Un tigre

Un crabe

Une poule

Un cochon

CHAPTER II

REVIEW OF THE LITERATURE

This research study will be exploring the successfulness of two pedagogical techniques used to teach students vocabulary in a second language, chunking and frontloading. In this literature review the importance of vocabulary retention will be investigated. Then the significance of second language learners will be discussed, including the concept of memory and what learners need to place vocabulary into their long-term memories. Then, through investigating other researchers' work, the need for intervention will be discussed and the question of why there are major changes being implemented into foreign language instruction will be addressed. In conclusion, effective strategies to increase vocabulary in second language learners will be investigated.

The fundamental necessity to any language is vocabulary. Without it, a language essentially does not exist. Within the last several decades, vocabulary pedagogy and second language (L2) acquisition “has moved to a position of ‘some importance’ in the field of Second Language Acquisition, attracting concerted research efforts,” (Zheng, 2012, p. 106) with a hope of developing higher vocabulary retention among L2 learners. A language teacher with 15 years or more experience can tell you firsthand how over the last few years L2 pedagogy has fundamentally changed; instructional implementation of vocabulary is consistently argued among academics, but one thing all agree upon is that vocabulary is the key to success in reading, interpersonal, and interpretive language skills (Dudzic, 2013).

The Importance of Vocabulary Retention in Language

Vocabulary: without it, this paper would not be able to be read nor written. The spoken instructions explaining how to write it would not have been fathomed, nor would the instructions

have been able to have been explained successfully. The prominence of vocabulary is omnipresent. Vocabulary allows language to be communicated, written, understood, and read. Without a strong vocabulary basis, basic human interaction becomes a struggle. Second language teachers across the world are aware that the most important aspect of language learning is the individual learner. Oberg (2011) says that “When acquiring an L2, or any new information, each individual’s capacity for memory quickly comes to the fore as an important concern (p. 118).

A crucial component of language and vocabulary development is the age at which a student begins the L2 process. As children develop, they are continuously changing cognitively, and, according to McColley (2014), “expansion and connection or ‘pruning’ (the stage at which the brain cuts out the excess connections that are not being used,” (p. 4) is widely known by many as the brain’s way of using it or losing it. The younger a student learns, the stronger ability the learner has to memorize the language since during this time the brains connections and expansions are rapidly being produced. The stage in life when a child begins learning a language also dictates into which area storage the brain stores the L2, another factor in vocabulary retention (Kennedy, 2006).

Vocabulary in the past (and in some circumstances, still today) was drilled into a student’s brain by using the rote technique (repetitive technique to “increase” memory retention) that offered little differentiation of instruction nor contextualization of the vocabulary (Huang & Huang, 2015). Vocabulary retention is more than being able to recall a definition, though. “Vocabulary knowledge is the knowledge of a word that not only implies a definition, but also implies how that word fits into the world” (Sharifi & Mohammadi, 2014, p. 76). Contextualizing vocabulary allows the L2 learner to make connections in the brain through chunking, circumlocution, or scaffolding, increasing the likelihood of it being retained long term.

A new hot term in education today is student-centered learning, and in novice level L2 classrooms this concept is continuously debated for its effectiveness. L2 learners are now being expected to learn more vocabulary and grammar on their own through contextualization and circumlocution. However, “it is estimated that the vocabulary learning from context is only possible and reliable when the student understands between 95% and 98% of the text” (Payvandi, Mohammadi, Madani, & Froghe, 2014, p. 54). In order for language learners to develop vocabulary through these self-teaching techniques, they must first have the keystone to language, a strong vocabulary infrastructure, already developed.

The Significance of Memory in L2 learners

Without memory, we are unable to store and process information like vocabulary, with the expectation of later recalling as needed. Regardless of which techniques are used in vocabulary instruction, there are two stages to the process of memorizing the vocabulary. The first stage is being able to recognize the word, and the second stage is being able to store the word into memory for as long as possible (Ge, 2015). The second stage is a much more complicated process because most learners forget the meaning of learned words as time progresses and the specific vocabulary is not continuously reinforced. Memory in general can be summed up into three types of informational processing perspectives: sensory memory, short-term memory, and long-term memory. Sensory and short-term memory are both very limited in capacity, unlike long-term memory which is both larger in capacity and in storage duration (Ge, 2015). The key to vocabulary retention is transitioning taught vocabulary from short-term to long-term memory where students will be able to recall the information and produce it in a myriad of linguistically authentic ways.

Effective long-term memory storage techniques in L2 learning are imperative to develop fluent speakers. It is suggested that an L2 learner must acquire a minimum of 2,000 words to be able to comprehend 90-94% of authentic language discourse (Gallego & Llach, 2009). It is crucial that the “old” ways of teaching a language are manipulated so that instructors avoid teaching vocabulary in a way that is more likely for students only to place in the short-term memory database with rote techniques. When teaching vocabulary techniques, the pedagogical methods being used must cater to leading L2 learners to developing vocabulary that is stored in the long-term memory.

Vocabulary is memorized better when the brain is able to make connections and process the vocabulary as something that is more than simply a word. When implementing effective instructional strategies, it is appropriate for an instructor to include techniques that are catering to the two types of long-term memory storage. By accommodating the taxon system of long-term memory, the L2 learner is able to categorize the vocabulary into sections or chunks. Additionally, providing techniques that pertain to the locale system of long-term memory allows the L2 learner to “connect and apply their recent experiences in new and different situations” (McColley, 2014, p. 5). With the basis of long-term memory being the locale and taxon system, it is understandable why “old-fashioned” methods such as the rote technique need to be amplified. Learning vocabulary through outdated word-definition techniques does not offer any source for the brain to make authentic connections from experiences nor to easily chunk the vocabulary into categorical compartments for long-term storage. New methodology must encourage instruction to use pedagogy that does.

The Need for Intervention

In order for students to be receptive to learning, they must first feel comfortable in their environments. An educator must take into consideration classroom processes when evaluating expectations of their language learning students: students' emotional states, individual idiosyncrasies, individuals' psychological behaviors, and personal factors such as intrinsic motivation and self-efficacy (Khaloufi, 2016). Anxiety levels are often high in a language classroom because students are fearful of pronouncing vocabulary wrong and not understanding what is being communicated in the target language. Educators are often overly focused on meeting curriculum requirements and preparing students for exams. As such, students' individual needs are often neglected; however, the more comfortable a student is and the more his/her needs are met, the greater success a student typically enjoys.

Khaloufi (2016) also discusses the importance of avoiding boredom and fear in the classroom to increase student vocabulary success rates. Lessons need to be unique and “connectable” for a student so students are both entertained and able to chunk information into their long-term memory. Fear is often evident when students spend the majority of time listening rather than producing the language on their own, including through speaking and writing. An educator must be mindful of creating a warm climate in which students feel comfortable in the classroom so that they are more willing to take risks and have more motivation to develop their L2 (Khaloufi, 2016).

The process of learning is pluralistic not unitary, and educators need to respect the significance of differentiated instruction in the pedagogical practices. The theory of multiple intelligences is known to appease students cognitively in multiple areas since students all learn differently (Bakić-Mirić, 2010). Even in a classroom of twenty-five learners, the diversity in the

cognitive interests of students is extensive; one vocabulary retention technique may work well for one student yet have not cognitive success with another student. When teaching a lesson, educators must be able to take the same lesson and implement a variety of multiple intelligences to cater to their students' individual needs and desires.

Currently, teachers are unable to differentiate instruction with true success because there is not enough time to create lessons that are personal for every individual need. Too many lessons are often taught to appease one or two types of students in the classroom while the others must try hard to learn in a style that is not compatible with their cognitive needs. This inability to individualize instruction for all students has a domino effect: boredom, students aren't learning and feel insecure, students shut-down, and ultimately students shut off from retaining vocabulary.

Differentiation is key when recognizing techniques that are going to effectively allow a student to better acquire L2 vocabulary. Every student learns differently, and it is important to acknowledge that one technique that may have worked 20 years ago, or even for a student today, may not effectively help another student develop the same skills. As Zheng (2012) mentions, over the past several decades vocabulary acquisition has been “moved to a position of some importance” (p. 106) because it L2 learners are having a much more difficult time in developing “productive vocabulary” (p. 106) than they are “receptive vocabulary” (p. 106). Productive vocabulary is developed when the L2 is able to make connections and relate it to his/her own personal life for further usage in an authentic way. Receptive vocabulary is very similar to that of a flashcard technique; words are identifiable but not necessarily able to be used in communication accurately. Educators (especially ones who have taught longer and at one time

used the “old-fashioned ways”) should attend professional development to remain up-to-date with the latest advancements in research for vocabulary acquisition.

Students are changing at a rate unlike before, and educators need to quickly adapt to create a more productive learning environment. Most teachers today were not brought up in a technology-based world, at least not to the extent that learners are used to today. It is very common for a student to successfully multi-task while teachers tend to encourage a student to do one thing at a time (no music while working, no cell-phones, etc). Nearly everything surrounding a current student today involves technology (e.g. computers, Ipods, cell phones), and teachers are struggling to keep up at a rate that remains entertaining for the students because they are much more commonly more advanced in technological areas. What is new and innovative technologically to a teacher is far too often old news to a student (Zheng, 2012). Many educators of languages fear online translators as opposed to dictionaries, but this fear is an inability to change with the times. Students are able to quickly look up words using online translators, and the paper dictionary is relatively useless to today’s students.

Effective Instructional Methods for Vocabulary Retention in L2 Learners

With vocabulary being the core of language communication, it is important to understand which instructional tools are the most effective for vocabulary retention among L2 learners. One effective technique in developing vocabulary retention is very similar to that of how both *Dora the Explorer* teaches English speakers basic Spanish vocabulary before they can ever write their own name and how a language dictionary explains L2 vocabulary in their L1 (native language); embedding L2 Target Words in L1 (native tongue) stories (Ge, 2015). In reading, a very effective way of introducing vocabulary and increasing vocabulary retention skills is through contextualization and circumlocution, building connections into their memories. The stories can

also be easily differentiated to cater to learners of different levels so that technique is more effective across the classroom.

As indicated in research, another highly effective method to implement in a language learning classroom is using a picture book. This technique allows students to associate vocabulary with images. Symbols are highly recognized by students and reduce the risk for confusion and misunderstanding because the pictures being used explicitly “translate” the word in a language that is universal, pictures. This technique, combined with collaborative discussions of the text using the reading and target language, is effective in vocabulary retention and acquisition (Sun & Teng, 2017). The collaborative discussions in extension to the picture books allow students to build their own connections in their brains which results in a more successful vocabulary retention rate.

Through movement and Total Physical Response (TPR), students are able to manipulate vocabulary with a kinesthetic approach, creating a more effective connection and a greater likelihood of vocabulary retention. TPR is a tool that gets the students moving and using sensory techniques to learn the language, eradicating boredom and creating a hands-on learning approach (Farley, Ramonda, & Liu, 2012). With the movement and visual representations, the students are creating through the use of TPR, the students are creating stronger connections and developing more effective vocabulary retention skills. TPR also caters to multiple intelligences and can easily be manipulated to offer differentiation to students with various learning needs.

Summary

Teaching a second language to a student requires in-depth knowledge of the process of how the brain stores information, the individualized needs of the students, and effective methods of vocabulary instruction as demonstrated in research. Individualizing instruction, blending the

use of technology, TPR, picture symbols, and reading with imagery can significantly increase students' vocabulary retention rate, thus creating a more successful language learning classroom.

A learning environment that is comfortable for students and that caters to the multiple intelligences using the latest techniques in vocabulary acquisition is one in which students are set up to have a successful learning experience.

CHAPTER III

METHODS

Design

This study consisted of a pre-experimental design. There were two groups, one group being taught the vocabulary using front-loading and the other using chunking. The study compared which group gained the most vocabulary knowledge over the course of six 80-minute courses. The null hypothesis is that there will be no difference in academic performance between students that are receiving the frontloading and students that receive the chunking with visuals.

Participants

The participants in this study are 43 seventh-grade students (21 boys and 22 females) from one middle school in Baltimore County, Maryland. Their ages ranged from 12-13 years old, and the participants were chosen based on convenience. The classes were selected by the researcher out of convenience. The researcher chose which group received the chunking (22 students) and the frontloading (21).

Instrument

The researcher designed a pre/posttest consisting of 20 vocabulary words that come from a standard unit on nature. There are 20 vocabulary words and the students will need to identify the animal (in French) to a corresponding picture. By using the same posttest, it eliminates the bias of having different vocabulary among the groups.

Procedure

After selecting two of the researcher's classes that are comparable in student population, the groups were assigned as a frontloading group and a chunking group. During the first class,

both groups will be introduced to the vocabulary, frontloading all at once and chunking in a scaffolded method. Then over the next five classes the frontloading group will receive all of the vocabulary from day one. There will be an interpersonal activity working with the vocabulary on class two, an interpretive on class three, and a presentational activity on class four. These activities will all be relating to the vocabulary but with a frontloading perspective. During class five, the students will review the animals and be asked to play a review game consisting of memory. They will create this game on their own. For the chunking group, everything will occur in the same order but each day the animals will be presented in a group of five and chunked. They are chunked into four categories: reptiles/ fish, farm animals, forest animals, insects and birds. On the sixth class, both classes will take the post test. During the study both groups will be encouraged to study outside of the classroom, complete all student work, and to ask any questions. All posttest are the same for every student, and their scores will be compared to determine whether one group performs better than the other.

CHAPTER IV
RESULTS

The purpose of this study was to determine if two different pedagogical techniques, front-loading and chunking, have any significant influence on students learning vocabulary. The hypothesis was that students in the chunking group will outperform students that are learning the vocabulary using the front-loading methods.

Table 1 shows the means and standard deviation for each group, the group that received chunking and the group that received front-loading. An independent t-test was run to determine whether any differences existed at posttest. Results showed no significant differences at posttest [$t(41) = 3.121, p < .05$]. The chunking group outperformed the front-loading group at posttest. The null hypothesis was rejected. These results and their implications will be discussed in the following chapter.

Table 1

Means and Standard Deviations of Vocabulary for the Group

Group	Mean (Standard Deviation)
Chunking	17.68 (6.61)
Front-Loading	14.90 (10.49)

CHAPTER V

DISCUSSION

This study examined the effectiveness of French vocabulary instruction by using two methods: chunking and front-loading. This study rejected the null hypothesis that there would be no significant difference in the successfulness of vocabulary retention between chunking and frontloading. The chunking group scored higher on the assessment of vocabulary, retention differing from the hypothesis that students introduced to vocabulary with the chunking method would demonstrate equal vocabulary retention skills with the students instructed with frontloading.

Implication of Results

The teacher played an intensive role throughout this study because of the work involved in teaching the same lessons with different instructional methods. For chunking, the teacher had to group the vocabulary in a way that would provide sound connections with the students and their prior knowledge. Clear visuals and authentic interpersonal, interpretive, and presentational activities were needed to help students develop the vocabulary in an authentic way. Creating and finding authentic resources was facilitated with the internet but was time consuming and strenuous. A veteran teacher would have more success in creating lessons involving chunking as he or she would be more able to accumulate resources and reflect on what works and does not work when creating a lesson that requires chunking. A novice teacher should find a way to balance chunking with other instructional methods to ensure he or she is not spending overly abundant time planning lessons. This treatment would be most successful in a classroom where a unit is being instructed that requires a lot of vocabulary.

Even though the null hypothesis was rejected, the researcher did observe some students who had more success with the frontloading method than some students did with the chunking method. It was observed that students in the chunking group were more comfortable with the vocabulary and had more confidence when completing presentational activities than the students who were instructed with frontloading. The observations suggest that a teacher should become familiar with which technique provides more success for a student and then provide differentiated instruction based off of student preference.

Theoretical Consequences

The results do support the theories that support the effectiveness of chunking to create better vocabulary retention skills through the use of connections. Some research claims that frontloading is more effective because it allows the students to create their own chunking techniques as they see fit. Instead, chunking here was predetermined by the instructor as to how various vocabulary words correlate. The results showed students in the chunking method scoring higher overall on the assessment than the frontloading method. Research indicates that most students perform better when they are able to categorize vocabulary by connections (Zheng, 2012). These connections are distinctive to the particular learner but help them develop vocabulary.

Threats to Validity

In this study there were threats of both internal and external validity. These threats may have impacted the findings in this study.

There was the possibility of unintentional teacher bias during instruction. The assessment itself avoided being bias since it was the same for both groups of students. It is possible, though, that the teacher subconsciously taught the two different groups in a way that would reflect the

hypothesis. The teacher may have incidentally interacted differently between the two subject groups in a way that could have had implications on the students' vocabulary retention.

Another threat to validity was that the sample type and size was not random. It was chosen out of convenience by the researcher. Along with a lack of control group, these research choices impact the extent to which results can be generalized.

Time and schedule differences also could have had implications on internal validity. The testing groups are on an A/B day schedule. The chunking group was a morning class on the A day rotation, and the frontloading group was an afternoon class on the B day rotation. Both classes experience an 85-minute French class every day, but their levels of engagement may have varied because of the time of day.

Another threat to internal validity was the number of times the researcher tested the hypothesis. Completing just one study comparing the vocabulary retention of students may not be sound enough to confidently suggest that chunking is overall more effective than frontloading vocabulary. Along with that is timing. Because the schedule is alternating and the study took about three weeks to complete, the weekend impacted the amount of time between classes. For two weeks the chunking group had French three times a week, whereas the frontloading group had it twice.

Concluding the threats to the internal validity, the time of year that the study was completed may have also impacted the results. The study was completed in the end of April into May. This time of year, some students are not as focused in their coursework. Also, some students were not used to being taught vocabulary by just using one technique, and it could have impacted the results by mixing up the pedagogical routine they have been used to.

One potential threat to external validity is the ability level of the students in each group. Because they are two different classes with completely different students, it is possible that one class had stronger performing students than another, impacting the results. In the chunking group there were fewer IEPs than in the group of students in the frontloading group which could be reflective of overall student potential since there was no differentiation on the assessment itself to avoid bias. Students also had different experiences, and some students may have had more prior knowledge than others of the animal vocabulary that was introduced. Three students have parents who speak French fluently and may also have been introduced to the vocabulary outside of the classroom.

Another threat to the external validity relates to the techniques that the researcher chose to investigate. Frontloading and chunking are only two techniques of many that are used in a classroom to instruct vocabulary. There are pedagogical methods that are potentially more successful than chunking, but these were not studied. These results can only be generalized to the two techniques that were used in the study.

Connections to Previous Studies

This study investigated the effects of two instructional tools for vocabulary: chunking and frontloading. This study was influenced by the research of McColley (2014), who investigated the influence of using visual techniques versus traditional teaching of grammar, comparing the two groups' vocabulary retention skills.

Learning a second language is an arduous task, and it is difficult to determine which are the best vocabulary techniques because there are various factors that can play a role in a second language learners vocabulary development (Zheng, 2012). The learning and long-term storage of vocabulary tends to be rather idiosyncratic to the individual learner. Second language learners

must identify early on which strategies are most beneficial to improving their vocabulary retention skills to ensure success in a second language setting. Vocabulary needs to be taught in a variety of ways so that a learner is able to better chunk and make connections with prior knowledge (Dudzic, 2013).

Students also need to be able to find ways to make their own connections with the vocabulary. These techniques need to be taught early on in language development, so they are able to metacognitively develop these essential skills (Zheng, 2012). This will allow learners to have a better understanding of which pedagogical instruments will best benefit them. If they are cognitive of needing visuals, they will have much more success in the classroom by learning in a way that works for them, also creating a more motivated student (Zheng, 2012).

As indicated in other research, it is both the technique in which vocabulary is taught to ensure retention and methods in which they are instructed. Vocabulary is language, and language need to be real and authentic. Research shows that students, when using combined methods of vocabulary retention with classroom activities that are authentic uses of the vocabulary, retain more vocabulary successfully (Hummel, 2010). This research shows that when students are taught with various techniques such as frontloading, chunking, and contextualization, they are able to reproduce the vocabulary more accurately and perform more successfully on vocabulary retention assessments.

It is evident that among the researchers there are varying opinions, but it is agreed upon that there is not one better way to teach vocabulary to language learners over another (McColley, 2014). Each learner has a different style and requires different techniques for developing vocabulary, but it is evident in research that learners respond better independently to different types of instructional techniques.

Suggestions for Future Research

The study did reject the null hypothesis that students who were placed in the chunking group would have the same vocabulary retention skills as those students placed in the frontloading group. The students in the chunking instructional group scored higher and demonstrated stronger vocabulary retention. This research doesn't suggest that frontloading be eradicated from instruction but does suggest that further studies should be completed to ensure a stronger validity.

The results did have both internal and external validity; however, in any future research on this topic, many of the threats are avoidable. One suggestion to avoid potential teacher bias is to have an outside observer watch the teacher, take notes, and then provide feedback to the instructor on a daily basis. Also, scheduling would alleviate potential threats if students of the same time frame were chosen instead from two different times of day. In addition, the study should be completed in the beginning of the school year before students are adapted to the routines of the teacher.

To solve the potential insufficient research, the future researcher should be prepared to study the test groups over more than one vocabulary unit. This will allow a more reliable observation of the data provided over multiple units. This also allows the teacher to reflect on how each unit went to determine whether there are changes and adjustments that they need to make to upcoming units to make the research more viable. Because a small group of students was in the testing groups, the researcher could investigate a longitudinal study over a few years to compare more than one year of students. The researcher could even include a variety of other vocabulary instructional methods to juxtapose with the two original methods chosen.

Future research could also have students take a questionnaire asking them to describe how they feel they learn vocabulary best. Then the students could be placed into groups based off of their responses. Students who only claim to be stronger chunking learners or frontloading learners would be placed together. This would potentially prevent students from being placed in incorrect groups and thus negatively impacting the data.

Future researchers should also consider investigating multiple units because every vocabulary lesson is different and will relate to students differently. In addition, the vocabulary in some sections will be more difficult than others. Using multiple lessons could create stronger validity in the results of future research relating to this study.

Conclusion

The results of this study provided evidence to reject the null hypothesis that students placed in instructional group taught with chunking would have equal vocabulary retention skills than students in the frontloading group. Though the results rejected the null hypothesis because the chunking group retained more vocabulary according to the post instruction test, there were threats to both external and internal validity present. In addition, the researcher discovered students should have been placed in a group of their own choosing based off of learning style preference to avoid students being placed in a group that goes against how they tend to learn. More research is required to develop the research goal of this experiment. Through further research, this topic will help teachers better understand how to cater to the students' individual needs and help them reach maximum vocabulary retention in their second language.

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