

Student Work

8-1-2002

The effect of using conceptual sign language on third grade elementary students' learning of Spanish vocabulary.

Julie Jahde

Follow this and additional works at: <https://digitalcommons.unomaha.edu/studentwork>
Please take our feedback survey at: https://unomaha.az1.qualtrics.com/jfe/form/SV_8cchtFmpDyGfBLE

Recommended Citation

Jahde, Julie, "The effect of using conceptual sign language on third grade elementary students' learning of Spanish vocabulary." (2002). *Student Work*. 2975.
<https://digitalcommons.unomaha.edu/studentwork/2975>

This Thesis is brought to you for free and open access by DigitalCommons@UNO. It has been accepted for inclusion in Student Work by an authorized administrator of DigitalCommons@UNO. For more information, please contact unodigitalcommons@unomaha.edu.

THE EFFECT OF USING CONCEPTUAL SIGN LANGUAGE
ON THIRD GRADE ELEMENTARY STUDENTS' LEARNING
OF SPANISH VOCABULARY

A Thesis

Presented to the

Department of Education

and the

Faculty of the Graduate College

University of Nebraska

In Partial Fulfillment

of the Requirements for the Degree

Masters of Arts in Elementary Education

University of Nebraska at Omaha

by

Julie Jahde

August 2002

UMI Number: EP74437

All rights reserved

INFORMATION TO ALL USERS

The quality of this reproduction is dependent upon the quality of the copy submitted.

In the unlikely event that the author did not send a complete manuscript and there are missing pages, these will be noted. Also, if material had to be removed, a note will indicate the deletion.



UMI EP74437

Published by ProQuest LLC (2015). Copyright in the Dissertation held by the Author.

Microform Edition © ProQuest LLC.

All rights reserved. This work is protected against unauthorized copying under Title 17, United States Code



ProQuest LLC.
789 East Eisenhower Parkway
P.O. Box 1346
Ann Arbor, MI 48106 - 1346

THESIS ACCEPTANCE

Acceptance for the faculty of the Graduate College,
University of Nebraska, in partial fulfillment of the
Requirements for the degree
Masters of Arts in Elementary Education,
University of Nebraska at Omaha.

Committee

C. Elliott Ostler

David F Conway

Chairperson

Yvonne Tixier y Vigil

Date

May 30th, 2002

THE EFFECT OF USING CONCEPTUAL SIGN LANGUAGE ON THIRD GRADE
ELEMENTARY STUDENT'S LEARNING OF SPANISH VOCABULARY

Julie M. Jahde, MA

University of Nebraska, 2002

Advisor: Dr. Yvonne Tixier y Vigil

ABSTRACT

This study examined the use of Conceptual Sign Language together with Spanish instruction for third grade students. With the growing number of Hispanics in the United States, Spanish is becoming an important subject. According to the National Network for Early Language Learning, (NNELL) Spanish as a Second Language can be very beneficial for elementary students. Using movement, gestures and Total Physical Response (TPR) techniques have been demonstrated as effective instructional strategies. They have also been shown to be effective for any foreign language classrooms, especially with elementary students.

Conceptual sign language has also been an effective tool to reinforce vocabulary for hearing students. This study will combine conceptual sign language with Spanish instruction in order to examine the effects third grade students' learning of Spanish vocabulary as assessed by a receptive and expressive curriculum-based measurement.

TABLE OF CONTENTS

| CHAPTER | PAGE |
|---|------|
| Abstract | i |
| Chapter I: Introduction..... | 1 |
| Section A: Problem Statement..... | 3 |
| Section B: Operational Definitions..... | 5 |
| Section C: Hypothesis..... | 8 |
| Section D: Purpose-Combining Signs and FLES Spanish..... | 9 |
| | |
| Chapter II: Review of Related Literature..... | 11 |
| Section A: Methods for Second Language Acquisition..... | 11 |
| Section B: Benefits of Sign Language with Hearing Students.. | 18 |
| Section C: Effectively Teaching Elementary FLES Students.... | 20 |
| Section D: Combining Signs and Spanish Instruction..... | 24 |
| | |
| Chapter III: Methodology..... | 29 |
| Section A: Subjects..... | 29 |
| Section B: Instrumentation..... | 31 |
| Section C: Procedures..... | 36 |
| Section D: Data Collection..... | 38 |
| Section E: Data Analysis..... | 40 |
| | |
| Chapter IV: Results..... | 42 |
| Section A: Data to Establish Equivalent Groups..... | 42 |
| Section B: Hypothesis 1..... | 44 |
| Section C: Analysis of Hypothesis 1..... | 44 |
| Section D: Hypothesis 2..... | 45 |
| Section E: Analysis of Hypothesis 2..... | 46 |
| Section F: Inter-rater Reliability..... | 47 |

| | |
|---|----|
| Chapter V: Summary, Conclusions and Recommendations... | 48 |
| Section A: Summary..... | 48 |
| Section B: Conclusions..... | 48 |
| Section C: Limitations..... | 50 |
| Section D: Recommendations..... | 52 |
| | |
| Bibliography..... | 57 |
| Appendixes..... | 63 |

Tell me and I will forget; Oigo y olvido;
Teach me and I will remember; Veo y recuerdo;
Involve me and I will learn. Hago y comprendo.
--Ancient Chinese Proverb -Proverbio Chino

Chapter I: Introduction

Census data released in the spring of 2001 revealed that Hispanics make up the most increasing ethnic population in the United States (Rosen, 2001). According to the U.S. Census Bureau (2000), "In 2000, 35.7% of the Hispanics were less than 18 years of age, compared with 23.5% of non-Hispanic Whites" (p.2). Rosen (2001) states that the "35.3 million Latinos account for 12.5% of the U.S. population" (p.14). The Hispanic population is quickly becoming the majority population in many cities throughout the United States, and it is becoming more common for children in the United States to live in dual language environments, especially Spanish and English (DeHouwer, 1999 & Walker-Vann, 1998). The result of this increase in our school system creates a challenge for teachers. Even though the Hispanic population is learning English as quickly as possible, the Spanish language is the second most spoken language in the United States; consequently, there is a need for English speakers to learn a second language. Many employers are searching for qualified

bilingual workers to help communicate with the influx of Spanish only speakers. Marcos (1998) advises that developing the language capabilities of students will improve the quality of the work force later. Instead of starting foreign language study in middle school or high school, there is now a movement to begin foreign language study at an earlier age. It is believed that learning a second language will be very beneficial for students both academically and socially.

Learning a second language improves test scores and enhances students' global perspective. Cooper's research (1987) "shows that the verbal scores on the Scholastic Aptitude Test (SAT) of students who had taken four or five years of a foreign language were higher than the verbal scores of students who had taken four or five years of any other subject." (p.381) Ernst-Slavit & Pierce (1998) found that communicating in other languages broadens ones' global perspectives. This, they believe, increases one's own personal self-concept and also leads to better appreciation of other communities.

Few training programs exist for teachers of Elementary Spanish as a Second Language. One reason for this is that it is difficult to locate teachers that both speak the language and have an aptitude for educating elementary students. Many people who learn a second language in

college do not necessarily do so to teach in public school and those that do, generally tend to acquire a teaching degree at the secondary level. Few elementary teachers select foreign language as a second major. According to Curtain & Pesola (1994) qualified elementary foreign language teachers need to be, "fluent in the target language, [have] meaningful experiences living in the countries, [have] experience working with elementary age children, and [have] an understanding of second language teaching" (p.39). Curtain & Pesola (1994) also state that "primary students from ages five to seven learn best with concrete experiences and immediate goals" (p.69). Younger learners succeed best by participating in highly motivating Spanish activities and connecting the language to their own personal world. Few training programs exist to provide resources, techniques and activities for effectively instructing K-6 students. Teaching elementary students a second language is a challenge because few elementary educators are trained in second language acquisition and few programs exist as models for research.

Section A: Problem Statement

If we are to increase the fluency in Spanish for second language students, world languages should be taught before Junior High or High school. To aid pronunciation

accuracy and acquire a higher level of language skills, instruction should begin in elementary school. There is a need to find more effective techniques for teaching unfamiliar vocabulary to second language learners, in this case teaching Spanish to English speakers.

Incorporating gestures with Spanish as a second language instruction appears to increase second language acquisition. Seaver (1992) used pantomime and added the kinesthetic element of actions and gestures in his class, he found that it increased his students' motivation to learn a second language. To enhance second language acquisition James J. Asher (2000) developed what is called the Total Physical Response method (TPR) as a means of incorporating action with language. Building on Asher's TPR method, Ray & Seely (2000) invented a technique called TPR storytelling that not only combines an action with a second language word but then also uses those gestures to make up a story. The use of these stories in the target language led to an increase in vocabulary comprehension and retention for his students. These researchers found that after using the TPR storytelling method "classes that take national standardized tests consistently score better than the national average" (p.174). It appears that the incorporation of TPR storytelling may well influence second language acquisition.

Total Physical Response (TPR) and TPR storytelling techniques use gestures to accompany vocabulary instruction. This study took these approaches a step further by incorporating conceptual sign language into an instructional second language program. Conceptual signs for the Spanish vocabulary were taught concomitantly with the current instruction of Spanish as a second language for third grade students in a rural elementary school. The purpose of this study was to examine the effect on scores of a curriculum based measurement for Spanish language acquisition when vocabulary learning is supplemented with conceptual signs.

Section B: Operational Definitions

The following terms have been operationalized to provide consistency in treatment and measurement.

Conceptual Sign Language as used in this study is based on American Sign Language, (ASL) but does not incorporate all of the grammatical and syntactic features of ASL. The objective of this study was to increase elementary students second language vocabulary acquisition by having the signs corresponded directly with the vocabulary taught. The vocabulary words were linked to signs from ASL, but the ASL grammar structures were not directly taught. Conceptual

sign vocabulary taken from ASL was chosen as the most practical for students in the USA because there are a variety of sign languages used in different Spanish speaking countries.

Foreign Language in the Elementary School (FLES) is an elementary school foreign language enrichment program designed to expose elementary students to Spanish language and cultural activities. Curtain & Pesola (1994) define FLES programs as having the following qualifications: "A single language that is vertically articulated throughout the program sequence. Classes meet within the school day, for a minimum average of 75 minutes per week. The program results in meaningful communicative comprehension outcomes. Finally, teachers have both language proficiency and professional knowledge for effective foreign language instruction at the elementary level" (p.34). In this study, students currently meet with the Spanish instructor for 60 minutes per week and watch a video for 15 minutes per week.

Curriculum based measurement

Deno (1985) stated that, "curriculum-based measurements (CBM) combine the advantages of both informal observation and achievement tests." He continues by saying that a "CBM generates reliable data that is valid with

respect to widely used indicators of achievement" (p.219). The benefits of Curriculum Based Measurements are that they can be referenced to the current local curriculum, to a sampling of peers and also individually referenced to see improvement in a student's achievement (Deno, 1985).

CBM as used in this study has been designed as a vocabulary acquisition test based on the current Spanish language curriculum of third grade students. (See Appendixes A-G) This particular assessment measured both receptive and expressive Spanish abilities. The current standardized measurements for elementary Spanish speakers are based on the assumption that the students are living in a Spanish-speaking environment and are bilingual. The FLES students in this study were native English speakers. They were only exposed to Spanish for approximately one hour each week making the current standardized tests far too difficult for these students. Furthermore, the vocabulary of the standardized tests is not always concurrent with that of the Spanish curriculum. Many times, standardized tests measure general vocabulary knowledge at a point in time. This particular test (Appendixes A-G) measured specific vocabulary that was learned within the Spanish curriculum. This curriculum-based measurement has been developed to specifically assess the knowledge of these students congruent with the target vocabulary.

Total Physical Response (TPR) is a method of instruction that incorporates action, gestures, and pantomime along with verbal instruction. TPR helps to involve learners and acquire language through the use of actions. In the words of the originator, Asher (2000):

"TPR has teachers physically and verbally model commands for students who are then required to respond with appropriate actions. Through TPR, students develop receptive language before expressive language emerges. Thus, speech production is the result of comprehension and language acquisition and not the cause." (p. 6.1)

Section C: Hypotheses

The following hypotheses have been developed to investigate the potential effect of incorporating conceptual sign language during Spanish instruction on Spanish vocabulary acquisition:

1. There will be a significant difference on the receptive part of the curriculum based measurement of vocabulary between third grade students receiving Spanish instruction adapted with conceptual sign language and third grade students receiving regular Spanish instruction with no conceptual sign language.

1. There will be a significant difference on the expressive part of the curriculum based measurement of vocabulary between third grade students receiving Spanish instruction adapted with conceptual sign language and third grade students receiving regular Spanish instruction with no conceptual sign language.

Section D: Purpose of the Study

Daniels (2001) conducted several studies that showed that vocabulary knowledge and retention is increased when sign language is used with hearing students. Another study done in Italy by Capirci, Cattani, Rossini & Volterra (1998) found that Italian Sign language improved hearing children's abilities to pay attention, to better discriminate visually, and to increase memory of spatial concepts. According to Capirci et. al. (1998), these hearing students even "performed better on a Raven Progressive Matrices (PM) 47 Test (Raven, 1949) than the control group of children at the same school that were learning English as a second language" (p.135). Capirci et. al. (1998) explains that, "the Raven PM 47 measures visual-spatial skills at four time points" (p.136). Combining the information gained from the influence of sign language on vocabulary retention for hearing students, many foreign language elementary students may well benefit from

incorporating conceptual sign language concomitantly with foreign language instruction.

Curtain & Pesola (1994) explain the importance of learning a second language in elementary school, including the benefits and the best techniques in the book Languages and Children- Making the Match. They suggest using, "props, dialogues, role plays, pair work, songs, rhymes, and finger plays, in order to surround concrete experiences with language" (p.102-4). Asher (2001) has also shown that using the Total Physical Response method (TPR) to combine commands with movement and gestures is very helpful for language retention.

The purpose of this study was to determine if the use of conceptual sign language would improve the learning of Spanish vocabulary by 3rd grade English speaking students. This study evaluated the effect on receptive and expressive vocabulary acquisition as measured on the curriculum based measurement when conceptual sign language was used during third grade Spanish instruction.

Chapter II: Review of Related Literature

Section A: Methods for Second Language Acquisition

A traditional grammar based class mainly focuses on written vocabulary and memorizing lists of words. According to Krashen (1981), "the best results of second language acquisition have been achieved by exposing students to meaningful interactions and natural communication" (p.1). Glisan (1986) states that Krashen's theories find that, "learners acquire language by being exposed to large quantities of meaningful input" (p.419).

Starting at birth, young children learn almost all of their primary language in context. In the second language classroom, teachers attempt to model the natural acquisition of language. However, second language teachers do not have the same amount of contact time, as compared to native speakers during the first five years of home language environment. Foreign language teachers attempt to discover techniques that would maximize contact time with the new language and mirror an environment that exposes students to the target language in a meaningful way as much as possible. Immersion is one technique believed to be effective; consequently, teachers attempt to use only the target language to "immerse" the students in that language within a limited class period. This method attempts to

replicate the students' early years of native language learning and provide the maximum amount of contact time in the foreign language. This means that the focus of instruction must be real and meaningful communication that has been modeled in the target language.

Immersion, however, without appropriate teaching strategies reduces the effectiveness of second language acquisition. As Ray & Seely (2000) state, "not only quantity contributes to acquisition, but also technique. Teaching vocabulary must be done in such a way that students can remember the words on a long-term basis" (p.10). Students must first develop a vocabulary base if other aspects of second language acquisition are to be accomplished. The Total Physical Response (TPR) approach is one method that is often used in foreign language classrooms to help with vocabulary retention. Glisan (1986) states that TPR is a foreign language method that uses authentic communication in meaningful contexts by having students follow commands. The TPR method takes words such as run or jumps and adds actions to the words so that the students practice the word combined with an action. This works well for words that are concrete or action verbs; however, this does not necessarily work with abstract vocabulary. TPR does not necessarily expand language utterances into meaningful sentences, additional gestures

are needed for abstract vocabulary. As students' skills in the foreign language increase, American Sign Language may contain the vocabulary needed to correspond with abstract Spanish words. Another limitation with the TPR method is that inventing different actions with different classes may be confusing for a teacher with multiple classes. The use of conceptual sign language may help to provide consistency in linking the actions with vocabulary.

These limitations with the TPR method concerned Ray & Seely (2000) who expanded TPR to include TPR Storytelling. This is a technique related to TPR that allows students to aurally acquire the vocabulary and then later provide many opportunities to practice using that vocabulary in sentence form with authentic situations and stories. They believe that by teaching vocabulary in this way, students will use the target language in a more realistic and natural manner.

Marlatt (1995) points out that all of these TPR strategies provide a variety of meaningful contexts for the students that help to focus their attention and aid concentration during language experiences. Marlatt (1995) explains the process of language development; he illustrates how a student begins by understanding input in a second language, later uses gestures, and finally adds speech when he/she is ready. Marlatt (1995) states that some students may not be confident in speaking initially

and, therefore, for those activities that require verbal responses, gestures or sign language can even temporarily substitute for speech until the students are comfortable using the target language. This would be helpful for the reluctant and shy learners. More importantly, it also allows for the natural "silent period" that occurs when learning a first or a second language. Ray & Seely (2000) further explain that during this "silent period" students are not familiar with the words which would add stress and anxiety if they were forced to produce them. Conceptual sign language reduces stress and helps students to participate with motions until they are ready to add the vocalization.

Using gestures to communicate is natural for primary language learners. Daniels (1994) points out that Piaget discussed the way children use sign to exchange ideas in a natural way. In her article, she points out that using gestures is one of the first forms of communication. She uses Piaget's theory that language in movement such as gesture and mime is the real language of the child. For example, babies begin by muttering sounds and then pointing to things that they want, later they respond to commands from their parents. After this silent period, they begin to verbalize first with simple sounds, second by babbling,

third by uttering words, and finally by connecting words to form a sentence.

Seaver (1992) considers that Ashers' TPR method also, "purports to imitate first language acquisition on the assumption that children acquire their first language through commands given by their parents, such as, "Come here," and "Don't touch the stove." In the classroom, students observe the teacher carrying out a command and then they perform the same action" (p.23). Seaver (1992) believes that mime can play a role in TPR, and if mime helps students acquire language, extending mime to include conceptual sign language may well be able to also enhance TPR and foreign language techniques.

TPR techniques are based on the theory that language develops through pantomime and gestures. Gestures are in fact a natural means of communication. One need only observe tourists in a foreign country who do not speak the language. Gestures and mime may be the only form of language possible during desperate attempts to communicate with and understand the natives. Seaver (1992) states that, "travelers will often resort to mime when they possess little or no knowledge of the language of the country in which they are traveling. Though gestures are often culturally defined, a certain amount of universal meaning can be conveyed by gesture" (p.22). Conceptual sign language

incorporated into language instruction may help students with the idea of initiating and attempting communication with hand movements.

By using conceptual sign language students start paying attention to non-verbal signals and noting behaviors during oral communication. Making a cultural mistake or a non-verbal error can be far more offensive and memorable than making a grammatical or language error. Furthermore, many mistakes made by non-native speakers might be able to be prevented by paying attention to the environment and picking up on non-verbal cues. Students can be made more aware of the importance of non-verbal actions when gestures or conceptual sign language is used during instruction.

Both verbal and non-verbal cues are often times necessary for communication. According to Seaver (1992), "in interpersonal communication the non-verbal domain is a powerful source of information that is often crucial to the proper understanding of the linguistic messages" (p.21). Communicating a total message depends on the combination of both verbal and non-verbal modalities (Von-Raffler-Engel, 1980). Seaver (1992) further implies that in a typical social conversation only about 30-35% of the intercommunication is conveyed by the words and the remaining 65-70% of the meaning is derived non-verbally. This demonstrates the importance of non-verbal behavior in

effective communication. McNeill (1999) states that, "gestures convey meanings linked to spoken utterances and are omnipresent, unrehearsed, and near obligatory partners to speech" (p.78). Therefore, by adding the kinesthetic aspect to language learning, students are better equipped to increase understanding and improve listening comprehension in the target language. Incorporating sign language with second language instruction appears to be a natural technique.

Another benefit of adding conceptual sign language to a typical conversational foreign language class is that through the physical and manual participation, an individual uses both sides of the brain to process and store the information. Glisan (1986) states that, "research in brain lateralization indicates that the left hemisphere is responsible for language production, while the right hemisphere enables physical responses to occur" (p.421). Asher (2001) agrees that while acquiring a second language, we must first decode the strange noises with our right brain before the left brain is ready to talk. Using TPR or other gestures helps to access both parts of the brain concurrently and therefore enhances language acquisition. Instead of inventing gestures, we can incorporate the physical aspect into language learning by using some of the hand movements that already exist in sign

language. The actions related to the production of signs may provide teachers with the tool to activate both sides of the brain and stimulate multiple pathways for processing information. Using a variety of modalities for integrating information may well reinforce the learning of a second language.

Section B: Benefits of Sign Language with Hearing Students

Hearing students' exposure to a sign language program enhances performance in the domain of nonverbal cognitive skills and development according to a study done in Italy by Capirci et.al. (1998). In this study, Capirci et. al. (1998) measured an experimental group of 6- year- old children that had Italian Sign Language classes one hour a week for two school years (p.137). They found that the children that had sign language performed better on a test of visual-spatial skills than the hearing children exposed to an English course, and also better than hearing children not exposed to any foreign language (p.136).

Research done by Neville, Coffey, Lawson, Fischer, Emmorey, & Bellugi (1997) also showed that "the effect of the early acquisition of American Sign Language (ASL) of both hearing and deaf native signers included an increased role for the right hemisphere and parietal cortex" (p.285). Asher (2001) concluded that, "the right hemisphere is mute,

but can express itself by listening to a command in the target language, and then performing the appropriate action. The left hemisphere can express itself by talking" (p. 2-24). Therefore, hearing students might well benefit from exercising both sides of their brains.

Incorporating signs with languages is not a new concept. Daniels (2001) notes that Thomas Hopkins Gallaudet, a well-known advocate for deaf education in the 1850's, alluded to the idea of educating hearing students with sign language. Gallaudet felt that exposure to language in many formats and using multiple senses may well help the brain to permanently store information. Daniels' (1994) conducted a study that supports Gallaudet's contention. She proved that "children receiving sign instruction scored significantly higher on the Peabody Picture Vocabulary Test (PPVT-R) than those receiving no sign instruction" (p.155). The pretest scores for both signing and non-signing pre-school classes were virtually identical. She explains that sign was incorporated without stressing it or focusing on the signs in particular. She estimated that the English word alone was used about 25% of the time and the American Sign Language sign was used alone about 25% of the time. The remaining 50% of instruction used American Sign Language vocabulary and English words simultaneously. At the end of the school year, the Peabody

Picture Vocabulary test was administered to all students. She reported that, "the results of this study show a statistically significant improvement in receptive English vocabulary for students who received the sign language instruction" (p.160-161). She states that:

"sign is received in a visual-spatial manner by the right hemisphere of the brain...the eyes are receptors for sign as the ears are the receptors for spoken language. The experience in these classes thus delivers the communication in a combined visual, auditory and physical mode...possibly leaving a multiple imprint on the learner's memory" (p.163).

From Daniels' research we may well conclude that, "simultaneously presenting words in a visual, kinetic and auditory manner enhances the hearing child's vocabulary development. " (p.165) Her research supports using visual, manual, aural, and oral techniques for hearing students in order to amplify their language abilities.

Section C: Effectively Teaching Elementary FLES Students

In a typical classroom, teachers make many accommodations for the wide variety of personalities and styles of learning. Gardner's (1983) Theory of Multiple Intelligences proclaims that individuals have multiple

strengths which he names, "Intelligences". To apply his theories, Gardner encourages educators to think about individual learning styles in their classrooms and how to incorporate them into the content of each lesson. Gardner & Hatch (1989) believe that many classes, tests, and grading scales focus only on linguistic and logical-mathematical achievements. Incorporating sign language may well add the modalities of visual-spatial and bodily kinesthetic which, in turn, might possibly lead to success for more students. They also consider that by using more of a variety of modalities, students are able to develop and discover their individual abilities and strengths. This motivates individuals to be engaged in the classroom experience, instead of giving up in frustration. Daniels (1994) believes that signing uses the kinetic sense which enables children to literally feel the language.

The more elementary students are engaged in active learning, either through actions or hands-on exercises, the more potential they have for academic achievement. Daniels (1994) considers that when using sign language the communicators are required to maintain eye contact to both transmit and receive the message. This forces students to focus and pay close attention in order to understand the meaning. As students are watching the sign language closely, teachers can also be monitoring the students'

responses visually. By seeing the conceptual signs immediately, Jitendra, Da Costa, Policare & Wetherhold (1997) established that teachers could provide students with immediate and corrective feedback. Preventing errors from being repeated incorrectly may help to change them before the mistakes become fossilized habits.

Another added benefit of the immediate feedback is that there will be fewer discipline problems. When sign language is incorporated in a lesson, students are actively engaged in their learning through constant participation. After acquiring some basic vocabulary in sign language, some classroom routines and discipline enforcement can be done non-verbally. For example, asking to use the restroom or responding to a question with yes/no can be done without even disrupting other students. Petrie, Lindauer, Bennett, & Gibson (1998) argue that by combining the conceptual signs and the oral language may help with classroom management. They suggest that 75-80% of the discipline techniques should be done nonverbally. When non-verbal cues are used properly, the rest of the class is able to continue working instead of deflecting attention to the discipline issue. This is particularly important given the limited contact time with the students during second language instruction. Using the same techniques and sign language provides discipline consistency between the 200-

400 students that elementary Foreign Language teachers typically deal with each week.

In addition to helping with discipline issues, sign language captures attention because it is a relatively novel technique for many elementary children. Jitendra et. al. (1997) noted that, elementary students are particularly motivated by learning sign language because they are curious about the actions that parallel words. Sign language can also be used to communicate in the hallways or cafeteria when students are supposed to be quiet. This makes students intrinsically motivated by what Jitendra et. al. (1997) refer to as the secret code aspect. Many students enjoy using sign language with each other outside of the classroom.

Trying to comprehend another language can be difficult and mildly scary for some students, particularly for those that struggle in English/Language Arts class. Sign language can take some of the fear out of learning a foreign language because it helps to aid understanding. Seaver (1992) stated in his article about the benefits of pantomime that, "it has proven to be a valuable strategy in creating a less stressful learning context with ancillary benefits in the affective domain" (p.24). Inhibitions and anxiety decrease as the focus is transferred onto the movement and communication of meaning instead of only the

accurate pronunciation of specific vocabulary. Glisan (1986) believes that many language students are influenced by Krashen's (1981) Affective Filter hypothesis which states that, "language learners that experience a lack of motivation have a filter or block that prevents them from internalizing input" (p.420). Other researchers such as Horwitz, Horwitz & Cope (1986) claimed that, "the problems of anxiety represent serious impediments to the development of second language fluency as well as to performance" (p.127).

In summary, Seaver (1992) believes that through the use of mime or in this case sign language, enthusiasm for language class increases. The expressiveness of sign language relates to that of miming and incorporating this technique may motivate elementary students to learn a second language.

Section D: Combining Signs and Spanish Instruction

At the present time, few studies exist that combine sign language and foreign language instruction. More research needs to be done on the combination of conceptual sign language and instruction of Foreign Languages in the Elementary School (FLES). Merendino & Simpson-Evans (1998) described how Preschool students were encouraged to use English, Spanish and sign language, particularly during a

tostada-making lesson. The students were able to work with real ingredients, plastic fruits and vegetables, food puzzles, and pictures to color while communicating in all three languages. The fifteen students in their classroom had a variety of disabilities, both physical and developmental. By using real experiences to work together, these students were able to learn to respect each other's cultures and acquire some vocabulary in all three languages.

Christensen (1985) used conceptual sign language with Spanish speaking parents of deaf students in San Diego to promote a "trilingual approach to total communication" (p.244). She stated that,

"conceptual sign language provides a communicative alternative that can bridge the linguistic and phonological boundaries of oral language with a concept-based, visual-gestural mode, thus allowing basic communication to occur between persons whose oral languages are significantly different in form. A Spanish speaker and an English speaker, both of whom share a common sign language lexicon, can exchange abstract ideas clearly and achieve a level of communication beyond that achieved by gestures. Conceptual signs, then, may serve as a communicative

bridge for persons whose oral languages are different" (p. 245).

If parents, hearing-impaired children, and teachers share the sign language from which the conceptual sign is derived, then they may better comprehend and share information with each other. Christensen (1985) concludes that, "based on the TPR theory of kinesthetic reinforcement, the physical involvement of signed language would make sign language easier to acquire than a second spoken language" (p.246). Because of the ease and high comfort level, students will most likely use their conceptual sign language to reply to the teacher. As their anxiety decreases, they will then attempt to orally respond using the second language. Until they are comfortable communicating with speech, using hand movements is an immediate way for the teacher to check visually for understanding without forcing the students to speak before they are ready. Christensen's' statement about the gestures involved in sign language being acquired faster than speech in another language further strengthens the theory of the silent period as being the initial step in the process of language acquisition.

Adding to second language instruction is in accordance with the guidelines suggested in the National Standards for Foreign Language. The standards contain the five C's, which

are; communication, comparisons, cultures, connections and communities (Redmond & Lorenz, 1999). By adding signs to elementary Spanish instruction, teachers will enhance interactions, further comparisons, and connect to other cultures within communities around our world. This parallels the goals of the National Standards.

American Sign Language is in the process of being recognized as a foreign language in many states. Discovering the differences in communication methods of various cultures can also help students become more open-minded. In this study, students were exposed to the languages of both the deaf and Hispanic cultures. Starting at an early age, it is important to be aware of cultural differences and celebrate the diversity of our nation.

In conclusion, sign language represents the message both kinesthetically and visually by helping to connect with a wider variety of learning styles as shown by Glisan (1986) and Gardner & Hatch (1989). Using sign language may well further develop vocabulary by enhancing language acquisition in hearing students (Capirci et. al, 1998; Daniels, 2001). Using gestures, actions and the Total Physical Response method (TPR) has been shown to enhance foreign language education (Ray & Seely, 2000; Asher, 2000). It seems reasonable to conclude from a review of the literature that using conceptual sign language along with

the regular Spanish instruction may also enhance language acquisition in a Foreign Language Elementary School (FLES) classroom.

Chapter III: Methodology

Section A: Subjects

The subjects for this study were 38 monolingual third grade children from a small rural, farming community school district. (There were 18 males and 20 females.) The students are all native English speakers. There are two elementary schools in this district. One school has two third grade classes, Class A and Class B, only Class A from this school, was involved in this study. Class A, the experimental group, included 16 students, ten males and six females. In this experimental group approximately 25% of these students were on free and reduced lunch.

The only other elementary school in the same rural district has only one third grade class, Class C. This control group, Class C included 22 students, 8 males and 14 females. In the control group approximately 31% of these students were on free and reduced lunch. All students in both groups had normal hearing ability and a normal range of academic abilities. The students had little or no previous experience with sign language. The experimental group had Spanish vocabulary instruction combined with conceptual signs for each vocabulary word. The control

group had Spanish vocabulary instruction without conceptual signs for each vocabulary word.

To provide continuity in the instruction, both elementary schools had the same Spanish teacher. She was a certified High-School Spanish teacher and a certified interpreter for both American Sign Language (ASL) and Signing Exact English (SEE). She provided Spanish instruction for both classes, but used conceptual signs for the experimental group only. Students' attendance was recorded during the Spanish classes throughout the nine-week period.

There was almost no risk of contamination between the two classes, as in teaching the conceptual signs during recess. Even though both groups are in the same school district, the classes are located in two separate towns 16 miles or 37 minutes apart. Furthermore, the control group had the regular classroom teacher monitoring during each Spanish lesson to validate that no conceptual sign language was used. The control group had class on Tuesday from 10:55-11:25 and on Thursday from 10:15-10:45. The experimental group also had the regular classroom teacher observing the Spanish lessons. This experimental group, had Spanish class each Wednesday from 2:30-3:00 and Thursday from 12:30-1:00. Both classes watch a video series for about fifteen minutes a week. The video series does

not use any sign language. This study measured the difference between scores on the curriculum based vocabulary assessment by testing students from the experimental group who were exposed to conceptual sign language and the control group who were not exposed to any conceptual sign language during their current Spanish instruction.

Section B: Instrumentation

A curriculum-based measurement (Appendixes A-G) was used to gather data on both the receptive and expressive abilities of the two third grade classes. This test was developed as a measurement of both receptive and expressive abilities in Spanish using pictures that are matched with those of the current K-6 Spanish curriculum. Twenty-five vocabulary items were selected from the third grade elementary Spanish curriculum. These 25 words with corresponding pictures were taught during the nine weeks of this study.

The receptive vocabulary was measured by giving the Receptive test to the entire class at the same time (See explanation in Appendix A). To begin, each student was given a practice sample page with five pictures to demonstrate how to take the test (Appendix C). The five pictures represented vocabulary learned in previous Spanish

lessons, but were not included in the 25 pictures that the students had on the actual receptive test page (Appendix D). This sample page (Appendix C) was given as practice to help the students understand the format. For the sample test, two examples were given in Spanish. Students wrote the number one in the box that corresponded with the picture for the first Spanish word that they heard. The word was repeated once so that the students heard each word twice. Then the next Spanish word was said and also repeated once, and the students wrote the number two in the box that corresponded to that picture. This sample page was not part of their final score. The sample page was then collected and the receptive test page was given to each student.

The receptive test page was a paper that contained 25 vocabulary pictures (Appendix D). The test was given to the entire class at the same time. To dissuade cheating four different versions were developed. Each version had the pictures in a different order to avoid contamination. The students also put a book standing up on their desk to use as a privacy barrier. The test administrator pronounced the Spanish words on the list of ten items one at a time. Each Spanish word or phrase was repeated once. Therefore the students heard each stimulus item twice (Appendix B). The class took the test simultaneously by writing the

number responses (1-10) in the lower right hand corner of their picture sheet as they heard the Spanish words from the list in Appendix B. For example, after hearing the first phrase, "el lago" each student wrote the number one in the box next to the picture of the lake. The words, "el lago" were then repeated again. After the ten test words were read, the test administrator collected the test and coded them by Class A, the experimental group and Class C, the control group. The test administrator then scored the test by adding up the number of correct answers out of the ten possible answers. The test was given entirely in Spanish, but the English was included on the script to help those people who reviewed the test. Of the original 25 pictures, fifteen were not used during this assessment because it lessened the probability of guessing. (See Table 1)

Table 1

Twenty-five vocabulary words and phrases (*The words used in the receptive test are in bold print*)

| | | | | |
|---|--------------------------------|---|--|--|
| el lago (the lake) | la ciudad (the city) | el plato (the plate) | Enciendan las luces. (Turn on the lights.) | los lapices de colores (the colored pencils) |
| el patio de recreo (the recess patio) | nadar (to swim) | andar en bicicleta (to ride a bike) | la cuchara (the spoon) | la oficina (the office) |
| el río (the river) | el campo (the country side) | la puerta (the door) | Apaguen las luces. (Turn off the lights.) | la regla (the ruler) |
| la montaña (the mountain) | el cuchillo (the knife) | el tenedor (the fork) | la oficina de enfermera (the nurse's office) | patinar (to skate) |
| Continuen adelante. (Continue forward) | la taza (the cup) | mirar la television (to watch television) | la biblioteca (the library) | usar la computadora (to use the computer) |

The expressive vocabulary was measured by having the students identify orally, in Spanish, items from ten picture cards one at a time (Appendix E). Students were tested individually. The ten vocabulary pictures used as a stimulus were a subset of 25 vocabulary words chosen for this study. The ten items selected for the expressive part were different from the ten items selected for the

receptive part. There were four random order sequences of the stimulus items to avoid contamination (Lists A-D in Appendix F). Lists were used in order as each child was tested individually. For example, List A was used for the 1st, 5th, 9th, 13th, 17th, and 21st students. List B was used for the 2nd, 6th, 10th, 14th, 18th, and 22nd students. List C was used for the 3rd, 7th, 11th, 15th, and 19th students. List D was used for the 4th, 8th, 12th, 16th, and 20th students.

To begin the expressive test, students listened to the prompt by the test administrator. The prompt was "¿Qué es?" in Spanish, which in English means, "What is this?" Students then orally identified the vocabulary word that corresponded to the picture. The oral responses of each student were recorded using a portable audio cassette recorder manufactured by Radio Shack. The model # was CTR-94.

After all of the testing was completed, two different Raters rated the ten oral responses from the expressive test cassette tape. Rater A and Rater B both used the rubric to rate each students' performance in the categories of proficient, developing, beginning, and unknown (Appendix G).

Only the verbal production was being assessed. Many students from the experimental group did use the signs while responding, but their signing ability was not being

assessed. This test took approximately five to ten minutes. The first list was translated into English to help those people who reviewed the test. (See Table 2)

Table 2

Twenty-five vocabulary words and phrases (The words used in the expressive test are in bold print)

| | | | | |
|---|--|--|---|--|
| el lago (the lake) | la ciudad (the city) | el plato (the plate) | Enciendan las luces. (Turn on the lights.) | los lapices de colores (the colored pencils) |
| el patio de recreo (the recess patio) | nadar (to swim) | andar en bicicleta (to ride a bike) | la cuchara (the spoon) | la oficina (the office) |
| el río (the river) | el campo (the country side) | la puerta (the door) | Apaguen las luces. (Turn off the lights.) | la regla (the ruler) |
| la montaña (the mountain) | el cuchillo (the knife) | el tenedor (the fork) | la oficina de enfermera (the nurse's office) | patinar (to skate) |
| Continuen adelante. (Continue forward) | la taza (the cup) | mirar la television (to watch television) | la biblioteca (the library) | usar la computadora (to use the computer) |

Section C: Procedures

The true experimental design, posttest only model was used for this study. Due to time factors and test

sensitivity issues, a pre-test was not given. The third grade students in the experimental group and the control group were chosen as a cluster sample. The students in the experimental group and the control group were found to be compatible by using the students' composite scores on reading and language parts of the Iowa Test of Basic Skills by Hoover, Hieronymous, Frisbie & Dunbar, (1997). All students that had parent permission were then selected to participate in this study (Appendix H). Students also signed an individual written assent form before taking the test (Appendix I). Those choosing not to participate did not take the receptive or the expressive test and were not included in the study, but they still continued with their Spanish class as usual.

The study took place over a 9-week period (one quarter) during which the students were taught a series of 25 vocabulary words and phrases with pictures during the normal Spanish time. Conceptual sign language was incorporated into their Spanish lessons for the experimental group only. After the nine weeks of Spanish lessons, a curriculum-based measurement was administered to both the experimental group and the control group.

Spanish as a Second Language immersion techniques were used for both classes which means that the classes were conducted entirely in Spanish. All students were exposed to

the same pictures which were the visuals used in the expressive and receptive tests (Appendixes D & H). The experimental group used the conceptual signs for the vocabulary, but the Spanish teacher was not directly teaching the signs in English. She incorporated the conceptual signs during the experimental groups' regular Spanish lessons. The conceptual signs were used for specific vocabulary instead of directly translating each Spanish sentence into American Sign Language. The Spanish teacher allowed students to have a silent period as necessary, but also encouraged both verbal and/or signed responses.

The goal for both classes was functional communicative competence. The curriculum used was the K-12 *IN-VISION* Curriculum (In-Vision, 2000) that is based upon the National and State Foreign Language Standards (Redmond & Lorenz, 1999). The Spanish teacher checked often for understanding and monitored for feedback. Both classes repeated routines and vocabulary in a variety of ways.

Section D: Data Collection

The data collection began after the nine weeks of Spanish instruction with the designated 25 vocabulary words. Consent forms were collected from the principal, teachers, parents, and students. After the nine weeks, the

curriculum-based measurement was administered to all students from the experimental group and the control group that gave consent to participate in the study. Data were collected from both classes within the same week, Week 10.

The receptive test (Appendixes A-D) took approximately 15 minutes and was administered to both the experimental group and the control group during their Spanish class time. There were four different picture pages. Each picture page had the pictures in a different order to help prevent contamination. The students also put a book standing up on their desk to use as a privacy barrier. After all ten answers were marked; the papers were then handed in and graded by Rater A.

The expressive test (Appendixes E-G) took approximately five to ten minutes and was given individually by the test administrator during the school day. The expressive test (Appendixes E-G) was audio taped in order to allow for Rater A and Rater B's evaluation of the students' Spanish vocabulary pronunciation. Rater A was the same as the test administrator. Rater B was a neutral third party judge and a native Spanish speaker that was originally from Peru. The students' production was scored using the rubric. This was not done during the test, but was done by listening to the cassettes at a later time. The

following rubric was used to assess students' levels of production of expressive vocabulary (Appendix G).

Appendix G: Rubric for the expressive test

| Score | Unknown = 0 points | Beginning = 1 point | Developing = 2 points | Proficient = 3 points |
|----------------------------------|--|---|---|--|
| Pronunciation of oral vocabulary | Word is unknown and no attempt is made to pronounce the word. No part of the phrase is attempted. | Word is unintelligible. Student tried to say something, but was not understood. The phrase is incorrect and no part is understood. | Word is known, but errors occur in pronunciation. Word is understandable, with mistakes. The phrase is partially correct and understandable. | Word is known. Pronunciation is correct, accurate and understandable. The phrase is complete and correct. |

Section E: Data Analysis

There were two raters for the expressive part of the curriculum-based measurement. The first rater, Rater A, was the researcher, who is certified as an elementary educator and also has K-8 Spanish teaching certification. Rater A has had 8 years of experience teaching with elementary Spanish programs. Rater A was also the test administrator for both of the receptive and expressive parts. The second rater, Rater B, was a native Spanish speaker originally from Peru but has lived in the United States for 11 years.

Data were analyzed for both the receptive and expressive parts of the Curriculum Based Measurement (Appendixes A-G). For the receptive part, an average score

for both the experimental and control groups was calculated by Rater A using the data gathered. A t-test was then used to analyze and compare the group scores to determine if significant differences exist in students' scores between the experimental group that was using conceptual sign language and the control group that was not using any conceptual sign language during traditional elementary Spanish instruction. This test was selected because it works for measuring intervals.

For the expressive part of the Curriculum Based Measurement, (Appendixes E-G) a Likert type rubric scale was used to analyze this non-parametric data. A Mann Whitney U test (Ferguson & Takane, 1989) was used to determine if significant differences exist in students' scores between the experimental group that was using conceptual sign language, and the control group that was not using conceptual sign language during traditional elementary Spanish instruction. The Spearman Rank Order Correlation Coefficient then calculated inter-rater reliability.

Chapter IV: Results

Section A: Data to Establish Equivalent Groups

Due to test sensitivity issues and time factors, a pre-test was not given. Subjects for this study were identified by data obtained from the Iowa Test of Basic Skills by Hoover et. al. (1997). This test was used to establish equivalent groups. Sixteen students were identified for the experimental group, Class A, and 22 students comprised the control group, Class C. The experimental group was exposed to conceptual sign language during Spanish instruction over a nine- week period. The subjects in the experimental group included 10 males and 6 females with approximately 25% of these students on free and reduced lunch. The control group subjects were in the same rural district. There were 22 students, 8 males and 14 females. In the control group approximately 31% of these students were on free and reduced lunch. All students in both groups have normal hearing ability and a normal range of academic abilities. The students had little or no previous experience with conceptual sign language concepts. The 22 students in the control group were not exposed to any conceptual sign language along with their foreign language instruction. The Iowa Test of Basic Skills by Hoover et. al. (1997) was used to examine the differences

between the experimental and the control group. The differences found between the two groups represented statistically insignificant differences. Table 3 shows the scores obtained on the ITBS by both groups.

Table 3

*Iowa Test of Basic Skills (ITBS) by Hoover et. al. (1997)
scores to Establish Equivalent Groups*

| | Composite of ITBS Language Scores | Composite of ITBS Reading Scores |
|--------------------|--------------------------------------|-------------------------------------|
| Experimental group | 2.8 | 3.2 |
| Control group | 2.7 | 3.0 |

The composite grade equivalent of the Reading scores for the experimental group, was 2.8 and the control group was 2.7 as determined by the Average National Standard Scores (NSS). The composite of the Language scores for the experimental group was 3.2 and the control group was 3.0 as determined by the National Grade Equivalent (NGE) of Average National Standard Scores (NSS). The differences represented statistically non-significant differences.

Section B: Hypothesis 1

The first hypothesis proposed for this study was as follows:

There will be a significant difference on the receptive part of the curriculum based measurement of vocabulary between third grade students receiving Spanish instruction adapted with conceptual sign language and third grade students receiving regular Spanish instruction with no conceptual sign language.

Section C: Analysis of Hypothesis 1

There was a significant difference on the receptive part of the curriculum based measurement of vocabulary between the experimental group, and the control group.

The receptive test (Appendixes A-D) in which the students were able to associate the verbal pronunciation of the Spanish word with the picture showed a significant difference in test scores at the .05 level as determined by a t-test. (See Table 4)

Table 4

Statistics for the receptive test (Appendixes A-D)

| | n | Mean | Standard deviation | Computed t value |
|-----------------------|------|------|-----------------------|---------------------|
| Experimental group | n=16 | 5.44 | 2.09 | 2.54* |
| Control Group | n=22 | 3.82 | 1.56 | |

*p<.05

As shown in Table 4 the computed t value was 2.54. This t-test showed significant difference in the receptive test scores.

Section D: Hypothesis 2

The second hypothesis proposed for this thesis was as follows:

There will be a significant scoring difference on the expressive part of the curriculum based measurement of vocabulary between third grade students receiving Spanish instruction adapted with conceptual sign language and third grade students receiving regular Spanish instruction with no conceptual sign language.

Section E: Analysis of Hypothesis 2

As shown in Table 5, there was a significant difference found on the expressive part (Appendixes E-G) of the curriculum based measurement of vocabulary between the experimental group and the control group. The expressive test scores were calculated with a Mann-Whitney U test (Ferguson & Takane, 1989) that showed significant difference at .05.

Table 5

Statistics for the Expressive test (Appendixes E-G)

| | n | Sum of Ranks | U_a |
|--------------------|------|--------------|--------|
| Experimental Group | n=16 | 257.5 | 121.5* |
| Control group | n=22 | 483.5 | |

* $p < .05$

Table 5 shows that the U_a was 121.5, which shows significant difference at the .05 level.

Section F: Inter-rater Reliability

To test for inter-rater reliability on the expressive portion of the test (Appendixes E-G), the Spearman Rank

Order Correlation Coefficient was used. The Coefficient was calculated at .97 for inter-rater reliability.

To further support the strong reliability obtained from Spearman, the average scores for Rater A and Rater B were examined. Each of the 38 students was given a score per item on each of the 10 items. The ten scores were totaled to make a composite score for the expressive test. The average composite score for the 38 students determined by Rater A was 8.45 and the average score determined by Rater B was 8.26. This lends additional support that both Rater A and Rater B scored the expressive test (Appendixes E-G) similarly when using the expressive test rubric (Appendix G).

Chapter V: Summary, Conclusions and Recommendations

Section A: Summary

The evidence from both the receptive (Table 4) and expressive tests (Table 5) shows that using conceptual signs concomitantly with the current Spanish as a Second language instruction improved both receptive and expressive vocabulary acquisition. Students scored significantly higher on the curriculum based measurement for Spanish language acquisition when conceptual signs were added to vocabulary learning. It appears to demonstrate that adding conceptual signs helped the students to both understand and later produce the vocabulary without confusing that child's second language acquisition.

Section B: Conclusions

Using conceptual signs in teaching a foreign language appears to improve receptive and expressive acquisition of a second language. The results of the study indicate that significant difference occurred in the scores (Table 4) of the receptive test (Appendixes A-D) when students were given 25 vocabulary pictures and asked to identify the Spanish word for the vocabulary item after the examiner pronounced the word in Spanish. The students in the class

with conceptual sign language scored significantly higher on this portion of the curriculum based assessment. This would indicate that the use of conceptual signs helped students better understand Spanish vocabulary and retain the knowledge during the nine-week period. Thus using conceptual signs seems to enhance acquisition, understanding and recall of Spanish vocabulary. It would appear that students in the experimental group were better able to recognize pictures and vocabulary words after having conceptual signs during Spanish instruction.

It also appears that using conceptual signs in foreign language instruction benefits acquisition of Spanish vocabulary as demonstrated by the significance difference found between the experimental group and the control group on the expressive test. This indicates that students better verbalize the Spanish vocabulary after having conceptual signs during Spanish instruction. Students seemed to be more familiar with vocabulary and more accurate at pronouncing words, therefore, scoring higher on the expressive test. Students in the experimental group were better able to correctly produce the Spanish word that corresponded with each picture.

Anecdotal information from some students lends further support to the use of conceptual sign language in the classroom. Many times the students in the experimental

group would stumble on the pronunciation of the Spanish word, yet sign the answer correctly. One student in this group repeated the sign over and over and then he finally said, "I can do all the actions, but I can't remember the words." In language acquisition, many times students can comprehend the input but are not ready to verbalize in a foreign language. Some of the students in the experimental group demonstrated the conceptual sign during the expressive test, yet these students did not score any higher because they did not verbally produce the word. This may mean that they might not be ready for verbal production, but it is worth noting that they were able to gesture and communicate in some form as they attempted to recall the vocabulary word.

Section C: Limitations

There are two possible limitations that might have affected the outcome of this study. They were the number of students participating and the amount of contact time with the Spanish teacher.

Generalization must be done with caution, since only two classes of students were used in this study. This research was limited in the number of students included in this study because there were only three third grade classes in this rural school district, Classes A-C. Only

one class from each school was chosen to ensure there was no interaction between the students (as in practicing sign language at recess.) A larger sample size might well yield different results. This study was limited by the small enrollment of the third grade classes in this particular school district as taught by this Spanish teacher who was certified in both Spanish, ASL and SEE sign language. There was also no exposure to Spanish culture outside of the school setting in this rural area.

The amount of contact time was another limitation to this study. The classes only received 12 Spanish lessons out of the possible 18 due to teacher illness and conflicts of school sponsored activities. Out of those 12 Spanish lessons only eight were spent on the actual 25 vocabulary words for this study.

The Spanish teacher decided independently to change the program of instruction. Due to absences and changes, only 17 out of the 25 original words were taught during the nine weeks. The Spanish teacher decided during the nine weeks to add in lessons with other words and integrate with classroom content. Although the students did not get the full number of lessons originally scheduled, they still showed significant gains in both the expressive and receptive vocabulary. This further supports the benefit of coupling conceptual sign language with foreign language

instruction. Even though students had less exposure to vocabulary instruction, including conceptual sign language with foreign language instruction appears to enhance vocabulary learning. Given the reduced number of sessions this suggests that the use of conceptual signs may be a powerful strategy.

Section D: Recommendations

Further research is needed to support the influence of using conceptual sign language with foreign language instruction. It is recommended that a study be done with more contact time during the nine weeks or over a longer period of time. By adding more contact time with the vocabulary during both the experimental and control group classes, the significance may have been greater.

It is also highly recommended that the Spanish teacher continue with the plan of instruction for the vocabulary chosen in order to provide the maximum amount of contact time rather than add or include other instruction.

An important part of retention and language acquisition is attendance. According to a study done in Alabama by Miller-Whitehead (2001), "attendance was positively related to a school's achievement to ability comparison grade as well as to SAT average and performance grade." (p.7) Attendance should be closely monitored for

both the students and the Spanish teacher. Since Spanish is not spoken at the homes of these students, the best way to acquire vocabulary is to attend Spanish classes. It appears that students that have been absent may not score as high on the curriculum based measurement, and without the practice during the Spanish lessons these students' may have a lesser chance of retaining the information.

How effective is conceptual sign language in terms of retention? Further research needs to be done to examine whether students retain their expressive and receptive abilities over time. Further research might examine the long-term retention rate of Spanish vocabulary for students with and without conceptual sign language. It would also be interesting to examine whether these results occur with high school students.

More research is needed to examine the effect of using vocabulary items that are related, rather than selecting random words. This study had vocabulary from the current Spanish curriculum, but it was not easy for the Spanish teacher to group concepts together. For example, in this study there were five place setting words, three environmental words, and various random objects and places. It would also be interesting to see if students with incorrect answers on the receptive or expressive test, tended to make mistakes that were concurrent with related

concepts. For example, many students may have confused cuchillo (knife) and cuchara (spoon) since they were learned at the same time and are related conceptually.

While this research cannot be generalized, it does lend support to previous research describing the use of signs with hearing students by Capirci et. al (1998) and Daniels (2001). A natural extension of these studies may be the use of sign language to increase vocabulary acquisition and production in a second language. This research builds upon the use of gestures for vocabulary acquisition by Petrie (1998) and TPR by Asher (2000). The use of conceptual signs provides consistency instead of inventing new gestures and actions for the vocabulary. More research is needed to verify this finding and to discover the influences of using actions and/or conceptual signs with second language vocabulary.

There is much to learn in the field of early language learning. As our daily life becomes more global via the World Wide Web and airplane travels, the need for communication in foreign languages becomes greater. Teachers are constantly trying new ways to motivate foreign language students and increase vocabulary acquisition. Adding conceptual signs to foreign language instruction, may be the catalyst needed to motivate foreign language learning.

In this study, using conceptual sign language during Spanish instruction showed significant scoring differences in both receptive and expressive vocabulary assessments. It appears that this may work because the Spanish vocabulary seems to come to life with conceptual sign language. When students kinesthetically act out a word, they seem to be storing it into long term memory where they can later access it more frequently both receptively and expressively. A possible reason for the effectiveness may be that many conceptual signs work like a picture and help students to link the sounds of a foreign language to body movements. This might mean that the vocabulary is more memorable because they can "see it" and using conceptual sign language is one more way of communicating the concept. Using pictures and visuals enhance story telling in any elementary classroom so it may follow that using conceptual signs may help tell the story of the foreign sounds and retain new vocabulary. Adding conceptual sign language does not appear to confuse the students, instead, they are better able to respond to visual stimuli.

The possibilities are encouraging for our children to be able to try to communicate with both the deaf and Hispanic cultures. By linking Spanish and conceptual sign language these elementary students were better able to understand and express Spanish vocabulary. Students in the

experimental class were more involved in their own learning when conceptual signs were included which may have helped improve their test scores on the curriculum based measurement. As the ancient Chinese proverb states, "Involve me and I will learn."

Bibliography

Asher, J. J. (2000). *Learning another language through actions*. Los Gatos, CA: Sky Oaks.

Asher, J. J. (2001). *Brainswitching: Learning on the right side of the brain*. Los Gatos, CA: Sky Oaks.

Capirci, O., Cattani, A., Rossini, P., & Volterra, V. (1998). Teaching sign language to hearing children as a possible factor in cognitive enhancement. *Journal of Deaf Studies and Deaf Education*, 3(2), 135-142.

Christensen, K. M. (1985). Conceptual sign language as a bridge between English and Spanish. *American Annals of the Deaf*, 130, 244-249.

Cooper, T. (1987). Foreign language study and SAT-Verbal scores. *Modern Language Journal*, 71, 381-387.

Curtain, H. & Pesola, C. (1994). *Languages and children: Making the match*. White Plains, NY: Longman.

Daniels, M. (1994). Words more powerful than sound. *Sign Language Studies*, 83, 155-166.

Daniels, M. (2001). *Dancing with words: Signing for hearing children's literacy*. Westport, CT: Bergin & Garvey.

DeHouwer, A. (1999). *Two or more languages in early childhood*. Washington D.C.: ERIC Clearinghouse on Languages and Linguistics. (ERIC Document Reproduction Service No. ED 433697)

Deno, S.L. (1985) Curriculum-based measurement: The emerging alternative. *Exceptional Children*, 52(3), 219-232.

Ernst-Slavit, G. & Pierce, A. (1998). Introducing foreign languages in elementary school. *Principal*, 77(3), 31-33.

Ferguson, G. & Takane, Y. (1989). *Statistical analysis in psychology and education*. New York, NY: McGraw-Hill.

Gardner, H. (1983). *Frames of mind- The theory of multiple intelligences*. New York, NY: Basic Books, Inc.

Gardner, H. & Hatch, T. (1989). Multiple intelligences go to school. *Educational Researcher*, 18(8), 4-10.

Glisan, E. W. (1986). Total physical response: A technique for teaching all skills in Spanish. *Foreign Language Annals*, 19,419-427.

Hoover, H.D., Hieronymous, A.N., Frisbie, D.A., & Dunbar, S.B. (1997). Iowa Test of Basic Skills (1955-1996). Forms K, L, & M. Itascá, IL: Riverside Publishing Company.

Horwitz E., Horwitz M., & Cope, J. (1986). Foreign language classroom anxiety. *Modern Language Journal*, 70,125-132.

In-Vision, Iowa/Nebraska Technology Challenge Grant. (2000) A taste of Espanol and Technology. (Brochure). Omaha, NE:In-Vision

Jitendra, A., Da Costa, J., Policare, E., & Wetherhold, B.(1997). Teaching sign language to children with behavior disorders: A direct instruction approach. *Preventing School Failure*, 41,137-141.

Krashen, S. D.(1981). *Second language acquisition and second language learning*. Oxford: Pergamon Press.

McNeill, D. (1999). Triangulating the growth point-arriving at consciousness. In L. Messing & R. Campbell (Eds.), *Gesture, speech, and sign* (pp. 77-92). Oxford: Oxford University Press.

Marcos, K. M. (1998). Second language learning: everyone can benefit. *ERIC Review* 6(1), 2-5.

Marlatt, E. A. (1995). Learning language through total physical response. *Perspectives in Education and Deafness*, 13(4), 18-20.

Merendino, M. & Simpson-Evans, M. (1998). Tostada preparation provides educational feast: Preschoolers learn language, explore culture. *Perspectives in Education and Deafness*, 16(4), 10-11.

Miller-Whitehead, M. (2001). Education equity in Alabama: What we learned from report card 2000. Little Rock, AR: Mid-South Educational Research Association. (ERIC Document Reproduction Service No. ED 459198)

Neville, H., Coffey, S., Lawson, D., Fischer, A., Emmorey, K., & Bellugi, U. (1997). Neural systems mediating American Sign Language: Effects of sensory experience and age of acquisition. *Brain and Language*, 57,285-308.

Petrie, G; Lindauer, P., Bennett, B., & Gibson, S. (1998). Nonverbal cues: The key to classroom management. *Principal*, 77(3),34-36.

Raven, J.C. (1949). Progressive matrices (1947). Sets A, Ab, B. board and book Forms. London: Lewis.

Ray, B. & Seely, C. (2000). *Fluency through TPR storytelling*. Berkeley, CA: Command Performance Language Institute.

Redmond, M. L. & Lorenz, E. (1999). *Teacher to teacher; Model lessons for K-8 foreign language*. Lincolnwood, IL: National Textbook Company.

Rosen, J. (2001). Selling to the 35+ Million. *Criticas*, 1(2),14-19.

Seaver, P. W. (1992). Pantomime as an L2 classroom strategy. *Foreign Language Annals*, 25,21-30.

United States Census Bureau. (2000). *The Hispanic population in the United States*. (Publication No. P20-535). Washington D. C.: Therrien, M. & Ramirez, R.

Von-Raffler-Engel, W. A. (1980) Kinesics and paralinguistics: A neglected factor in second language research and teaching. *The Canadian Modern Language Review*, 36,225-237.

Walker-Vann, C. (1998). Profiling Hispanic deaf students. *American Annals of the Deaf*, 143,46-54.

Appendixes

- A. List and Explanation for the Receptive Test.
- B. Lists for the Receptive Test.
- C. Sample page for the Receptive Test with 5 pictures.
- D. Page I of 25 Pictures for Curriculum Based measurement-Receptive.
- E. 10 picture cards for Curriculum Based measurement-Expressive. (These were made into flashcards.)
- F. Explanation for the expressive test and four different lists.
- G. Rubric for the Expressive test.
- H. Parents consent letter for permission to participate in this study.
- I. Student assent form to participate in this study.

Appendix A: Explanation for the Receptive part of the Curriculum Based Measurement

- Receptive vocabulary was measured by giving the Receptive test to the entire class at the same time.
- To begin, each student was given a sample page with five pictures that were not graded. (Appendix C) The five pictures were learned in previous Spanish lessons, but were not included in the twenty-five pictures that the students had on the actual receptive test page. This sample page was given as practice to help the students understand the format.
- For the sample test, two examples were said. Students wrote the number one in the box that corresponded with the picture for the Spanish word that they heard. The word was repeated once. Then the next Spanish word was said and also repeated once, and the students wrote the number two in the box that corresponded to that picture. The sample tests were then collected.
- Each of the students was then given the Receptive test page, which was a paper that contains twenty-five vocabulary pictures. The test was given to the entire class at the same time, so there were four different versions. Each version had the pictures in a different order to avoid contamination. (Appendixes D-G) The students also put a book standing up on their desk to use as a privacy barrier.
- The test administrator said the list of ten items below, one at a time. Each Spanish word or phrase was repeated once. Therefore each stimulus item was heard twice.
- The class took the test simultaneously by writing the number response (1-10) in the lower right hand corner of their picture sheet as they heard the Spanish words from the list below. For example, after hearing the first words, "el lago" each student wrote the number one in the box next to the picture of the lake. The words, "el lago" were then repeated once.
- After the ten test words were read, the test administrator collected the test, and coded them by Class A and Class C. The test administrator later rated the receptive tests (Appendixes D-G) by adding up the number of correct answers out of the ten possible answers.
- The test was given entirely in Spanish with no sign language used, but the English has been included on this list to help those people that are reviewing the test.
- There are fifteen pictures that were not be used during this assessment. Ten of the fifteen were used in the expressive test.

Appendix B Lists for the Receptive part of the test

List for the Sample Receptive part

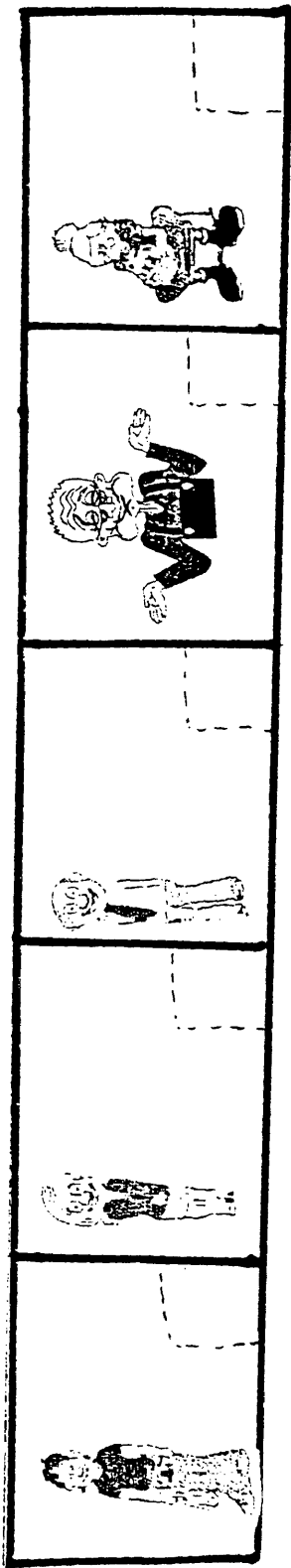
Using the Sample page (Appendix C) La mama- the mother

Using the Sample page (Appendix C) El hermano- the brother

List for the Receptive part

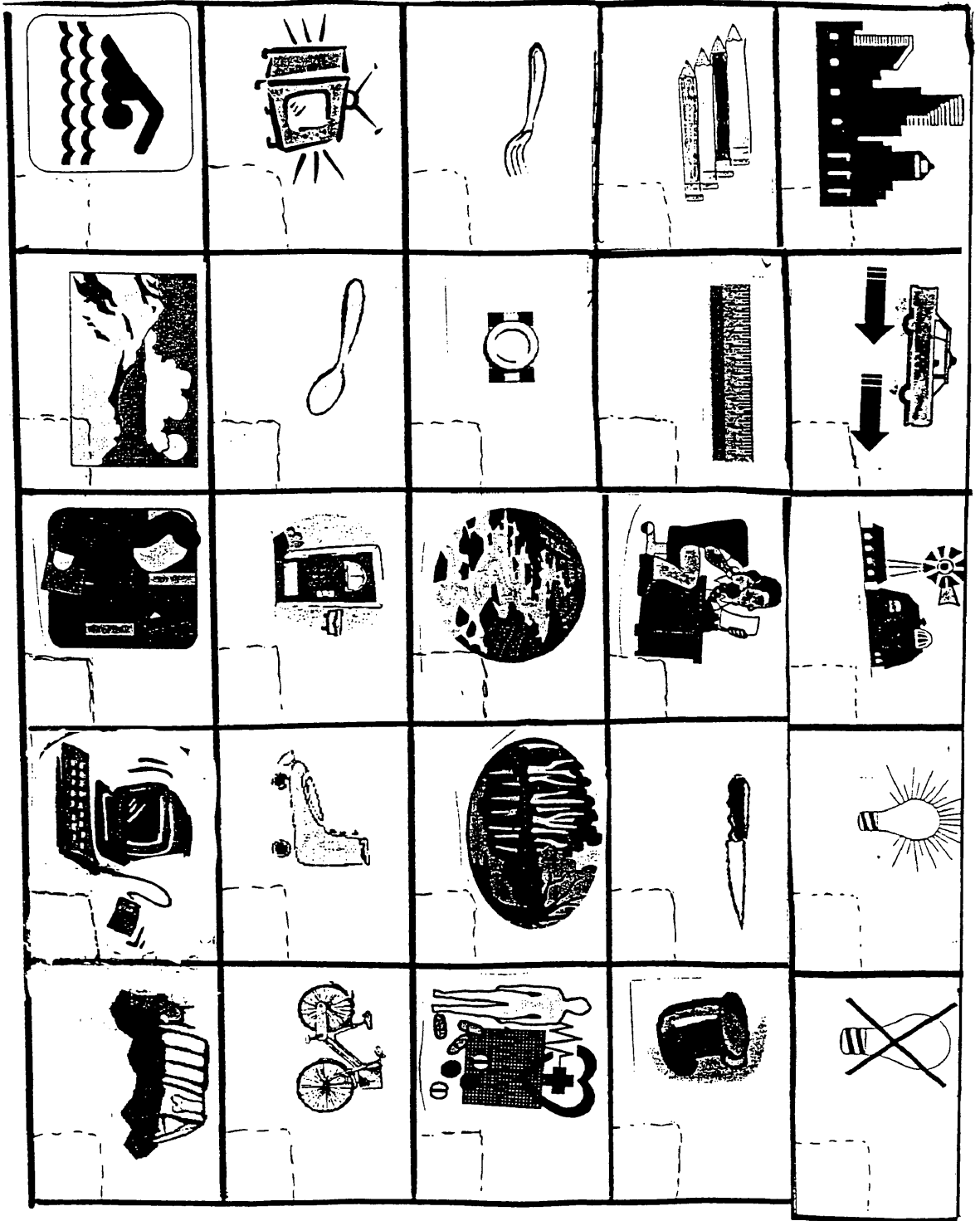
Using the page of 25 pictures (Appendixes D-G)

1. el lago---The lake
2. la ciudad--- The city
3. el plato---the plate
4. Enciendan las luces.--- Turn on the lights.
5. lapices de colores---colored pencils
6. el patio de recreo---the recess playground
7. nadar---to swim
8. andar en bicicleta---ride a bike
9. la cuchara-the spoon
10. la oficina-the office



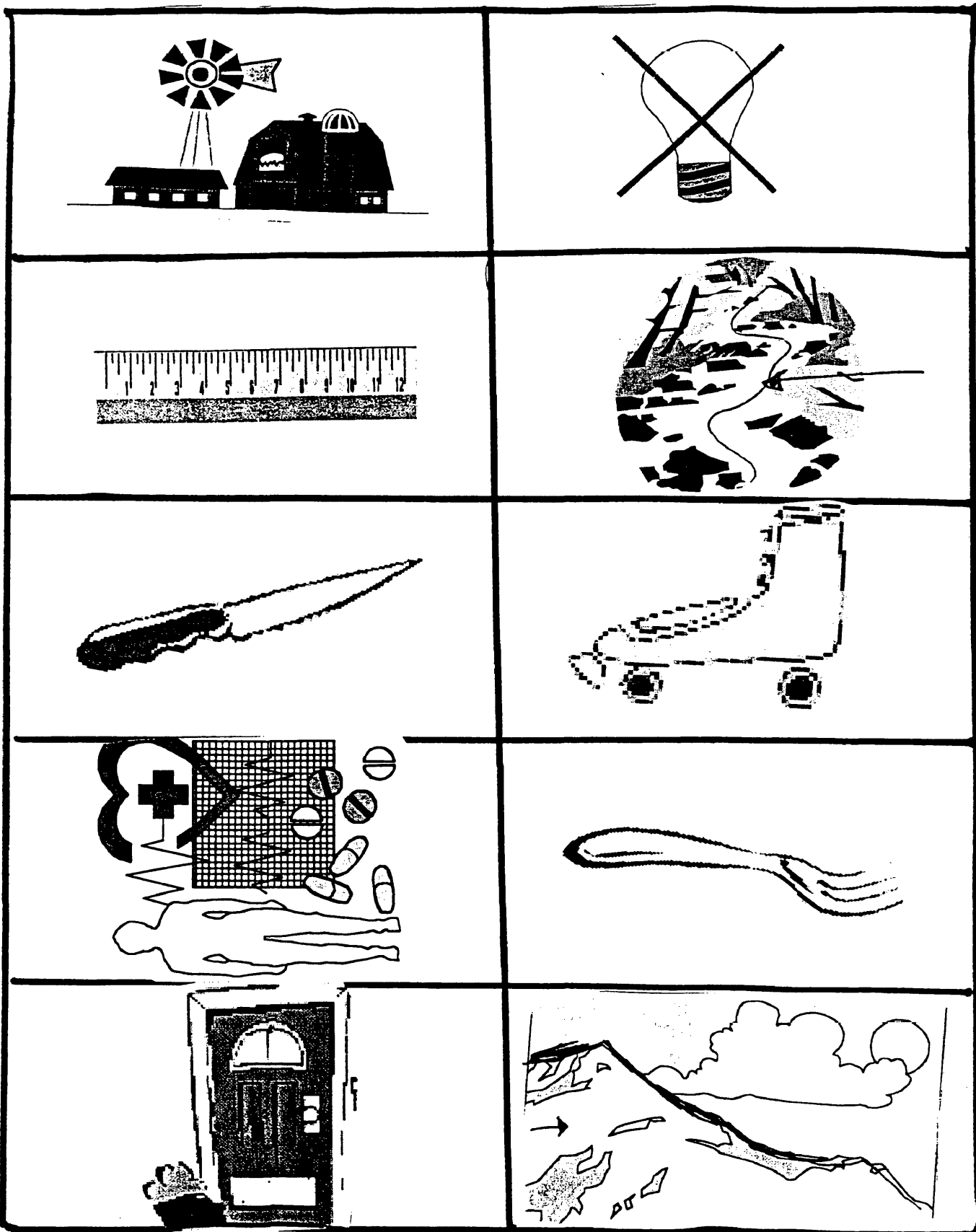
Sample Page for Receptive test

Appendix C- Sample Receptive test picture page



Appendix D- Receptive test picture page

Appendix E- Expressive test picture page



Appendix F

Explanation for the Expressive part of the Curriculum Based Measurement and four different lists.

- The expressive vocabulary was measured by having the students identify orally in Spanish items one at a time from ten picture cards. (Appendix H) Students were tested individually.
- The ten vocabulary pictures used as a stimulus are a subset of twenty-five items used in the receptive part. There were four random order sequences of the stimulus items to avoid contamination. (Lists A-D below)
- Lists were used in order as each child was tested individually. For example; List A was used for the 1st, 5th, 9th, 13th, 17th, and 21st students. List B was used for the 2nd, 6th, 10th, 14th, 18th, and 22nd students. List C was used for the 3rd, 7th, 11th, 15th, and 19th students. List D was used for the 4th, 8th, 12th, 16th, and 20th students.
- To begin the expressive test, students listened to the prompt by the test administrator. The prompt was, "Que es?" in Spanish, which in English means "What is this?"
- Students then orally identified the vocabulary word that corresponded to the picture. The oral responses of each student were recorded using a cassette player.
- The oral responses on the cassette were later rated based on the rubric guidelines that identified each student's performance in the categories of proficient, developing and beginning, and unknown. (Appendix J)
- Two different raters rated these responses after all of the testing was completed.
- Only the verbal vocabulary production was being assessed, although students from Class A did attempt to use the sign in the response, their signing ability was not being assessed.
- This test took approximately ten minutes. The first list was translated into English to help those people that are reviewing this test.

Lists for the Expressive Test

List A

1. (el) rio-- river
2. (el) campo- the country
3. (la) puerta- door
4. Apaguen las luces-turn off the lights
5. la regla- ruler

6. (la) montana- the mountain
7. (el) cuchillo- the knife
8. (el) tenedor—the fork
9. (la) oficina de enfermera.- Nurse's office
10. Patinar -to skate

List B

1. Patinar
2. (el) tenedor
3. (la) montana
4. (el) rio
5. (la) puerta

6. Apaguen las luces
7. (el) campo
8. (la) oficina de enfermera.
9. (el) cuchillo
10. la regla

List C

1. (la) puerta
2. (la) oficina de enfermera
3. Apaguen las luces
4. Patinar
5. (el) cuchillo

6. (el) tenedor
7. la regla
8. (el) campo
9. (el) rio
10. (la) montana

List D

1. la regla
2. (el) rio
3. (el) tenedor
4. (el) cuchillo
5. (la) oficina de enfermera

6. (el) campo
7. Patinar
8. (la) puerta
9. (la) montana
10. Apaguen las luces

Appendix G

Rubric for the Expressive part of the test

| Score | Unknown= 0 points | Beginning = 1 point | Developing = 2 points | Proficient= 3 points |
|----------------------------------|--|---|---|--|
| Pronunciation of oral vocabulary | Word is unknown and no attempt is made to pronounce the word. No part of the phrase is attempted. | Word is unintelligible. Student tried to say something, but was not understood. The phrase is incorrect and no part is understood. | Word is known, but errors occur in pronunciation. Word is understandable, with mistakes. The phrase is partially correct and understandable. | Word is known. Pronunciation is correct, accurate and understandable. The phrase is complete and correct. |

Appendix H- Parents consent letter



University of
Nebraska at
Omaha

Teacher Education
College of Education
Omaha, Nebraska 68182-0163
(402) 554-3666

IRB #515-01-EX

December 20, 2001

Dear Parent or Guardian,

Your son or daughter is a member of a third grade class that has been selected to participate in a research study. This study is being done in conjunction with a master's degree program from the Department of Teacher Education at the University of Nebraska at Omaha. I am the principal investigator in the study and will work with Dr. Tixier y Vigil, professor in the Department of Teacher Education at UNO. The study has the approval of the Griswold school district elementary principal, Betty Johnston.

The study concerns the use and influence of sign language by Mrs. McQueen during the instruction of Spanish. This study will not require any changes in the current Spanish curriculum. Only the method of presentation by the Spanish teacher Mrs. McQueen will differ. Students in two third grade Spanish classrooms will be tested at a convenient time during the school day in order to assess Spanish language growth. All tests and data collected will be anonymous and confidential. An analysis of the data collected will be available upon completion of all research.

You are invited to permit your child to participate. This study will take place during their regular Spanish class for nine weeks. The receptive part of the test will be done as a class and will take about ten minutes. The individual part that tests their expressive vocabulary will take approximately ten minutes of your child's time. You are free to decide not to enroll your child, or to withdraw your child at any time without any consequences to their Spanish classes. The test results will remain confidential and will in no way impact your child's grade.

DOCUMENTATION OF INFORMED CONSENT:

YOU ARE VOLUNTARILY MAKING A DECISION WHETHER OR NOT TO ALLOW YOUR CHILD TO PARTICIPATE IN THIS RESEARCH STUDY. YOUR SIGNATURE CERTIFIES THAT YOU HAVE DECIDED TO ALLOW YOUR CHILD TO PARTICIPATE HAVING READ AND UNDERSTOOD THE INFORMATION PRESENTED. YOU WILL BE GIVEN A COPY OF THE CONSENT FORM TO KEEP.

SIGNATURE OF PARENT

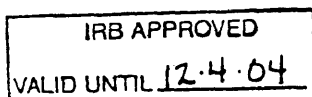
DATE

If you have any questions, please contact me at (402) 597-4832 or jjahde@esu3.org

Sincerely,

A handwritten signature in black ink that reads "Julie Jahde".

Julie Jahde
Elementary Spanish Coordinator
IN-VISION Project in Omaha, NE



Appendix I- Student assent form



University of
Nebraska at
Omaha

Teacher Education
College of Education
Omaha, Nebraska 68182-0163
(402) 554-3666

IRB #515-01-EX

December 20, 2001

Dear student,

I am working on a research project to find out if using sign language helps you to remember Spanish words. You will be working on these Spanish words for nine weeks. You may or may not use sign language when Mrs. McQueen is teaching you these Spanish words.

In March you will take a test for about ten minutes during class. This receptive test will be matching pictures with Spanish words. After that, you will spend about ten minutes telling me some Spanish words for the expressive part of the test. You do not have to participate in the tests. These tests will not be a part of your grade and will not affect your Spanish class. Your teachers will not even know your individual scores on these two tests.

**DOCUMENTATION OF INFORMED CONSENT:
YOU ARE VOLUNTARILY DECIDING TO PARTICIPATE IN THIS
RESEARCH STUDY. YOUR SIGNATURE CERTIFIES THAT YOU HAVE
READ AND UNDERSTOOD THIS INFORMATION. YOU WILL BE GIVEN A
COPY OF THIS FORM TO KEEP.**

SIGNATURE OF STUDENT

DATE

If you have any questions, please contact me at (402) 597-4832 or
jjahde@esu3.org

Sincerely,

A handwritten signature in cursive script that reads "Julie Jahde".

Julie Jahde
Elementary Spanish Coordinator
IN-VISION Project in Omaha, NE

