

VISUAL AND AUDITORY METALINGUISTIC LESSONS
FOR SPANISH SECOND LANGUAGE ACQUISITION

by

Dawna Michele Spencer

Approved:

Elyse Arwood Date May 27, 2008

Chairperson

Sally Hood Date 5/27/08

Committee Member

Nita Moore Date 5-27-08

Committee Member

Approved:

Marisa Cirillo 5/27/08

Dean, School of Education

Date

Approved:

Thomas Greene 5/27/08

Dean, Graduate School

Date

VISUAL AND AUDITORY METALINGUISTIC METHODS FOR
SPANISH SECOND LANGUAGE ACQUISITION

A Thesis Presented to the Faculty of
the School of Education
at the University of Portland

In Partial Fulfillment
Of the Requirements for the Degree
Master of Arts

by
Dawna Spencer
May 2008

Acknowledgements

This work would not have been possible without the support and encouragement of Dr. Ellyn Arwood, the chair of the committee for this thesis, whose expertise, guidance, and encouragement was infinitely helpful. I would also like to thank the other members of this thesis committee Ms. Nita Moore and Dr. Sally Hood for their participation and input regarding this thesis. I would like to thank the University of Portland and all staff in the Department of Education at the University for striving to provide students the best education possible.

I cannot conclude without thanking my family and friends for all of their love and support throughout this journey. I would like to thank my mother Karen Spencer for going far above and beyond in order to support me in facilitating this thesis and for encouraging me in its completion. I would like to thank my father Michael Spencer for his love and immense support during this thesis. I would also like to thank my husband Ashley Cooper for his continued positive attitude and the ability to make me smile in the face of a challenge. I would like to thank my grandmother Helen Spencer for her wonderful proofreading abilities and years of modeling what was possible to accomplish. Finally, I would like to thank all of my extended family and friends who have been so very sustaining, understanding and supportive during the process of completing this thesis.

Abstract

This research was conducted with high school students, grades 9-12, in two first year Spanish classes. One class was instructed using auditory metalinguistic lessons (Group A) and one was instructed using visual metalinguistic lessons (Group B). The content material that was taught related to a thematic unit in Spanish about the family “La familia.”

The proposed hypothesis for this research was that adding visual language to the classroom in the form of visual metalinguistic lessons would be more effective in reaching all learners needs in terms of how they conceptualize or acquire concepts related to the target language of Spanish when compared with a class where no visual language was added. In order to determine this, pre and post assessments were analyzed using descriptive statistics and t-tests (unequal variances) at a probability of .05 as statistically significant.

Two surveys were also included in this research in order to determine the number of visual processors in each classroom and to gain student input about the type of instruction used. The Temporal Analysis of Propositions (TemPro) was used to analyze student language samples in order to determine how individual students learned new concepts and if the populations of Group A and Group B conceptualized in the same way.

The pre-test findings indicated that even though there were not statistically significant differences between the two classes to begin with, the group numbers, 24 in Group A and 20 in Group B, were small (24 and 20 respectively) and the groups were not homogeneous suggesting that using t-tests to look for differences in means may not tell the whole story.

The post-test findings did indicate that there were statistically significant differences in learning gains when comparing average pre-test to post-test scores from Group A and Group B overall. When students who missed 14% or more of class time were taken into consideration, there were no statistically significant differences in learning gains from Group A to Group B. It was found that comparing pre-tests that evaluated the mean using t-tests (unequal variances), did not provide a thorough understanding of the data.

In terms of evaluating overall learning gains using raw data, Group B, the visual group's data, were more uniform in nature suggesting overall better success where Group A learning gains data showed some very high learning gains, some average gains and some low gains. This suggested that adding visual language to the classroom did a better job of reaching all learners. Adding visual language to the classroom did match how learners in Group B conceptualized.

In terms of reaching all learners, 85% of students in Group B scored a 70% or above on the post-test and when students with absences of 14% or higher were not included in the data, 100% of the students in Group B scored a 70% or above. 79% of students in Group A scored a 70% or above on the post-test and when students with absences of 14% or higher were not included in the data, 85% of the students in Group A scored a 70% or above. Significant attendance issues were associated with low scores in both groups and were taken into consideration.

The researcher also found that the population of the groups conceptualized in the same way, 100% visual thinkers in both groups, and matched what is known about today's population (Arwood, 1991). Survey results, determining the number of visual

processors, matched these results 86% of the time and also reflected that visual learners develop strategies to cope when concepts are represented using auditory language.

The researcher recommends future classroom research in the use of visual metalinguistic lessons in relation to concept acquisition and reaching all learners given the current population of visual thinkers. Several questions could be addressed in future research for example, how do most teachers currently understand visual and auditory language? Is current instruction matching what is known about the population of today's learners? Do the majority of teachers use visual language or auditory language? Is the curriculum in most schools auditory or visual? Are the classrooms in most schools auditory or visual? Are the assumptions of an auditory culture impacting the understanding of how learners think? How can visual metalinguistic methods be used in conjunction with other methods of foreign language teaching in order to more effectively reach all learners? Further research would be beneficial for both educators in understanding how the current population of learners conceptualizes and in the type of instruction implemented by educators as this has a significant impact on student concept acquisition.

Table of Contents

	Page
Chapter 1: Introduction	1
<i>Visual and Auditory Learning Systems and Metalinguistic Lessons</i>	2
<i>Language Acquisition and Second Language Instruction</i>	5
<i>Researcher's Role and Background</i>	8
<i>Research Methods</i>	11
<i>Summary</i>	14
Chapter 2: Review of Literature	16
<i>Second Language Instruction</i>	17
<i>Language Acquisition</i>	26
<i>Language Standards and Proficiency</i>	35
<i>Language and Learning</i>	42
<i>Language</i>	48
<i>Teaching and Learning Paradigms</i>	50
<i>Visual and Auditory Learning Systems</i>	52
<i>Visual and Auditory Metalinguistic Lessons</i>	54
<i>Learning Styles</i>	60
<i>Summary</i>	62
Chapter 3: Methods and Procedures	64
<i>Statement of Research Design</i>	65
<i>School and Community</i>	66
<i>Participants</i>	71

<i>Study Timeline</i>	73
<i>Ethics</i>	74
<i>Procedures</i>	75
<i>Pre and Post Instruments and Procedures</i>	76
<i>Classroom Surveys and Temporal Analysis of Propositions Instrument and Procedures</i>	88
<i>Visual and Auditory Metalinguistic Lesson Procedures</i>	92
<i>Limitations</i>	94
<i>Delimitations</i>	97
<i>Compilation of Data</i>	98
<i>Summary</i>	99
Chapter 4: Results	100
<i>Raw Pre-test and Post-test Scores</i>	101
<i>Raw Pre-test to Post-test Score Gains</i>	107
<i>Pre-test and Post-test t-Tests (Two –Sample Assuming Unequal Variances)</i>	110
<i>Learning Gains t-Tests (Two –Sample Assuming Unequal Variances)</i>	112
<i>Temporal Analysis of Propositions (TemPro) Data</i>	113
<i>Student Survey Data</i>	116
<i>Summary</i>	122
Chapter 5: Discussion / Conclusions	125
<i>Pre-test and Post-test Findings</i>	125
<i>Comparisons to Existing Literature</i>	127
<i>Recommendations for Future Research</i>	131

<i>Summary</i>	132
References	136
Appendixes	142
Appendix A Sample Pretest and Post-test Thematic Unit Assessments	142
Appendix B Oral Assessment and Rubric	150
Appendix C Sample Survey 1 and 2 Questions	152
Appendix D Temporal Analysis of Propositions (TemPro)	155
Appendix E Study Timeline	162
Appendix F Sample Visual and Auditory Metalinguistic Lessons	170
Appendix G Data Graphs and Tables	176

Chapter 1

Introduction

The understanding of what language is, the processes involved in learning, and the processes involved in language acquisition all ultimately influence teaching methods. This understanding impacts a whole range of content areas that includes, specifically for the purposes of this paper, second language instruction. The dominant cultural forces that are represented within a culture's language underwrite how the learning process is understood and therefore affect the understanding of how concepts are acquired.

There are many existing theories about language, learning, and language acquisition. What is known about language and how concepts are acquired ultimately influences teaching methodologies. Language theory implies that meaningful learning of information occurs through one's cognitive structure. This is facilitated by instruction that enhances meaningful learning.

Culture influences the way one thinks. In terms of linguistics, a linguistic culture that is based on the characteristics of English assumes auditory language properties. English, as an auditory language favors the understanding of concepts from an auditory perspective where "auditory concepts represent sound and sight," (Arwood, Kaakinen & Wynne, 2002, p. 6). English and Spanish, or alphabetic languages, are both auditory languages. The dominant cultural forces therefore contain underlying assumptions that people hear and think in spoken or auditory ideas (Arwood, Brown & Robb, 2005). This dominant linguistic bias has an impact on teaching, as there exists an underlying assumption that students hear and think in spoken ideas to match with how English functions as an auditory language. "U.S. educators typically assume that a person or

learner, who speaks English thinks in the way English functions as a language” (Arwood, Kaakinen & Wynne, 2002, p. 1).

How the learning process is understood directly impacts and influences how instruction in a second language is given. Current best practices in teaching a foreign language afford an eclectic perspective to teaching a foreign language and provide successful methods and strategies that incorporate meaningful learning for students learning a foreign language. These methods and strategies are discussed in-depth in the literature review section of this thesis. One of the main purposes of this study was to determine if visual metalinguistic lessons could be added to the foreign language teachers’ “toolbox” in taking on that eclectic approach which incorporates methods and strategies that are based on best practice to enhance concept acquisition.

Visual and Auditory Learning Systems and Metalinguistic Lessons

Understanding how the learner acquires concepts, and for the purposes of this paper related to a second language acquisition in Spanish, may help to improve the understanding of how instruction takes place in a classroom. “A person’s ability to learn may be assisted by using strategies that match a person’s underlying thinking or conceptual development – visual or auditory systems” (Arwood & Brown, 2001, p. 7).

A learning system (Arwood, 1991) can be described as the way the person can acquire new ideas or concepts. “Concepts can be formed into visual language or auditory language. The learning system is neurobiological” (Arwood, Kaakinen & Wynne, 2002, p. 4). From this perspective, the learning system is the means by which the learner processes, or “uses perceptual patterns to create concepts” (Arwood, Kaakinen & Wynne, 2002, p. 4), whether in visual or auditory concepts.

Could underlying cultural assumptions embedded in the auditory language of English, as well as Spanish, exclude a certain percentage of learners who think in visual concepts? "...it is estimated (Arwood & Young, 2000) that 60-90% of all learners do NOT think in these spoken (auditory) concepts. Instead the majority of learners (60-90%) think in visual concepts." (Arwood, Kaakinen & Wynne, 2002, p. 1).

The use of visual or auditory language in the classroom affects how the learner processes concepts related to the content being instructed, and for the purposes of this paper, include the acquisition of concepts related to a second language, specifically the target language of Spanish. These lessons take into consideration visual and auditory learning systems based on visual and auditory language assumptions and address the learning system of each individual learner. "Since the majority of learners think in visual concepts, teachers should consider how to teach concepts in a visual way." (Arwood, Kaakinen & Wynne, 2002, p. 1).

It is important to make a distinction between a learning system and learning styles. Learning styles can be defined as "...the way a person solves a problem or learns a task" (Arwood, 1991). This study is referring to learning systems as "neurobiologically linked to the creation of language" (Arwood, Kaakinen & Wynne, 2002, p. 4) and not the manner or preference with which a person problem solves or approaches learning.

Processing, for the purposes of this research, can be referred to as "the ability to use the perceptual patterns to create concepts" (Arwood, Kaakinen & Wynne, 2002, p. 4). If the learning process, or process of acquiring new concepts, is considered to be a cognitive process, a neurobiological process, or an interwoven mixture of many processes both external and internal, this understanding will ultimately influence teaching methods.

An understanding of the learning process is tied into what we know about cognitive developmental levels (Piaget, 1971). Arwood (1991) made the connection between language and cognitive levels of development, as “She (Arwood) recognized that as learners acquire more complex concepts, their language level represents their cognitive development.”

New advances in neural research lend support to this perspective in that, “Neurobiologists are beginning to perceive that language is a process of constant activity and negotiation that engages all the functions of the brain to some extent or another at some time” (Atkinson, 2001, p. 8). Jacobs and Schumann (1992) note that, “With respect to learning, cognition might be defined as the perception of a stimulus, attention to that stimulus, the movement of the information in the stimulus into memory, and finally, the expression or use of that information” (p.294). According to Damasio and Damasio (1992), “A large set of neural structures serves to represent concepts; a smaller set forms words and sentences. Between the two lies a crucial layer of mediation” (p.89). The implication here is that neural representation and manipulation of concepts are at the center of language production. “Concepts represent the way the learner’s brain is ‘wired’ neurologically, independent of external patterns of teaching. The neurobiological system determines the way a learner conceptualizes” (Arwood & Brown, 2001, p. 10).

Visual metalinguistic lessons are unique in that they add visual language to spoken language and incorporate developmental levels. These lessons include drawing concepts at a preoperational level, drawing in real time, drawing before note taking or writing, drawing on boards or papers so that the drawings can be referred to later, and drawing ideas so they are relational or connected and flowcharted (Arwood, Kaakinen &

Wynne, 2002). Auditory metalinguistic lessons can be described as concepts being represented in written and spoken format. Written or spoken words are used to describe the concepts, written or spoken words are used to explain concepts, and written or spoken words are repeated to reiterate important concepts (Arwood, Kaakinen & Wynne, 2002). Visuals can be used with auditory lessons, but written or spoken words are used to describe and explain.

If concepts are taught, and for the purposes of this paper concepts relating to learning a second language, in a way that addresses how a learner is able to acquire concepts, it may then be possible for learners to acquire those concepts and use them not only in the classroom but in many contexts outside the classroom in real life. Ultimately, one of the primary goals of teaching is to have students use what they learn in the classroom and apply it in their everyday lives.

Language Acquisition and Second Language Instruction

There are several major contributors to the postmodern view of language acquisition. These views range from empiricist perspectives (Hadley, 2001) to rationalist perspectives (Hadley, 2001). The empiricist side of the continuum included theories relating to Behaviorist Psychology, such as BF Skinner's Behaviorist theory (Skinner, 1957) and then the following theories of Connectionism (Feldman, 1981) and Parallel Distributed Processing (Rumelhart, McClelland, and PDP Group, 1986). The rationalist side of the continuum included the earlier theories of Universal Grammar (Chomsky, 1965; Ellis, 1985; and McLaughlin, 1987), the Monitor Theory (Krashen, 1982), and the early Cognitive Theories (Ausubel, Novak, & Hanesain, 1968; Ellis, 1985, 1990; and McLaughlin 1987, 1990). These many theoretical viewpoints address the processes

involved in language acquisition and have a direct impact on the understanding of the processes involved in acquiring a second language. However, according to Boltho (2003), “Most existing theories (of language) have foundations in the atomistic view of language which works from separate levels of language organization, such as grammar and lexis and phonology, and which engages first, and sometimes only, with the smallest and most systematizable units” (p. 253). This does not mean that language theory is atomistic in its view of language but it refers to its foundations, from which current theory stems from and even departs from. It does speak, however, to the dominate cultural forces in a culture where English is used and how it functions as a language, as those who use English are expected to think in the written and spoken word.

Distinct, but not separate from these theoretical constructs that address second language acquisition, are the teaching methods employed when instructing a second language. Traditional methods that have existed for instructing a second language “constitute the most common ways of approaching foreign language teaching before the 1970’s, when rapid developments in second-language acquisition research ushered in a profusion of new approaches” (Omaggio Hadley, 2001, p.106). An overview of these traditional methods includes, but is not limited to, the grammar-translation method (as outlined by Chastain, 1976), the direct method (as outlined by Rivers, 1981), and the audio-lingual method (as outlined by Rivers, 1981). An overview of methods and approaches in reaction to and extensions of these traditional approaches include, but are not limited to, the Cognitive Anti-Method (as outlined by Ellis, 1990), the Cognitive Code Method (as outlined by Chastain, 1976), and Communicative Language Teaching (as outlined by Richards and Rogers, 1986). Some other adaptations include, but are not

limited to, Total Physical Response or TPR (Asher, 1972), Total Physical Response Storytelling or TPRS (Ray & Seely, 1997), The Natural Approach (Terrell, 1977), Community Language Learning (Curran, 1976), The Silent Way (Gattegno, 1976), and Suggestopedia (Lozanov, 1978).

Most current methods do recognize that the actual learning process involved in acquiring meaningful concepts about a target language is important as it relates to instruction. The process that the learner employs to acquire new concepts reflects the actual acquisition of concepts related to the target language, however, how clearly is this acquisition understood? If an estimated 60-90% of the population of K-12 students are visual thinkers, yet in the classroom content is instructed using auditory language, are all learners' needs addressed and is the curriculum reflective of this? According to Rubio, Passey, and Campbell (2004) who researched the role of input in current language textbooks

Based on the results reported above we can say that the implied notion of traditional grammar instruction that one learns to produce by producing is still very much alive. Only about a fourth of the activities examined can be classified as input activities. The grammatical features that we analyzed all represent cases of structures in which there is a complex form-meaning relationship that usually presents difficulties for acquisition (p.171).

Given that English and Spanish are both auditory languages, what underlying assumptions might exclude the visual learner? "Most higher education involves some auditory assumptions." (Arwood, Kaakinen, & Wynne, 2002, p. 2). These assumptions include:

1. If the teacher uses spoken English to explain concepts, students will hear the concepts and understand their meaning.

2. If the teacher assigns readings, then the students will read by saying (mentally) the words on the page and understand the concepts.
3. When the student writes, the student thinks in spoken English concepts that are written.
4. When the student listens, the student writes words that are understood spoken concepts.
5. If the student is shown a demonstration, movie, or experiment while someone is talking, then the student understands the inferred concepts.
6. Higher education students know how they learn best.
(Arwood, Kaakinen & Wynne, 2002, p. 2).

Since the majority of K-12 learners are visual learners (Arwood & Young, 2000) these particular assumptions that embody a traditional auditory language method of teaching, do not meet visual learners' needs. Many visual learners develop strategies in order to be successful in a traditional auditory setting.

Visual thinkers cannot always make sense out of spoken words in a lecture or in reading the sound of patterns of text. Visual thinkers depend on graphs, charts, and on their own ways to make mental pictures from auditory material presented in the classroom. Sometimes, the auditory classroom does not afford enough information for the visual learner to perform well on tests or clinically apply concepts (Arwood, Kaakinen & Wynne, 2002, p. 2).

Researcher's Role and Background

This researcher's teaching philosophy is that all students can learn. Individual students may have different ways of acquiring concepts and it is the researcher's role as a teacher to understand the theory behind concept development in order to create and deliver instruction that meets students' needs. This speaks to the goals of the researcher's teaching in such a way that when students are able to acquire concepts they may use them not only in the classroom, but in many and varied contexts in real life. The researcher is a visual thinker and has had to develop strategies in order to be successful in a

predominately auditory culture. This has lead the researcher to embark on this research, as it was the researcher's observation and own personal experience that even though there are many successful second language learners, many do struggle through the experience of learning a second language due to methods that are influenced by auditory assumptions.

After taking undergraduate classes that addressed visual thinkers and detailed the underlying concepts explaining visual and auditory thinkers, the researcher was able to better understand how visual and auditory thinkers acquire concepts and was able to understand the connection between developmental levels, language, and cognition, not simply the development of products. This carried on into the researcher's teaching methods. The researcher has incorporated visualization into language used in the classroom, cartooning to draw out concepts, thematic picture dictionaries, and visual metalinguistic lessons. The researcher incorporated visual metalinguistic lessons as a Learning Specialist, as an ESOL teacher, and currently as a Spanish language teacher where the researcher experienced that the students were using concepts and retaining the concepts for later use. For this reason, the researcher saw a need to conduct this study.

The researcher sees the role of teaching as a facilitator to students in the classroom (more authoritative in nature), not the director (more authoritarian in nature) because the researcher believes that students must create their own meaning in order for learning to be meaningful to them and the environment must be learner centered. Some assumptions on the part of the researcher could include that the students have an intrinsic desire, as the researcher does, to learn the Spanish language, and that teaching a foreign language be representative of an eclectic approach comprising a global view of foreign

language methods and strategies in order to fully meet individual students' needs, and the needs of the classroom community as a whole. That is in order that students may acquire concepts related to the Spanish language and actually use the language.

In being aware of the cognitive differences of visual and auditory thinkers, the researcher uses visual metalinguistic lessons in Spanish classes in order to present new concepts and connect new concepts related to the content. These are layered with multiple examples, flowcharted and are continually referred to and added to from student and teacher input. The researcher normally integrates TPR (Total Physical Response) and has started integrating TPRS in the classroom, other content areas, cultural aspects of Spanish speaking countries and teaching the language in context. Creating an environment where the learner can create meaning through varied group and individual activities that afford meaningful input in the target language of Spanish and nurture communicating in the target language is important. Individual student needs are addressed, which might require giving students more of a challenge or making adaptations.

The researcher has had ten years of experience with the Spanish language, cultural studies related to Spanish speaking countries around the world, and reading, writing, listening, and speaking in the target language of Spanish. The researcher has traveled extensively over many years and participated in an immersion experience in Spain for a summer in order to further develop proficiency and understanding.

As an undergraduate, the researcher double majored in Spanish and Education and has endorsements in, and is highly qualified to teach, Spanish (Middle Level, High School), English for Speakers of Other Languages / Bilingual (Middle Level, High

School), Special Education (Middle Level, High School), Basic Math (Middle Level, High School), Multiple Subjects (Middle Level), and is currently completing a Masters of Arts. The researcher also has a total of six years experience tutoring students who cannot attend school for various reasons (health issues, mental issues, discipline issues, etc.). The researcher has been working for the past year and a half with a Spanish native speaker teen parent and providing ESOL instruction after school. The researcher is now completing a fourth year of teaching experience, the first year as a Learning Specialist at the middle school level and the past three as a Spanish I and II teacher at the high school level. The researcher has been and is involved in the school and the community. The researcher participates in leadership teams, such as the Positive Behavior Support leadership team, and clubs, such as being the co-advisor for two years of the Kiwanis Education for Youth Club (KEY Club), a volunteer community service club for high school students.

Research Methods

The research in this thesis was of a quasi-experimental design and was mostly quantitative in nature. The research took place at a high school comprised of approximately 1,500 students located in a rural, recreational, and agricultural setting. The participants were part of a convenience sample, the participants to which the researcher had access. The participants involved in this study were high school students, ranging from grades 9 to 12 and attending two first year Spanish classes. There were a total of 44 participants in this study.

The pre and post assessment was based on a thematic unit “La familia” (The Family). The content included communication activities (writing, speaking) and

comprehension activities (reading, listening) in Spanish related to related to the family, the house, where things are located, describing family members, vocabulary related to the family, chores, possessive adjectives, negatives, and a cultural and geographical understanding of Chile. Pre and post assessments included reading, writing, listening, speaking, and cultural understanding. The pre and post assessment directly reflected the core content that was taught within the scope and sequence of instructing that core content.

Appropriate visual and auditory metalinguistic procedures were followed.

In auditory language teaching,

- Concepts are represented in written and spoken format
- Written or spoken words are used to describe the concepts
- Written or spoken words are used to explain concepts
- Written or spoken words are repeated to reiterate important concepts in summary (Arwood, Kaakinen & Wynne, 2002, p. 8)
- Strategies are developed for individual learners who may struggle

In visual language teaching,

- Concepts are drawn
- Lessons are drawn in real time
- Drawing takes place before note taking or writing
- Drawing takes place on boards or papers so that the drawings can be referred to later
- Ideas are connected (flowchart)
- Strategies are developed for individual learners who may struggle (Arwood, Kaakinen & Wynne, 2002, p.15-16)

The researcher needed to simplify the methods employed to only auditory metalinguistic lessons and visual metalinguistic lessons in order to obtain data that was not influenced by other methods or approaches and in order to clearly demonstrate

whether there were any statistically significant differences between the groups given the differences in instruction.

The curriculum that was designated by the district for use in teaching Spanish was auditory in nature. A description of this curriculum and why it is auditory in nature is explained further in the methods portion of this thesis. Typically, the type of curriculum used in other content areas at the school was similar to that of the Spanish I curriculum in that it was auditory in nature. The researcher used and adapted the curriculum mandated by the district with both groups. The researcher taught using visual metalinguistic lessons to one group using the curriculum given and adapting that curriculum to follow the visual metalinguistic protocols, whereas, the researcher taught using auditory metalinguistic lessons to the other group using the curriculum and following the auditory metalinguistic lesson protocol, which matched the curriculum. The adaptation of the curriculum simply meant that concepts related to the thematic unit being instructed were instructed using visual language or auditory language.

Surveys were given pre and post-test to evaluate for visual processors and to attain student input about the type of instruction used (whether auditory metalinguistic lessons or visual metalinguistic lessons). A Temporal Analysis of Propositions (TemPro) was used to analyze written language samples to evaluate how individual students accessed their learning system (whether auditory or visual language). The data collected in this study was compiled individually and compared in class groups. The pre and post-test data was analyzed using descriptive statistics, t- tests (assuming unequal variances due to unequal class sizes) at a probability of .05 as statistically significant.

The study took place over a period of approximately six school weeks (29 days). The method of instruction, whether using visual metalinguistic lessons or auditory metalinguistic lessons, was assigned randomly to each class. First year Spanish classes (A, B and C) were labeled on a piece of paper and then randomly chosen out of a hat by hand. The first class drawn received instruction with visual metalinguistic lessons (Group A), and the second class drawn received instruction with auditory metalinguistic lessons (Group B). The researcher employed methods that were commonly accepted in an educational setting. This study was submitted to the SOE subcommittee on Human Subject and Research and was deemed exempt from a full board review.

Summary

A culture's linguistic basis imparts assumptions to what is known about how a person thinks and then ultimately, for the purposes of this paper, how the learning process is understood. This has a direct influence on the understanding of how concepts are acquired.

In any content area, and for the purposes of this study with the specific content area being Spanish at a beginning level, understanding how the learner processes concepts (Arwood, 1991) is important in addressing each individual learner's needs. Many methods take this process into consideration, however the use of visual language addresses language and cognitive levels of development as,

- The initial layers of concept acquisition occur at the "preoperational" level of language and cognition
- To the initial or preoperational layers of concept acquisition, more layers of multiple connections among concepts create a "concrete level" of understanding
- When multiple concrete concept layers interrelate, then the "formal level" of learning occurs (Arwood & Unruh, 2000, p. 5).

The use of visual language is not known in any past or current methods of foreign language teaching. This being the case, there was a need for this research to be conducted in the foreign language classroom as this particular study had not been done before to the researcher's knowledge. The researcher concluded that there was a need to determine if the method, visual language instruction, would be useful in instructing a foreign language and reaching all learners.

The null hypothesis for this research was that there were no statistically significant differences between pre and post-test assessment scores and overall gains within the two groups (A and B) given the two lesson formats used for instruction, auditory and visual metalinguistic lessons. The purpose of this study was to determine whether adding visual language to the classroom in the form of visual metalinguistic lessons would be more effective in reaching all learners in terms of how they conceptualize or acquire concepts related to the target language of Spanish when compared with a class where no visual language was added.

Chapter 2

Review of Literature

For a second language learner, one end goal of acquiring a second language would be to communicate effectively in all forms involving, but not limited to, reading, writing, listening, speaking, and cultural understanding. In other words, the learner processes information and acquires concepts related to a target language and then is able to demonstrate a level of proficient communication using what they have learned in many different settings in many different ways. This speaks to the primary purpose for studying a second language, the ability to communicate effectively in all forms with speakers of the target language in real life situations. This process of language acquisition as a whole, and the process of working towards being able to use and communicate in all forms in a language, involves an attempt by the learner to acquire meaningful concepts about the target language and then use them in a meaningful way. If this process plays a dominant role in language acquisition, then how is it that this “acquisition” of concepts related to language takes place? Furthermore, how is the learner able to process the information given in order to be able to produce the language, use the language, and become more proficient in the target language?

The purpose of this study was to determine if adding visual language to the classroom would be more effective in reaching all students related to the acquisition of meaningful concepts in the target language of Spanish when compared with a classroom where auditory language was used. This was reflected in analyzing pre and post assessment scores and learning gains based on a thematic unit of study between students instructed using visual metalinguistic lessons and those instructed using auditory

metalinguistic lessons given two groups of high school students attending two separate first year Spanish classes. The students were also evaluated to determine the percentage of students in each class who were visual or auditory thinkers and surveys were given to evaluate for visual processors and to gain student input about instruction used as well.

The following review of literature includes a working definition for all the variables involved in this question, as well as an analysis of second language instruction, language acquisition, language standards and proficiency, language and learning, language, teaching and learning paradigms, visual and auditory learning systems, visual and auditory metalinguistic lessons, traditional auditory methods and learning styles.

Second Language Instruction

There are many well-known methods of teaching a second language. The methodologies that have existed historically have a foundational base in theoretical perspectives that range from (Omaggio Hadley, 2001) empiricist perspectives to rationalist perspectives with regards to theories related to language acquisition. The term “method”, as it relates in this case to second language instruction, could be defined as “the notion of a systematic set of teaching practices based on a particular theory of language and language learning” (Rodgers, 2001, p.3). Approaches to second language instruction and methods for second language instruction are two distinct terms. According to Rodgers (2001), “...methods are held to be fixed teaching systems with prescribed techniques and practices, whereas approaches represent language teaching philosophies that can be interpreted and applied in different ways” (p.3).

Traditional methods that have existed for instructing a second language “constitute the most common ways of approaching foreign language teaching before the

1970's, when rapid developments in second-language acquisition research ushered in a profusion of new approaches" (Omaggio Hadley, 2001, p.106). An overview of these traditional methods includes, but is not limited to, the grammar-translation method (as outlined by Chastain, 1976), the direct method (as outlined by Rivers, 1981), and the audio-lingual method (as outlined by Rivers, 1981). An overview of methods and approaches in reaction to and extensions of these traditional approaches include, but are not limited to, the Cognitive Anti-Method (as outlined by Ellis, 1990), the Cognitive Code Method (as outlined by Chastain, 1976), and Communicative Language Teaching (as outlined by Richards and Rogers, 1986). Some adaptations that draw on certain traditional methods include, but are not limited to, Total Physical Response or TPR (Asher, 1972), The Natural Approach (Terrell, 1977), Community Language Learning (Curran, 1976), The Silent Way (Gattegno, 1976), and Suggestopedia (Lozanov, 1978).

The grammar-translation method involved a focus on the rules of grammar and proficiency that was based on the learner's ability to perform translation exercises between target and native languages. Learning about the language was the focus and little time was spent actually speaking in the language. According to Chastain (1976) the purpose of the grammar-translation method,

...was to prepare the students to be able to explore the depth and breadth of the second language's literature. A secondary objective was to gain a greater understanding of the first language. An equally important goal was to improve the students' capability of coping with difficult learning situations, i.e., develop the students' minds (p.103).

Grammar and vocabulary were taught through lengthy instruction and "talking about the language" was a measure of acquisition. Grammar and vocabulary (Chastain,

1976) were learned through memorization and translation was part of many lengthy exercises in reading and writing. According to Chastain (1976),

The goal was to be able to convert each language into the other, and the process was one of problem solving, the problem being that of puzzling out the correct forms assisted by the grammar rules and the dictionary. There was little concern with being able to communicate orally in the language. Consequently, there were few opportunities to listen to or to speak the language in the class (p.104).

The direct method presented a more active approach to second language learning and instruction. According to Rivers (1981) the direct method,

...advocated learning a new language through direct association of words and phrases with objects and actions, without the use of the native language by teacher or student...The ultimate aim was to develop the ability to think in the language, whether one was conversing, reading, or writing (p. 32).

The audio-lingual method “which described the learning process in terms of conditioning” (Omaggio Hadley, 2001, p.109), had some basic underlying premises directly related to an empiricist perspective. The language itself was not taught, but through conditioning and drill practice in the target language the learner increased proficiency. Only the target language was spoken in the classroom. According to Rivers (1981),

The audio-lingual method aims at teaching the language skills in the order of listening, speaking, reading, and writing. Material is presented in spoken form, and the emphasis in the early years is on the language as it is spoken in everyday situations; reading and writing at this stage play supportive roles. At advanced levels, when the last two skills receive increasing emphasis, students are introduced to more literary forms of expression. At all stages, however, the listening and speaking skills are kept at a high level by continual practice (p. 43).

Ellis (1985) provides us with a description of linguistic development based on exhaustive research on language acquisition. Ellis (1985) includes four stages of linguistic development that are not stair stepped in nature and do overlap. A summary of these four stages provided by Omaggio Hadley (2001) are as follows:

Stage One: Interlanguage forms resemble those of pidgin languages, with more or less standard word order, regardless of the target language. Parts of sentences are omitted, and learners use memorized chunks of discourse in their communication.

Stage Two: Learners begin to use word order that is appropriate to the target-language and to include most of the required sentence constituents in their speech. Language production in these first two stages is often quite inaccurate, however, as learners begin to include target language features in their speech, but not consistently as a native speaker would use them.

Stage Three: Learners begin to use grammatical morphemes systematically and meaningfully.

Stage Four: Learners acquire complex sentence structures, such as embedded clauses and relative constructions, and use them with greater facility and precision. (Omaggio Hadley, 2001, pp. 19-20)

The cognitive anti-method embodied several basic theoretical assumptions as outlined by Ellis (1990) given in summary in this paper as follows (L1 being first language and L2 being second language),

- 1) Second language is controlled by the learner
- 2) Human beings possess an innate capacity for learning language
- 3) It is not necessary to attend to linguistic form in order to acquire an L2
- 4) Classroom language learning is not an additive process
- 5) Errors are concomitant of the learning process and are therefore inevitable
- 6) L1 interference is the result of ignorance (pp.35-37)

The cognitive-code method was in direct opposition to the cognitive anti-method

and the audio-lingual method. The main opposition was related to the proposition that learning must be meaningful to facilitate acquisition of a language. According to Chastain (1976), “The second language learner is seen as consciously acquiring *competence* in a meaningful manner as a necessary prerequisite in the acquisition of *performance* skills. The teacher assists learning but does not assume full responsibility for it.” (p. 146). Chastain (1976) also outlines several characteristics of this method that are given in summary in this paper as follows:

- 1) The goal is to develop in the students the same types of abilities possessed by native speakers.
- 2) In developing the student’ language ability, the teacher proceeds from competence to performance
- 3) As soon as the students comprehend the underlying structure, they must be required to perform.
- 4) The infinitely varied and innovative nature of language necessitates teaching of the language rule system, not the language per se.
- 5) Learning should be meaningful (pp.146-147).

Communicative language teaching can be described as an approach rather than a method. According to Richards and Rogers (1986), some characteristics related to the theory of communicative language teaching are as follows,

- 1) Language is a system for the expression of meaning.
- 2) The primary function of language is for interaction and communication.
- 3) The structure of language reflects its functional and communicative uses.
- 4) The primary units of language are not merely its grammatical and structural features, but categories of functional and communicative meaning as exemplified in discourse (p.71).

Since communicative language teaching is an approach and not a method

(Richards & Rogers, 1986), it is not limited to any specific design but “represents a flexible approach to teaching that is responsive to learner needs and preferences”

(Omaggio Hadley, 2001, p.118).

Total physical response (TPR) is an approach that is,

...based on the belief that listening comprehension should be developed fully, as with children learning their native language, before any active oral participation from the students is expected. Further, it is based on the belief that skills can be more rapidly assimilated if the teacher appeals to the kinesthetic-sensory system (Omaggio Hadley, 2001, p.118).

The TPR approach, developed by Asher (1972) and further outlined by Asher, Kusdo, and de la Torre (1974), is to be used in conjunction with other methods of instruction as a teaching strategy. “Drawing from the work of Jean Piaget, Asher holds that the child language learner acquires language through motor movement...” (Richards & Rogers, 2001, p. 75). TPR is useful for the initial stages of second language development. It focuses on receptive language skill and not productive language skills.

Total Physical Response Storytelling or TPRS is useful for more advanced levels of second language acquisition.

The story telling strategies of TPRS utilize the vocabulary taught in the earlier stage by incorporating it into stories that the learners hear, watch, act out, retell, revise, read, write, and rewrite. (Cantoni, 1999, p.54).

TPRS (Ray & Seely, 1997). incorporates role playing in retelling the story and students are to gesture, use props, and pictures are used as well. When students are retelling the story to a partner they can incorporate their own versions of the story while keeping the main content of the original story, the content to be practiced intact.

Both TPR and TPRS are examples of language teaching as an interactive learner-centered process that guides students

in understanding and applying information and conveying information to others. (Cantoni, 1999, p.54).

The Natural Approach, developed by Terrell (1977), maintained a main premise that “it is possible for students in a classroom situation to learn to communicate in a second language” (p.325). Terrell’s method was based largely on Krashen’s Monitor Theory as it related to second language acquisition and is directed at beginning students learning a second language. Richards and Rogers (2001), summarize in the following points some of the main characteristics of the Natural Approach as it relates to second language instruction,

- 1) As much comprehensible input as possible must be presented.
- 2) Whatever helps comprehension is important. Visual aids are useful, as is exposure to a wide range of vocabulary rather than study of syntactic structure.
- 3) The focus in the classroom should be on listening and reading; speaking should be allowed to emerge.
- 4) In order to lower the affective filter, student work should center on meaningful communication rather than on form; input should be interesting and so contribute to a relaxed classroom atmosphere (p.183).

Community Language Learning (CLL), developed by Curran (1976), stems from a humanistic approach that “...Engage the whole person, including the emotions and feelings (the affective realm), as well as linguistic knowledge and behavioral skills” (Richards & Rogers, 2001, p. 90). According to Omaggio Hadley (2001), some characteristics of CLL can be described in that,

...the teacher serves as the “knower/counselor” whose role is essentially passive. He or she is there to provide the language necessary for students to express themselves freely and to say whatever it is they want to say. The class is comprised of six to twelve learners seated in a close circle, with one or more teachers who stand outside the circle, ready to help. The techniques used are designed to reduce anxiety in the group to a minimum and to promote the expression of ideas and feelings (p.124).

The Silent Way, developed by Gattegno (1976), "...is based on the premise that the teacher should be silent as much as possible in the classroom, but the learner should be encouraged to produce as much language as possible" (Richards and Rogers, 2001, p. 81). Gattegno incorporated the use of colored charts and Cuisenaire rods to teach language concepts. Richards and Rogers (2001), summarize in the following points the basic premise of Gattegno's method,

- 1) Learning is facilitated if the learner discovers or creates rather than remembers and repeats what is to be learned.
- 2) Learning is facilitated by accompanying (mediating) physical objects.
- 3) Learning is facilitated by problem solving involving the material to be learned (p.81).

Suggestopedia, introduced by Lozanov (1978), incorporates the belief that "...relaxation techniques and concentration will help learners tap into their subconscious resources and retain greater amounts of vocabulary and structures..." (Omaggio Hadley, 2001, p.127). Omaggio Hadley (2001), summarizes particular characteristics of the method as follows,

The language is initially presented in context through dialogues that are culturally based. Such texts based on everyday life give students models that can be used to develop functional proficiency through role-plays and other interactive language-practice activities. The method also addresses the affective needs of students by providing a relaxed and nonthreatening atmosphere for learning. There also seems to be an interest in the development of accuracy, as explanations are provided for grammatical structures learned and the material is practiced and reviewed...(p.128).

Second language acquisition theories provide a framework for understanding language, language acquisition, pedagogy, and influence methods involved in instruction as well as many other fields of study. The question does arise however, that if these

theories are influenced by assumptions that underlie English as the dominant auditory language in the culture, then they may have an influence on the understanding of the learners' cognitive processing of concepts, and the acquisition of those concepts. An underlying assumption could be noted in second language theory that learners think as English functions as a language, in written and spoken words. Many methods and approaches of second language instruction strive to provide meaningful input, context and a holistic approach, focusing on language acquisition, but how is this acquisition understood in terms of how the learner acquires concepts? Can we really know how concept acquisition takes place for the learner?

According to Diaz-Rico and Weed (2002),

Research on cognitive processes shows that the learner constructs language using rules internalized during problem solving or authentic communication. The shift from what the teacher does to what the learner does is characteristic of contemporary thinking about learning in general and language acquisition specifically... (p. 23).

Awareness of internalized cognitive processes involved in language is necessary in second language acquisition and instruction and any other content area. It would seem that an understanding of how the learner acquires concepts would be an important clarification in understanding concept acquisition related to a foreign language, or any other content area for that matter.

How the teacher instructs does have an impact on how the learner learns. The teacher is the most significant factor in the classroom. The method of instruction should incorporate what we know about developmental levels, language, and cognitive processes in order to address the learner's needs while the instruction is taking place. It would be

important for the teacher to understand how to design instruction that addresses the learner's process of acquiring concepts.

This general overview of methods and approaches has served to provide a limited guide, highlighting major historical influences, in the history of second language instruction. It can be said that, "principles and priorities in language teaching have shifted and changed over the years, often in response to paradigm shifts in linguistic theory and learning theory" (Omaggio Hadley, 2001, p.129). Currently, teachers tend to take a more "eclectic approach" (Omaggio Hadley, 2001) to second language instruction. However, this eclectic approach (Richards & Rogers, 1986) must still be based on sound research and pedagogy.

Language Acquisition

As an operational definition for the purpose of this paper, language acquisition could be defined as the learning process associated with acquiring concepts and ideas about a target language in order to communicate in that target language in all forms including writing, reading, listening, speaking, and cultural understanding.

The postmodern view of language acquisition represents several major contributors to the theoretical basis in an attempt to explain the process of language acquisition. When placed on a continuum (Omaggio Hadley, 2001) ranging from empiricists (or environmentalists) to rationalists (or mentalists/nativists), some particular theoretical viewpoints that have impacted our understanding of second language acquisition can be described.

On the empiricist side of the continuum (Omaggio Hadley, 2001), there are the earlier theories relating to Behaviorist Psychology, such as BF Skinner's Behaviorist

theory (Skinner, 1957) and then the following theories of Connectionism (Feldman, 1981) and Parallel Distributed Processing (Rumelhart, McClelland, & PDP Group, 1986). Both the former and latter theories assume that there is no innate language system or structure that facilitates language development. The empiricists propose language development as a response to stimuli and reinforcement of that stimulus in the form of repetition “So far as a science of behavior is concerned, Man Thinking is simply Man Behaving” (Skinner, 1957, p.452). The rationalist models of cognition imply a “central executive that oversees the general flow of processing” (Omaggio Hadley, 2001, p.71). Connectionist models (on the empiricist end of the spectrum), however, describe a completely different mode of processing and imply that language development stems from neural networks that are strengthened through cognitive processes where frequency of input is important. Feldman (1981) states that, “...it is at least conceptually feasible to model the information-processing behavior of the nervous system at many different levels of abstraction within the same theoretical framework” (p.78). According to Rumelhart, McClelland, and PDP Group (1986), “...higher level functions seem very much to be characterized by distributed, rather than central control” (p.135). This “distributed” nature of higher level functions directly reflects Parallel Distributed Processing (PDP) models where,

...learning takes place by changes in the system itself. Existing connections are modified, new connections are formed, old ones are weakened. In the conventional system, we distinguished between the information being processed and the processing structures. In the PDP system, they are the same: The information is reflected in the very shape, form, and operation of the processing structures (McClelland, Rumelhart, & PDP Group, 1986, p.545).

On the rationalist side of the continuum (Hadley, 2001), there are the earlier theories of Universal Grammar generated by many theorist's research including, but not limited to Chomsky (1965), Ellis (1985), and McLaughlin (1987), the Monitor Theory (Krashen, 1982), and the Cognitive Theory of Ausubel, Novak, and Hanesain (1968), Ellis (1985, 1990), and McLaughlin (1987, 1990),

The Universal Grammar theory grew from earlier work by Chomsky (1957) that rejected a behaviorist perspective and argued for rationalist perspective that was related to cognitive psychology. Some of the defining features of The Universal Grammar Theory, that is quite complex in nature, are that it describes an innate genetic and biological role underlying language acquisition. Chomsky (1965) proposed that all children were born with a "Language Acquisition Device" (LAD) that was the actual core of their ability to process language. This theory also is descriptive of grammar rules that are universal to all languages and others that lay outside this universal which tend to be harder to acquire. These innate rules are considered to be a product of the "LAD" (Chomsky, 1965).

The Monitor Theory (Krashen, 1982) is descriptive of five hypotheses related to second language acquisition that support the understanding that first and second language acquisition are similar. This theory is also extended to practical classroom application in regards to second language instruction. The five hypotheses include:

1. The acquisition-learning distinction
2. The natural order hypothesis
3. The monitor hypothesis
4. The input hypothesis
5. The affective filter hypothesis (Krashen, 1982).

The acquisition learning distinction hypothesis proposes that “adults have two distinct and independent ways of developing competence in a second language” (Krashen, 1982, p.10). These are described as acquisition as a subconscious development of language and learning is a conscious understanding of rules that regulate a language and language production (Krashen, 1982). The natural order hypothesis (Krashen, 1982) proposes that there is a predictable order to which grammatical structures are acquired. The Monitor hypothesis proposes that,

...acquisition and learning are used in very specific ways. Normally acquisition “initiates” our utterances in a second language and is responsible for our fluency. Learning has only one function, and that is as a Monitor or editor. Learning comes into play only to make changes in the form of our utterance, after it has been “produced” by the acquired system (Krashen, 1982, p.15).

A corollary to the Monitor hypothesis related to the important question of how we acquire language is that,

If the Monitor hypothesis is correct, that acquisition is central and learning is more peripheral, then the goal of our pedagogy should be to encourage acquisition. The question of how we acquire then becomes crucial (Krashen, 1982, p.20).

The input hypothesis (Krashen, 1982) proposes that the acquisition of a language comes from exposure to comprehensible input (*i* is representative of current competence),

- 1) The input hypothesis relates to acquisition, not learning.
- 2) We acquire by understanding language that contains structure a bit beyond our current level of competence (*i + 1*). This is done with the help of context or extra-linguistic information (Krashen, 1982, p.21).

The interesting aspect of this particular theory is that it proposes that, “...we acquire by ‘going for meaning’ first, and as a result we acquire structure” (Krashen,

1982, p.21). Through context, knowledge of the world, and instruction, meaning can be created; therefore, linguistic concepts are expanded. The input hypothesis also proposes that,

- 3) When communication is successful, when input is understood and there is enough of it, $(i + 1)$ will be provided automatically.
- 4) Production ability emerges. It is not taught directly. (Krashen, 1982, p.22).

The cognitive theory, attributed to many cognitive theorists including but not limited to Ausubel, Novak, and Hanesain (1968), Ellis (1985, 1990), and McLaughlin (1987, 1990), proposes that first and second language learning differ and that the underlying factors of language acquisition are related to internal or mental processes. These are organized so that the learner is actively involved in language development, and is not simply responding to stimuli but rather what is learned becomes part of the cognitive structure. “Contemporary cognitive psychology means *knowing*, rather than *responding*,” “emphasizes mental *structure* or *organization*,” and “stresses the notion that an individual is *active*, *constructive*, and *planful*, rather than a passive recipient of environmental stimulation” (McLaughlin, 1990, p.113).

The existence of mental structure or organization in cognitive psychology has been influenced by Jean Piaget “who maintained that all living creatures are born with an invariant tendency to organize experience, and that this tendency provides the impetus for cognitive development.” (McLaughlin, 1990, p.113). Vygotsky (1930/1978, 1934/1986) however, primarily focused on cognitive development and cognitive interactions with language, therefore creating a general theory of cognitive development. The basic principles of his theory state that cognitive development is limited to a certain range at

any age and that in order to achieve full cognitive development one requires social interaction (hence the name given to his theory, social development or social cultural theory). Vygotsky (1930/1978) states,

Every function in the child's cultural development appears twice: first on the social level, and later on the individual level; first between people and then inside the child. This applies equally to voluntary attention, logical memory, and to the formation of concepts. All the higher functions originate as actual relationships between individuals (p. 57).

Vygotsky's theory involves a zone of proximal development where children are at a level that they engage in social behavior but cannot solve a problem alone without intervention and guidance from an adult or more advanced peer. According to Vygotsky's theory, this is the area where instruction can succeed and real learning is possible. The impact that this has on language learning is that social language plays a vital role in the development of communication and language learning. Learning requires that communication occur in any relationship, whether between parent and child or child and teacher. Social language functions as the catalyst for learning and speaks to the zone of proximal development in that problem solving is employed in order to nurture continued growth and learning beyond the current level of development to a potential level of development. According to Vygotsky (1930/1978), learning always involves some type of external experience being transformed into internal processes through the use of language.

More specifically related to second language acquisition, this acquisition process, according to McLaughlin (1990), involves automaticity and restructuring due to the process of automaticity. "...a complex cognitive skill such as acquiring a second language, involves a process whereby controlled, attention-demanding operations become

automatic through practice” (p.125). This process of automaticity does not always lend itself to the production of correct forms in the second language at all times. According to McLaughlin (1990),

Practice can have two very different effects. It can lead to improvement in performance as sub-skills become automated, but it is also possible for increased practice to lead to restructuring and attendant decrements in performance as learners reorganize their internal representational framework (p.125).

Ellis (1990) makes a distinction relating to automaticity and connects this with declarative and procedural knowledge in that,

Declarative knowledge involves ‘knowing that.’ It consists of such information as the definition of words, facts, rules and memory for images and sequences of events. Procedural knowledge is ‘knowing how.’ It is represented in memory in terms of ‘production systems’ consisting of a condition and an action... (Ellis, 1990, p.177).

Ausubel, Novak, and Hanesain (1968) propose that learning must be meaningful,

Meaningful learning involves the acquisition of new meanings, and new meanings, conversely, are the products of meaningful learning. That is, the emergence of new meanings in the learner reflects that completion of a meaningful learning process (Ausubel, Novak, & Hanesain, 1968, p.40).

Ausubel, Novak, and Hanesain (1968) make a distinction between meaningful learning and rote learning in that,

Meaningfully and rotely learned materials are learned and retained in qualitatively different ways because potentially meaningful learning tasks are, by definition, relatable and anchorable to relevant established ideas in cognitive structure. They can be related to existing ideas in ways making the understanding of various kinds of significant (derivative, correlative, superordinate, combinatorial) relationships... Rotely learned materials, on the other hand, are discrete and relatively isolated entities that are relatable to cognitive structure only in an arbitrary, verbatim fashion, not permitting the establishment of the above-mentioned relationships (Ausubel, Novak, & Hanesain, 1968, p.144).

The implication here is that meaningful learning, and instruction that enhances meaningful learning, enables information to be processed and integrated into one's cognitive structure.

Building from the work of many scholars, Noam Chomsky (1965) developed the theory of transformational-generative grammar. Chomsky (1965) made the distinction between competence and performance as it relates to the production of language,

We thus make a fundamental distinction between *competence* (the speaker-hearer's knowledge of his language) and *performance* (the actual use of language in concrete situations....In actual fact, it (performance) obviously could not reflect competence (p.4).

There was a later shift in the 1980's in theory from grammatical competence to communicative competence, which further delineated the notion of communicative competence in relation to grammar and performance. According to Canale and Swain (1980),

...we have so far adopted the term 'communicative competence' to refer to the relationship and interaction between grammatical competence, or knowledge of the rules of grammar, and sociolinguistic competence, or knowledge of the rules of language use. Communicative competence is to be distinguished from communicative performance, which is the realization of these competencies and their interaction in the actual production and comprehension of utterances (p.6).

In order to address breakdowns in communication related to communicative competence, a third component, known as strategic competence, was introduced by Canale and Swain (1980), strategic competence is "made up of verbal and non verbal communication strategies that may be called into action to compensate for breakdowns in communication due to performance variables or to insufficient competence" (p.30).

This theory led to a model of language competence developed by Bachman (1990), who organized language competence, or the knowledge and production of language, into several sub-components that stemmed from organizational competence and pragmatic competence. In this model, language competence essentially refers to communicative competence.

According to Bachman (1990) organizational competence “comprises those abilities involved in controlling the formal structure of language for producing or recognizing grammatically correct sentences, comprehending their propositional content, and ordering them to form texts.” (p.86). Under the subheading of organizational competence are the abilities related to grammatical competence and textual competence. Grammatical competence can be defined as “those competencies involved in language usage” (Bachman, 1990, p.87). Aspects of textual competence relate to “the knowledge of the conventions for joining utterances together to form a text” (Bachman, 1990, p.88).

Pragmatic competence refers to the “language *users* and the *context* of communication” (Bachman, 1990, p.89). Under the subheading of pragmatic competence are the abilities related to illocutionary competence and sociolinguistic competence. Illocutionary competence can be referred to as “the knowledge of the pragmatic conventions for performing acceptable pragmatic functions” (Bachman, 1990, p.90). Sociolinguistic competence can be referred to as “the knowledge of the sociolinguistic conventions for performing language functions appropriately in a given context” (Bachman, 1990, p.90). Bachman (1990) notes that these components are interrelated and interactive, “...in language use these components all interact with each other and with features of language use” (p.86). This view of language competence represents a guide

for understanding what communicative language proficiency is as it applies to a second language.

The theoretical viewpoints that have been discussed in this section offer an understanding and defining perspectives ranging from empiricist viewpoints to rationalist viewpoints regarding language acquisition, and for the purposes of this paper, theorized processes related to acquiring a second language. Learning, and the process of learning a second language involving acquiring and layering new ideas or concepts where neurobiological functions play a role, should necessarily impact methods of instruction in teaching a second language.

Language Standards and Proficiency

The currently accepted measurement of a language learner's level of ability in a language can be described as their proficiency level in that language. Ultimately this lends itself to the primary goal of communicating effectively with speakers of the target language. The American Council on the Teaching of Foreign Languages (ACTFL Proficiency Guidelines, 1986) provides guidelines to measure proficiency. Proficiency guidelines, for adults only, (Omaggio Hadley, 2001) "...were not designed to present a theoretical model of language competence nor explain how language acquisition may occur." (p. 19). They were meant to "*describe* and *measure* competence in a language, not to prescribe methods, materials, or approaches to language teaching and learning." (Omaggio Hadley, 2001, p.32) The ACTFL guidelines are represented in a scale that is multidimensional in nature and represents a continuum. The second language learner can be placed on this rating scale for evaluating proficiency levels in reading, writing, listening and speaking. This scale ranges from novice (low, mid, and high, to

intermediate (low mid and high), to advanced (low, mid, high), and finally to superior. The ACTFL developed Oral Proficiency Guidelines that evaluate for global understanding. This was not to identify specific grammar production or the expression of specific skills but rather expresses a holistic approach and is evaluative for identifying the global capacity of the speaker in communication (ACTFL Proficiency Guidelines - Speaking, 1999).

To be proficient in a language is to be able to communicate effectively in that language with speakers of that language. However,

1. Proficiency is not a theory of language acquisition.
 2. Proficiency is not a method of language teaching.
 3. Proficiency is not a curricular outline or syllabus.
 4. Proficiency does not imply a preoccupation with grammar error.
- (Omaggio Hadley, 2001, p.32-34).

It is important to note that even though the ACTFL scale or guidelines are not descriptive in nature in relation to theoretical models or language acquisition, “there is a strong degree of compatibility between the *global* level descriptions of linguistic and functional features in the oral proficiency guidelines and overall sequence of development...” (Omaggio Hadley, 2001, p.19).

Ellis’ (1985) four stages of universal linguistic development, mentioned previously, afford an understanding that when linguistic breakdowns occur, this serves as an indicator as to whether or not concepts within the learner’s interlanguage have been acquired or “automatized.” Each learner is very unique on an individual basis as to where or when certain aspects of interlanguage may break down. Globally, however, there is a connection between the continuum represented in the ACTFL guidelines and language learner development.

Thus the four global level designations of the guidelines seem to be capturing a continuum of development similar to the one that Ellis describes as universal, lending support to their usefulness as an overall organizational framework within which pedagogical choices can be made (Omaggio Hadley, 2001, p.21).

The ACTFL expanded upon proficiency guidelines in order to address the needs of “second language use by students who participate in elementary, middle and high school foreign language programs” (Swender & Duncan, 1998, p. 479).

The ACTFL Performance Guidelines for K-12 Learners comprehensively describe the language performance of foreign languages across three modes of communication (Interpersonal, Interpretive, Presentational), following specific periods of classroom instruction (Swender & Duncan, 1998, p. 479).

These performance guidelines (ACTFL, 1998) “are designed to help teachers understand how well students demonstrate language ability at various points along the language continuum” (Swender & Duncan, 1998, p. 480). These guidelines provide a means to measure proficiency in what students do and is inclusive of three modes. The Interpersonal Mode “is characterized by active negotiation of meaning among individuals” (Swender & Duncan, 1998, p. 481). Examples of this mode would include conversation (speaking). The Interpretive Mode “is focused on the cultural interpretation of meaning that occur in written and spoken form where there is no recourse to the active negotiation of meaning with the writer or the speaker” (Swender & Duncan, 1998, p. 481). Examples of this mode would include interpreting meaning in many mediums such as text, movies, speeches, and so on (listening and reading). The Presentational Mode “refers to the creation of messages in a manner that facilitates interpretation by members of the other culture where no direct opportunity for the active negotiation of meaning between members of the two cultures exists” (Swender & Duncan, 1998, p. 482).

Examples of this mode would include such activities as the presentation of speeches or the writing of reports (writing and speaking). The function of these modes is to integrate skills related to comprehensibility, comprehension, language control, vocabulary use, communication strategies, and cultural awareness.

It is important to note that each individual student may have differing abilities, may have developed or not developed learning strategies useful to acquiring a second language, may have different motivations for learning a second language or simply see it as a requirement and therefore have differing levels of commitment, may have different prior experience with the language in regards to experience with authentic communication in the language, allotted class time in the language and experience with different teachers and methodologies related to the target language.

In a study by Thompson (1996), "...the picture of proficiency that emerged is one of overlapping ranges of performances with no exact correspondence between levels of study and levels of proficiency in speaking, reading, writing and listening." (p. 47). Thompson did note that students did progress with every additional year of study. She also noted that, "correlations among the four different skills were not particularly strong suggesting that they follow different paths of development which do not always parallel each other." (p. 47).

In 1993, foreign language education became the seventh subject area added where national standards were developed for students in kindergarten through twelfth grade (Standards for Foreign Language Learning: Preparing for the 21st Century, 1996) due in large part to the collaborative work of the ACTFL and many other professional language associations receiving federal support and funding to do so. The Standards for Foreign

Language are meant to be used as only as a guide for educators to aid them in developing curriculum and to be used in conjunction with state standards. In Oregon, for example, these standards have been embedded in state standards to meet specific benchmark levels (Oregon Department of Education, 2008).

The standards (Standards for Foreign Language Learning: Preparing for the 21st Century, 1996) incorporate five goal areas, otherwise known as “the five C’s.” They were designed to measure proficiency across “the five C’s.” The goals include communication or the ability to “communicate in languages other than English,” cultures or the ability to “gain knowledge and understanding of other cultures,” connections or the ability to “connect with other disciplines and acquire information,” comparisons or the ability to “develop insight into the nature of language and culture,” and communities or the ability to “participate in multilingual communities at home and around the world” (Standards for Foreign Language Learning: Preparing for the 21st Century, 1996, p.9). According to Phillips (1999),

Standards broadened the content range of language by venturing well beyond the traditional four skills of listening, speaking, reading, and writing and the occasional study of culture. The new frameworks for communication and culture in the *Standards for Foreign Language Learning: Preparing for the 21st Century* (1996) dramatically change the paradigms under which teachers have been operating even within the traditional content. The addition of goals and standards that encourage students to use new languages to explore interdisciplinary content, to develop insights into the very nature of language and culture as systems or patterns, and to search actively to test their new competencies in venues beyond the school legitimize the occasional forays that foreign language classes took in to these areas. The representation of all five goals as interlocking circles signifies that all should be systematically incorporated into language instruction at all levels (p. 3).

Listed below are the five global goals with their respective standards that embody the Standards for Foreign Language Learning.

- Communication
 - Standard 1.1: Students engage in conversations, provide and obtain information, express feelings and emotions, and exchange opinions.
 - Standard 1.2: Students understand and interpret written and spoken language on a variety of topics.
 - Standard 1.3: Students present information, concepts, and ideas to an audience of listeners or readers on a variety of topics.
- Cultures
 - Standard 2.1: Students demonstrate an understanding of the relationship between the practices and perspectives of the culture studied.
 - Standard 2.2: Students demonstrate an understanding of the relationship between the products and perspectives of the culture studied.
- Connections
 - Standard 3.1: Students reinforce and further their knowledge of other disciplines through the foreign language.
 - Standard 3.2: Students acquire information and recognize the distinctive viewpoints that are only available through the foreign language and its cultures.
- Comparisons
 - Standard 4.1: Students demonstrate understanding of the nature of language through comparisons of the language studied on their own.
 - Standard 4.2: Students demonstrate understanding of the concept of culture through comparisons of the cultures studied and their own.
- Communities
 - Standard 5.1: Students use the language both within and beyond the school setting.
 - Standard 5.2: Students show evidence of becoming life-long learners by using the language for personal enjoyment and enrichment (Standards for Foreign Language Learning: Preparing for the 21st Century, 1996, p.9).

Each of these five goals represent subsets of standards that relate to what knowledge students are able to demonstrate, understand, acquire, and engage. Again,

these particular standards (Standards for Foreign Language Learning: Preparing for the 21st Century, 1996) are often defined and incorporated in state standards as a guideline only, not a prescription of instruction or delegating a scope and sequence, to be used by teachers when developing curriculum and instruction.

Currently, as in the state of Oregon, the particular levels of varied proficiency in a language (ranging from novice to mid-intermediate) have been embedded into state standards that correlate directly with benchmark stages, cumulative hours of instruction, and the integration of interpersonal modes (speaking), presentational modes (writing and speaking), and interpretive modes (listening and reading) (Oregon Department of Education, 2008). There are many factors to consider in relation to a learner's proficiency level related to achievement over time. Some of these factors include (Standards for Foreign Language Learning: Preparing for the 21st century, 1996) the age of the learner, varying learning speeds and learning styles of students, teaching methodologies, abilities and interests of the instructor, scheduling patterns of the language program, scope and sequence of the language program, and authenticity of the cultural environment and materials.

Although the overall common curriculum goals and content standards do address a global understanding of what is required to communicate in a foreign language, the individual benchmarks do denote specific skills that need to be mastered in order to move to the next level. These specific benchmark levels do contain evaluative jargon related to specific skills that include but are not limited to the memorization of words phrases and sentences, the demonstration of understanding through this memorization and copying and writing from memory. The benchmarks do reflect a somewhat stair stepped approach

to learning where the learner's products are evaluated in terms of meeting benchmark requirements and the progression through the benchmark levels.

The measure of proficiency, being represented by an interactive continuum, is not static or stair-stepped in nature. A learner may demonstrate proficiency in some areas, while in other areas may lag behind in reading, writing, listening, speaking or cultural understanding. The acquisition of meaningful concepts related to all forms of the target language and the use of those at a proficient level, is unique to each learner. A stronger correlation with this interactive continuum related to proficiency could be represented in the interconnection of learning and development rather than the development of products as it relates to the learning process in order to address all learners' needs.

Language and Learning

Through the use of language we are able to communicate with others the representations of thoughts, ideas, and concepts that we have about our experiences and the world around us. The acquisition of any concept or idea, not only those related to second language, occurs through a learning process. According to Arwood and Brown (2001),

Learning begins at three levels: sensory input, perceptual pattern development, and conceptualization. Language represents the concepts. Concepts grow through using concepts in layers and by overlapping past and present knowledge. Language allows concepts to be stored in memory for retrieval (p. 5).

Language then is an important factor in how the individual learner processes information. For the purposes of this paper processing will refer to "the ability to use the perceptual patterns to create concepts" (Arwood, Kaakinen & Wynne, 2002, p. 4). From this perspective, the attention now focuses on how the learner processes sensory

information to develop perceptual patterns that create concepts that ultimately result in language (Arwood, 1991). The acquisition of any concept, including those related to second languages would need to address this learning process. According to Arwood and Brown (2001),

Language adds meanings to concepts. For concepts to be meaningful they must be in the form of the way the person thinks. If my thoughts are in pictures I will picture concepts. If my thoughts are in self-talk I will use self-talk for the concepts. A person's ability to learn may be assisted by using language strategies that match the person's underlying thinking or conceptual development – visual symbols or auditory symbols (p. 9).

How the learner neurobiologically acquires concepts is important. From this perspective, the learner may be assisted when using language (visual symbols or auditory symbols) in order to process information and may acquire concepts that are layered and meaningful in order to produce the target language, or what ever content is being taught. The process involving how the learner acquires concepts related to the target language is paramount to the end product, in the form of the target language produced. Although many other foreign language teaching methods do focus on the process of language acquisition, none are as distinct in the underlying understanding of how the learner neurobiologically acquires concepts in connection with developmental levels and language. This perspective is not stair stepped in nature and speaks to how learning and development connect given individual learners concept acquisition neuobiologically.

According to Arwood and Young (2000) “Language improves through cognitive stages of development therefore increasing the way the students use language to communicate thoughtfully about themselves as well as others” (p. 317). Arwood was able to “make the connection between Jean Piaget’s (Piaget, 1970) basic stages of cognitive

thinking and language development ...” (Arwood & Unruh, 2000, p. 5). This in turn gave a clearer understanding of language and cognitive developmental interplay.

McLaughlin’s (1990) work on restructuring “characterized by discontinuous, or qualitative, change as the child moves from stage to stage in development” (p.117), related to second language acquisition, encompassed the acknowledgement that,

...developmental psychologists became concerned that their knowledge of cognitive growth consisted of a series of ‘snapshots’ of the child’s ability at various points in development, but that they knew little about how the child progressed from snapshot to snapshot (McLaughlin, 1990, p.118).

According to McLaughlin (1990), the developmental psychologist Jean Piaget, “maintained that cognitive development is an outcome of underlying structural changes in the cognitive system” (p.116). This in turn created an understanding that, “there is much known about linguistic *products*, but little known of the dynamics of psycholinguistic *process*” (McLaughlin, 1990, p.118).

Advancing technology makes it possible to include an examination of the role of cognitive processes neurobiologically and their relationship to language, which, for the purposes of this paper, ultimately influences second language instruction. According to Atkinson (2001), “Neurobiologists are beginning to perceive that language is a process of constant activity and negotiation that engages all the functions of the brain to some extent or another at some time” (p. 8).

Neurobiology may be defined as, “the study of the nervous system in all species, including how the nervous system interacts with the environment. Neurobiological findings, especially those related to plasticity, memory, and learning, apply at a basic level to the language acquisition process” (Jacobs & Schumann, 1992, p.283). If

cognitive processes play a role neurobiologically in the creation of language, how then can the cognitive process be defined? According to Jacobs and Schumann (1992), “With respect to learning, cognition might be defined as the perception of a stimulus, attention to that stimulus, the movement of the information in the stimulus into memory, and finally, the expression or use of that information” (p.294).

The brain does function to produce language, but what sort of understanding of this process, from the perspective relating to current research in neuroscience, is available that provides an explanation of concept formation related to language production? According to Damasio and Damasio (1992), “A large set of neural structures serves to represent concepts; a smaller set forms words and sentences. Between the two lies a crucial layer of mediation” (p.89). This would indicate that concepts, and neural representation and manipulation of those concepts, are at the center of language production, but what are the specifics of this “crucial layer of mediation”? Damasio and Damasio (1992) state that the brain processes language using three interacting sets of structures,

First, a large collection of neural systems in both the right and the left cerebral hemispheres represents nonlanguage interactions between the body and its environment, as mediated by varied sensory and motor systems-that is to say, anything a person does, perceives, thinks or feels while acting in the world (p. 89).

This would indicate that input into the sensory and motor systems provide the first entry for information to be sent along pathways, in non-language form, to be eventually disseminated by other structures in the brain. At this point, “the brain not only categorizes these non-language representations (along the lines such as shape, color, sequence, or emotional state), it also creates another level of representation for the results of its

classification” (Damasio & Damasio, 1992, p.89). Objects, events, and relationships are organized thereby building “successive layers of categories and symbolic representations” (Damasio & Damasio, 1992, p.89)

As the brain organizes sensory input into multiple ordered categories and symbols there exists a second structure within the brain that then interacts with this organized input and imposes rules of language in order to process it.

Second, a smaller number of neural systems, generally located in the left cerebral hemisphere, represent phonemes, phoneme combinations, and syntactic rules for combining words. When stimulated from within the brain, these systems assemble word-forms and generate sentences to be spoken or written. When stimulated externally by speech or text, they perform the initial processing of auditory or visual language signals (Damasio & Damasio, 1992, p. 89).

If this second set of neural structures when stimulated externally, engage in a processing of auditory and visual signals in order to create language, this could have important implications on teaching methods. Teaching methods involve speech and text in the form of ideas that are directed at the students. Students must then process this speech and text in order to create meaning and then language. This would tend to support the idea that “A person’s ability to learn may be assisted by using language strategies that match the person’s underlying thinking or conceptual development – visual symbols or auditory symbols” (Arwood & Brown, 2001, p. 9).

According to Damasio and Damasio (1992), the first set of structures organizes sensory input, the second set then imposes on that input sets of language formation rules, but then what about the formation of multilayered concepts that relate to the production of language that is meaningful?

A third set of structures, also located largely in the left hemisphere, mediates between the first two. It can take a concept and stimulate the production of word-forms, or it can receive words and cause the brain to evoke the corresponding concepts (Damasio & Damasio, 1992, p. 89).

In this perspective, the concept that is created is generated from stimuli. “The collections of neural structures that represent the concepts themselves are distributed across both right and left hemispheres in many sensory and motor regions” (Damasio & Damasio, 1992, p. 92)

This neural research appears to support the connection between levels of development and language in that: “Learning begins at three levels: sensory input, perceptual pattern development, and conceptualization” (Arwood & Brown, 2001, p. 5). Pragmatic theory and application explains the synergy of the neurobiological learning described by Damasio and Damasio in 1992. “The development of conceptual information is a direct relationship between the child’s ability to neurologically organize perceptual patterns”(Arwood, 1991, p. 63).

The process of acquiring and using language appears not to be static, totally procedural, or linear in nature (Arwood, 1991). Elements related to second language acquisition, such as varied proficiency leveled tasks in reading, writing, listening, cultural understanding, and speaking, are not solely acquired in a completely sequential manner, but are acquired through a process of acquiring concepts. “Concepts represent the way the learner’s brain is ‘wired’ neurologically, independent of external patterns of teaching. The neurobiological system determines the way a learner conceptualizes” (Arwood & Brown, 2001, p. 10). Concepts taught, relating to a second language or any other content area for that matter, in a way that addresses how a learner is able to acquire concepts,

may enable the learner to acquire those concepts being taught and use them in varied contexts.

If in fact the acquisition of a second language involves acquiring and layering new ideas or concepts, and neurobiologic functions play a role in how information is processed, would it not be important to include in the method of instruction an understanding that addresses how the individual learner acquires concepts?

Language

For the purposes of this research paper, language can be defined as “the symbol system used to represent concepts” (Arwood, Kaakinen & Wynne, 2002, p. 2). English and Spanish languages are examples of an auditory language. Auditory languages can be defined as “auditory concepts that represent sound and sight...” or alphabetic languages they are “acquired by hearing and seeing meaning” (Arwood, Kaakinen & Wynne, 2002, p. 6). According to Arwood, Kaakinen and Wynne (2002),

English symbols are made up of spoken sounds (acoustics) and seen letters (visuals or auditory concepts (sound + sight)). Any language that uses a change in the sound patterns of letters to change meaning is an auditory language (p. 2).

Auditory languages use words to convey language meaning. “English, as an auditory language, is considered a ‘low context’ language. The speakers assume that the underlying meaning of words convey any context” (Arwood, Brown, & Robb, 2005, p. 21).

Cherokee Indian and Mandarin Chinese are examples of visual languages. Visual languages follow the characteristics of “visual concepts that represent integrated visuals...” (Arwood, Kaakinen & Wynne, 2002, p. 4). Visual languages require that most of the meaning come from the context and not from the words.

...the speakers talk about the context. The context includes elements of who, what, where when, why and how. The context refers to all of the non-verbal and verbal meaning collected from everything surrounding the words (Arwood, Brown, & Robb, 2005, p. 21).

In today's schools it is estimated that 60 to 90% of K-12 grade students think in visual concepts (Arwood & Young, 2000). According to Arwood, Kaakinen and Wynne (2002) 10 to 40% of students think in spoken ideas whereas 60 to 90% think in visual ideas and this is consistent with other higher education findings. For example,

Recently, the authors assessed the participants at a nurse educators' conference for how the participants think. Of the 186 participants, 86% used visual concepts for learning. In another collection of data, out of 105 preservice nurses, 77% used visual concepts. These numbers are consistent with other higher education findings. The majority of learners think in visual concepts (Arwood, Kaakinen & Wynne, 2002, p.1).

A description of the characteristics of (Arwood, 1991) visual language and auditory language is necessary to provide a basis with which to understand cultural characteristics that are ascribed to each respectively. According to Arwood (1991), a comparison can be made between visual concepts and auditory concepts in order to understand the characteristics of each and exemplify how different people think in different ways in using language. Since concepts represent language it can be said that visual language and auditory language represent concepts. When using visual language (Arwood,1991), the person actually sees what is said (high context), thinks in graphics (seeing movies, shapes etc. in one's head), uses spatial concepts (e.g., grounds to physical parameters) or space, uses one's body as a physical reference point in relationship to things., has a photographic memory and sometimes a phonographic memory, organizes by sets and cross references by what is seen (e.g., what is written is seen), can infer from

seeing the whole picture (e.g., can use flowcharts to see the whole), can see oneself do what one can visually depict. In contrast to visual language, when using auditory language (Arwood, 1991), the person understands the sounds of the words (low context), thinks in sounds (sound is used internally), uses temporal concepts (e.g. grounds to the timing of sound words) or time, uses sound words as a physical reference point, has an auditory memory (e.g. alphabet, spelling, multiplication tables), organizes by category and cross references by using sound words (e.g. see and hear), can infer from the use of words in the spoken or written language, and can hear oneself say what one does or what another person says one does (Arwood, 1991).

If the acquisition of new concepts, concepts related to second language acquisition in particular, involves this learning process driven by visual or auditory languages, then in order for the learner to acquire concepts related to the target language would it not be beneficial to address learners' needs in regards to how individual learners acquire concepts?

Teaching and Learning Paradigms

All languages are not the same and different cultures have different concepts. Arwood (1991) has identified two of these, visual and auditory language. Visual and auditory concepts (languages) have different characteristics (Arwood, 1991). Learners who think in visual or auditory concepts do not learn in the same way. Different ways of thinking implies different ways the brain acquires concepts and therefore, all learners do not learn in the same way. In order to address the large percentage of visual learners that exist in a culture that is auditory in nature, "The majority of learners think in visual concepts" (Arwood & Brown, 2001, p. 9), it appears a paradigm shift is needed to

address visual learners. This shift does not necessarily represent a change in methods, but a change in cultural perspectives related to assumptions that may exist in institutions, including education, that are auditory language driven and do not accommodate visual language learners.

English and Spanish are both auditory languages. “Most higher education involves some auditory assumptions.” (Arwood, Kaakinen & Wynne, 2002, p. 2).

According to Arwood, Kaakinen, & Wynne (2002) these assumptions include:

7. If the teacher uses spoken English to explain concepts, students will hear the concepts and understand their meaning.
8. If the teacher assigns readings, then the students will read by saying (mentally) the words on the page and understand the concepts.
9. When the student writes, the student thinks in spoken English concepts that are written.
10. When the student listens, the student writes words that are understood spoken concepts.
11. If the student is shown a demonstration, movie, or experiment while someone is talking, then the student understands the inferred concepts.
12. Higher education students know how they learn best (p. 2).

These assumptions influence methods of instruction in the classroom. Instruction in auditory language will not meet the needs of the visual learner, the predominant percentage of learners (Arwood & Young, 2000). Visual learners do not think in auditory concepts as,

Visual thinkers cannot always make sense out of spoken words in a lecture or in reading the sound of patterns of text. Visual thinkers depend on graphs, charts, and on their own ways to make mental pictures from auditory material presented in the classroom. Sometimes, the auditory classroom does not afford enough information for the visual learner to perform well on tests or clinically apply concepts (Arwood, Kaakinen & Wynne, 2002, p. 2).

When given an auditory language format, in the form of a lesson in Spanish for example, the visual learner must do some translating in the learning system, where the auditory learner does no translating. The visual thinker must:

- 1) translate spoken ideas into visual thoughts to be written out or drawn
- 2) write out the exact spoken words and look at them later to try and figure out meaning
- 3) (do) a combination of these two (Arwood, Kaakinen & Wynne, 2002, p. 10).

When given a visual language format, the visual and auditory learner can both acquire concepts related to the information being presented.

If the visual students are presented the concepts on the board in visual language, then they can actually see the pictures of the concepts and see the mental ideas simultaneously. They will not need to only use the faculty's spoken words but will be able to encode their visual mental ideas into memory without translation. The auditory student takes the spoken words by the teacher and connects them to the visual language pictures on the board. The auditory thinker is also able to follow the format (Arwood, Kaakinen & Wynne, 2002, p. 11).

When using a visual language format, visual and auditory learners are addressed. Instruction in this form allows for the visual or auditory learner to acquire concepts about information being presented in order to create language and to use language, as well as create and layer previous and new concepts. Spanish language instruction given to a first year Spanish class using visual language may address both visual and auditory learners' needs.

Visual and Auditory Learning Systems

For the purposes of this paper, the term "learning systems" (Arwood 1991) will be defined as, "the way the person can acquire new ideas or concepts. Concepts can be formed into visual language or auditory language. The learning system is

neurobiological.” (Arwood, Kaakinen & Wynne, 2002, p. 4). Visual and auditory language results from “visual concepts that represent integrated visuals” (Arwood, Kaakinen & Wynne, 2002, p. 5) and “auditory concepts that represent sound and sight” (Arwood, Kaakinen & Wynne, 2002, p. 5) respectively. Within the learning system auditory concepts “overlap past spoken ideas with present visual and spoken ideas” (Arwood & Brown, 2001 p. 4) (acoustic/visual) ultimately resulting in auditory language. Visual concepts “overlap past visual experiences with present visual ideas” (Arwood & Brown, 2001 p. 4) (visual/visual) ultimately resulting in visual language. Visual and auditory learners conceptualize differently.

Both visual and auditory thinkers can use visual and acoustic patterns for regurgitation but learning new concepts occurs in the way the learning system meta-linguistically functions to form language. A visual thinker uses visual-motor graphics for acquiring meaning. An auditory thinker uses his/her own voice with external visuals to create auditory concepts (Arwood, Brown, & Robb, 2005 p.26).

A visual or auditory learning system encompasses the processes involved in *any* concept acquisition and therefore includes those that are specific to this study, those concepts involved in second language acquisition. According to Arwood,

Meaning is acquired through levels of sensory input, perceptual organization, and integration, and concept development. This process of acquiring meaning explains how the learning system is developed. Therefore, changes in the semantic acquisition also result in changes to the product of the learning system (Arwood, 1991, p. 36).

From this perspective, the actual “learning system,” whether visual or auditory, provides the basis for the learner to acquire new ideas and concepts and not the external features of instruction in relation to the learner’s acquisition of ideas and concepts (Arwood, 1991). However, “A person’s ability to learn may be assisted by using

strategies that match a person's underlying thinking or conceptual development – visual or auditory systems” (Arwood & Brown, 2001, p. 7).

It is interesting to note that visual learners access their learning system through visual motor patterns. “A visual thinker acquires new concepts through visual motor patterns while an auditory thinker uses visual acoustic patterns for new concepts” (Arwood, Brown, & Robb, 2005, p.17). The “acting out” of verbs, for example, using TPR includes motor movement and overlaid verbal input as well. Visually, a learner can see him or herself or the teacher doing the actions while saying the target word aloud at the same time which adds meaning to the words.

Visual and Auditory Metalinguistic Lessons

There are differences that exist in the conceptual development of visual and auditory learners (Arwood, 1991), but what impact does this have on methods of instruction and, specifically related to this study, second language learning? For the purposes of this study, it is beneficial to define all aspects of what visual and auditory metalinguistic lessons are. When referring to “visual and auditory metalinguistic lessons,” “visual” refers to the use of visual language and “auditory” refers to the use of auditory language. Metalinguistic refers to dealing critically with linguistic factors while incorporating other cultural factors or “Meta-linguistic function is the way a child acquires or learns new concepts for language” (Arwood, Brown, & Robb 2005 p.8). A lesson refers to an organized plan of instruction containing goals, objectives, procedures, and reflection.

The development of a visual lesson takes into consideration the conceptual language levels (preoperational, concrete, and formal) by putting the concepts into

context first at a preoperational level (Arwood, Kaakinen & Wynne, 2002). "...the student needs to be able to make multiple applications from concrete examples given at a preoperational (contextual) level by the teacher" (Arwood, Kaakinen & Wynne, 2002, p. 25).

Strategies involved in designing and implementing visual metalinguistic lessons include:

1. Drawing concepts.
2. Lessons are drawn in real time.
3. Draw before note taking or writing.
4. Draw on boards or paper so that these drawings can be referred to later.
5. Connect ideas.
6. Develop strategies for learners that struggle (Arwood, Kaakinen & Wynne, 2002, p. 15-16).

When using these visual metalinguistic lessons the lessons are "drawn (visual-motor) while speaking (acoustic) to meet auditory and visual language needs" (Arwood, Kaakinen & Wynne, 2002, p. 15), drawn in "real time" because "while talking, both auditory and visual thinkers are able to follow the content" (Arwood, Kaakinen & Wynne, 2002, p. 15), drawn first to make "connections to past ideas through drawing, and then visually assign meaning, followed by providing paper handouts" (Arwood, Kaakinen & Wynne, 2002, p. 15), connecting ideas because "visual concepts need to be in context or need to be relational" (Arwood, Kaakinen & Wynne, 2002, p. 16), and developing strategies for those learners who still struggle with the material (Arwood, Kaakinen & Wynne, 2002). Concepts are not taught separate from key information related to the concept, "Concepts need layers and overlapped examples for students to learn best. Layer concepts by adding related information. Overlap concepts by adding multiple examples." (Arwood, Kaakinen & Wynne, 2002, p. 20). Visual metalinguistic

lessons contain people at the center of the concept connecting with the ideas “All drawing with people at the center of the content are at the preoperational level, which helps all learners with new concepts” (Arwood, Kaakinen & Wynne, 2002, p. 18). The drawings and the text is boxed in or “grounded” as “visual thinkers use their bodies as a reference point to the board, so the ideas on the board that are framed or boxed are grounded and therefore easier to see and understand” (Arwood, Kaakinen & Wynne, 2002, p.21). Auditory thinkers’ needs are met too by connecting the spoken word to the visual language (Arwood, Kaakinen & Wynne, 2002).

In a foreign language classroom the “concepts” that would be taught are in context within the scope and sequence of the unit being covered. The unit concepts relate to varied topics such as family. When family is drawn out, several layers of meaning can be added and flowcharted to the topic regarding family, finally language in the form of words are added to the flowcharted ideas such and key vocabulary words, grammar, verbs and so on. However, these smaller units (vocabulary, grammar, verbs, etc.) make up the whole idea of family and are taught in context as well as related to each other.

Visual metalinguistic lessons are not considered to be “artwork,” as “drawing language is not art” (Arwood, Kaakinen & Wynne, 2002, p. 17); it is a means for which both visual and auditory learners can be able to process concepts according to their learning systems. It is important that the students “know that these (referring to real time drawing) are your pictures and that the students need to make their own pictures” (Arwood, Kaakinen & Wynne, 2002, p. 34). Visual metalinguistic lessons do not include things like graphic organizers and icons used alone, “words and boxes are auditory in

characteristic (not contextual) and are formal (symbolic)” (Arwood, Kaakinen & Wynne, 2002, p. 26).

Amundsen (1988), conducted research involving counselors drawing metaphoric representations of cases. These were then discussed with other counselors in order to describe a case and analyze it for further insights. Amundsen concluded that, “the use of case drawing provides a novel method of conceptualizing client problems and the counseling relationship and the means whereby conceptualizations are made concrete through drawings” (Amundson, 1998, p. 393).

The use of visual metalinguistic lessons addresses the learning system of the visual language learner and the auditory language learner, “Since the majority of learners think in visual concepts, teachers should consider how to teach concepts in a visual way.” (Arwood, Kaakinen & Wynne, 2002, p. 1). The use of visual metalinguistic lessons allows for the visual and auditory learners’ needs, in relation to the acquisition of concepts, to be addressed. Once the visual learner has moved through the levels of development, they are able to assign meaning to formal concepts such as words. Visual learners can then take that meaning and apply it in an auditory setting. Without moving through the levels of development, visual learners must develop strategies to be successful in an auditory setting.

Different learners use different types of patterns to develop language concepts. Therefore there are different meta-linguistic abilities among learners and likewise different language forms. The relationship between learning and language rests with the way a person conceptualizes an idea or the meta-cognitive ways of thinking. A visual thinker acquires new concepts through visual-motor patterns while auditory thinker uses visual-acoustic patterns for new concepts (Arwood., Brown, & Robb, 2005, p. 17).

Visual and auditory metalinguistic lessons are presented in very different ways. Typically, using an auditory metalinguistic lesson, the educator refers to an outline or written form containing key concepts (Arwood, Kaakinen & Wynne, 2002). This outline or written form uses auditory language where "...the words are abstract, they represent ideas that can't be seen, touched, or felt. Therefore, the outline is at a formal level of development." (Arwood, Kaakinen & Wynne, 2002, p. 12). This outline does not address the preoperational level of concept development or the concrete level of concept development. It appears well organized, is in sequence, and seems to be easily understood. The educator would continue with the lesson by talking about the key concepts orally and in writing and then reviewing the key concepts orally and in writing (Arwood, Kaakinen & Wynne, 2002). This auditory lesson is already at a formal conceptual level and emphasizes the product. The needs of the auditory learner are met with this lesson, but the visual learner is left to translate key concepts, as the concepts represent formal auditory concepts that the visual learner's system cannot process directly.

For example, in a foreign language classroom, the lesson objective may be to understand important facts and information about Argentina while integrating key vocabulary and verbs that related to that culture or culture in general. In an auditory classroom the teacher might ask students to brainstorm about student prior knowledge, relate that prior knowledge to real life examples, ask the students to investigate by reading information about Argentina from the classroom book using a fact sheet that was printed out and given to the students. The students would then discuss with their partners in the target language, given written prompts, the important or interesting information

incorporating key vocabulary and verbs. Here, the teacher is instructing by speaking and writing only, although visuals are used, they are not characteristic of visual language. The classroom book is auditory in nature, there are many pictures but the pictures are not connected or flowcharted. The fact sheet is auditory if it is a written list of facts and the written prompts are also auditory in nature. The students may be drawing, but they are not moving through the levels of development and putting themselves in the picture first (preoperational). The map may be labeled, but there are no arrows connecting multiple concepts (concrete). Words are added before connections are established (formal).

A visual metalinguistic lesson looks very different as the teacher introduces new concepts by drawing them in real time with a person at the center “when the teacher drew the person and talked through the person’s actions, the lesson was at a preoperational level of development” (Arwood, Kaakinen & Wynne, 2002, p12). There are multiple examples given in order to form concepts that are flowcharted and interconnect with words about and concepts in writing and this in turn interconnects with more formal concepts related to the target words that are written last. This emphasizes the process that the learner cognitively goes through to acquire new concepts.

When concepts to be learned are overlapped through examples, then cognition moves up the developmental level. Therefore, if new concepts are presented in a visual format at the preoperational level, the visual learners can move to a higher cognitive level. The student moves the concept to the next level, which allows the teacher to test at the formal level of cognition. Application is not possible until the information is known at the formal level (Arwood, Kaakinen & Wynne, 2002, p.13).

For example, in a foreign language classroom, if the lesson was the same as the aforementioned lesson, with the lesson objective being to understand important facts and information about Argentina while integrating key vocabulary and verbs that related to

that culture or culture in general, it would look much different. In a visual classroom where the teacher is drawing out the concepts, the concept would be introduced at a preoperational level by drawing a picture of a person and flowcharting at least three connecting concrete layers, such as the people who lived there where they lived and what they did, thereby creating layers of concepts and multiple concrete examples that related to the learner's experience (at least three) in order to move on to understanding formal concepts. The teacher would then add auditory language or words and sentences to the flowchart such as key vocabulary, grammar, verbs etc. moving to formal concepts. The students now have moved through all developmental levels and then proceed to the map activity with the written facts and prompts. If questions do arise, the teacher can go back to the drawing and add additional layers of meaning. Once concepts are understood, the learner can move on to activities that incorporate auditory language. "Once students understand the concepts, they can answer auditory, multiple choice, application test questions" (Arwood, Kaakinen & Wynne, 2002, p.13).

Learning Styles

For the purposes of this study, it is important to differentiate between the definition given of a learning system and other related terminology in the field such as learning styles. Learning styles relate to "...the way a person solves a problem or learns a task" (Arwood, 1991). A learning style is "A preference for learning influenced by past educational experiences" (Arwood, Kaakinen & Wynne, 2002, p. 4). For example, a learner may like to listen to music when studying because of past experiences studying this way that helped them concentrate better; however, this does not represent how the learner creates language (concepts) neurobiologically or *conceptualizes*.

Gardner's (1993) Model of Multiple Intelligences represents learning styles as it "refers to a learner-based philosophy that characterizes human intelligence as having multiple dimensions that must be acknowledged and developed in education" (Richards & Rogers, 2001, p.115). A summary of Gardner's Multiple Intelligences, as provided by Richards and Rogers (2001), is as follows:

- 1) *Linguistic*: the ability to use language in special and creative ways, which is something lawyers, writers, editors, and interpreters are strong in
- 2) *Logical/Mathematical*: the ability to think rationally, often found with doctors, engineers, programmers, and scientists
- 3) *Spatial*: the ability to perform mental models of the world, something architects, decorators, sculptors, and painters are good at
- 4) *Musical*: a good ear for music, as is strong in singers and composers
- 5) *Bodily/kinesthetic*: having a well-coordinated body, something found in athletes and crafts persons
- 6) *Interpersonal*: the ability to be able to work well with people, which is strong in salespeople, politicians, and teachers
- 7) *Intrapersonal*: the ability to understand oneself and apply one's talent successfully, which leads to happy and well adjusted people in all areas of life
- 8) *Naturalist*: the ability to understand and organize the patterns of nature (p.116).

These intelligences are descriptive of the manner in which a person problem solves or approaches learning. According to Richards and Rogers (2001), "This model is one of a variety of learning style models that have been proposed in general education and have subsequently been applied to language education" (p.115).

This study is referring to learning systems as "neurobiologically linked to the creation of language", (Arwood, Kaakinen & Wynne, 2002, p. 4) and not the *manner* or *preference* with which a person problem solves or approaches learning.

Learning systems refer to the way the neurobiological systems actually create meaning from the sensory input to form patterns

that are conceptualized as ideas and then represented through language (Arwood, Brown, & Robb 2005 p.8).

Learning occurs at three levels, sensory input (or physical experience, no meaning), perceptual patterns (physical experience overlap, limited meaning) and conceptualization (cognitive experiences that are meaningful, advanced meaning) (Arwood & Brown, 2001).

All humans have a neurobiological learning system for acquiring new information. The sensory input forms patterns. These patterns use more of the brain to create systems. Systems of patterns form ideas that are concepts. So, concepts build through the layers of acquired patterns (Arwood, Brown, & Robb 2005 p.8).

It is through the use of language that concepts become meaningful. In order for concepts to be meaningful they must be presented in the way a person conceptualizes or thinks. The learning system is neurobiological and different learners conceptualize in different ways.

Sensory systems construct meaning in different ways. Visual input forms visual patterns. As the eyes move, the visual patterns also connect with motor patterns. Acoustic and visual input forms auditory patterns. Different learners use different types of patterns to develop language concepts. Therefore there are different meta-linguistic abilities among learners and likewise different language forms. The relationship between learning and language rests with the way a person conceptualizes an idea or the meta-cognitive ways of thinking. A visual thinker acquires new concepts through visual-motor patterns while an auditory thinker uses visual-acoustic patterns for new concepts (Arwood, Brown, & Robb 2005 p.17).

Summary

This review of literature has served to provide an analytical overview of second language instruction, language standards and proficiency, language and learning, language and teaching and learning paradigms. It has also served to provide a detailed

understanding, based on current research involving visual and auditory language, of visual and auditory learning systems, visual and auditory metalinguistic lessons, traditional auditory methods, and the difference between learning styles and learning systems. The underlying premise being that instruction that incorporates visual metalinguistic lessons in second language learning, or any other content area for that matter, includes both the visual and the auditory learner and will therefore reach all learners in the classroom.

The purpose of this study was to determine if adding visual language to the classroom in the form of visual metalinguistic lessons would be more effective in addressing all learners' needs in terms of concept acquisition as it relates to the target language of Spanish when compared with a class where no visual language was added. In order to determine this, the researcher analyzed pre and post-test assessment scores and learning gains for statistical significance. Language samples were analyzed for how students think, and student surveys were given that determined the number of visual processors and student input about methods used.

This review of literature has brought about some key points to be addressed regarding second language learning in relation to methods used in instruction. Primarily, the question could be raised that combined with current methods of second language instruction, including visual language in the classroom would be a useful method in reaching all learners and address learners' needs in terms of how they conceptualize, or how concepts are acquired by the learner.

Chapter 3

Methods and Procedures

The purpose of this chapter is to outline specific methods used in this research project relating to research design, school and community, participants, study timeline, ethics, procedures, pre and post-test instruments and procedures, classroom surveys and Temporal Analysis of Propositions instrument and procedures, visual and auditory metalinguistic lesson procedures, limitations, delimitations, study timeline, and compilation of data. The particular research design used in this study was quasi-experimental and mostly quantitative in nature. The participants of this study were high school students, grades 9 to 12, in two separate first year Spanish classes. The content material that was taught related to a thematic unit in Spanish about the family, “La familia.”

The purpose of this study was to determine if adding visual language to a second language classroom, in the form of visual metalinguistic lessons, would be effective in reaching all learners in terms of how they conceptualize or acquire concepts related to the target language of Spanish when compared with a class where no visual language was added. Visual metalinguistic lessons were defined as lessons using visual characteristics of languages, and auditory metalinguistic lessons were defined as lessons using auditory characteristics of language (Arwood, Kaakinen & Wynne, 2002). The researcher’s proposed hypothesis was that adding visual language to the classroom would be more effective in addressing all learners’ needs in terms of how they acquire concepts, and specifically, for the purposes of this paper, concepts related to the second language of Spanish. This was measured by analyzing pre and post assessment data for statistically

significant differences in terms of overall scores and learning gains given two high school first year Spanish classes. One class was instructed using visual metalinguistic lessons and one class was instructed using auditory metalinguistic lessons. The pre and post-test data were analyzed using descriptive statistics and t- tests (assuming unequal variances due to unequal class sizes) at a probability of .05 as statistically significant. A written language sample was also taken from each individual student and the Temporal Analysis of Propositions (TemPro) was used to analyze the written language samples to determine individual levels of conceptual development and identify auditory thinking or visual thinking for auditory language functioning. Surveys were given pre-test to ascertain whether the two groups were similar or different in the number of visual processors. Post-test surveys were used to attain student input about the type of instruction used, whether through visual metalinguistic lessons or auditory metalinguistic lessons. In this study, data were compiled individually and compared in groups.

Statement of Research Design

As stated previously, this research design was quasi-experimental as the researcher accessed a convenience sample of students in two separate Spanish classes of unequal number. Analysis of raw data were quantitative in nature, as measured by pre and post-test assessments that were directly related to the content that was taught. Other findings were gathered from student surveys. One survey was given pre-test to determine the number of visual processors. One survey was given post surveys that included student input as to the type of instruction implemented. Findings were also included regarding written language samples that were analyzed using the Temporal Analysis of

Propositions (TemPro) in order to determine if the two groups were from the same population in terms of how they conceptualized.

School and Community

This research was conducted in a district that encompasses twelve buildings in separate locations and spans 425 square miles in a rural, horticultural, and recreational setting. The district serves over 4,500 students. There are six elementary buildings, grades kindergarten to 5, three middle schools, grades 6 to 8, and one high school, grades 9 to 12. The high school is a 6-A school, offering a full range of programs related to academics, athletics, and various activities, with approximately 1,400-1,500 students attending at any given time throughout the year. The high school is a member of the Mt. Hood Conference, the Oregon School Activities Association, and is accredited by the Northwest Association of Schools and Colleges.

The students reflect the wide range of communities represented in the district existing in the rural, horticultural, and recreational setting. The high school has a nine period day that includes lunch. The school year is divided into two semesters about eighteen weeks in length, with three six week report grading updates within each semester.

The high school faculty consists of one principal, two assistant principals, an athletic director, four counselors, a drug intervention program director, several high school security staff members (including a police officer from the local police department), a school nurse, a librarian, 66 classroom teachers, and 33 support staff. “The average years of experience of the certified staff are twelve years. 70% of the teaching staff have a master’s degree or higher and 89% of the curriculum is taught by teachers

who meet the Federal Definition of a Highly Qualified Teacher” (Rural School District, Northwest Oregon). The high school’s mission statement is as follows: (In order to protect confidentiality the actual name of the high school is not mentioned or cited)

In partnership with our community, ‘this’ high school will provide a safe, clean, orderly, learning environment in which students become confident, skilled, lifelong learners who are productive individuals (Rural School District, Northwest Oregon).

The high school employs a letter grade system with each letter grade carrying a certain point value in order to determine cumulative grade point average or CGPA. An A is worth 4 points, a B is worth 3 points, a C is worth 2 points, a D is worth 1 point, an F is worth 0 points, an S signifies satisfactory (worth 0 points), and a U signifies unsatisfactory (worth 0 points). Semester credits determine what credits will be earned towards graduation. One-half credit is given for the completion of one class for one semester. Certificate of Initial Mastery (CIM) requirements are encompassed within core curriculum. Those students that meet the requirements, score at a proficient level on state tests and collect the required work samples are awarded the CIM. There are a required 24.0 credits in order to graduate. These include:

Foreign Language, Fine Arts, Industrial/Business Technology	1.0
Personal Finance	.5
Electives	8.5
English Elective	1.0
English	3.0
Health	1.0
Freshman Focus	.5
Mathematics	2.0
Physical Education	1.0
Science	2.0
Social Studies	3.5

(Rural School District, Northwest Oregon).

Students are now required to complete CRLE'S or Career Related Learning Experiences that tie into senior projects that they do. College credit is available to students at the high school through the local area community college in English, Math, History, Spanish, German, and French, while advanced placement is available in English, Chemistry, Social Studies, and Math (Rural School District, Northwest Oregon). The high school also offers a work experience program where students can earn up to two credits. There are programs available for Talented and Gifted students, students with handicapping conditions, and English Language Learners. There is also an alternative school setting available that currently has a 95% graduation rate (Rural School District, Northwest Oregon). Credit Recovery is available in the summer in English, Science, Math, and Social Studies. Technical courses related to health and human resources and industrial and engineering systems are available in conjunction with the local community college. There is a career education program and a school to career program in development.

The high school's athletic program serves over 800 students and includes twenty-five teams. There are twenty-six clubs at the school with over 600 participants. The arts department is award winning encompassing art, drama, choir, and band (Rural School District, Northwest Oregon).

Regarding Annual Yearly Progress in 2006-2007 when this research was conducted, the high school met the Reading Knowledge and Skills standard overall as well as the Mathematics Knowledge and Skills standard, but failed to meet standards with subgroups such as the Economically Disadvantaged, English as a Second Language, Students with Disabilities, and Hispanic origin subgroups also. The school has met the

AYP graduation standard for the last three years (Rural School District, Northwest Oregon).

The goals and objectives for future improvement at the high school are as follows:

Goal: By June of each year until 2009 (the high school) will meet the Adequate

Yearly Progress requirements of the Federal “No Child Left Behind Act” as defined by the Oregon Department of Education.

Objectives:

Participation

1.1 – 95% of all 10th graders will participate in statewide assessments including 95% of each student subgroup as defined by NCLB.

Academic Status

1.2 – The entire student group participating in statewide assessment will meet the Academic Target each year as set by the Oregon Department of Education. Each student subgroup defined by NCLB will also meet the Academic Target set each year by ODE.

Graduation Rate

1.3 - (the high school) students including all subgroups defined by NCLB will achieve a minimum of 100% annual graduation rate as defined by the Oregon Department of Education (Rural School District, Northwest Oregon).

The high school received an \$800,000 grant through the Bill Gates Foundation to develop smaller learning communities, which is meant to enhance “freshman transition and career pathways programs” (Rural School District, Northwest Oregon). The goals outlined for the grant are to build a stronger sense of community in order to improve academic progress, career goals, and individual student productivity. This grant supports a long-term plan that was piloted two years ago and was in effect at the time of this research in 2007, with the freshman class and sophomore classes. During the school year,

certain teachers are assigned specific students that they maintain contact with throughout the year. This includes participating in community building activities among those students and the staff.

Some portions of the high school were built in the 1920's, and further additions have been added as the population of students attending has grown. Over the last two years, research was conducted involving administration, staff, community, and students in order to propose building a new high school. This proposal will go on the next ballot as a bond in 2008.

Last year the researcher participated in a research project that included collecting surveys from students, staff, and administration regarding instituting a school-wide behavior system. The old school wide behavioral system consisted of detention, removal from class, Wednesday school, suspension, and expulsion. It was common knowledge that this alone was not functioning for the school. Attendance issues were also a serious problem. A Positive Behavior Support system (PBS) was instituted at the beginning of the 2007-2008 school year as part of a five year plan. This continues the language that the students are exposed to regarding behavior, from all of the middle schools and elementary schools who have PBS programs. This program targets attendance issues, media device use issues, and behavior issues for the first year. This PBS program was openly received and has had a very positive effect on our school regarding behavior.

There were 393 freshmen who attended the high school, 365 sophomores, 310 juniors, and 295 seniors. The dropout rate at the high school was 3%, which was less than the state average, and the attendance rate was 93.4%, which was above the state average (Rural School District, Northwest Oregon). There were 692 males and 671 females at the

high school. Of the students attending the high school there were 1,207 Caucasian students, 25 Native American students, 21 Asian students, 8 African American students, and 102 Hispanic students. The percentage of students that qualify for and were receiving free and reduced lunch at the high school was 26.79%. District wide the percentage of students who qualified for and were receiving free and reduced lunch was 33.47%.

Participants

The researcher instructs classes in both Spanish I and Spanish II at the aforementioned high school in rural Oregon. There were 44 participants (students) in this study ranging from grades 9 to 12 and enrolled in two separate high school first year Spanish classes where the researcher was the educator. Two students originally involved in the research, one from each Spanish class, began the study but did not finish the study. One of these students moved within the first week and the other student was moved to a different placement within the first week.

The researcher, for the purpose of this study, selected these particular participants based on the fact that the participants belonged to a population that was a convenience sample. The students had limited, approximately seven months, five days a week at about 50 minutes per day, exposure to the Spanish language. A first year Spanish class is a class that contains students who are exposed to academic instruction in Spanish at a beginning level while also allowing for differing individual experience levels, as some students had more experience with the language than others. Pre-test results were used in determining prior knowledge that the students had regarding the thematic unit being taught.

In the first Spanish I class (Group A), there were 24 students, 13 males and 11 females. There were 21 Caucasian students, one student of Chinese descent, and two

students of Hispanic descent attending this class. These two students of Hispanic descent were native Spanish speakers, but had received little formal education. In the second Spanish I class (Group B) there were 20 students, comprised of 13 males and 7 females. There were 17 Caucasian students, one African American student, and two students of Hmong descent in this class. ELL students and IEP students received some accommodations and modifications.

In Group A, the two students of Hispanic descent were ELL (English Limited Learners) and receiving services as they were a level 1 in their proficiency in the English language. The ELL students were new at the semester and had not been in the class for the entire year. The ELL students were accommodated for in terms of challenging the students more in the areas they were proficient in Spanish (speaking and listening) and working on the areas (reading, writing and cultural understanding of Chile) they needed help in as was demonstrated on the pre-test. The ELL students were put in a leadership role in the classroom which helped them to integrate into the community of learners while practicing Spanish and assigning meaning to English. Other learners in the classroom benefited from the ELL learners in many ways and the ELL learner's confidence level was boosted. There was one student on a 504 Plan (a student who does not have enough of a discrepancy in test scores to qualify for an Individualized Education Plan but needs extra support of some kind). There was one student that had an Individualized Education Plan (IEP) having been identified as having a specific learning disability. The term "learning disability" in a traditional sense,

...is used to describe children and adolescents who are not learning at an expected rate despite the fact that they have experienced traditionally adequate instructional programs (Bernstein and Tiegerman-Farber, 2002, p.390).

For the purposes of this paper, and in relation to a neurobiological perspective regarding learning systems, learning disabilities may also be described in terms of “learning systems” (Arwood 1991) defined as, “the way the person can acquire new ideas or concepts. Concepts can be formed into visual language or auditory language. The learning system is neurobiological.” (Arwood, Kaakinen and Wynne, 2002, p. 4). If a child conceptualizes differently (visual language) and is tested using testing procedures that are predominantly representative of auditory language in order to determine differences, the child could be diagnosed as learning disabled, having a language disorder or having behavioral issues (Arwood, 1991).

In Group B there were three students on an Individualized Education Plans and one student under court supervision and living away from the biological parents.

For the students on IEP’s and 504’s in these groups, in terms of accommodations, some students needed more time to demonstrate their knowledge which did not affect the research results but simply allowed them the opportunity to show what they knew. In terms of modifications, some assignments were shortened in writing; however, with the support of the family tree performance assessment, which was similar to the writing assessment on the post-test, the students were able to demonstrate what they knew on the post-test.

Study Timeline

This study took place over a period of about six weeks (29 school days), covering a complete thematic unit in Spanish about the family. This study began on April 30, 2007, and ended on June 7, 2007. This study took place during the regular academic school year and during regularly scheduled class times. The duration of each class period

was fifty-minutes, per day, on regular A schedule days; and forty-five minutes per day on modified B schedule days (when students participated in assemblies or tutorial lasting a half an hour at the beginning of the day). An outline of the study timeline and lessons may be referred to in Appendix E and F of this thesis respectively.

Ethics

In this study the researcher employed methods typically used in an educational setting and are commonly accepted. For the purposes of this study, visual language was added to one classroom (classroom B) in the form of visual metalinguistic lessons while it was not added to the other classroom (classroom A) where traditional auditory metalinguistic lessons were used. This was done in order to determine if adding visual language to the classroom would be more effective in reaching all learners' needs in terms of how they conceptualize when compared with a class where no visual language was added. The researcher would normally include visual metalinguistic lessons as one of the methods implemented for instructing students in an accepted educational setting. Auditory language lessons have been and currently are traditionally implemented in an educational setting. Students were randomly assigned numbers to protect confidentiality. These numbers connected individual students anonymously with respective data related to test scores, learning gains, survey data and language analysis data. This was done in order to protect confidentiality.

Though the subjects were minors, constituting a review by the Institutional Review Board if certain criteria were not met, the employment of the researcher's methods did not differ from the manner of instruction typically given in an accepted classroom setting. The study was submitted to the SOE subcommittee on Human Subject

and Research and was deemed exempt from a full board review. A meeting was arranged with the principal of the school to discuss the proposed research. The research was approved by the principal and was fully supported by the administration at the proposed research site.

Procedures

The particular population in this research was representative of two separate classes of first year Spanish students. The method of instruction for the two classes was assigned randomly. The classes (A and B) were labeled on a piece of paper and then chosen out of a hat by hand randomly. There were three Spanish I classes, the total amount the researcher was instructing, that were available to draw from the hat. The first class drawn out of the hat received instruction using auditory metalinguistic lessons (Group A). The second class drawn received instruction with visual metalinguistic lessons (Group B). The pre-test assessment was given to students directly before a thematic unit in Spanish was taught and the post-test was given directly after the unit was concluded. The pre-test and post-test included reading, writing, listening, speaking, and cultural understanding. Both groups were given short practice homework assignments that were auditory in nature directly related to the content taught about three times a week as a review and the students were asked to practice orally for 15-20 minutes the other two days of the week. A survey was given to students of both classes at the end of the second week to determine how many students used visual thinking. A final survey was given at the end of the thematic unit to gather student input on the method of instruction used. The Temporal Analysis of Propositions (TemPro) was used to analyze language samples that

were gathered from all students in both classes to evaluate for whether or not a student used visual or auditory language to access their learning system.

The particular classroom where the research took place and where the instruction was given was arranged so that all students could see a whiteboard clearly where concepts were presented, whether in visual or auditory language. The room was divided up into two sections that seated 15 students on either side with a large aisle down the middle of the room. The chairs were situated to focus on the whiteboard and large sheets of paper at the front and center of the room.

Pre and Post-test Instruments and Procedures

This section addresses the pre and post assessments as instruments used in this study, the development of those assessments, and the implementation of the assessments. The questions posed throughout this assessment were directly related to the content taught. This speaks to the construct validity of the assessment, as the content being taught was the content that was tested.

The assessments that included reading, writing, listening, cultural understanding and speaking, as well as the speaking rubric and writing rubric, were created by the researcher. In classes throughout the researcher's undergraduate and graduate degree, the researcher, as educator, was trained in how to develop appropriate assessments that matched the appropriate goals and objectives within the scope and sequence needed for the content matter. An example of the pre-test and post-test may be found in appendix A of this thesis. An example of the oral assessment and rubric may be found in Appendix B of this thesis. These assessments directly reflected the content instructed, incorporating

the Spanish I classroom book, as outlined in the study timeline which provided the scope and sequence for content instruction (see Appendix E).

The assessments included communication, related to the interpersonal and presentational modes, in writing and speaking and comprehension, related to the interpretive mode, in reading, listening and cultural understanding. These assessments reflected content in and about the target language of Spanish related to the family, the house, where things were located, describing family members, vocabulary related to the family, chores, possessive adjectives, negatives, and a basic cultural and geographical understanding of Chile. This scope of the content and sequence of the thematic unit connected with earlier thematic units and the student's experience up to that point with the Spanish language.

The pre and post-test assessments were the same. The assessments directly reflected instruction that integrated the content material taught in the thematic unit "La familia" ("The family") from the Spanish I book that the students have access to and use as a resource in class (Humbach, Valesco, Chiquito, Smith, and McMinn, 2006). The assessments used words and vocabulary out of context and therefore were auditory in nature. The school purchased the curriculum materials and adopted them for teaching Spanish I and Spanish II. Teachers were to use these curriculum materials in their instruction and follow the given curriculum.

It is important to note that the curriculum that was adopted by the district to teach Spanish I is based on the assumptions of an auditory language not a visual language. The Spanish I book that the students had access to and that was used to teach the thematic unit related to the family had many attributes that were easily identified as auditory (using

auditory language). The concepts in the book were represented in writing or in written words to be spoken (mostly like outline format). There were “visuals” in the form of photos in the book, but the pictures did not layer concepts or create context by connecting layered concepts. The images stood alone and were not connected or flowcharted. The text was put into context using formal pictures of specific people having a dialogue, already at a formal level. Written or spoken words were used to describe concepts, explain concepts, and directed to repeat or reiterate concepts. Graphic organizers and icons were used, which are auditory in nature. The researcher adapted the content represented in the Spanish I book to visual and auditory metalinguistic lessons.

The pre-assessment was given before the first day of instruction in the thematic unit on the April 30, 2007, during a regular fifty-minute class period. The students took the paper pencil assessment at their desks while seated. Upon completion of the pre-assessment, individual students were asked questions from the oral pre-assessment by the educator. The students were given a copy of the oral assessment rubric previous to the oral assessment beginning so that they could understand how they would be graded. The oral pre-assessments continued into the following day, June 1, 2007. The oral pre-assessment took place in a private area of the classroom while other students were working on individual projects so that the students being tested would not experience interference or distraction communicating with the researcher and so that the other students who were not being interviewed at the time were prevented from overhearing the test questions being asked.

The post assessment, a duplicate of the pre-assessment, was given June 6, 2007, in the same form and setting as the pre-assessment. The oral post assessment, a duplicate

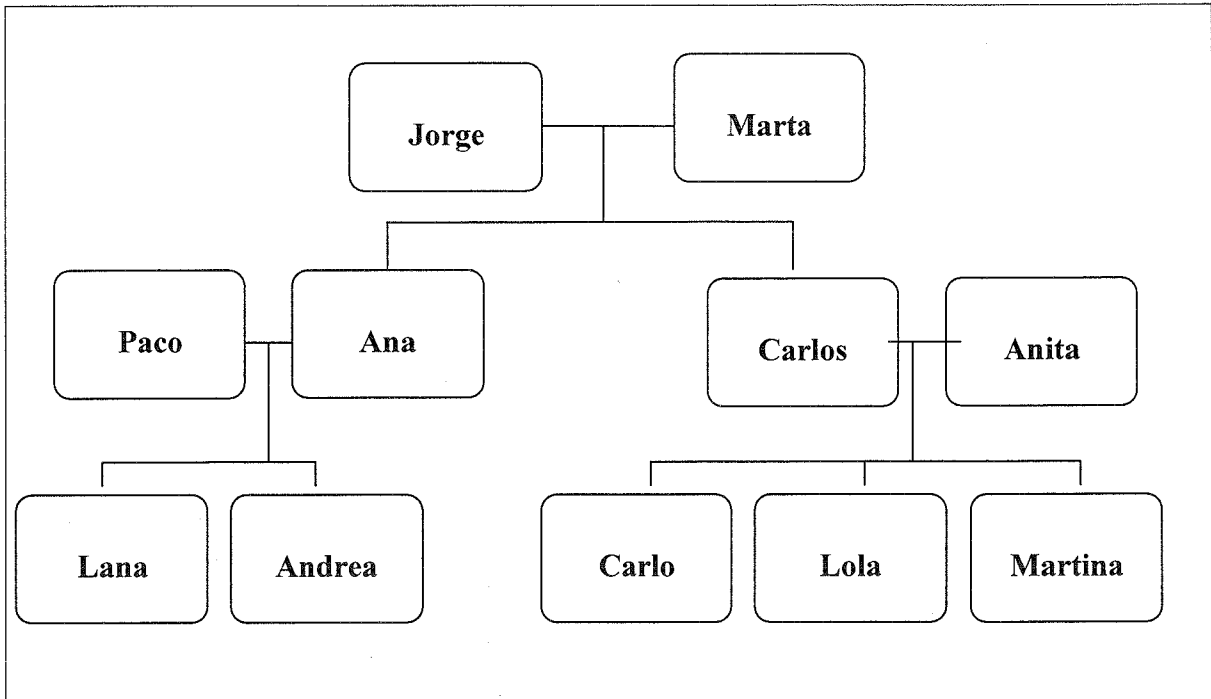
of the oral pre-assessment, began the day before, June 5, 2007, and continued into the next day June 6, 2008. This assessment was given in the same form and setting as the oral pre-assessment (see Appendix A for pre and post assessments).

On the listening portion of the pre and post assessment, the students listened to the teacher read the following questions out loud. The teacher read each prompt out loud twice before moving to the next prompt. The students then responded in writing according to the family tree they were provided. The correct answer to the questions is given for reference in this thesis next to each question below the family tree. The listening portion was about 9% of the test. The students were given the following directions:

Listen to the teacher talking about a family. Use the family tree to answer the questions asked. Respond in writing below. (10 points)

Listening Prompts -

1. ¿Quién es el padre de Ana?
2. ¿Quién es la abuela de Lola?
3. ¿Quién es el tío de Andrea?
4. ¿Quiénes son los primos de Lana y Andrea?
5. ¿Quiénes son las sobrinas de Carlos y Anita?



- 1) Jorge
- 2) Marta
- 3) Carlos
- 4) Carlo, Lola, Martina
- 5) Lana, Andrew

On sections that incorporated reading on the pre and post assessment, the students read the following passage in Spanish and then wrote the correct answer, whether true or false, related to statements in Spanish about the paragraph. The correct answer to the questions is given for reference in this thesis. The students were given the following directions:

Read the letter and answer the questions given if the statement is cierto (true) or falso (false). (10 points):

Hola Marta,

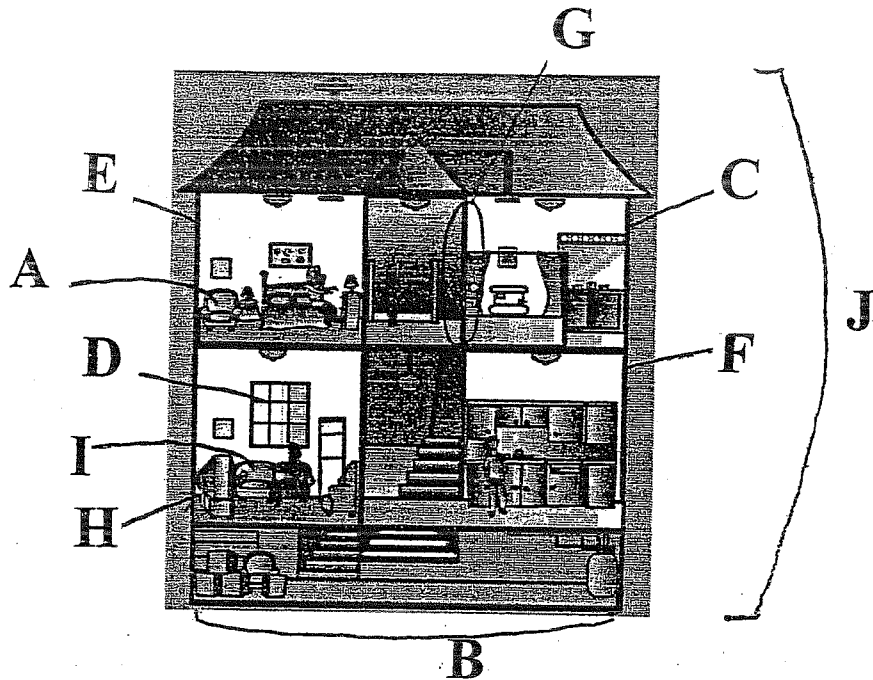
¿Cómo estás? Este verano mi familia y yo vamos a ir a Chile. Hay cinco personas in mi familia. Mi madre, mi padrastro, mi hermano mayor, mi hermana menor, y yo. Mi hermana menor es traviesa y mi hermano mayor es divertido. Mi madre y mi padre tienen los ojos azules, pero yo tengo los ojos verdes y necesito usar lentes. Vamos a ir con nuestras parientes. Mis abuelos, mis tíos, y mis primos. Tengo un gato muy gordo, pero él no puede ir con nosotros. ¿Quieres venir con nosotros?

Blanca

- C 1) Blanca tiene un padrastro.
- F 2) Blanca tiene los ojos azules.
- F 3) El gato puede ir con la familia a Chile.
- C 4) Blanca necesita usar lentes.
- F 5) Blanca tiene una hermana mayor y un hermano menor.

There were several other sections of the test that incorporated reading that focused on vocabulary and specific grammatical structures related to the thematic unit. On the same paper test the students matched vocabulary given a diagram, matched vocabulary given the words in Spanish and English, and circled the appropriate responses after reading a sentence as shown respectively. The students were given the following directions and responded. The correct answer to the questions is given for reference in this thesis.

Match the letters given to represent parts of the house with the house vocabulary. (10 points)



- 1) la habitación E
- 2) la cocina F
- 3) el baño C
- 4) la pared G
- 5) la casa J
- 6) la sala H
- 7) la silla A
- 8) la ventana D
- 9) el sofá I
- 10) el sótano B

Match the vocabulary with the appropriate definition. (20 points)

1) abuela <u> Q </u>	a. younger
2) tío <u> E </u>	b. deaf
3) joven <u> S </u>	c. building
4) nieta <u> J </u>	d. mischievous
5) primo <u> P </u>	e. uncle
6) padre <u> R </u>	f. garden
7) bisabuelo <u> O </u>	g. nephew
8) madrastra <u> K </u>	h. older
9) hijo <u> M </u>	i. chores
10) mayor <u> H </u>	j. granddaughter
11) menor <u> A </u>	k. stepmother
12) el edificio <u> C </u>	l. address
13) la dirección <u> L </u>	m. son

14) el jardín <u>F</u>	n. countryside
15) la puerta <u>T</u>	o. great-grandfather
16) sobrino <u>G</u>	p. cousin (male)
17) travieso (a) <u>B</u>	q. grandmother
18) sordo (a) <u>D</u>	r. father
19) los quehaceres <u>I</u>	s. young
20) el campo <u>N</u>	t. door

¿Dónde está? - Circle the correct response using the picture of the house. (5 points)

- 1) La madre está (encima de / lejos de) la cama.
- 2) La cocina está (debajo / al lado) del baño.
- 3) El niño está (cerca / lejos) del sótano.
- 4) La silla está (delante de / detrás de) la televisión.
- 5) La habitación está (lejos de / encima de) la sala.

Negation – Circle the correct negative the fits each sentence. (5 points)

Mi mama (nunca / nadie) quiere ir de compras. Mi padre no quiere ir de compras conmigo (tampoco / nada). Mi hermana (tampoco / nunca) quiere ir también. No me gusta. (Siempre / Nadie) quiero ir de compras. Por eso, no voy a hacer (nada / tampoco) ahora.

Possessive adjectives – Circle the correct possessive adjective in the dialogue. (5 points)

- ¿Cuántas personas hay en (tú / nuestra) familia?
- En (mí, tú) familia hay diez personas. (Nuestro / Su) perro es parte de la familia también.
- ¡Tienes una familia grande! ¿Cómo son (tus / sus) parientes?
- Son muy divertidos. Tengo muchos primos. (Sus / tus) casas son muy grandes.

The reading portion of the assessment was about 48% of the total assessment.

On the writing portion of the pre and post assessment, the students responded in writing to a prompt. In two other sections of the assessment, the students wrote in the correct response that completed the sentences given in Spanish. The writing prompt answers varied from student to student. The rubric used to grade student responses is

given. Possible student responses could vary. The students were given the following directions and given space on the test to write their answers:

Escribamos - In Spanish, write a description of your family (minimum of six people) in paragraph form. Your description needs to include your family members, how they are related to each other, and one characteristic of each. (20 points)

Writing Rubric							
Does your paragraph...							
A. include six members of the family?	0	1	2	3	4	5	6
B. describe how the family members are related?	0	1	2	3	4		
C. describe a characteristic of each family member?	0	1	2	3	4	5	6
D. make sense and is there agreement in gender and number?	0	1	2	3	4		
							Total: /20

The writing portion of the assessment was about 17% of the total assessment.

On the speaking portion of the pre and post assessment, the students responded orally to questions asked by the researcher. The questions were asked in Spanish and the questions were answered in Spanish. The questions could only be stated twice. Responses to oral questions varied from student to student. The researcher scored each student response on a scale of one to five related to four sections regarding speaker comprehension, speaker comprehensibility, speaker accuracy and speaker fluency on the speaking rubric. The score for each section were averaged for each section in the question for a final point value. Each section averaged point value was then added to obtain the

total score of the four sections. The rubric used to grade student responses is given.

Possible student responses could vary. The students were given the following directions:

Respond to the questions in Spanish in complete sentences. The question can only be repeated twice.

11) ¿Cuántas personas hay en tu familia?

- A 0 1 2 3 4 5
- B 0 1 2 3 4 5
- C 0 1 2 3 4 5
- D 0 1 2 3 4 5

12) ¿Cómo es tu familia?

- A 0 1 2 3 4 5
- B 0 1 2 3 4 5
- C 0 1 2 3 4 5
- D 0 1 2 3 4 5

13) ¿Cómo es la casa de tu familia?

- A 0 1 2 3 4 5
- B 0 1 2 3 4 5
- C 0 1 2 3 4 5
- D 0 1 2 3 4 5

14) ¿Cuántas habitaciones hay en tu casa?

- A 0 1 2 3 4 5
- B 0 1 2 3 4 5
- C 0 1 2 3 4 5
- D 0 1 2 3 4 5

15) ¿Tienes un perro o gato?

- A 0 1 2 3 4 5
- B 0 1 2 3 4 5
- C 0 1 2 3 4 5
- D 0 1 2 3 4 5

16) ¿Tienes los ojos verdes?

- A 0 1 2 3 4 5
- B 0 1 2 3 4 5
- C 0 1 2 3 4 5
- D 0 1 2 3 4 5

Score

/ 20

Speaking Rubric

A. Speaker Comprehension (the questions asked are understood and the responses show understanding)	(unclear)	0	1	2	3	4	5	(clear)
B. Speaker Comprehensibility (ideas are communicated clearly and are easily understood)	(unclear)	0	1	2	3	4	5	(clear)
C. Speaker Accuracy (structures and related vocabulary are communicated with accuracy)	(unclear)	0	1	2	3	4	5	(clear)
D. Speaker Fluency (communication is clear, easily understood, and demonstrates fluency)	(unclear)	0	1	2	3	4	5	(clear)

The speaking portion of the assessment was about 17% of the total assessment.

On the culture portion of the pre and post assessment, the students responded in writing to the questions asked in Spanish and identified, from a map given, key places in Chile. The correct answer to the questions is given for reference in this thesis. The students were given the following directions:

La cultura – Chile

Answer the cultural questions given the vocabulary. (5 points)

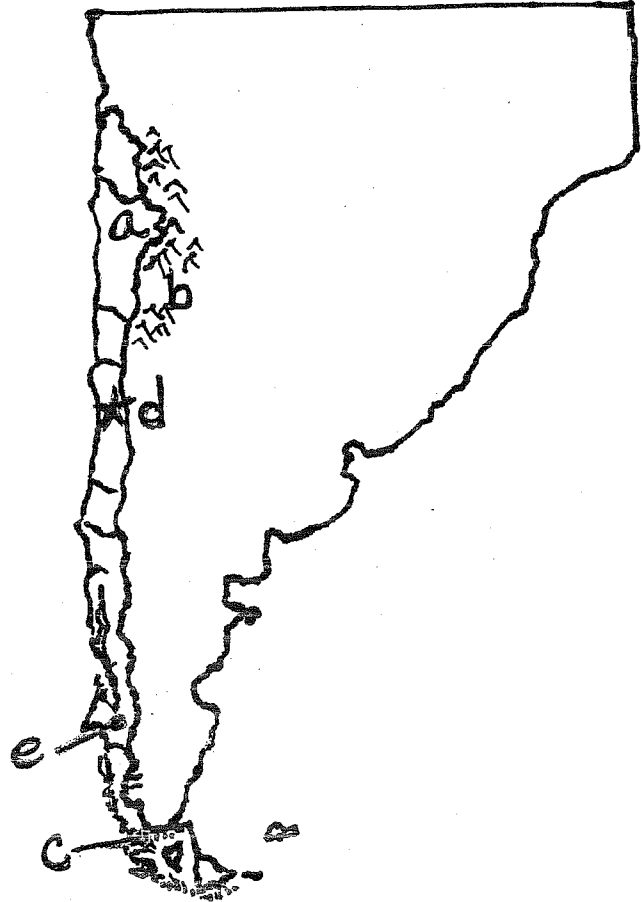
dos mil	La cueca	Los Andes
Santiago		La Atacama

1. ¿Cuál es la capital de Chile? Santiago
2. ¿Cuál es el desierto más seco del mundo en Chile? La Atacama
3. ¿Cómo se llaman las montañas famosas de Chile donde puede esquiar y snowboardear? Los Andes
4. ¿Cuál es el baile nacional de Chile? La cueca
5. ¿Cuántos volcanes hay en Chile? dos mil

Geography

Match each letter on the map of Chile with the area or city it represents. (5 points)

1. El Parque Nacional Laguna San Rafael e
2. Los Andes b
3. Santiago d
4. Punta Arenas c
5. Atacama Desert a



The culture portion of the assessment was about 9% of the total assessment.

Classroom Surveys and Temporal Analysis of Propositions Instrument and Procedures

There were two classroom surveys given in this study, Survey 1 and Survey 2.

Examples of these surveys can be found in Appendix C of this thesis. Survey 1 was given to students of both classes at the end of the second week. This survey was given to determine how many students were visual processors was compared with the students' written language samples after they were analyzed using the TemPro which determined how students accessed their learning system, either through visual language or auditory language. Auditory thinkers tend to "use outlines, write sound words, depend on spoken/verbal presentations" (Arwood, Kaakinen & Wynne, 2002, p. 39). A visual thinker "depends on drawings, doodlings, etc." (Arwood, Kaakinen & Wynne, 2002, p. 39)

Survey 1 was adapted and printed from "Questions to Evaluate for Visual Processors" (Arwood, Kaakinen & Wynne, 2002, p. 39) with the permission of the authors. Survey one was given to 103 nursing students in a previous study by nurse educators (Arwood, Kaakinen & Wynne, 2002). The survey results were compared with written samples that were analyzed using the TemPro. Those survey results matched the TEMPRO written language analysis findings "97% of the time" (Arwood, Kaakinen & Wynne, 2002, p. 37).

Survey 2 was given after the post-tests. This survey was given to gather student input about the method of instruction used in order to better understand student perspectives of the methods used. The data from these surveys served to provide useful information about the methods implemented from the student's perspective.

In both surveys, students were given a paper copy of the survey and asked to choose answers by circling options given that applied to them. Survey 1 contained five questions with multiple choice answers which determined the number of visual processors in each class according to the student's perspective. Survey 2 contained four questions. The first three questions asked students to rate each question along a scale of one to ten (one being the lowest and ten being the highest). The last question (question number four), was similar to question five in the first survey and student answers were cross referenced for evaluation. This was a paper survey and the students used pencils to circle answers. Survey 1 and Survey 2 can be found in Appendix C of this thesis.

The Temporal Analysis of Propositions (TemPro) was used to analyze written language samples that were gathered from all students in both classes to evaluate for whether or not a student used visual or auditory language to access their learning system. The Temporal Analysis of Propositions may be referred to in Appendix D of this thesis.

The TemPro measures number of auditory propositions used in response to a time based question, number of semantic language errors, and number of items marked on a behavioral checklist.

Research using the TEMPRO to discriminate between typical language users and atypical language users found the TemPro to be highly reliable (.96) (Arwood & Beggs, 1992, p.1).

As defined by Arwood and Beggs (1992) in the TemPro Examiners Manual, a proposition can be defined as:

The intended primary content of an utterance (a cognitive unit) established through the acts of referring and predicating. Propositions are, therefore, determined by the use of an utterance to refer to a predicate. In the TEMPRO a proposition contains a minimum of three ideas that are connected in a temporal sequence (Arwood & Beggs, 1992, p.2).

Defining these variables further, the act of referring is “the act of sharing information” (Arwood & Beggs, 1992, p.2) and the act of predicating is “the act of connecting at least two ideas by using a temporal sequence” (Arwood & Beggs, 1992, p.2)

The TemPro is usually used with an oral prompt and an oral response. In this particular research, that was not feasible given the research format and timeframe. However, a written response to an oral question can be analyzed for propositions using the TemPro. This same instrument had been used to evaluate written language samples in a study by nurse educators (Arwood, Kaakinen & Wynne, 2002). The written language samples in that study yielded that out of 103 student nurses who participated, 76.6% accessed their learning system through visual language, 14.5% accessed their learning system through auditory language, and this was not possible to ascertain in 8.9% of the students (Arwood, Kaakinen & Wynne, 2002, p36).

For the purpose of this study, the researcher asked students to write and the written language samples were analyzed as to how many propositions were used in each individual language sample that came from the students. This determined whether students accessed their learning system through auditory or visual language.

The mean in typical language use is 3.83 propositions (Auditory Learning Systems). The Standard Deviation =.31. When the temporal concepts are not represented (no propositions) the speaker has a Visual/Spatial Learning System (Arwood & Beggs, 1992, p.1).

In typical language functioning, the language user is able to temporally connect three ideas (Arwood, & Beggs, 1992). There is a formal understanding of concepts that cannot be seen such as “a typical day” or “justice” and “when the speaker wishes to talk

about these displaced concepts, then elements of time are used” (Arwood & Beggs, 1992, p.2). However, for atypical language functioning, the language user is not able to temporally connect three ideas because “they represent those ideas by relationships from their experience that can be seen” (Arwood & Beggs, 1992, p.3). In order to connect concepts, language is visualized which represents spatial relationships and not temporal elements that connect concepts (Arwood & Beggs, 1992).

Evaluation was not needed for semantic language errors, as the language sample was written and the same errors found in an oral language sample are not expected to be found in a written language sample. Evaluation was not needed for behavior, as it was not pertinent to this study. The sampling procedures of TemPro were modified for oral language to written language and then written samples were analyzed by Dr. Ellyn Arwood , a trained TemPro examiner and author of the “Temporal Analysis of Propositions” (Arwood & Beggs, 1992), for number of auditory propositions.

The TemPro is intended as a way for evaluators to consider the quality of language by analyzing how well the intended message (proposition) is communicated when given the task of talking about something that is not present and visible. In order to establish shared information about a non-visible concept, the speaker must connect (predicate) two or more related ideas (refer) with temporal concepts (because, so, during, while, when, etc.) (Arwood & Beggs, 1992, p. 2).

The written samples were marked with the following key developed by Dr. Ellyn Arwood and were scored on the front sheet of the TemPro instrument in the appropriate “number of propositions” column.

1. Visual – Visual language used (0 propositions)
2. Auditory – Auditory language used (1-3 propositions)
3. Visual ? – Some aspect is unclear (0 propositions)
4. Auditory ? – Some aspect is unclear (possible proposition)
5. ? – Not representative of natural language (undetermined)

Again, the Temporal Analysis of Propositions instrument may be referred to in Appendix D of this thesis. The key for scoring the written language samples can also be found in Appendix D in table form.

The researcher collected language samples at the beginning of the thematic unit. The educator administered the oral prompt for the TemPro. The researcher asked the students to answer the question in writing “Answer the question, ‘What do you do on a typical day?’.” The writing samples were evaluated with the TemPro and analyzed for how individual students accessed their learning systems (whether auditory or visual language). The researcher gave students lined paper and pencils with no erasers. Students were informed by the researcher that they were participating in a quick write and the purpose of the activity was to answer the question the best they could without worrying about their writing. The students were directed by the researcher that the only editing they could do was to draw a line through something that they did not want. Students were directed by the researcher to write until they were finished or until the time was up. Students were given three minutes to answer the question. The researcher asked students to stop writing, put down their pencils, and hand in their papers.

Visual and Auditory Metalinguistic Lesson Procedures

The researcher as educator adhered to the following lesson procedures related to auditory language teaching (auditory metalinguistic lessons) and visual language teaching (visual metalinguistic lessons) and when instructing classes A and B respectively. In classes throughout the researcher’s undergraduate and graduate degree, the researcher was trained how to teach using visual metalinguistic lessons and understand the difference between visual metalinguistic lessons and auditory metalinguistic lessons. The

“concepts” referred to below are concepts related to the thematic unit taught as explained previously. Examples of visual and auditory metalinguistic lessons may be referred to in Appendix F of this thesis. The researcher adhered to the definitions of auditory language when teaching auditory metalinguistic lessons. In auditory language teaching the researcher,

- Taught concepts that were represented in written and spoken format
- Visuals were used, but were not connected or flowcharted, and therefore did not represent visual language
- Written or spoken words were used to describe the concepts
- Written or spoken words were used to explain concepts
- Written or spoken words were repeated to reiterate important concepts in summary (Arwood, Kaakinen & Wynne, 2002)
- Developed auditory language strategies for individual learners who struggled

In visual language teaching the researcher,

- Drew out concepts
- Drew out lessons in real time
- Drew before any note taking or writing took place
- Drew on a whiteboard or large sheets of paper so that the drawings could be referred to later
- Connected and flowcharted ideas
- Developed strategies for individual learners who struggled (Arwood, Kaakinen & Wynne, 2002) using visual language.

The researcher as educator used visual metalinguistic lessons that were “drawn (visual-motor) while speaking (acoustic) to meet auditory and language needs” (Arwood, Kaakinen & Wynne, 2002, p. 15). The researcher drew in “real time” because “while talking, both auditory and visual thinkers are able to follow the content” (Arwood, Kaakinen & Wynne, 2002, p. 15). The researcher drew first to make “connections to past ideas through drawing, and then visually assign meaning, followed by providing paper

handouts” (Arwood, Kaakinen & Wynne, 2002, p,15). The researcher connected ideas because “visual concepts need to be in context or need to be relational” (Arwood, Kaakinen & Wynne, 2002, p. 16). The concepts in the lessons were not taught separately from key information related to the concept, “Concepts need layers and overlapped examples for students to learn best. The researcher layered concepts by adding related information. The researcher overlapped concepts by adding multiple examples.” (Arwood, Kaakinen & Wynne, 2002, p. 20). The researcher included people at the center of the concept connecting with the ideas “All drawing with people at the center of the content are at the preoperational level, which helps all learners with new concepts.” (Arwood, Kaakinen & Wynne, 2002, p. 18).

The drawings in the lessons had text that is boxed in or “grounded” as “visual thinkers use their bodies as reference points to the board, so the ideas on the board that are framed or boxed are grounded and therefore easier to understand.” (Arwood, Kaakinen & Wynne, 2002, p.21). These lessons were not “artwork” (Arwood, Kaakinen & Wynne, 2002) but a means for which both visual and auditory learners can be able to process concepts according to their learning system. The researcher as educator let the students know that the pictures created were the researcher’s pictures and that the students would need to create their own pictures (Arwood, Kaakinen & Wynne, 2002). These lessons did not include things like graphic organizers and icons used alone (Arwood, Kaakinen & Wynne, 2002).

Limitations

There are limitations of this study related to aspects of this research that the researcher controlled. The researcher chose to write the assessment that was used and

also chose to use a pre and post assessment format to measure any statistically significant differences between class pre and post assessments. Had another form of assessment been chosen or another format for comparison between two classes, this would have significantly changed the parameters and possibly the outcome of the research. In writing the assessment, the researcher chose the point ceiling and had another point ceiling been chosen, this could have also changed the outcome of the research. The researcher chose to adapt, develop and use surveys to determine if students were visual processors and to obtain student input on the type of instruction used. Had the researcher not chosen to implement these surveys, there would not be a means to determine the number of visual processors and compare with the written language analysis findings.

The form of instruction, whether using visual language teaching or auditory language teaching, was chosen by the researcher and is intentional. The methods in this research were conducted following protocols defining visual and auditory metalinguistic lessons. Had these protocols not been followed, the definitions of a visual metalinguistic lesson and auditory metalinguistic lesson would not be clear and therefore the research would be invalid and not representative of the hypothesis being explored. The outcome of these lessons being directly linked to the protocols established were fully dependent on the researcher. Therefore, the outcome of the pre-test and post-test scores and learning gains were fully dependent on the researcher following the aforementioned protocols in relation to instruction of visual and auditory metalinguistic lessons.

The timeline that was used for instruction and implementation of the research was chosen. The researcher chose the timeline based on convenience. Given more or less time, this might have changed the outcome. When the research occurred was chosen by

the researcher. Originally, the researcher had planned to do the research at the beginning of the year, but because of continued and serious student scheduling problems during the first part of the year, due to a new computer scheduling/grading system, the researcher chose to wait until these problems were resolved. Due to the fact that the research was conducted later in the year, there was a possibility that students who were visual learners had developed strategies to cope in an auditory classroom and students were aided by the past experience with Spanish during the year and/or visual language strategies that the researcher may have unconsciously implemented.

The resources available in the classroom, teacher's manual, and student resource books, were chosen regarding the thematic unit taught as they were part of the curriculum mandated by the school district. The particular thematic unit instructed was chosen, as well as the scope and the sequence of the instruction related to the thematic unit. The researcher chose to use and adapt these resources and focus on the particular thematic unit based on convenience. Given different resources and the instruction of a different thematic unit, this might have changed the outcome.

The researcher decided to access a convenience sample, and therefore, the participants were not random. In choosing the convenience sample, it yielded a smaller sample size. The particular site where the research took place was chosen in order to access the convenience population. Had a convenience sample not been chosen and had the research been conducted at a different site it is possible that the outcome may have been different.

Delimitations

There were delimitations of this study related to the aspects of the research over which the researcher had no control. The researcher could not control the exposure to Spanish that the participants had during the study or prior to the study. The researcher had no control over whether or not participants in the study were receiving tutoring, speaking with others, or speaking with other native speakers outside of class time, they may have done better or worse on the assessments. The researcher had no control over extraneous variables such as individual student attendance issues, school schedule changes, and individual students being called out of class and missing class time. The researcher also had no control as to whether or not the participants were completing the required homework on their own for practice. It was necessary that the researcher chose to implement the methods in Spanish I classes and not in Spanish II classes, due to the fact that students in all Spanish II classes had been previously exposed to the methods the year before. Therefore, the researcher had no choice but to randomly draw from three Spanish I classes, excluding the three Spanish II classes, in order to determine which Spanish I classes would participate in the research.

The researcher had no control over whether or not certain participants might score higher on the post-test as compared to the pre-test if they remembered some questions from the pre-test. The pre-test and post-test were given about a month apart which the researcher considered was a significant amount of time in order to avoid this problem.

The researcher did not know the individual cognitive level of the participants or their cognitive level of instruction. The researcher could not control the individual metacognitive strategies that participants might have developed, and therefore it is

possible that the participants may have been able to process auditory and/or visual language because they have developed strategies to do so. Also, the researcher's interpretation of a visual or an auditory metalinguistic lesson may have been influenced by researcher's own thinking process.

It was not known directly to the researcher about the participant's past experiences with school, teachers, and the school community. The researcher also did not know directly what the participant's home life was like, their socioeconomic status, or their family background.

Compilation of Data

The raw data were compiled in an excel program and was analyzed using the Excel data analysis program. The data were analyzed using descriptive statistics, t- tests (assuming unequal variances due to unequal class sizes) at a probability of .05 as statistically significant. Surveys were given pre and post-test to evaluate for number of visual processors and to attain student input on the type of instruction used. Language samples were taken and the Temporal Analysis of Propositions (TemPro) was used to analyze written language samples and evaluate for how individual students accessed their learning systems (whether auditory or visual language). The student surveys were also compared with the TemPro findings to determine if student responses matched language samples, whether visual thinkers or auditory thinkers. All data were compared between Group A, students instructed using auditory metalinguistic lessons and Group B, students instructed using visual metalinguistic lessons using a pre and post assessment that included reading, writing, listening, speaking, and cultural understanding.

Summary

This chapter provides an outline as to the methods and procedures in this research. The quasi-experimental research design, mostly quantitative in nature, lends itself to the pre and post-test assessments that the researcher chose to measure in order to whether or not adding visual language to the classroom was more effective in reaching all learners in terms of how they conceptualize or acquire concepts related to the target language of Spanish. The participants in this study were of a convenience sample and reflect the population that the researcher had access to. This population was part of the school and community that is outlined in depth in this chapter. The participants, whose confidentiality has been protected with the use of randomly assigned numbers, were instructed, while following the procedures that met the description of each type of lesson, using auditory metalinguistic lessons or visual metalinguistic lessons. Participants in this research took pre-test and post-test assessments included reading, writing, listening, speaking and cultural understanding related to the target language of Spanish covering one thematic unit over “La familia” for a period of approximately six weeks (29 days).

Chapter 4

Results

The purpose of this chapter is to report all of the results gathered from the data collected during this research and to provide a description and analysis. The proposed hypothesis suggested that adding visual language to a second language classroom, in the form of visual metalinguistic lessons, would be more effective in reaching all learners in terms of how they conceptualize or acquire concepts related to the target language of Spanish when compared with a class where no visual language was added.

Data were compiled individually and compared between two groups. Group A was instructed using auditory metalinguistic lessons and Group B was instructed using visual metalinguistic lessons. The methods were assigned by drawing the individual groups randomly out of a hat. Randomly assigned numbers represent individual participants (students). The data were analyzed using descriptive statistics and t- tests (assuming unequal variances due to unequal class sizes) at a probability of .05 as statistically significant. Surveys were given pre and post-test to evaluate for visual processors and to attain student input about the method of instruction used. The Temporal Analysis of Propositions (TemPro) was used to evaluate language samples that were taken from students given at the beginning of the thematic unit in order to evaluate how individual students accessed their learning systems. This was compared with the individual student surveys regarding their learning systems. Because the sample size was small, 24 in Group A and 20 in Group B, results cannot be generalized to other groups.

Raw Pre-test and Post-test Scores

The raw pre-test and post-test scores from Group A, instructed using auditory metalinguistic lessons, showed that all students demonstrated gains from the pre-test to the post-test (see Figure 1). No student scored a zero on the pre-test which indicated that most students may have had some prior knowledge of the content matter (see Appendix G table 4.1 for table of Group A raw scores and learning gains).

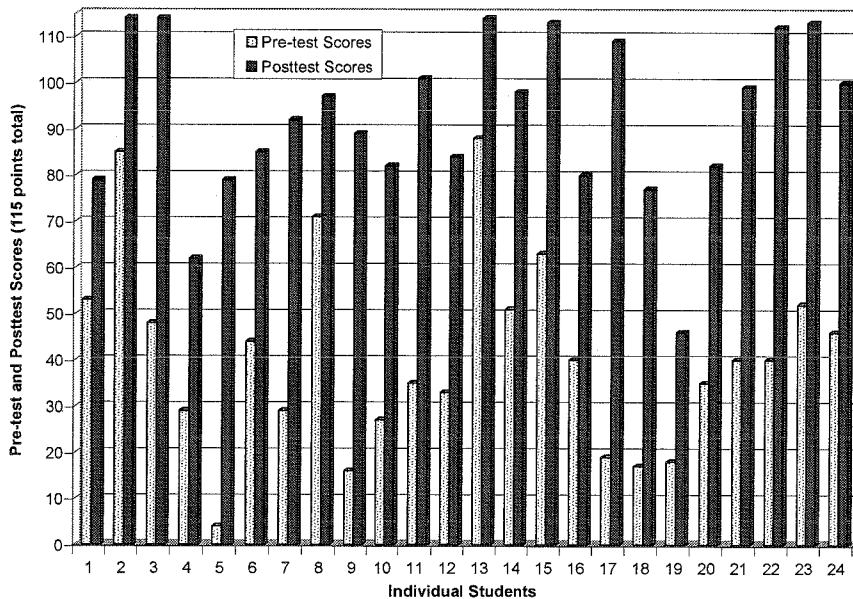


Figure 1. Pre-test and post-test scores from Group A instructed using auditory metalinguistic lessons.

Regarding pre-test scores, there was a wide range of Group A pre-test scores (see Appendix G Table 4.2 for Group A pre-test descriptive statistics). There was an 84 point spread between the minimum and maximum score on the pre-test, which indicated that some students knew considerably more about the subject matter than others. The highest score was 88 and the lowest score was 4. This indicated that there was a wide range of knowledge about and previous experience with the content matter represented in this

class and there were two ELL students in this class whose first language was Spanish. There was also one student who had 504 accommodations and two students who had IEPs for specific learning disabilities. The average pre-test score was approximately 41%. However, two students, the ELL students, demonstrated above a 70% passing level on the pre-test which meant that they had previous experience with the content matter, therefore, the lessons designed to teach new concepts were not valid constructs for determining if visual or auditory metalinguistic lesson differences affected learning new concepts.

Regarding post-test scores, a wide range of scores were apparent in the post-test as well (see Appendix G Table 4.3 for Group A post-test descriptive statistics). There was a 68 point spread between the highest and the lowest score. The highest score was 114 points and the lowest was 46 points. The average post-test score for this class was about 92%, about a 51% increase from the pre-test. For comparison, when ELL student post-test scores were not included, the average post-test score fell by 1%.

As a whole in Group A, 79% of students scored a 70% or above and 92% of the students scored a 60% or above two students scored below 60% on the post-test. Frequent absences for some students in this group (14-25% of class time missed) were directly associated with 80% of the low test scores (69% and below). Of the two ELL students, two students with an IEP and one student on a 504 plan in this group, all passed with a 70% or above with the exception of one student on an IEP that did not pass the post-test. School policy dictates that students come in before school, after school, or during tutorial (twice a week) in order to make up missed class time. The researcher encouraged students to do so, however, not all students took the opportunity to do this. Ten students with absences, those students who missed 14% or more of class time, were removed from

the data in order to compare with Group A findings including students with absences.

These ten students included both ELL students. When these students were removed from the data a wide range of scores were still apparent in the post-test (see Appendix G Table 4.4 for Group A post-test descriptive statistics minus students who were absent more than 14% of class time). The point spread between scores and the highest score and lowest score were the same as Group A findings that included students with absences. The average post-test score for this class was about 95%, which did increase when compared with Group A findings that included students with absences. Also, 85% of students scored a 70% or above (an increase when compared with Group A findings that included students with absences), 92% of the students scored a 60% or above and one student scored below 60% on the post-test.

The raw pre-test and post-test scores from Group B, instructed using visual metalinguistic lessons, showed that all students demonstrated gains from the pre-test to the post-test (see Figure 2). No student scored a zero on the pre-test which indicated that most students had some prior knowledge of the content matter (see Appendix G table 4.5 for table of Group B raw scores).

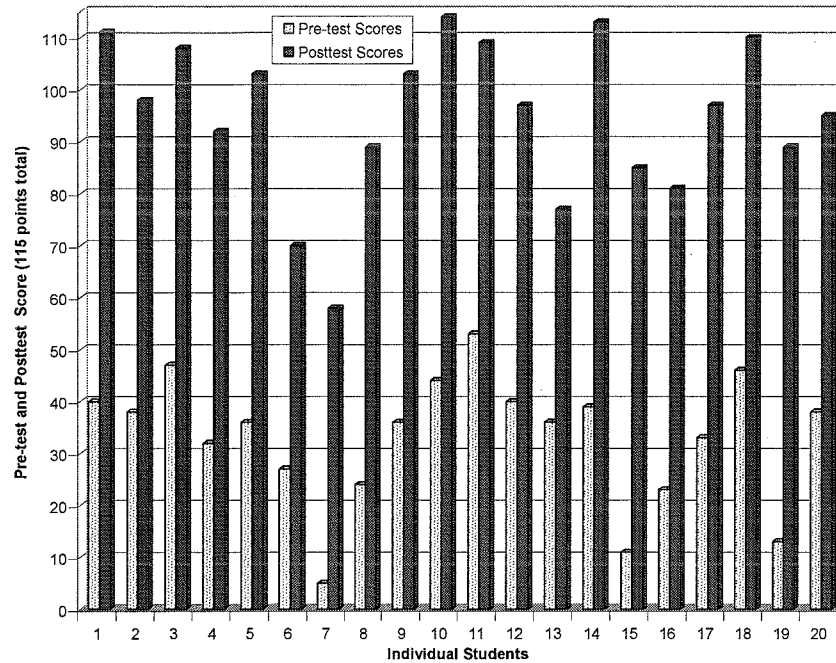


Figure 2. Pre-test and post-test scores from Group B instructed using visual metalinguistic lessons.

There was a wide range of Group B pre-test scores (see Appendix G Table 4.6 for Group B pre-test descriptive statistics), a 48 point spread between the minimum and maximum score on the pre-test, which indicated that some students knew more about the subject matter than others. The highest score was 53 and the lowest score was 5. This indicated that there was a wide range of knowledge about and previous experience with the content matter represented in this class, although not as wide a range as Group A. There were also three students who had an IEP for a specific learning disability in this group. There were no ELL students in this group. The average pre-test score was about 33%. This was about 8% less than Group A. For comparison, the ELL students were removed from Group A data to determine if the averages for the pre-tests were closer. When ELL students were removed from Group A, the average pre-test score was about

37%. This was a difference of 4% between average Group A and Group B pre-test scores which was a closer average between groups.

There were a wide range of Group B post-test scores as well (see Appendix G Table 4.7 for Group B post-test descriptive statistics). There was a 56 point spread between the highest and the lowest score. The highest score was 114 points and the lowest was 58 points. The average post-test score for this class was approximately 95%, 3% higher than Group A. Also, 85% of students scored a 70% or above and 95% of the students scored a 60% or above. One student scored below 60% on the post-test. Of the three students who had an IEP in this group, two of the three students passed the post-test with a 70% or above while one student received a 60%. This student also had a high absenteeism rate. Frequent absences for some students in this group (14-25% of class time missed) were directly associated with 100% of the low test scores (69% and below). The researcher continually encouraged students in this class to make up missed class time as well, however, not all students took the opportunity to do this. Six students with absences, those students who missed 14% or more of class time, were removed from the data in order to compare with Group B findings that included these students. When these students were removed, (see Appendix G Table 4.8 for Group B post-test descriptive statistics minus students who were absent more than 14% of the time) the point spread between the highest and the lowest score decreased to 25, the highest score 114 was the same and lowest score went up to 89 points when compared with Group B findings that included students with absences. The average post-test score for this class was about 102%, which did increase when compared with Group B findings that included students

with absences. Also, 100% of students scored a 70% or above which was an increase when compared with Group B findings that included students with absences.

Passing rates were compared between Group A and Group B data (see Figure 3 and Figure 4). In Group A, instructed using auditory metalinguistic lessons, 79% scored a 70% or above. When students with absences were not included 85% scored a 70% or above. One IEP student did not pass the post-test.

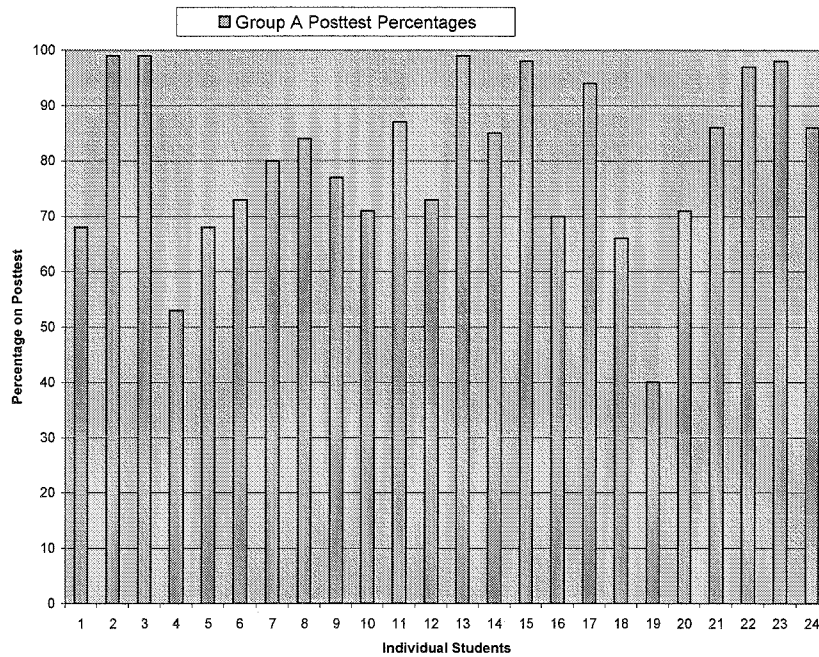


Figure 3. Post-test passing rates from Group A instructed using auditory metalinguistic lessons.

In Group B, instructed using visual metalinguistic lessons, 85% scored a 70% or above. When students with absences were not included 100% scored a 70% or above. All IEP students passed the post-test.

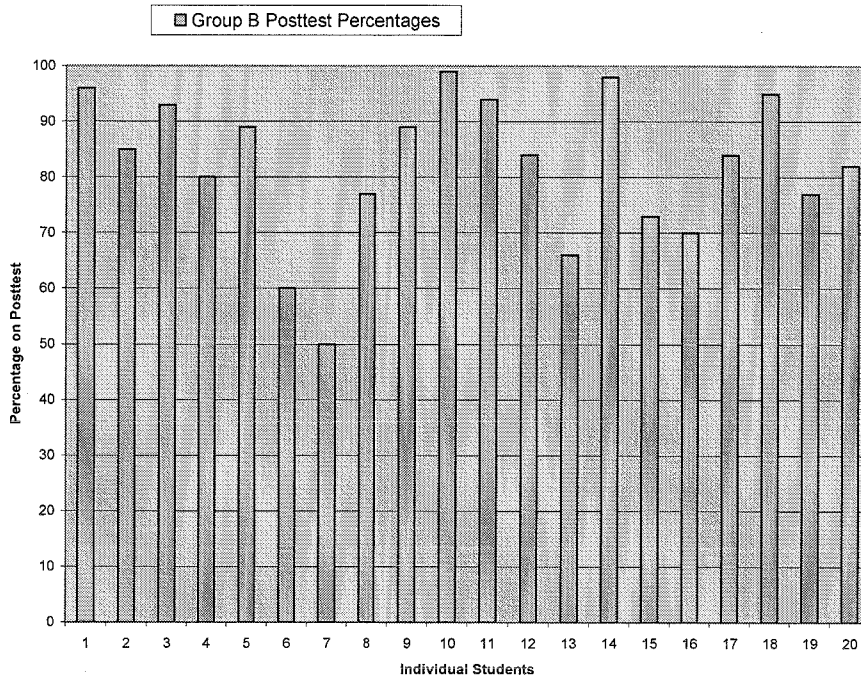


Figure 4. Post-test passing rates from Group B instructed using visual metalinguistic lessons.

Raw Pre-test to Post-test Score Gains

All students in Group A realized pre-test to post-test learning gains (see Figure 5). This indicated that the students were able to demonstrate some acquired concepts related to the content taught (see Appendix G table 4.1 for table of Group A raw scores and learning gains).

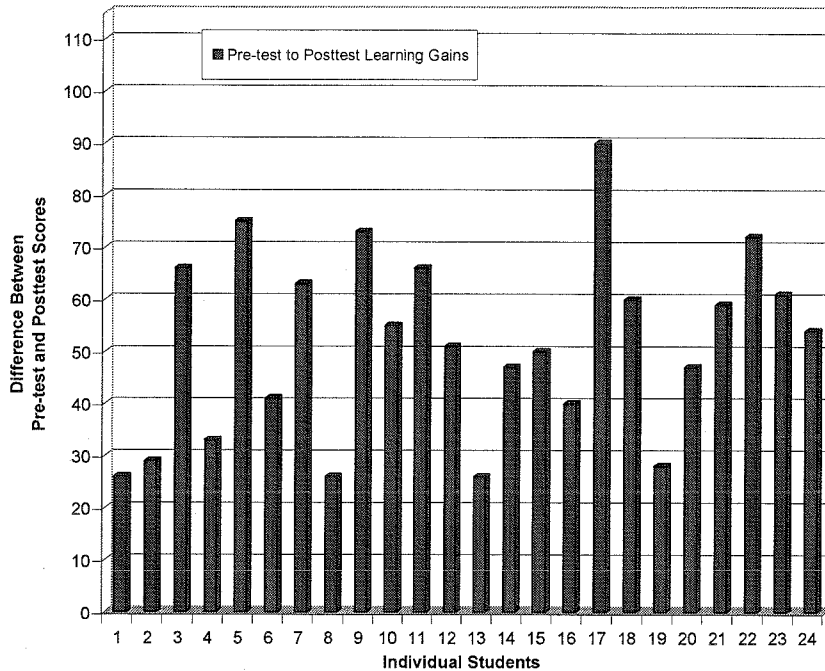


Figure 5. Pre-test to post-test learning gains from Group A instructed using auditory metalinguistic lessons.

There was a wide range of learning gains represented in Group A, which was also reflected in the pre-test scores and post-test scores. The highest was a 90 point learning gain and the lowest was a 26 point learning gain. The average was approximately a 52 point learning gain (see Appendix G Table 4.9 for Group A learning gains descriptive statistics). For comparison, when ELL learners were removed from the data the average learning gains went up on average about two points. When ten students with absences of 14% or more were removed from the data the learning gains went up on average about three points.

All students in Group B realized pre-test to post-test learning gains (see Figure 6). This indicated that the students were able to demonstrate some acquired concepts related

to the content taught (see Appendix G table 4.5 for table of Group B raw scores and learning gains).

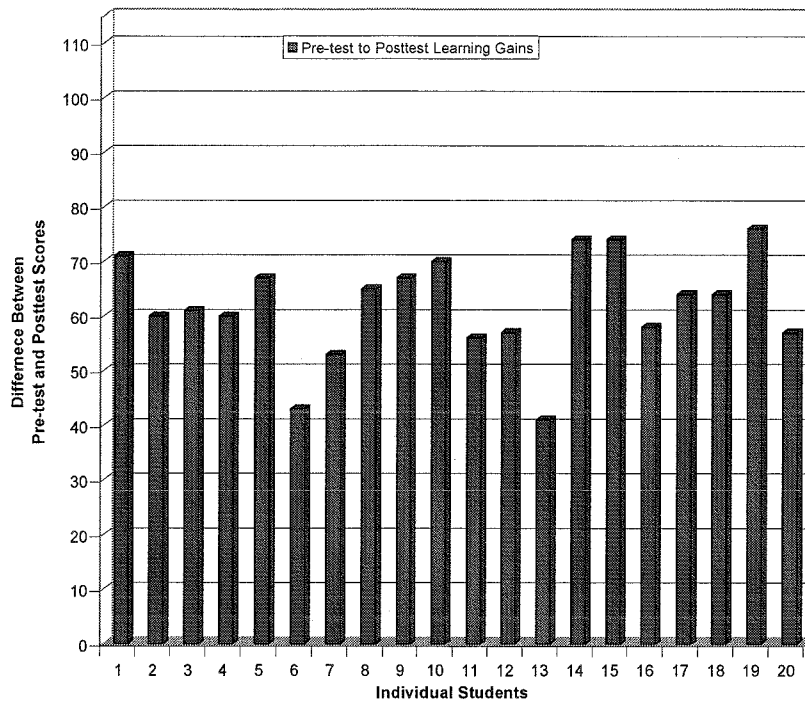


Figure 6. Pre-test to post-test learning gains from Group B instructed using visual metalinguistic lessons.

There was a wide range of learning gains represented in Group B, which was also reflected in the pre-test scores and post-test scores. The highest was a 76 point learning gain and the lowest was a 41 point learning gain. The average was approximately a 62 point learning gain, 10 points higher on average than Group A (see Appendix G Table 4.10 for Group B learning gains descriptive statistics). When ten students with absences of 14% or more were removed from the data the learning gains went up on average about two points.

When comparing pre-test to post-test learning gains in group A and Group B (see Figure 7 and Figure 8)

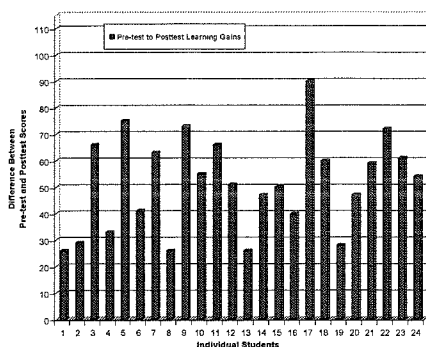


Figure 7. Pre-test to post-test learning gains from Group A instructed using auditory metalinguistic lessons.

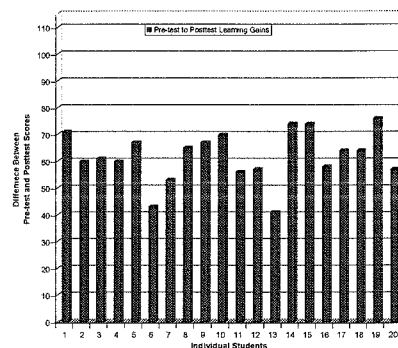


Figure 8. Pre-test to post-test learning gains from Group B instructed using visual metalinguistic lessons.

It is possible to see that Group A is representative of a bell shaped curve where some learner's needs were addressed better than others. Approximately 30% of students in the auditory Group A scored below the lowest score in the visual Group B. It is also possible to see that Group B was not representative of a bell shaped curve and was representative of better addressing all learner's needs. All students in Group B exceeded the lowest score in Group A. This was representative of the methods used, visual metalinguistic methods. When outliers in the data are excluded, such as high absences and ELL students, the same conclusions could still be reached about these graphs.

Pre-test and Post-test t-Tests (Two-Sample Assuming Unequal Variances)

Pre-test t-Tests (Two-Sample Assuming Unequal Variances) were conducted in order to compare Group A and Group B and to look for any significant differences in pre-test which could have significantly impacted post-test scores (see Table 4.11).

Table 4.11
t-Test: Two-Sample Assuming Unequal
Variances
Pre-test (Group A and Group B)

	Group A	Group B
Mean	41	33
Variance	443	157
Observations	24	20
Pooled Variance	313	
Hypothesized Mean Difference	0	
df	42	
t Stat	1	
P(T<=t) one-tail	0.07	
t Critical one-tail	1.7	
P(T<=t) two-tail	0.15	
t Critical two-tail	2.02	

Note. $p < .05$, two tailed

According to the parameters of the critical two-tail, the value of t Stat was not ≥ 2.02 and t was not ≤ -2.02 . The P-value $P(T \leq t)$ was also $> .05$. Therefore, there was a higher than 5% possibility, above what would be acceptable, that the two groups scores were statistically different on the pre-test due to chance. Group A scored slightly higher on average on the pre-test than Group B, though not statistically significant, therefore, there was no statistically significant difference between Group A and Group B when comparing pre-test scores on average. This suggests that their average was similar and therefore indicated equal groups to start. For comparison, when ELL students were removed from the data the same determination could be made as this did not change the data significantly.

Post-test t-Tests (Two-Sample Assuming Unequal Variances) were conducted in order to compare Group A and Group B and to look for any significant differences in post-test scores (see Table 4.12).

Table 4.12
t-Test: Two-Sample Assuming Unequal Variances
Posttest (Group A and Group B)

	Group A	Group B
Mean	93	95
Variance	318	230
Observations	24	20
Pooled Variance	278	
Hypothesized Mean Difference	0	
df	42	
t Stat	-0.5	
P(T<=t) one-tail	0.32	
t Critical one-tail	2	
P(T<=t) two-tail	0.63	
t Critical two-tail	2.02	

Note. $p < .05$, two tailed

According to the parameters of the critical two-tail, the value of t Stat was not ≥ 2.02 and t was not ≤ -2.02 . The P-value $P(T \leq t)$ was also $> .05$. Therefore, there was a higher than 5% possibility, above what would be acceptable, that the two groups scores were statistically different on the post-test due to chance. Group B scored slightly higher on average on the post-test than Group A, though not statistically significant, therefore, there were no statistically significant differences between Group A and Group B when comparing post-test scores on average. For comparison, students were removed from the data that had a 14% or higher rate of absences during the study, which included ELL students. The same determination could be made as this did not change the data significantly.

Learning Gains t-Tests (Two-Sample Assuming Unequal Variances)

Learning gains t-Tests (Two-Sample Assuming Unequal Variances) were conducted in order to compare Group A and Group B post-test learning gains and to look for any significant differences between the two groups (see Table 4.13).

Table 4.13
 t -Test: Two-Sample Assuming Unequal Variances
 Learning Gains (Group A and Group B)

	Group A	Group B
Mean	52	62
Variance	319	89
Observations	24	20
Pooled Variance	215	
Hypothesized Mean Difference	0	
df	42	
t Stat	-2.3	
P(T<=t) one-tail	0.01	
t Critical one-tail	1.7	
P(T<=t) two-tail	0.03	
t Critical two-tail	2.02	

Note. $p < .05$, two tailed

According to the parameters of the critical two-tail, the value of t Stat was not \geq 2.02, however, t was \leq -2.02. The P-value $P(T \leq t)$ was also $< .05$. Therefore, there was less than 5% chance, or what would be acceptable, that the average learning gain differences were due to random chance. These results were statistically significant which suggests that overall Group B experienced an increase in learning gains that was statistically significant when compared with Group A learning gains, in the form of points gained, from pre-test to post-test on average. For comparison, students were removed from the data that had a 14% or higher rate of absences during the study, which included ELL students. When this data was analyzed, there were no statistically significant differences between the average learning gain differences.

Temporal Analysis of Propositions (TemPro) Data

The Temporal Analysis of Propositions (TemPro) was used to analyze written language samples from students to determine how they accessed their learning systems, whether through visual language or auditory language.

Of 20 students in Group B and 24 students in Group A none developed auditory propositions in the writing analysis so it can be concluded that these students think using visual processing (see Figure 9 and Figure 10). Reliability of the TemPro has been ascertained with oral language samples, however, not with written language samples. The question was restated in Spanish as well for ELL learners to ensure that the question posed was understood. Their responses reflected that the question was understood.

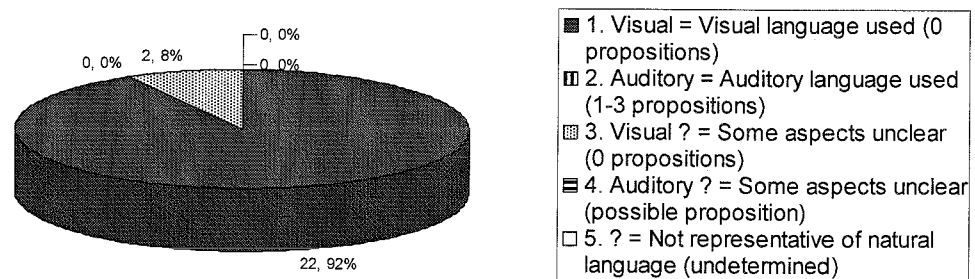


Figure 9. Group A written language samples evaluated with the TemPro

Figure 9 shows that out of the 24 students in Group A, 92% accessed their learning system through visual language. It also shows that 8% of the students were visual, with no propositions contained in the written language sample, yet there were some aspects of the sample that were unclear.

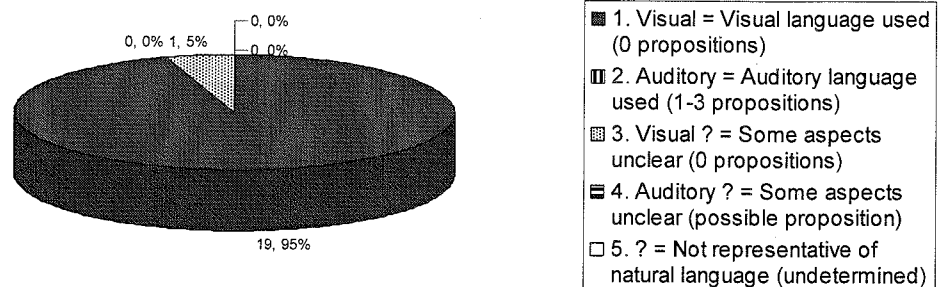


Figure 10. Group B written language samples evaluated with the TemPro

Figure 10 shows that out of the 20 students in Group B, 95% accessed their learning system through visual language. It also shows that 5% of the students were visual, with no propositions contained in the written language sample, yet there were some aspects of the sample that were unclear.

The findings from the TemPro match estimations about today's school populations where 60-90% of learners are estimated think in visual concepts (Arwood & Young, 2000). Both Groups A and B were identified as being 100% visual thinkers in the makeup of the classroom population. Therefore, Group B would be expected to perform better than A since their metalinguistic ability matched the teaching methods. The results in this research indicated such and alignment.

Student Survey Data

There were two surveys that were given to students. One before the research began and one after the research concluded. Survey 1 contained five questions with several choices in each question and was examined to determine the number of visual processors in each classroom from student responses to given questions (see Appendix C for Survey 1 questions). ELL learners asked questions of the researcher in Spanish about parts of the survey they did not understand in written English. The researcher then translated where needed from English to Spanish to ensure that the questions and answers were understood. All students in the classroom, including those learning disabled students and students on a 504 plan could ask questions for clarification of the questions posed and the answers to choose from. The researcher provided clarification in the form of restating the questions or the answers only and did not attempt to influence student answers.

The first question had five questions pertaining to writing. All of these questions pertained to feedback a visual processor might receive. Visual processors would tend to have difficulty with organization and focusing on a topic because ideas are not connected in time or moving through time in a logical sequence and therefore visual learners do not make sufficient connections by giving sufficient examples, and providing focus and clarity. Due to this, the reader would have to infer about the information given. Auditory processors would more likely depend on outlines and organize by connecting ideas through time in a logical sequence. In Group A and B all students chose at least one of the options given to indicate visual processing. This matched with the TemPro language analysis findings that more than 90% of the learners accessed their learning system

through visual language. In Group A, 83% chose more than one answer and 41% chose three or more answers. In Group B, 65% chose more than one and 20% chose three or more answers.

The second question had four choices where answers a, b, and d pertained to visual processors. These were questions about classroom learning. Visual processors see what is said in their mind in pictures or words, whereas auditory processors hear the sound of their voice in their mind and see nothing. In Group A, 71% of the students chose visual processor questions while 29% chose an auditory processor question. This did not exactly match the TemPro language analysis findings; however the larger percentage chosen was visual. In Group B, 60% of the students chose visual processor questions while 40% chose an auditory processor question. This did not exactly match the TemPro language analysis findings; however the larger percentage chosen was visual and does match the estimated 60-90% population of visual processors in classrooms today. Since this survey is a survey of preference, it may match better with learning styles than with learning systems.

Question number three had four choices and posed questions about note taking. Choices a, b, and d pertained to visual processors while question c pertained to auditory processors. Auditory processors would tend to depend on outlines while visual learners tend to rely on drawings and doodling where their notes are not connected in time as auditory processors. In Group A, 71% of the students chose visual processor questions and 29% chose auditory processor questions. In Group B, 80% chose visual processor questions and 20% chose auditory processor questions. This did not exactly match the

TemPro language analysis findings; however the larger percentage chosen was visual and does match the estimated 60-90% population of visual processors in classrooms today.

Question number four had four choices and posed questions about reading. Choices b, c and d were visual processor questions and a was an auditory processor question. Visual processors would tend to depend on pictures and have difficulty pulling out the important information from the text because they need to see the whole that is connected (flowcharted) to infer and not the parts as given in auditory language. Auditory learners can infer from the use of words in the spoken or written language and would be able to pull out important information from a text. In Group A, 75% of the students chose visual processor questions and 25% chose auditory processor questions. In Group B, 20% chose visual processor questions and 80% chose auditory processor questions. This did not exactly match the TemPro language analysis findings; however the larger percentage chosen was visual and does match the estimated 60-90% population of visual processors in classrooms today.

Question number five had three choices and posed questions about what helps the student understand the class material better. Choices a and c were visual processor questions and b was an auditory processor question. Visual processors would tend to rely on drawings to provide context and connections in order to understand the material. Auditory learners would tend to rely on overheads and verbal presentations because again they can infer from the use of words in the spoken or written language. In Group A, 29% of the students chose visual processor questions and 71% chose auditory processor questions. In Group B, 60% chose visual processor questions and 40% chose auditory processor questions. The results of Group A did not match the TemPro findings,

however, it is possible that the students had not had much experience in the past with drawings on the board and it is possible that even though there were drawings they may not have been drawn in real time included a person and moved through by being connected or flowcharted where auditory language was added last. The results of Group B did not exactly match the TemPro findings; however the larger percentage chosen was visual and does match the estimated 60-90% population of visual processors in classrooms today.

According to the overall results of both classes, 38 students out of 44 students responded to a majority of visual processor questions. This matched the TemPro written language analysis findings 86% of the time.

It is important to note the difference between the design and purpose of the survey and the design and purpose of the Temporal Analysis of Propositions (TemPro). The TemPro is an instrument that can determine how a person accesses their learning system, which is neurobiological, given an oral or written sample. The survey is not an instrument that can determine how a person accesses their learning system. The survey was used to determine the number of visual processors according to the person taking the survey. There are many visual thinkers who develop strategies to cope with translating auditory language. The survey is also representative of student preferences or styles that have been influenced by past education and experiences while needing to translate auditory language. In the results of this survey, this was evident as some students chose some auditory processing options which reflected developed strategies to cope and preferences. Again, this survey of preference may match better with learning styles than with learning systems.

Survey 2 contained four questions. The first three questions asked if the material was presented in a way that was understandable to the students, if the students remembered what was presented and if the students would use what they learned at some point in the future. These questions were rated on a scale of one to ten. The last question contained three options and was a duplicate of question 5 in Survey 1; however in this question students could choose all that applied (see Appendix C for Survey 2 questions).

Regarding Group A responses to questions one through three, question number one, if the material was presented in a way that was understandable, was rated at a 6 and above by 87% of the students. Question number two, whether the students remembered what was presented, was rated at a 6 and above by 79% of the students. Question number three, whether or not the students would use what they learned in the future, at a 6 and above by 88% of the students. These responses reflected that the majority of the students understood, remembered and would use the material again that they had been taught. This corresponds with learning gains data and also speaks to the fact that visual learners develop strategies to cope when concepts are presented using auditory language. This corresponds with learning gains data and also speaks to the fact that visual learners develop strategies to cope when concepts are presented using auditory language.

Regarding Group B responses to questions one through three, question number one, if the material was presented in a way that was understandable, was rated at a 6 and above by 90% of the students. Question number two, whether the students remembered what was presented, was rated at a 6 and above by 75% of the students. Question number three, whether or not the students would use what they learned in the future, was rated at a 6 and above by 100% of the students, a 21% increase from Group A. These responses

reflected that the majority of the students understood, remembered and would use the material again that they had been taught. Group B responses to questions one and three were slightly higher than Group A. This corresponds with learning gains data where all students experienced learning gains and speaks to the method of instruction used, visual metalinguistic lessons.

Regarding question 4 and Group A, 45% of the students chose that the drawings on the board were helpful. This was interesting because there were no drawings on the board in that classroom, only writing on the board. These students could have been referring to their own mental pictures that they were creating as visual learners while writing on the board was taking place. 66% and 58% respectively chose that the overheads and the verbal presentation by the instructor were helpful. 53% of the students chose more than one option. These responses demonstrated that since it was determined that the majority of learners were visual thinkers in the classroom, they had developed strategies to cope with auditory language but were looking for visual language in order to make connections. Also, low numbers indicated average help by these auditory methods.

Regarding question 4 and Group B, 80% of the students chose that the drawings on the board were helpful. This was interesting because this matched the method of instruction used. 35% and 55% respectively chose that the overheads and the verbal presentation by the instructor were helpful. The large majority of verbal instruction took place while drawing and some verbal instruction took place individually when the teacher was moving from group to group in the room, however drawings were always referred to. Overheads, which were not written on, were used a few times. These represented pictures with color (that were auditory) only after concepts were presented and reviewed with real

time drawn metalinguistic lessons. 45% of the students chose more than one option.

These latter responses demonstrated that after the visual presentation of the concepts, information presented auditorally was easier to understand and that because the drawing was simultaneous with the verbal presentation students found this helpful.

Summary

The results of this chapter have been useful in many ways in order to provide a clearer picture of the students involved in this research, the methods used to instruct students involved in this research and the outcome of that instruction. From pre-test scores, it was determined that, although there were a wide range of scores in each group indicating a wide range of experience with the target language, there were no statistically significant differences in pre-tests even though individual variations may have impacted post-test scores. It was determined that 100% of learners in each classroom accessed their learning system through visual language which does match with what is known about today's population. Survey data derived from student responses to determine the number of visual processors was in accordance with this finding, 87% of the time. According to student responses, the majority of learners understood, remembered, and would use the material again that they had been taught. It was also concluded that students who access their learning system through visual language developed strategies to cope with auditory language teaching due to these responses. Group A and Group B were not previously exposed to visual metalinguistic lessons to the researcher's knowledge until this research project.

The proposed hypothesis was that adding visual language to the classroom in the form of visual metalinguistic lessons would be effective in reaching more learners in

terms of how they conceptualize or acquire concepts related to the target language of Spanish when compared with a class where no visual language was added.

Although there were no statistically significant differences between post-test scores, there were statistically significant differences in learning gains when learning gain averages from Group A and Group B were compared overall. Group B, instructed using visual metalinguistic lessons, experienced statistically significant learning gains on average when compared with Group A. All students in both groups made learning gains. For comparison, when students were not included in the data who missed 14% or more of the class time, there were no statistically significant differences in average learning gains.

Visual metalinguistic lessons were more effective in reaching all learners, in Group B when looking at pre-test to post-test learning gains, showing more uniform gains for all students. It was possible to see when comparing pre-test to post-test learning gains graphs that in Group A that some learners' needs were better met than others, as some made significant gains while others made very little. However, in Group B the graph was more uniform in terms of gains that students made and meeting all learners' needs. This was representative of the methods used. Auditory metalinguistic methods, exemplary of a traditional classroom, do not meet visual language learners' needs, unless learners have developed strategies to translate auditory language, whereas visual metalinguistic lessons meet both auditory and visual learners' needs. In Group B we saw that learners' needs were met more uniformly in terms of individual gains, even though there were no comparisons for auditory learners in the classroom as they were all identified as visual thinkers.

The results indicated that Group B performed slightly better on the post-test and had significantly higher average learning gains that were more consistent over the entire class. However, when student absences were taken into consideration, there were no significant average learning gains observed. The visual metalinguistic methods used with Group B did match how learners in that group conceptualized.

Chapter 5

Discussion / Conclusions

The purpose of this chapter is to discuss the findings from this research and suggest future studies in light of these findings. The proposed hypothesis in this research was that adding visual language to the classroom in the form of visual metalinguistic lessons would be effective in reaching all learners in terms of how they conceptualize or acquire concepts related to the target language of Spanish when compared with a class where no visual language was added.

This research was conducted with high school students, grades 9-12, in two first year Spanish classes. One class was instructed using auditory metalinguistic lessons and one was instructed using visual metalinguistic lessons. A thematic unit in Spanish related to the family “La familia” was the content material that was taught. Group A was instructed using auditory metalinguistic methods and Group B was instructed using visual metalinguistic methods. Pre and post assessments were analyzed using descriptive statistics and t- tests (assuming unequal variances due to unequal class sizes) at a probability of .05 as statistically significant. Two surveys were included in this research in order to determine the number of visual processors in each classroom and to gain student input about the type of instruction used. The Temporal Analysis of Propositions (TemPro) was used to analyze student language samples in order to determine how individual students learned new concepts.

Pre-test and Post-test Findings

The pre-test findings indicated that even though there was a wide range of experience and abilities with the target language of Spanish related to the thematic unit

“La familia” and the content that was to be instructed in the two groups, there were not statistically significant differences between the two classes to begin with which might have an impact on post-test outcomes. The post-test findings did indicate that there were statistically significant differences in learning gains when comparing average test scores from Group A and Group B overall, however not in average post-test scores. When students who missed 14% or more of class time were taken into consideration, there were no statistically significant differences in learning gains.

The researcher came to understand during the course of this research that it was more important to look at reaching all students in a qualitative manner and look at how the method matched the individual learner’s needs, this being the theory behind the method, in terms of how learners conceptualize in providing meaningful input. In terms of reaching all learners, when comparing graphs from Group A and Group B pre to post-test learning gains, Group B was representative of more uniform gains demonstrating that visual metalinguistic lessons better addressed all learner’s needs. Group A represented the traditional bell shaped curve where some students did well and some did not. Also, 100% of the students in Group B scored a 70% or above when students with absences were eliminated. The same could not be said for Group A. Significant attendance issues were associated with low scores in both groups and were taken into consideration. In terms of overall learning gains, adding visual language to the classroom significantly helped learners conceptualize new concepts in Spanish. Adding visual language to the classroom did match how learners in Group B conceptualized.

In this research, the visual metalinguistic methods that were used were primarily related to drawing out concepts, overlapping concepts that were drawn out, reviewing the

concepts through those drawings and then adding formal language. Early in the research the researcher chose to focus the lessons this way in order to simplify the research as a whole due to the timeframe of the research. For example, the researcher did not teach the students how to take visual notes or add in thematic picture dictionaries in order to modify the curriculum more. The visual piece that was emphasized in this research was the drawing out of concepts. Visual language was not overlapped with the homework or the assessments or in adapting the order of the curriculum. Depending on the scope of future research that could be done in this area, this could be refined. It is quite possible that if visual language had been overlapped throughout the entire scope of the unit in all elements of instruction, the results could have been more significant. A number of visual language elements could be added such as incorporating teaching students to take visual notes, adding in picture thematic dictionaries, teaching students how to cartoon, adapting the homework and assessments so that they are representative of visual language and so on. Research could be conducted in several other areas previously mentioned whether combined or alone.

Comparisons to Existing Literature

The findings when comparing gains data overall indicated that using visual language does have a positive impact. Using visual language to represent concepts, and for the purposes of this research concepts relating to the target language of Spanish, allows visual learners to "...actually see the pictures of the concepts and see the mental ideas simultaneously. They will not need to only use the faculty's spoken words but will be able to encode their visual and mental ideas into their memory without translation

(Arwood, Kaakinen & Wynne, 2002, p11). This matched with what is known about the population of students being visual thinkers.

The majority of learners in classrooms could potentially be visual learners given the classroom sample and in this study they were visual. Even though there are many successful second language learners that function in auditory classrooms, one of the common complaints from second language learners, young and old, that the researcher has informally observed and encountered is that learners cannot remember long term some of what they learned in a second language classroom and use it latter in real life. This speaks to the fact that many successful second language learners may not have acquired concepts related to the target language at a formal level. Language in the form of auditory or visual language, “is the only way concepts may be retained (memorized) for retrieval over a long period of time (semantic, long term memory)” (Arwood & Brown, 2001, p.5). The researcher did not assess for long term retention, but this could be significant for future research.

Traditionally, second language teaching has included auditory language in instruction. Currently, the use of Total Physical Response (TPR) and Total Physical Response Storytelling (TPRS) is an approach that is increasingly used in second language instruction. Both TPR, used during the initial stages of second language instruction, and TPRS, used for more advanced stages of second language instruction, developed by Asher “hold that child language learner acquires language through motor movement...” (Richards & Rogers, 2001, p. 75). This is interesting to note, “...as visual concepts occur when a person is able to connect something that is seen with what is mentally visualized to form visual concepts or visual language” (Arwood & Brown, 2001, p.5) and what is

seen and what is visualized connects with motor or movement of the eyes, hands, etc. This is representative of a visual learning system. Auditory concepts "...occur when a person simultaneously can connect what they see and what they hear together to form mental and auditory concepts or auditory language" (Arwood & Brown, 2001, p.5) which is representative of an auditory learning system. It would seem that TPR and TPRS as approaches would support, in part due to modeling and focus on motor, visual and auditory learners needs yet the piece that is missing is tying this into developmental cognitive levels since language represents cognition.

The researcher has informally observed in the classroom that combining visual metalinguistic methods with the TPR and TPRS approaches has enhanced student concept acquisition. The researcher informally observed that students were more involved, had a higher retention, connected to more global concepts and created meaningful connections for use in other contexts. However, no formal research has been done in this area that the researcher knows of. Research in this area could provide very useful information in relation to second language instruction and second language acquisition.

The researcher observed that while teaching the students who were instructed using visual metalinguistic lessons were attentive and involved, as the real time drawing was occurring in order to present concepts. Their attention was on the whiteboard or large paper as the teacher was drawing and explaining. Their focus was on the connections that were being established when moving through developmental levels by drawing, connecting concepts, and adding words or phrases (Arwood, 1991). These students also tended to ask more questions than students instructed using auditory metalinguistic

lessons that were global in nature. They were able to make more connections themselves regarding the content matter relating to their own experiences and prior knowledge and then incorporate those concepts in communicating or interpreting in the target language. This speaks to the rationale for using visual metalinguistic lessons in that the concepts are presented in the way the majority of learners in today's classrooms conceptualize and cognitive levels of development are addressed where language represents cognition.

English and Spanish are auditory languages (Arwood, Brown, and Robb, 2005), in cultures that use auditory language there are auditory assumptions that are embedded in that culture. After analyzing the curriculum mandated by the district, it was found to be auditory in nature. It did not use visual language. An understanding of the difference between visual language and auditory language, and an understanding that the majority of curriculum materials used or referenced by instructors use auditory language can impact our understanding of instruction. This is especially in light of the fact that the majority of learners today are visual thinkers. In this research 100% of the students in Group A and Group B were visual thinkers.

What is known about language and learning influences teaching methods, and specifically for the purposes of this thesis, foreign language teaching methods. There are many methods that speak to the acquisition of meaningful concepts, yet the term acquisition very often is not clearly defined. According to Krashen (1982) understanding how we acquire language (referring to a second language) is paramount because there is a difference between learning, which functions as the editor of what has been acquired, and actual acquisition which "initiates our utterances in a second language and is responsible for our fluency" (p15). Visual metalinguistic methods exemplify the important

connection that exists between developmental levels, language, and the cognitive processes where language represents cognition (Arwood, 1991). This does speak to how a learner conceptualizes, or acquires concepts and the process by which this occurs neurobiologically. This relates to the acquisition of any concept, including the acquisition of concepts related to a second language. The connection that acknowledges and defines the difference between auditory language and visual language is not included in any other known method of foreign language teaching that the researcher is aware of.

Recommendations for Future Research

Other educators may find that incorporating visual metalinguistic lessons in the classroom would be useful in addressing all learners' needs and enhancing concept acquisition, specifically for the purposes of Spanish second language acquisition. The use of visual metalinguistic lessons can be applied to any content area and any concept. This is one of the many advantages of incorporating visual metalinguistic lessons in instruction. Further research that incorporated more visual language into the classroom, such as teaching students how to take visual notes or creating picture dictionaries to understand vocabulary would be beneficial.

Other educators would need to follow visual metalinguistic procedures and be trained in and spend time researching how to instruct visual metalinguistic lessons in order to fully understand what visual language is. There are many terms used in this thesis that relate to visual metalinguistic lessons that are often misidentified, such as the terms "auditory" and "visual". Many educators identify these terms as learning styles or preferences when in fact they relate to how learners access their learning system. Any further research that could be conducted would only benefit in enhancing the

understanding of these concepts, as the majority of the terminology relates to preferences and not learning systems.

Any further research could only improve the understanding of concept acquisition, as it relates to the connections between language and cognitive levels of development as defined in this thesis, not only in the areas of foreign language instruction, but in any content area. Further research in the area of combining what is known regarding current neurobiological research related to how a learner acquires concepts would have an impact on instruction and further research on teacher understanding of how learners acquire concepts would have an impact on instruction.

It would be very interesting to do research in the area of TPR and TPRS when combined with visual metalinguistic lessons. It would also be very interesting to do research regarding whether or not the majority of teachers are providing instruction that matches today's population consisting of a majority of visual thinkers.

Summary

This thesis has been an invaluable experience for the researcher in many ways. The researcher has learned so much through developing the thesis, researching related material that pertained to the thesis, developing the methods and assessments, actualizing the research, preparing and instructing visual metalinguistic lessons, analyzing the data, explaining the data, and making global connections regarding the results to future studies. In the process of this research, the researcher discovered that it was challenging to do research in an educational setting due to the myriad of variables that exist with people and the educational setting. The process of researching, developing, and instructing visual metalinguistic lessons has afforded the researcher an understanding of how learners think

(conceptualize) and how educators can best meet learners' needs in the acknowledgement that the majority of learners are visual learners. The researcher learned that it is better to strive for learning gains for all students and match students needs with methods than to strive for meeting the traditional bell shaped curve, where some student do well, most are average, and some fail. If all students must succeed and no child is left behind, then it would seem that instruction and grading based on the traditional bell shaped curve does not serve this purpose in order to meet all learners' needs. If all learners' needs are addressed in terms of meaningful input in how they conceptualize, then all learners will experience gains, not just a few. In conducting this research it became apparent that learning and development are interconnected and not stair stepped in nature. The development of products reflects a traditionally stair stepped approach where by a certain age some product should be produced. In actuality, learning and development interconnect and are not age dependant. Adult learners continually learn new concepts and in order to do so they must learn new concepts at a preoperational level first and then move through the developmental levels to concrete and then to formal. Instead of a stair stepped approach, learning and development are more spiral in nature and interconnect with each other and the learners' prior knowledge. This spiral interconnectedness is representative of second language instruction as well where meaningful input is interconnected with developing skills that do not unfold necessarily in an order with relation to age, but are much more dependant on prior knowledge, experience, and meaningful input for developing skills.

The researcher has become a better educator as a result of going through the process of completing this thesis and looks forward to continued growth throughout the

researcher's teaching career. The researcher has been able to make global connections to society as a whole because the researcher has a better understanding of visual and auditory cultures and how concepts are acquired which is interconnected to how people in society communicate and think.

The researcher would like to conduct further research pertaining to TPR, TPRS, and incorporating visual language in the classroom. The researcher would also like to continue in further education by completing a second masters degree in Spanish. The researcher sees teaching a second language as being an incredibly rewarding experience and sees the students as participants in a classroom community where they can learn about Spanish and use the language not just in the classroom but in and throughout their lives.

The purpose of this research was to investigate whether or not adding visual language to the classroom in the form of visual metalinguistic lessons would be effective in reaching all learners in terms of how they conceptualize or acquire concepts related to the target language of Spanish when compared with a class where no visual language was added. Although statistically significant differences in overall learning gains were experienced in the class instructed using visual metalinguistic lessons, when compared with results that took into consideration those students with frequent absences, there were not statistically significant differences. Therefore, the experimental hypothesis posed by the researcher was rejected and the null hypothesis was accepted. However, in terms of better reaching learners, students instructed using visual metalinguistic lessons did demonstrate more uniform learning gains, not exemplary of a traditional bell shaped

curve as did Group A, which was more representative of the method used for instruction, visual metalinguistic lessons, and better represented meeting all learners' needs.

References

- ACTFL proficiency guidelines*. (1986). Hastings on Hudson, NY: American Council on the Teaching of Foreign Languages.
- ACTFL proficiency guidelines - speaking*. (1999). Yonkers, NY: American Council on the Teaching of Foreign Languages.
- ACTFL (1998). *ACTFL performance guidelines for k-12 learners*. (ERIC Document Reproduction Service No. ED426593)
- Amundson, N. E. (1988). Use of metaphor and drawings in case conceptualization. *Journal of Counseling and Development*. 66(1), 391-393.
- Arwood, E. L. (1991). *Semantic and pragmatic language disorders* (2nd ed.). Rockville, MD: Aspen Systems Corporation.
- Arwood, E. L., & Beggs M.A., (1992). *Temporal analysis of propositions (TemPro)*. Portland, OR: Apricot, Inc.
- Arwood, E. L., & Beggs M.A., (1992). *Temporal analysis of propositions (TemPro): A tool for analyzing language functioning. Examiner's manual*. Portland, OR: Apricot, Inc.
- Arwood, E. L., & Brown, M. M. (2001). *A guide for visual strategies for young adults: "I see the ideas too."* Portland, OR: Apricot, Inc.
- Arwood, E. L., Brown, M. M., & Robb B. (2005). *Make it a visual classroom: I'm in your picture*. Portland, OR: Apricot, Inc.
- Arwood, E. L., Kaakinen, J., & Wynne A. L. (2002). *Nurse educators: Using visual language "Learning to see."* Portland, OR: Apricot, Inc.
- Arwood, E. L., & Unruh, I. (2000). *Event-based learning handbook: A guide to*

improve student learning. Portland, OR: Apricot, Inc.

Arwood, E. L., & Young, E. (2000). *The language of respect: The right of each student to participate in an environment of communicative thoughtfulness*.

Portland, Oregon: Apricot, Inc.

Asher, J. (1972). Children's first language as a model for second language learning. *The Modern Language Journal*, 56(3), 133-139.

Asher, J., Kusdo, J., Torre, R. (1974). Learning a second language through commands: The second field test. *The Modern Language Journal*, 58, 24-32.

Atkinson, S. (2001). *Toward a coevolution of language theories: Linking composition with brain and language studies*. (ERIC Document Reproduction Service No. ED455527)

Ausubel, D.P., Novak, J.D., & Hanesain, H. (1968). *Educational psychology: A cognitive view* (2nd ed.). New York: Holt, Rinehart, and Winston.

Bachman, L.F. (1990). *Fundamental considerations in language testing*. Oxford: Oxford University Press.

Bernstein, D. K., & Tiegerman-Farber, E. (2002). *Language and communication disorders in children* (5th ed.). Boston, MA: Allyn and Bacon.

Bolthio, R. (2003). Ten questions about language awareness. *ELT Journal*, 57(3), 251-259.

Cannale, M. & Swain, M. (1980). Theoretical basis of communicative approaches to second language teaching and testing. *Applied Linguistics*, 1(1), 1-47.

Cantoni, G. P. (1999). *Using TPR-Storytelling to develop fluency and literacy in native american languages*. (Eric Document Reproduction Service No. ED428927)

- Chastain, K. (1976). *Developing second language skills: Theory to practice* (2nd ed.). Chicago: Rand McNally.
- Chomsky, N. (1957). *Syntactic structures*. The Hague, The Netherlands: Mouton and Company.
- Chomsky, N. (1965). *Aspects of the theory of syntax*. Cambridge, MA: M.I.T. Press.
- Cummins J. (1979). Cognitive/academic language proficiency, linguistic interdependence, the optimum age question and some other matters. *Working Papers on bilingualism*, 19, 121-129.
- Curran, C. (1976). *Counseling-learning in second languages*. Apple River IL: Apple River Press.
- Damasio, A. & Damasio H. (1992, September). Brain and language. *Scientific American*, 267 (3), 88-95.
- Díaz-Rico, L. T. & Weed, K. Z. (2002). *The crosscultural, language, and academic development handbook: A complete K-12 reference guide* (2nd ed.). Boston, MA: Allyn and Bacon.
- Ellis, R. (1985). *Understanding second language acquisition*. Oxford: Oxford University Press.
- Ellis, R. (1990). *Instructed second language acquisition*. Oxford: Oxford University Press.
- Feldman, J.A. (1981). A connectionist model of visual memory. In G.E. Hinton and J.A. Anderson (Eds.), *Parallel models of associative memory*. (pp. 49-81). Hillsdale, NJ: Lawrence Erlbaum Associates.
- Gardner, H. (1993). *Multiple intelligences: The theory and practice*. New York: Basic

Books.

Gattegno, C. (1976). *The common sense of foreign language teaching*. New York: Educational Solutions.

Humbach, N., Valesco, S.M., Chiquito, A.B., Smith, S. & McMinn, J. (2006). *Teacher's Edition Holt Spanish I: ¡Exprésate!* Austin, Texas: Holt, Rinehart & Winston.

Jacobs, B., & Schumann, J. (1992). Language acquisition and the neurosciences: Towards a more integrative perspective. *Applied Linguistics*, 13(3), 282-301

Krashen, S. (1982). *Principles and practice in second language acquisition*. New York: Pergamon Press.

Lozanov, G. (1978). *Suggestology and outlines of suggestopedy*. New York: Gordon and Breach.

McClelland, J.L., Rumelhart, D.E., & the PDP Group (1986). *Parallel distributed processing: Explorations in the microstructure of cognition. Volume 2: Psychological and biological models*. Cambridge, Massachusetts: The M.I.T. Press.

McLaughlin, B. (1987). *Theories of second-language learning*. London: Edward Arnold.

McLaughlin, B. (1990). Restructuring. *Applied Linguistics*, 11, 113-128.

Omaggio Hadley, A. (2001). *Teaching language in context* (3rd ed.). Boston, MA: Heinle & Heinle.

Oregon Department of Education. *Second language standards – revised [Electronic version]*. Retrieved January 21, 2008, from http://www.ode.state.or.us/teachlearn/real/newspaper/Newspaper_Section.aspx?subjectcd=sl

Phillips, June K. & R.M Terry, (Eds.). (1999). *Foreign language standards: Linking research, theories, and practices*. The ACTFL Foreign Language Education

Series. Lincolnwood, IL: the National Textbook Company.

Piaget, J. (1970). *The science of education and the psychology of the child*. New York:

Orion Press.

Ray, B., & Seely, C. (1997). *Fluency through TPR storytelling*. Berkeley, CA: Command

Performance Language Institute.

Richards, J.C., and Rogers, T.S. (1986). *Approaches and methods in language teaching:*

A description and Analysis. Cambridge: Cambridge University Press.

Richards, J.C., and Rogers, T.S. (2001). *Approaches and methods in language teaching*

(2nd ed.). Cambridge: Cambridge University Press.

Rivers, W.M. (1981). *Teaching foreign language skills* (2nd ed.). Chicago: University of

Chicago Press.

Rubio, F., Passey P., & Campbell S., (2004). Grammar in disguise. *Revista Electrónica*

de Lingüística Aplicada, 3, 158-176.

Rumelhart, D.E., McClelland, J.L., & the PDP Group (1986). *Parallel distributed*

processing: Explorations in the microstructure of cognition. Volume I:

Foundations. Cambridge, Massachusetts: The M.I.T. Press.

Rural School District, Northwest Oregon.

Rodgers, T. (2001). *Language teaching methodology*. (Eric Document Reproduction

Service No. ED459628)

Standards for foreign language learning: Preparing for the 21st century. (1996).

Lawrence, KS: Allen Press, Inc.

Swender, E. & Duncan, G. (1998). ACTFL performance guidelines for k-12 learners.

Foreign Language Annals. 31, 479-491.

- Skinner, B.F. (1957). *Verbal behavior*. New York: Appleton-Century-Crofts.
- Terrell, T.D. (1977). A natural approach to second language acquisition and learning. *The Modern Language Journal* 61, 325-37.
- Thompson, Irene (1996). Assessing foreign language skills: data from Russian. *The Modern Language Journal* 80, 47-33
- Vygotsky, L.S. (1978). *Mind in society: The development of higher psychological process*. M. Cole, V. John-Steiner, S. Scribner & E. Souberman (Ed. &Trans.) Cambridge, MA: Harvard University Press. (Original work published 1930)
- Vygotsky, L.S. (1986). *Thought and language*. A. Kozulin (Ed. &Trans.), Cambridge, MA: MIT Press. (Original work published 1934)

Appendexes

Appendix A

Sample Pretest and Posttest Thematic Unit Assessments

**A. Escuchemos – Teacher directed questions for section “A”
about the family tree.**

**Chapter 5
La familia y la casa**

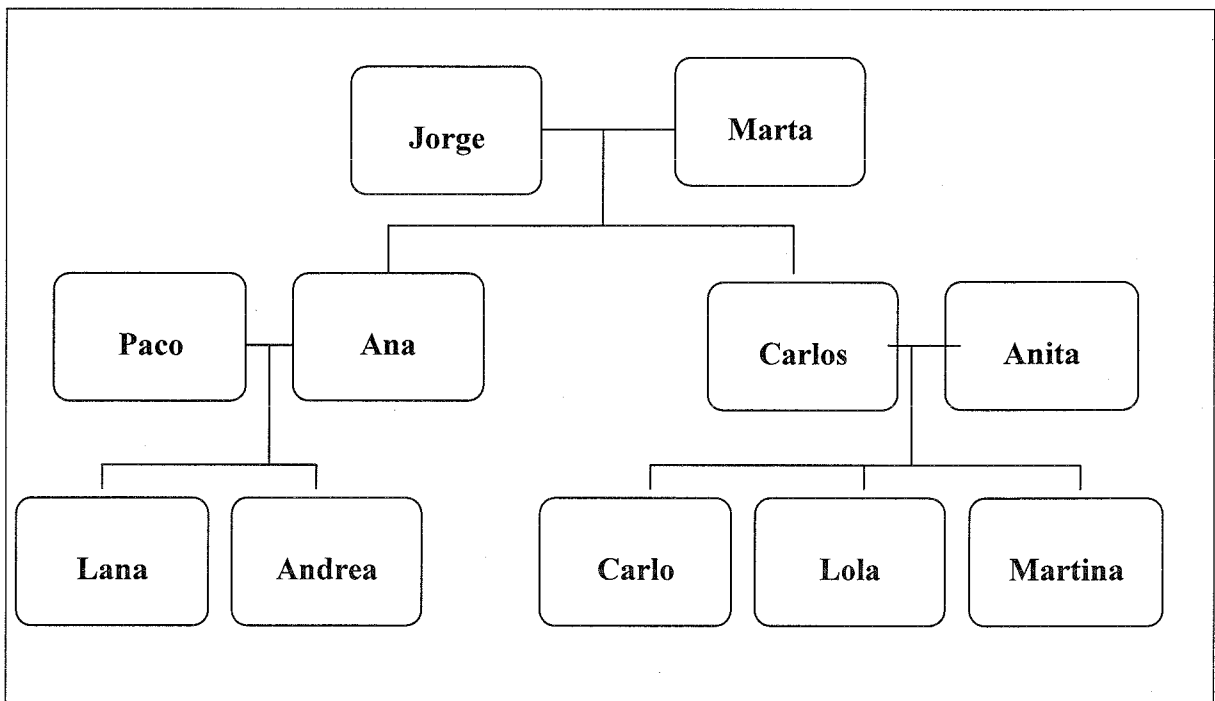
- 1. ¿Quién es el padre de Ana?**
- 2. ¿Quién es la abuela de Lola?**
- 3. ¿Quién es el tío de Andrea?**
- 4. ¿Quiénes son los primos de Lana y Andrea?**
- 5. ¿Quiénes son las sobrinas de Carlos y Anita?**

Nombre: _____

Chapter 5
Pretest / Posttest (95 points)
La familia y la casa

Escuchemos

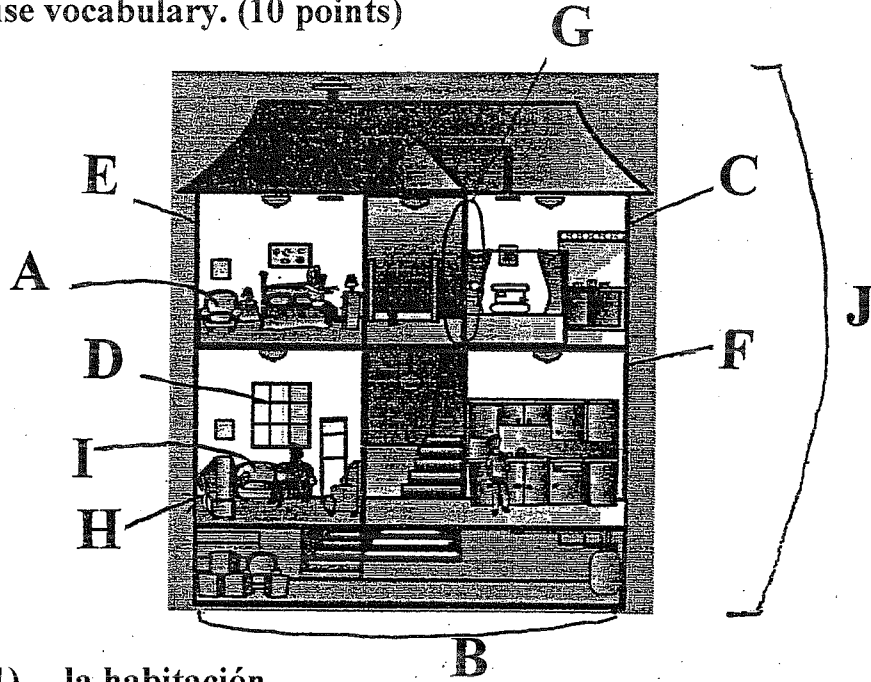
B. Listen to the teacher talking about a family. Use the family tree to answer the questions asked. Respond in writing below. (10 points)



- 1) _____
- 2) _____
- 3) _____
- 4) _____
- 5) _____

El vocabulario

C. Match the letters given to represent parts of the house with the house vocabulary. (10 points)



- 1) la habitación ____
- 2) la cocina ____
- 3) el baño ____
- 4) la pared ____
- 5) la casa ____
- 6) la sala ____
- 7) la silla ____
- 8) la ventana ____
- 9) el sofá ____
- 10) el sótano ____

¿Dónde está?

D. Circle the correct response using the picture of the house. (5 points)

- 1) La madre está (encima de / lejos de) la cama
- 2) La cocina está (debajo / al lado) del baño.
- 3) El niño está (cerca / lejos) del sótano.

4) La silla está (delante de / detrás de) la televisión.

5) La habitación está (lejos de / encima de) la sala.

E. Match the vocabulary with the appropriate definition. (20 points)

1) abuela _____	a. younger
2) tío _____	b. deaf
3) joven _____	c. building
4) nieta _____	d. mischievous
5) primo _____	e. uncle
6) padre _____	f. garden
7) bisabuelo _____	g. nephew
8) madrastra _____	h. older
9) hijo _____	i. chores
10) mayor _____	j. granddaughter
11) menor _____	k. stepmother
12) el edificio _____	l. address
13) la dirección _____	m. son
14) el jardín _____	n. countryside
15) la puerta _____	o. great-grandfather
16) sobrino _____	p. cousin (male)
17) travieso (a) _____	q. grandmother
18) sordo (a) _____	r. father
19) los quehaceres _____	s. young
20) el campo _____	t. door

Leamos

F. Read the letter and answer the questions given if the statement is cierto (true) or falso (false). (10 points)

Hola Marta,

¿Cómo estás? Este verano mi familia y yo vamos a ir a Chile. Hay cinco personas in mi familia. Mi madre, mi padrastro, mi hermano mayor, mi hermana menor, y yo. Mi hermana menor es traviesa y mi hermano mayor es divertido. Mi madre y mi padre tienen los ojos azules, pero yo tengo los ojos verdes y necesito usar lentes. Vamos a ir con nuestras parientes. Mis abuelos, mis tíos, y mis primos. Tengo un gato muy gordo, pero él no puede ir con nosotros. ¿Quieres venir con nosotros?

Blanca

- 1) Blanca tiene un padrastro.
- 2) Blanca tiene los ojos azules.
- 3) El gato puede ir con la familia a Chile.
- 4) Blanca necesita usar lentes.
- 5) Blanca tiene una hermana mayor y un hermano menor.

G. Negation – Circle the correct negative the fits each sentence. (5 points)

Mi mama (nunca / nadie) quiere ir de compras. Mi padre no quiere ir de compras conmigo (tampoco / nada). Mi hermana (tampoco / nunca) quiere ir también. No me gusta. (Siempre / Nadie) quiero ir de compras. Por eso, no voy a hacer (nada / tampoco) ahora.

H. Possessive adjectives – Circle the correct possessive adjective in the dialogue. (5 points)

- ¿Cuántas personas hay en (tú / nuestra) familia?
- En (mí, tú) familia hay diez personas. (Nuestro / Su) perro es parte de la familia también.
- ¡Tienes una familia grande! ¿Cómo son (tus / sus) parientes?
- Son muy divertidos. Tengo muchos primos. (Sus / tus) casas son muy grandes.

Escribamos

I. In Spanish, write a description of your family (minimum of six people) in paragraph form. Your description needs to include your family members, how they are related to each other, and one characteristic of each. (20 points)

Writing Rubric							
Does your paragraph...							
A. include six members of the family?	0	1	2	3	4	5	6
B. describe how the family members are related?	0	1	2	3	4		
C. describe a characteristic of each family member?	0	1	2	3	4	5	6
D. make sense and is there agreement in gender and number?	0	1	2	3	4		
						Total:	/20

La cultura – Chile

J. Answer the cultural questions given the vocabulary. (5 points)

dos mil	La cueca	Los Andes
Santiago		La Atacama

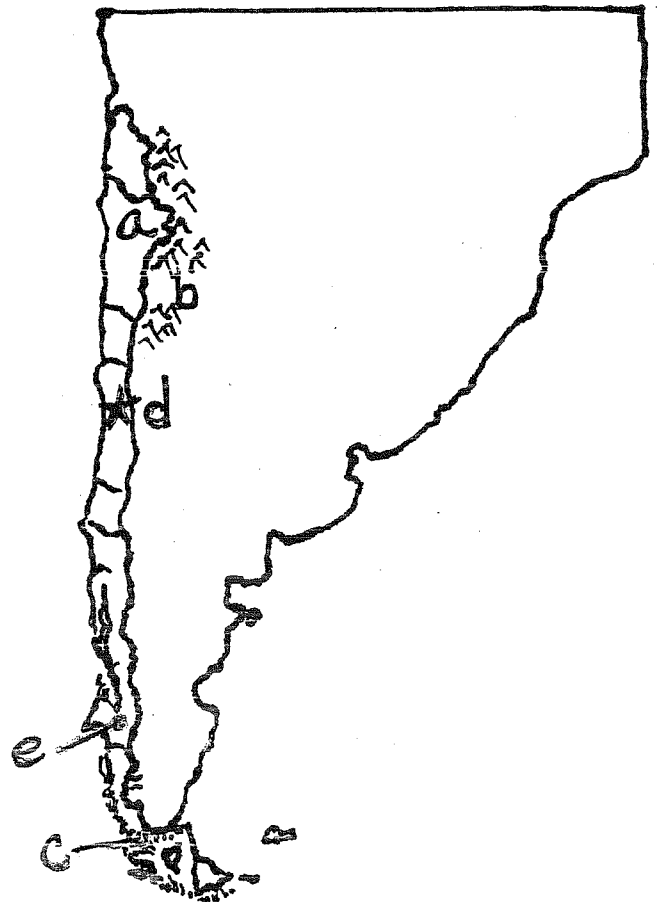
6. ¿Cuál es la capital de Chile? _____
7. ¿Cuál es el desierto más seco del mundo en Chile?

8. ¿Cómo se llaman las montañas famosas de Chile donde puede esquiar y snowboardear? _____
9. ¿Cuál es el baile nacional de Chile? _____
10. ¿Cuántos volcanes hay en Chile? _____

Geography

K. Match each letter on the map of Chile with the area or city it represents. (5 points)

6. El Parque Nacional Laguna San Rafael _____
7. Los Andes _____
8. Santiago _____
9. Punta Arenas _____
10. Atacama Desert _____



Appendix B

Oral Assessment and Rubric

Nombre: _____

Chapter 5
Oral Assessment
Pre-test / Posttest (20 points)
La familia y la casa

Speaking Rubric

A. Speaker Comprehension (the questions asked are understood and the responses show understanding)	(unclear)	0	1	2	3	4	5	(clear)
B. Speaker Comprehensibility (ideas are communicated clearly and are easily understood)	(unclear)	0	1	2	3	4	5	(clear)
C. Speaker Accuracy (structures and related vocabulary are communicated with accuracy)	(unclear)	0	1	2	3	4	5	(clear)
D. Speaker Fluency (communication is clear, easily understood, and demonstrates fluency)	(unclear)	0	1	2	3	4	5	(clear)

A. Respond to the questions in Spanish in complete sentences. I can only repeat the question twice.

1) ¿Cuántas personas hay en tu familia?

A 0 1 2 3 4 5
B 0 1 2 3 4 5
C 0 1 2 3 4 5
D 0 1 2 3 4 5

2) ¿Cómo es tu familia?

A	0	1	2	3	4	5
B	0	1	2	3	4	5
C	0	1	2	3	4	5
D	0	1	2	3	4	5

3) ¿Cómo es la casa de tu familia?

A	0	1	2	3	4	5
B	0	1	2	3	4	5
C	0	1	2	3	4	5
D	0	1	2	3	4	5

4) ¿Cuántas habitaciones hay en tu casa?

A	0	1	2	3	4	5
B	0	1	2	3	4	5
C	0	1	2	3	4	5
D	0	1	2	3	4	5

5) ¿Tienes un perro o gato?

A	0	1	2	3	4	5
B	0	1	2	3	4	5
C	0	1	2	3	4	5
D	0	1	2	3	4	5

6) ¿Tienes los ojos verdes?

A	0	1	2	3	4	5
B	0	1	2	3	4	5
C	0	1	2	3	4	5
D	0	1	2	3	4	5

Score

/ 20

Appendix C

Sample Survey 1 and 2 Questions

Nombre: _____

Survey 1

1. Questions about writing

When you hand in a writing assignment, which of the following best describes the types of critique comments you get from the person grading the assignments? Circle all that apply.

- a. Your paragraphs have no beginning, middle, and end.
- b. An outline might help you focus on a topic.
- c. You need to only have one subject in each paragraph.
- d. Your writing could use more depth.
- e. You describe the subject well, but with limited examples and connections.
- f. Despite the lengthy paper, I was unable to find the central topic.

2. Questions about classroom learning

Please read the following statements and circle the answer(s) that best describe(s) you. When the instructor is talking in the classroom, what do you hear or see in your mind?

- a. I see what you talk about in picture or I see the words as you talk.
- b. I hear what you say in pictures or I see the words.
- c. I see nothing when you talk, and I interpret what you say into my own sound words.
- d. I hear your words and write them down exactly as you say them.

3. Questions about note taking

When you take notes do you:

- a. Doodle in the margins?
- b. Draw around the words?
- c. Write in an outline format?
- d. Have lots of words on the paper that do not always connect?

4. Questions about reading from the text

When you read from the text do you:

- a. Underline a few important words?
- b. Underline almost everything and even color code?
- c. Give up underlining because everything seems important.
- d. Tend to look at the pictures rather than read the words?

5. Which helps you understand material that is presented in class better?

- a. The overheads
- b. The drawings on the board
- c. The verbal presentation by the instructor

From "Questions to Evaluate for Visual Processors," by E.L. Arwood, J. Kaakinen, & A. L. Wynne, 2002, *Nurse Educators: Using Visual Language "Learning to See"*, p.39. Copyright 2002 by Apricot, Inc. Adapted with permission of author.

Nombre: _____

Survey 2

1. On a scale of 1 to 10 (1 being the lowest and ten being the highest), was the material presented to you in class in a way that you could understand?

1 2 3 4 5 6 7 8 9 10

2. On a scale of 1 to 10 (1 being the lowest and ten being the highest), do you remember what material was presented in class?

1 2 3 4 5 6 7 8 9 10

3. On a scale of 1 to 10 (1 being the lowest and ten being the highest), do you think you will use what you have learned in class at some point in the future?

1 2 3 4 5 6 7 8 9 10

4. What helped you understand the material most (circle **all** that apply)?

- a. The verbal presentation by the instructor.
- b. The drawings on the board.
- c. The overheads.

(Question four from "Questions to Evaluate for Visual Processors," by E.L. Arwood, J. Kaakinen, & A. L. Wynne, 2002, *Nurse Educators: Using Visual Language "Learning to See"*, p.39. Copyright 2002 by Apricot, Inc. Adapted with permission of author.)

Appendix D

Temporal Analysis of Propositions (TemPro)

Key to evaluate written language samples using the TemPro

6. Visual – Visual language used (0 propositions)
7. Auditory – Auditory language used (1-3 propositions)
8. Visual ? – Some aspect is unclear (0 propositions)
9. Auditory ? – Some aspect is unclear (possible proposition)
10. ? – Not representative of natural language (undetermined)

Temporal Analysis of Propositions (TemPro) Instrument

TEMPORAL ANALYSIS OF PROPOSITIONS

TEMPRO

by
Ellyn Arwood, Ed.D.
Mary Ann Beggs, M.S.

Name _____

School _____ Grade _____

Birthdate _____ Age _____

Examiner _____

Date of Administration _____

	NUMBER OF PROPOSITIONS	NUMBER OF SEMANTIC LANGUAGE ERRORS	NUMBER OF ITEMS MARKED ON BEHAVIORAL CHECKLIST
<p>White area indicates typical learning system. {</p> <p>Shaded area indicates atypical learning system. {</p> <p>The Mean in typical language use is 3.83 propositions (Auditory Learning Systems). Standard Deviation = .31 When temporal concepts are not represented (no propositions) the speaker has a Visual/Spatial Learning System.</p>	6	0	0
	5	1	1
	4	2	2
	3	3	3
	2	4	4
	1	5	5
	0	6	6
		7	7
		8	8
		9	9
		10	10
		11	11
			12

Interpretation: If the student scores within the shaded area on all three charts, a learning, language disorder is likely. See the manual for suggestions for follow-up assessment and intervention goals.

3. Does the tense usage function to create a natural sequence?

Examples

- Yes** *"After the ball is pitched, the batter hits the ball and then runs to the base."* (The tense usage creates a sequence of time.)
- No** *"He is hitting the ball and runs to first base."* (No sequence—it sounds like he is performing both actions at the same time.)

Give examples from language sample here:

4. Is there shared meaning without the listener making inferences? (If you told this event to another person, could you use the student's exact words?)

Give examples from language sample here:

5. Are there a minimum of three related ideas that are connected temporally to establish a proposition? (A proposition is a referred, intended notion that contains three ideas connected temporally. If you have answered "yes" to the above questions, propositions are being established.)

Examples

- Yes** *"After the ball is pitched, the batter hits the ball and then runs to the base."*
- No** *"The pitcher throws the ball. The batter hits the ball, then runs."*

Give examples from language sample here:

Number of propositions: _____

6. Does the student demonstrate any of the following semantic language errors? Give examples of the ones evidenced.

A. Auditory Misperceptions

B. Off Target Responding

C. Semantic Word Errors

D. Neologisms

E. Topical or Referential Identification Problems

F. Topic Closure Difficulties

G. Tangentiality

H. Echolalia

I. Verbal Perseveration

J. Phonological Problems

K. Syntactical and/or Morphological Problems

Summary:

Interpretation:

1. If there are two or more sequential propositions, the language is functioning normally.
2. If the student did not establish two or more propositions in a narrative language sample, there is evidence of semantic language errors and the student exhibits three or more of the behaviors on the **TEMPRO Behavioral Checklist**, a learning/language disorder is likely. See the manual for suggestions for follow-up assessment and intervention.

TEMPO BEHAVIORAL CHECKLIST

Name _____ Grade _____

Check the statements that apply to this student.

- _____ 1. Has difficulty following a schedule.
- _____ 2. Has difficulty following directions.
- _____ 3. Has difficulty paying attention in class. Seems to "tune out".
- _____ 4. Does not finish work in class.
- _____ 5. Does not get homework assignments done.
- _____ 6. Is often described as "hyperactive".
- _____ 7. Is disorganized.
- _____ 8. Talks at inappropriate times. Interrupts or "blurts out".
- _____ 9. Moves around the room at inappropriate times.
- _____ 10. Is sometimes disruptive in class.
- _____ 11. Has difficulty working with other students and/or adults.
- _____ 12. Is reading significantly below grade level.
- _____ 13. Is writing and/or spelling significantly below grade level.
- _____ Other concerns:

Signed _____ Position _____ Date _____

To obtain more TEMPO Worksheets, write to:

APRICOT, Inc.
P.O. Box 18191, Portland, Oregon 97218
(503) 235-4119

Appendix E

Study Timeline

The following functions as a daily timeline and description of instruction took place on each particular day. The two kinds of lessons that are described in this timeline are visual and auditory metalinguistic lessons.

Timeline and Instruction:

<u>Date</u>	<u>Visual Metalinguistic Lessons</u> <u>Class B</u>	<u>Auditory Metalinguistic Lessons</u> <u>Class A</u>
4/30/2007:	<ul style="list-style-type: none"> • Pretest - Reading, Writing, Listening, Culture • Oral Pretest Questions • Individual time during chapter pretest and oral pretest to finish up "Travel Diaries" from last project/performance assessment 	<ul style="list-style-type: none"> • Pretest - Reading, Writing, Listening, Culture • Oral Pretest Questions • Individual time during chapter pretest and oral pretest to finish up "Travel Diaries" from last project/performance assessment
5/1/2007:	<ul style="list-style-type: none"> • Collect student written language samples • Continue Oral Pre-Test Questions • Individual time during oral pretest to finish up and turn in "Travel Diaries" from project/performance assessment • Real time drawn visual language instruction to introduce to Chapter 5 and objectives • Visual language instruction over family vocabulary and adjectives • Homework is to review and practice orally 	<ul style="list-style-type: none"> • Collect student written language samples • Continue Oral Pre-Test Questions • Individual time during oral pretest to finish up and turn in "Travel Diaries" from project/performance assessment • Auditory language instruction to introduce Chapter 5 and objectives • Auditory language instruction over family vocabulary and adjectives • Homework is to review and practice orally
5/2/2007:	<ul style="list-style-type: none"> • Hook (music/art/ question and answer/realia/current 	<ul style="list-style-type: none"> • Hook (music/art/ question and answer/realia/current

	<p>event etc. introduced with visual language)</p> <ul style="list-style-type: none"> • Review/Continue visual language instruction to introduce Chapter 5 and objectives • Vocabulary notes and visual instruction over family vocabulary and adjectives • Homework related to content 	<p>event etc. introduced with auditory language)</p> <ul style="list-style-type: none"> • Review/Continue auditory language instruction to introduce Chapter 5 and objectives • Vocabulary notes and auditory instruction over family vocabulary and adjectives • Homework related to content
5/3/2007:	<ul style="list-style-type: none"> • Hook • Review homework using visual language instruction • Visual language instruction over family vocabulary and adjectives • Related listening activity with family vocabulary and adjectives • Related reading/communication activity with family vocabulary and adjectives • Homework is to review and practice orally 	<ul style="list-style-type: none"> • Hook • Review homework using auditory language instruction • Auditory language instruction over family vocabulary and adjectives • Related listening activity with family vocabulary and adjectives • Related reading/communication activity with family vocabulary and adjectives • Homework is to review and practice orally
5/4/2007:	<ul style="list-style-type: none"> • Hook • Review using visual language instruction • Visual language instruction over Chile • Read and discuss in pairs and answer related questions in writing • Homework is to review and practice orally 	<ul style="list-style-type: none"> • Hook • Review using visual language instruction • Auditory language instruction over Chile • Read and discuss in pairs and answer related questions in writing • Homework is to review and practice orally
5/7/2007:	<ul style="list-style-type: none"> • Hook • Review homework using visual language instruction • Review family vocabulary with visual language instruction • Related communication activity using family vocabulary 	<ul style="list-style-type: none"> • Hook • Review homework using auditory language instruction • Review family vocabulary with auditory language instruction • Related communication activity using family vocabulary

	<ul style="list-style-type: none"> • Visual language instruction over extended family vocabulary • Homework related to content 	<ul style="list-style-type: none"> • Auditory language instruction over extended family vocabulary • Homework related to content
5/8/2007:	<ul style="list-style-type: none"> • Hook • Review homework using visual language instruction • Visual language instruction about possessive adjectives with family vocabulary • Related reading activity and discussion • Related listening activity • Homework is to review and practice orally 	<ul style="list-style-type: none"> • Hook • Review homework using auditory language instruction • Auditory language instruction about possessive adjectives with family vocabulary • Related reading activity and discussion • Related listening activity • Homework is to review and practice orally
5/9/2007:	<ul style="list-style-type: none"> • Hook • Review homework using visual language instruction • Visual language instruction about possessive adjectives verbs with family vocabulary • Related reading activity and question and answer • Review activities – (group whiteboard response activities/review questions/games/group and individual communication activities/etc.) • Homework related to content 	<ul style="list-style-type: none"> • Hook • Review homework using auditory language instruction • Auditory language instruction possessive adjectives and verbs with family vocabulary • Related reading activity and question and answer • Review activities – (group whiteboard response activities /review questions/games/group and individual communication activities/etc.) • Homework related to content
5/10/2007:	<ul style="list-style-type: none"> • Hook • Review homework using visual language instruction • Visual language instruction about possessive adjectives verbs with family vocabulary • Related reading activity and question and answer • Review activities • Homework is to review and practice orally 	<ul style="list-style-type: none"> • Hook • Review homework using auditory language instruction • Auditory language instruction possessive adjectives and verbs with family vocabulary • Related reading activity and question and answer • Review activities • Homework is to review and practice orally
5/11/2007:	<ul style="list-style-type: none"> • Survey #1 	<ul style="list-style-type: none"> • Survey #1

	<ul style="list-style-type: none"> • Review weekly concepts using visual language instruction • La cultura – Continue to review first section of culture related to Chili incorporating family vocabulary • Related map activity • Answer related questions in writing • Homework is related to content 	<ul style="list-style-type: none"> • Review weekly concepts using auditory language instruction • La cultura – Continue to review first section of culture related to Chile incorporating family vocabulary • Related map activity • Answer related questions in writing • Homework is related to content
5/14/2007:	<ul style="list-style-type: none"> • Hook • Review homework using visual language instruction • Visual language instruction about vocabulary related to the house • Related reading/communication activity • Review activities • Homework related to content 	<ul style="list-style-type: none"> • Hook • Review homework using auditory language instruction • Auditory language instruction about vocabulary related to the house • Related reading/communication activity • Review activities • Homework related to content
5/15/2007:	<ul style="list-style-type: none"> • Hook • Review homework using visual language instruction • Visual language instruction about vocabulary related to the house and where you live • Related reading/communication activity • Review activities • Homework is to review and practice orally 	<ul style="list-style-type: none"> • Hook • Review homework using auditory language instruction • Auditory language instruction about vocabulary related to the house and where you live • Related reading/communication activity • Review activities • Homework is to review and practice orally
5/16/2007:	<ul style="list-style-type: none"> • Hook • Review using visual language instruction • Visual language instruction about vocabulary related to the house and where you live also integrating chores • Related listening activity • Related communication 	<ul style="list-style-type: none"> • Hook • Review using auditory language instruction • Auditory language instruction about vocabulary related to the house and where you live also integrating chores • Related listening activity

	<ul style="list-style-type: none"> activity • Homework related to content 	<ul style="list-style-type: none"> • Related communication activity • Homework related to content
5/17/2007:	<ul style="list-style-type: none"> • Hook • Review homework using visual language instruction • Visual language instruction about estar and directions using the house, where you live, and chores vocabulary • Related reading/communication activity • Homework is to review 	<ul style="list-style-type: none"> • Hook • Review homework using auditory language instruction • Auditory language instruction about estar and directions using the house, where you live, and chores vocabulary • Related reading/communication activity • Homework is to review
5/18/2007:	<ul style="list-style-type: none"> • Hook • Review weekly concepts using visual language instruction • La cultura – Chile • Review map activity • Discuss/answer related questions in writing • Homework is related to content 	<ul style="list-style-type: none"> • Hook • Review weekly concepts using auditory language instruction • La cultura – Chile • Review map activity • Discuss/answer related questions in writing • Homework is related to content
5/21/2007:	<ul style="list-style-type: none"> • Hook • Review homework using visual language instruction • Visual language instruction about family vocabulary and family tree project • Time for family tree project/gallery performance assessment • Review activities • Homework related to content 	<ul style="list-style-type: none"> • Hook • Review homework using auditory language instruction • Auditory language instruction about family vocabulary and family tree project • Time for family tree project/gallery performance assessment • Review activities • Homework related to content
5/22/2007:	<ul style="list-style-type: none"> • Hook • Review homework and concepts using real time drawn instruction • Visual language instruction over family vocabulary and “nunca, nadie, tampoco, 	<ul style="list-style-type: none"> • Hook • Review homework and concepts using auditory instruction • Auditory language instruction over family vocabulary and “nunca,

	<p>siempre, and nada”</p> <ul style="list-style-type: none"> • Time for family tree project/gallery performance assessment • Review activities • Homework is to and practice orally 	<p>nadie, tampoco, siempre, and nada”</p> <ul style="list-style-type: none"> • Time for family tree project/gallery performance assessment • Review activities • Homework is to and practice orally
5/23/2007:	<ul style="list-style-type: none"> • Hook • Review concepts using visual language instruction • Visual language instruction over family vocabulary and “nunca, nadie, tampoco, siempre, and nada” • Time for family tree project/gallery performance assessment • Review activities • Homework related to content 	<ul style="list-style-type: none"> • Hook • Review concepts using auditory instruction • Auditory language instruction over family vocabulary and “nunca, nadie, tampoco, siempre, and nada” • Time for family tree project/gallery performance assessment • Review activities • Homework related to content
5/24/2007:	<ul style="list-style-type: none"> • Hook • Review homework and concepts using visual language instruction • Related reading/communication activity • Time for family tree project/gallery performance assessment • Review activities • Homework is to review and practice orally 	<ul style="list-style-type: none"> • Hook • Review homework and concepts auditory language instruction • Related reading/communication activity • Time for family tree project/gallery performance assessment • Review activities • Homework is to review and practice orally
5/25/2007:	<ul style="list-style-type: none"> • Hook • Review concepts using visual language instruction • La cultura – Chile • Discuss/answer related questions in writing • Time for family tree project/gallery performance assessment • Homework related to content 	<ul style="list-style-type: none"> • Hook • Review concepts using auditory language instruction • La cultura – Chile • Discuss/answer related questions in writing • Time for family tree project/gallery performance assessment • Homework related to content

5/28/2007:	<ul style="list-style-type: none"> • No School 	<ul style="list-style-type: none"> • No School
5/29/2007:	<ul style="list-style-type: none"> • Hook • Review homework and first section of concepts using visual language instruction (areas that need clarification or practice) • Related reading/communication activity • Work on / practice with family tree project/gallery presentation • Related reading/communication activity • Review activities • Homework is to review and practice orally 	<ul style="list-style-type: none"> • Hook • Review homework and first section of concepts using auditory language instruction (areas that need clarification or practice) • Related reading/communication activity • Work on / practice with family tree project/gallery presentation • Related reading/communication activity • Review activities • Homework is to review and practice orally
5/30/2007:	<ul style="list-style-type: none"> • Hook • Review homework and first section of concepts using visual language instruction (areas that need clarification or practice) • Related reading/communication activity • Work on / practice with family tree project/gallery presentation • Review activities • Homework is to review and practice orally 	<ul style="list-style-type: none"> • Hook • Review homework and first section of concepts using auditory language instruction (areas that need clarification or practice) • Related reading/communication activity • Work on / practice with family tree project/gallery presentation • Review activities • Homework is to review and practice orally
5/31/2007:	<ul style="list-style-type: none"> • Hook • Review homework and second section of concepts using visual language instruction (areas that need clarification or practice) • Related reading/communication activity • Family tree gallery walk 	<ul style="list-style-type: none"> • Hook • Review homework and second section of concepts using auditory language instruction (areas that need clarification or practice) • Related reading/communication activity • Family tree gallery walk

	<ul style="list-style-type: none"> • Homework is to review and orally 	<ul style="list-style-type: none"> • Homework is to review and orally
6/1/2007:	<ul style="list-style-type: none"> • Hook • Review using the first and second sections of concepts visual language instruction (areas that need clarification or practice) • Family tree gallery walk • Homework is to review and practice 	<ul style="list-style-type: none"> • Hook • Review using first and second sections of concepts using auditory language instruction (areas that need clarification or practice) • Family tree gallery walk • Homework is to review and practice
6/4/2007:	<ul style="list-style-type: none"> • Hook • Review using the first and second sections of concepts visual language instruction (areas that need clarification or practice) • Related reading/communication activity • Finish family tree gallery walk • Homework is to review and practice 	<ul style="list-style-type: none"> • Hook • Review using first and second sections of concepts using auditory language instruction (areas that need clarification or practice) • Related reading/communication activity • Finish family tree gallery walk • Homework is to review and practice
6/5/2007:	<ul style="list-style-type: none"> • Oral Assessments • Reading/communication activity • Individual and partner review and practice activities • Homework is to review and practice 	<ul style="list-style-type: none"> • Oral Assessments • Reading/communication activity • Individual and partner review and practice activities • Homework is to review and practice
6/6/2007:	<ul style="list-style-type: none"> • Posttest Chapter 5 • Finish Oral Assessments 	<ul style="list-style-type: none"> • Posttest Chapter 5 • Finish Oral Assessments
6/7/2007:	<ul style="list-style-type: none"> • Survey #2 given • Review 	<ul style="list-style-type: none"> • Survey #2 given • Review

Appendix F

Sample Visual and Auditory Metalinguistic Lessons

Visual Metalinguistic Lesson

Class: Spanish I

Standards:

Interpretive Mode – Demonstrate comprehension of written text on familiar topics for a variety of purposes. (reading)

Interpretive Mode – Demonstrate comprehension of messages, presentations, conversations and/or narratives on a variety of topics for a variety of purposes. (listening)

Interpersonal Mode – Express ideas, ask and answer questions, and initiate in and engage in conversations on familiar topics for a variety of purposes. (speaking)

Presentational Mode – Express ideas in written form on familiar topics for a variety of purposes. (writing)

Class Cultural Objective – Students will identify key concepts related to the country of Chile using target vocabulary.

Content Objectives: Students will identify and discuss prior knowledge about Chile and connect that prior knowledge with new information and key vocabulary relating to Chile

Language objectives: Students will demonstrate their prior knowledge, connect prior knowledge, identify key vocabulary, respond to sentences using key vocabulary in Spanish, create their own questions using key vocabulary in Spanish, and communicate in Spanish related to the country of Chile.

Procedures:

- 1) HOOK – Chilean music playing
- 2) Target language is used as much as possible
- 3) Students brainstorm prior knowledge about Chile while teacher draws in real time
- 4) Instructor introduces concepts in the target language by drawing in real time while asking students to share their prior knowledge regarding Chile integrating key vocabulary. The drawing has a person in the center to start off. The drawing is flowcharted and key vocabulary is added last. The drawing is referred to and added to during the class when needed.

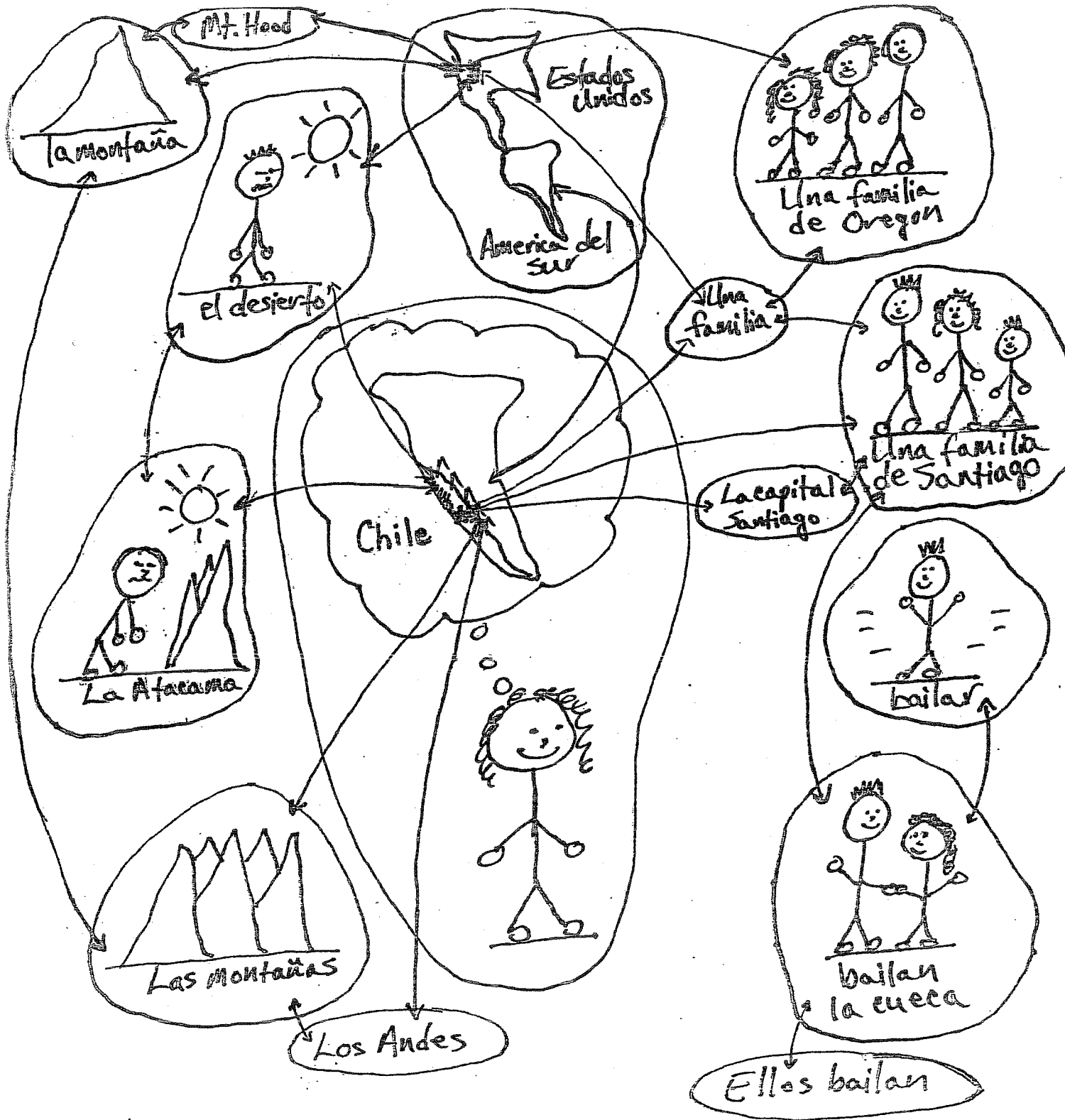
- 5) Refer to the world map in the classroom and information about Chile from the student's book while relating to prior knowledge and referring to the drawing and continuing to draw key vocabulary.
- 6) Drawing is referred to and added to during reading activity. Students read small passages in Spanish about Chile and find/discuss cognates
- 7) Pass out questions in Spanish with key vocabulary and concepts
- 8) Drawing is referred to and added to during writing activity. Students create short written answers to questions related to key vocabulary and phrases in Spanish
- 9) Drawing is referred to and added to during speaking activity. Students ask partners in Spanish questions and have partners respond
- 10) Brainstorm in pairs about a question that they could ask
- 11) Review referring to drawing and have students share questions and points of interest and other connections

Key Vocabulary:

el desierto
Chile
la familia
La Atacama
Santiago
Los Andes
la cueca
bailar
la montaña

Reflections: Students were actively engaged in the lesson and involved in all of the modes of communication. Students were attentive and participating when the drawing was taking place. Students responded with personal connections and global connections when sharing prior knowledge. Students demonstrated their knowledge of the content and met content and language objectives.

Visual Lesson Drawn Out In Real Time



Auditory Metalinguistic Lesson

Class: Spanish I

Standards:

Interpretive Mode – Demonstrate comprehension of written text on familiar topics for a variety of purposes. (reading)

Interpretive Mode – Demonstrate comprehension of messages, presentations, conversations and/or narratives on a variety of topics for a variety of purposes. (listening)

Interpersonal Mode – Express ideas, ask and answer questions, and initiate in and engage in conversations on familiar topics for a variety of purposes. (speaking)

Presentational Mode – Express ideas in written form on familiar topics for a variety of purposes. (writing)

Class Cultural Objective – Students will identify key concepts related to the country of Chile using target vocabulary.

Content Objectives: Students will identify and discuss prior knowledge about Chile and connect that prior knowledge with new information and key vocabulary relating to Chile

Language objectives: Students will demonstrate their prior knowledge, connect prior knowledge, identify key vocabulary, respond to sentences using key vocabulary in Spanish, create their own questions using key vocabulary in Spanish, and communicate in Spanish related to the country of Chile.

Procedures:

- 1) HOOK – Chilean music playing
- 2) Target language is used as much as possible
- 3) Students brainstorm prior knowledge about Chile with teachers guided spoken/written instruction
- 4) In the target language concepts are introduced in written and spoken form and written concepts are referred to.
- 5) Refer to the world map in the classroom and information about Chile from the student's book while relating to prior knowledge.
- 6) Students read small passages in Spanish about Chile and find/discuss cognates
- 7) Pass out questions in Spanish with key vocabulary and concepts
- 8) Students create short written answers to questions related to key vocabulary and phrases in Spanish
- 9) Students ask partners in Spanish questions and have partners respond
- 10) Brainstorm in pairs about a question that they could ask about Chile

- 11) Review with spoken concepts and referring to written concepts and have students share questions, points of interest and other connections

Reflections: Most students were actively engaged in the lesson and involved in all of the modes of communication. Students responded with some personal connections and global connections when sharing prior knowledge. Some students were off task at times. Students did demonstrate their knowledge of the content and met content and language objectives.

Key Vocabulary:

el desierto
Chile
la familia
La Atacama
Santiago
Los Andes
la cueca
bailar
la montaña

Students received same sample handout of student questions as Group B

Appendix G

Data Graphs and Tables

Table 4.1
Group A Raw Pre-test and Posttest Scores and Pre-test to Posttest Gains

Student	Pre-test Score	Posttest Score	Gains
	115 points total	115 points total	
1	53	79	26
2	85	114	29
3	48	114	66
4	29	62	33
5	4	79	75
6	44	85	41
7	29	92	63
8	71	97	26
9	16	89	73
10	27	82	55
11	35	101	66
12	33	84	51
13	88	114	26
14	51	98	47
15	63	113	50
16	40	80	40
17	19	109	90

Table 4.1(continued)
Group A Raw Pre-test and Posttest Scores and Pre-test to Posttest Gains

Student	Pre-test Score	Posttest Score	Gains
	115 points total	115 points total	
18	17	77	60
19	18	46	28
20	35	82	47
21	40	99	59
22	40	112	72
23	52	113	61
24	46	100	54

Table 4.2
Descriptive Statistics for Group A Pre-test

Mean	40
Standard Error	4
Median	40
Mode	40
Standard Deviation	21
Sample Variance	443
Kurtosis	0.3
Skewness	0.6
Range	84
Minimum	4
Maximum	88
Sum	983
Count	24

Table 4.3
Descriptive Statistics - Group A Posttest

Mean	93
Standard Error	4
Median	95
Mode	114
Standard Deviation	18
Sample Variance	318
Kurtosis	0.4
Skewness	-0.7
Range	68
Minimum	46
Maximum	114
Sum	2221
Count	24

Table 4.4
Descriptive Statistics - Group A Posttest
Minus Students Absent (14% of class time or more)

Mean	95
Standard Error	5
Median	95
Mode	114
Standard Deviation	20
Sample Variance	384
Kurtosis	1
Skewness	-1
Range	68
Minimum	46
Maximum	114
Sum	1328
Count	14

Table 4.5
Group B Raw Pre-test and Posttest Scores and Pre-test to Posttest Gains

Student	Pre-test Score	Posttest Score	Gains
	115 points total	115 points total	
1	40	111	71
2	38	98	60
3	47	108	61
4	32	92	60
5	36	103	67
6	27	70	43
7	5	58	53
8	24	89	65
9	36	103	67
10	44	114	70
11	53	109	56
12	40	97	57
13	36	77	41
14	39	113	74
15	11	85	74
16	23	81	58
17	33	97	64
18	46	110	64
19	13	89	76
20	38	95	57

Table 4.6
Group B Pre-test
Descriptive Statistics

Mean	33
Standard Error	3
Median	36
Mode	36
Standard Deviation	13
Sample Variance	157
Kurtosis	0.2
Skewness	-0.8
Range	48
Minimum	5
Maximum	53
Sum	661
Count	20

Table 4.7
Group B Posttest
Descriptive Statistics

Mean	95
Standard Error	3
Median	97
Mode	103
Standard Deviation	15
Sample Variance	230
Kurtosis	0.3
Skewness	-0.8
Range	56
Minimum	58
Maximum	114
Sum	1899
Count	20

Table 4.8
 Descriptive Statistics - Group B Posttest
 Minus Students Absent (14% of class time or more)

Mean	102
Standard Error	2
Median	101
Mode	89
Standard Deviation	9
Sample Variance	81
Kurtosis	-2
Skewness	-0.06
Range	25
Minimum	89
Maximum	114
Sum	1425
Count	14

Table 4.9
 Descriptive Statistics - Group A
 Average Learning Gains

Mean	52
Standard Error	4
Median	53
Mode	26
Standard Deviation	18
Sample Variance	319
Kurtosis	-0.5
Skewness	0.1
Range	64
Minimum	26
Maximum	90
Sum	1238
Count	24

Table 4.10
Descriptive Statistics - Group B
Average Learning Gains

Mean	62
Standard Error	2
Median	63
Mode	60
Standard Deviation	9
Sample Variance	89
Kurtosis	0.3
Skewness	-0.6
Range	35
Minimum	41
Maximum	76
Sum	1238
Count	20

Thesis Author Statement of Understanding

Title of thesis: Visual and Auditory Metalinguistic Lessons for Spanish Second Language Acquisition

Name of Author: Dawn Michele Spencer

Degree: Masters of Arts

Program/College: School of Education / University of Portland

I understand that I must submit one digital copy* of my thesis for inclusion in the University Library and the University Archives, per current University of Portland guidelines for the completion of my degree. Submission to the University Library must also include a print copy of the sign-off acceptance sheet of my program/college and this "Thesis Author Statement of Understanding."

I understand that in the interest of shared scholarship the University of Portland and its agents have the non-exclusive license to archive and make accessible my thesis in whole or in part in all forms of media in perpetuity. Further, I understand that my work, in addition to its bibliographic record and abstract, may be available to the world-wide community of scholars and researchers through electronic access.

I retain all other ownership rights to the copyright of the thesis. I also retain the right to use and share in future works (such as articles or books) all or part of this thesis. I am aware that the University of Portland does not require registration of copyright for electronic/digital theses.

Any reproduction or access will not be for commercial use or profit by the University of Portland.

Signature of Author: Dawn M. Spencer Date: 7/27/08

I hereby certify that, if appropriate, I have obtained and attached written permission statements from the owners of each third party, copyrighted matter to be included in my thesis. I certify that the version I submitted is the same as that approved by my committee.

Signature of Author: Dawn M. Spencer Date: 7/27/08

*Note: Digital Copy submission should be as a Compact Disc (CD) in PDF format

November 2007

Appendix D