The effects of songs in the foreign language classroom on text recall and involuntary mental rehearsal

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THE EFFECTS OF SONGS IN THE FOREIGN LANGUAGE CLASSROOM ON TEXT RECALL AND INVOLUNTARY MENTAL REHEARSAL

A Dissertation

Submitted to the Graduate Faculty of the Louisiana State University and Agricultural and Mechanical College in partial fulfillment of the requirements for the degree of Doctor of Philosophy

in

The Department of Curriculum and Instruction

by

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B.A., Louisiana State University, 1982
M.A., Louisiana State University, 1990
December 2002
DEDICATION

This is dedicated to my angels-my three children.

They are kind, wonderful people, who are a daily blessing to me.

I am very proud of them and I thank God for their love and support.
ACKNOWLEDGMENTS

Thanks to my Lord for giving me strength and for directing me to the guidance I needed.

I would like to express my appreciation to my family whose love and encouragement have made my efforts worthwhile. Loving thanks go to Rebeca, Samuel, and Sharon for believing in me and for their assistance in completing this task. I thank Rebeca for helping with research, Samuel for the initial recordings used in conducting the pilot studies, and Sharon for her indispensable help on the domestic front. Thanks go to my husband Carlos for time spent retrieving articles and making copies. I also thank my parents, Claude Smith and Doris Diné, for their encouragement and support. I hope my efforts make them all proud and reward their faith in me.

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ABSTRACT

This study investigated the effect of music on text recall and involuntary mental rehearsal (din) with students from four college-level Beginning Spanish classes. Two groups heard texts as songs, one group heard the same texts as speech, and one group was the control group. For the text recall variable, a cloze test was administered at the end of each song treatment to determine total words recalled. Students from one of the music groups heard the melody of the song while testing. For the din variable, students were asked to report on the amount of this phenomenon experienced.

Data was collected to answer the following questions: (1) Is there a significant increase in text recall when that text is learned through the use of songs?, (2) Is there a significant difference in delayed text recall for students who learned the text with song, as compared to those who learned the text with spoken recordings?, (3) Is there a significant difference in the recall results when one group of students from the song groups hears the melody of the song during the recall test?, and (4) Is there a significant difference in the occurrence of involuntary mental rehearsal after listening to song rather than text?

Immediate recall of text showed higher scores for the music class in all three songs. This difference reached significance in Songs 1 and 3. Delayed text recall showed no significant difference between the classes.

There was no advantage observed for the group that heard the background melody during testing.
Overall results for the din occurrence showed a significant difference between the classes. Students in the classes that heard music reported a higher occurrence of this phenomenon than did those who heard only spoken text. Students of the melody group reported a significantly higher frequency than did students from the text group.

These findings suggest that the use of songs in the foreign language classroom may aid memory of text. The results evidenced that the occurrence of the din is increased with music, and therefore may be a more efficient way to stimulate language acquisition.
CHAPTER 1
INTRODUCTION

The familiar adage, that music soothes the savage soul, comes from the interpretation of the Biblical verses Psalm 33: 2,3 (King James Version) in which music was used for mood-altering purposes. In another case, it was necessary for David to play music on the harp so that Saul “was refreshed, and was well, and the evil spirit departed from him” (I Samuel 16:23). Practical uses of music are still being told, such as the singer Mel Tillis who loses his stutter while singing and a boy who loses his stutter while reading with music (Martin, 1983). Some researcher’s opinions as well as a personal interest and interviews with professors will be covered in this chapter.

Historical Overview

Music is a universal in human culture. All cultures on this planet have music. Language and communication are also universal. Before the written word, stories of war and odes of praise were passed along from tribe to tribe by songs. According to Larrick (1991), wandering minstrels brought literature to the crowds of people in the village square. The messenger first sang the content of the message, so he would not forget any of it. “Those who came to listen were soon singing or chanting repeated lines and sometimes adding new stanzas on the old pattern.” (p. 3).

According to Wilcox (1996), work songs were the answer to group efforts: “Work songs comprise a vast literature of music as each country has songs that have been handed down by generations to add rhythm and pacing to group work
efforts. Some of these are rowing songs, marching songs, and harvest songs" (p. 9). In each case, the song historically made the work easier. It may also make language learning easier.

Livingstone (1973) provided anthropological evidence that homo sapiens sang (non-linguistic vocalizations) before speaking. Infants’ crib language resembles singing more than speech, and adults naturally adjust to infants and small children with musical motherese features. Jusczyk (1986) believes that babies have a sensitivity to speech that begins even before birth. Mothers generally “use simple grammar, affectionate terms and a higher voice with their children, and this ‘baby talk,’ rather than hindering a child’s language development, as has been proposed, actually facilitates it.” (p. 86). Jesperson (1925, as cited in Murphey, 1990) and Rousseau (1968) have both postulated that song preceded speech.

Howle (1989) said that lullabies are more than simple nursery songs, serving to set musical patterns to words the child hears but does not yet comprehend. This language-music structure provides an early formation of listening skills and language facility through cradle songs and nursery rhymes. The rhythm made the words memorable, as the child learned the prosody of his language. She believes this early memory bonding forms the basis of literary repertoire and future creativity. She admonishes both mothers and fathers to “seize every opportunity to sing and read to their children” (p. 22).

Richman (1993) noted that many researchers categorize human vocalization into two opposed systems, expressive sounds (e.g., sighing, crying,
laughing) and speech. Richman believes that a third type of vocalization lies between these two systems -- singing. Singing is more expressive of emotions than speech. He further held that the social functions of singing provide something that speaking does not. Group singing gives a strong, direct feeling of social cohesion and solidarity. He proposed that singing served as an evolutionary transitional state between primate-like vocalizations and speech.

Merkur, (2000) from the Institute of Biomusicology, believes that the musical ability and musical behavior of homo sapiens originally evolved as an advantageous reproductive strategy in the ancestors of humans and chimpanzees. He suggests that:

Music is an evolutionary spin-off from patterns of sexual selection. In particular, males who “made music” together may have attracted females, who chose music-makers as mates. Thus, we may have music because males that were musical were more likely to reproduce than males that were not. In short, we have music because to be human is to be musical. (p. 5)

Music is an essential part of human nature. In the words of Briscoe Darling, a mountain musician from the Andy Griffith Show, “you got time to breathe, you got time for music.”

**Personal Interest**

I have witnessed singers who sing an entire song in Spanish with only two non-native sounds made, yet if asked to read, or if heard in conversation, their first language accent is noticeably strong.

I believe that much of my own second language acquisition occurred with music, since I often recall specific phrases learned in song. While listening to
songs in Spanish, I focused not only on the comprehension of the content, but also upon phonemes and cultural expressions. The songs also reinforced the grammatical structures being taught in class. In times of frustration, the phrase “canta y no llorés” (sing and don't cry) from the Mexican folksong “Cielito Lindo” often was repeated mentally as a coping mechanism.

While living in Mexico, I realized that phrases from songs were being repeated over and over in the mind. Dreams were also an opportunity for the mind to practice messages and language that had been heard during the day. Why would certain songs “stick” in the mind of a person with little or no musical training? It could indeed be the mind’s way of coping with new material, repeating it in a pleasant way until it is remembered and available for later use. I enjoy music, and the desire to hear language through music may have increased proficiency as well as phonetic ability. Native speakers often asked how I was able to learn the Spanish language as an adult and have no detectable foreign accent. Scovel (1969) claimed that such a situation was impossible and that “no language can be learned as an adult without a foreign accent” (p. 249). Could this be attributed to nature, as he suggests, or to nurture, to a song-rich environment?

**Interviews**

Interviews were conducted to determine the interest in and use of music by three professors at Louisiana State University. Views about the use of music varied more than expected. The foreign language teacher uses music often to reinforce the grammatical structure and cultural knowledge being imparted, the
anthropologist uses music regularly to represent a slice of culture, and the second language acquisition specialist does not use music at all but feels it should be used to study the theme of the song.

B. Dupuy (personal communication, April 3, 1997), who teaches French and Language Teaching Methodology, does not use music in the classroom. The principal reason is the lack of resources and the time to put it together. She also feels that music has traditionally been considered superficial. She said, “music has to have proven itself and that there are some very famous songs known for the quality of their text. They are almost poems by themselves. In that case, then they are text-driven first.”

Dupuy seldom has the grammar in mind when she picks materials and stresses that one shouldn't select a song simply because it has good grammatical points. “We should look for the topic. Look at the story or the emotion. If it doesn't affect [the listener] emotionally it’s not going to stick. In that sense it is pedagogical, critical thinking.” Dupuy believes educators should commit to increasing resources. The ideal language lab should be more like a public library. It would have computers, CDs, and cubicles where students could sit and listen to music and videos.

L. Harrison (personal communication, April 14, 1997), a teacher of Spanish, Italian, and Latin, and a Beginning Language Coordinator for the Spanish Department, uses music regularly. She says she would use music just to teach culture, but that you have to mix culture and grammar. She uses songs to practice intonation and language structures, such as songs replete with the
future tense if the class were covering that feature. Harrison was more enthusiastic about discussing the cultural benefits of song. The song may be used culturally to tell a story and to point out aspects of the target culture. In addition, songs mirror the normal daily activities of the society. Harrison added that it helps when music is a strong part of one’s own culture. She is from Italy, and stated that she had grown up with music and great composers. “Everybody knows opera,” she added. She also mentions that other simpler forms of music, such as jingles, tend to stick better with the listener.

Unlike foreign languages, there is no resistance to music in the field of anthropology. As a matter of fact, M. Richardson, (personal communication, April 17, 1997) author and professor of anthropology, states “There’s a big anthropology segment devoted to cultures and music. Music has a legitimate place!” Richardson uses music frequently; in fact, he recalled, “Four or five years ago, I made myself a vow that I was going to start every class with music.” He uses music even more extensively in the teaching of a course called “Religion as Performance.” Music constitutes a performance act that gives reality to ideas.

Richardson stated that in teaching Latin American culture, music is very much a fundamental part of learning about the culture. He mentioned that as an additional pedagogical benefit, it breaks up the routine. “I love hearing it, anyway,” he added.

The three professors interviewed volunteered no information on testing students as a necessary outcome of using music. When asked how they assessed students after using this teaching practice, Dupuy said she would
discuss the theme of the song. On the other hand, Harrison uses a modified cloze exercise, leaving out the verb or relevant vocabulary, while Richardson asks short essay questions about the culture, such as “Describe Mariachi music.”

**Statement of the Problem**

Until recently, research on the use of music and song as a pedagogical tool in the foreign language classroom has been rare. As Falioni (1993) states, music’s use in the foreign language classroom has long been valued, but “all too often, music in the classroom has been relegated to recreation and entertainment status” (p. 98). She goes on to state that a survey of the last two decades of journals for foreign language teachers shows only a few articles on the subject compared to multitudinous articles on other methodological ideas. I also perused the major foreign language journals for the last 50 years for articles on the subject. Except for anecdotal articles advocating the incorporation of songs to increase students’ involvement, there was little published until the late 50s and 60s, when the popularity of audio-lingual methodology became evident. Little has changed since 1972 when Coe stated that in the area of songs there have been no controlled experiments. That is to say, no one has actually tried to measure how effective songs actually are in foreign language teaching.

The intention to use songs in the classroom has often been met with ridicule and a cautionary statement that although students were enjoying class, they were not learning. Advice from other faculty was given to this researcher that music must be used rarely and with care since it serves as enjoyment only-to enrich the class-but should not rob too much time from necessary lessons. As
Dupuy (personal communication, April 3, 1997), remarked “Music is considered the ‘fluff’ of the foreign language curriculum.” This attitude prevailed, due in part to the lack of empirical research using song in foreign language teaching.

The goal then, is to conduct more empirical studies measuring specific benefits of music and language learning that may affect the prevailing attitude in the foreign language community. Medina (1980) provides the following advice: “If music is a viable vehicle for second language acquisition to the same extent as other non-musical means, then songs can no longer be regarded as recreational devices, having little instructional value” (p. 18).

**Purpose Statement**

The purpose of this research is to show the value of music as a teaching tool and to provide further insight into the topic by adding to the research knowledge. This research studied the effect of song on text recall, and the occurrence of the din in the foreign language classroom. Although students may possess varying degrees of musical training, as would any group of people gathered by chance, it is presumed that the Spanish classroom group has an average degree of musical ability. Research reviewed on the impact of song prompted the following research questions.

**Research Questions**

1. Is there a significant increase in text recall when that text is learned through the use of songs?

2. Is there a significant difference in delayed text recall of students who learned the text with song, compared to those who learned the text with spoken recordings?
3. Is there a significant difference in the recall results when one student song group hears the melody of the song during the recall test?

4. Is there a significant difference in the occurrence of involuntary mental rehearsal (din), after listening to song rather than text?

**Significance of the Study**

The goal of this research is to show that students would benefit from the addition of music without changing the basic type of material covered. Results from the pilot study responses show that students report greater enjoyment of class time with the addition of music to the curriculum (Appendix A). The significance of the present study would be to expand on the research regarding the melody-text integration in relation to memory. This study also compared the occurrence of involuntary mental rehearsal, which may stimulate the language acquisition process by internal repetition of words and phrases.

The thrust of the proposed study on the foreign language teaching field would change the input focus from spoken or read texts to a musically based focus. This method would provide students the opportunity to practice second language production through entertaining and culturally rich songs. The introduction of songs in the classroom may aid in the retention of texts, while producing a mental repetition that may stimulate language acquisition.

According to Claerr and Gargan (1984), incorporation of a musical methodology can be seamless. “With some imagination, songs can be used to teach all aspects of foreign languages” (p. 31). These sentiments were echoed
by Falioni (1993), who stated that “practically all grammar points can be found in music texts, and the texts also offer a wide variety of vocabulary, all of which can be utilized to practice the four communication skills” (p. 98). Second language teachers (Jolly, 1975; Techmeier, 1969; Urbanic & Vizmuller, 1981), following observations in the classroom, conclude that songs help to develop better second language skills.

The pedagogical potential of music in foreign languages is enormous and has only begun to be realized. As more experimentation takes place and better materials become available, music in all its forms—from opera to popular ballad—would probably become an integral part of any sophisticated foreign language instruction program (Leith, 1979).

The present study indicates that the use of music could have strong implications in the university classroom, and the results could persuade administrators of the value of using songs in the foreign language classroom and laboratories. The addition of music in lesson planning on a regular basis could have a long-term influence on language students’ performance.

**Summary**

Beginning with early Biblical writings to contemporary opinion, this chapter has mentioned some of the roles music plays in our society and in our classrooms. Many clues to language and communicative meaning do not come in written form. Music can often provide a context to better understand the language. Pitches and melodies, rhymes, beats and phrases can function as
musical context. Music can be a way of activating meaning and improving comprehensibility, similar to a visual aid.

Studies indicate that music in education should be used for more than tension-release, or leisure-time entertainment, roles often assigned to music in the school curriculum. The next chapter will give a general outline of the empirical studies done on the effects of music, then expand upon how music may be especially advantageous in the foreign language classroom.

**Definition of Terms**

**Acquisition** - Subconscious process for developing ability in language via the language “mental organ” (Chomsky, 1975, as cited in Krashen, 1985). Requires comprehensible input.

**Affective filter** - A mental block, caused by affective factors (high anxiety, low self-esteem, low motivation), that prevents input from reaching the language acquisition device.

**Auditory discrimination** - The ability to distinguish between sounds.

**Authentic** - Materials or language use that occurs naturally in a culture. It is produced by and for native speakers (not language learners).

**Cerebral dominance** - The predominant importance of one side of the brain for a class of learned behavior.

**Comprehensible input** - Messages the acquirer is able to understand - the essential ingredient in language acquisition, according to current theory.
**Cloze test** - A test with every \textit{n}th word (typically every seventh) deleted and replaced by a blank to test overall linguistic competence. A specific cloze may target specific syntax such as direct objects, nouns, etc.

**Din** - The involuntary rehearsal or repetition in the mind of words or songs that have been heard in a foreign language.

\textit{i} - The acquirer's current competence, the last rule that has been acquired along the natural order of language acquisition.

\textit{i + 1} - The next rule the acquirer is “due to” acquire or is eligible to acquire along the natural order.

**Involuntary mental rehearsal** - The involuntary rehearsal or repetition in the mind of words or songs being learned or that have been heard.

**Immersion** - a form of bilingual education designed for major language students (typically elementary) where at least 50% of each day’s instruction of the school curriculum is taught in a second language.

**Language Acquisition Device** - (LAD) A mental device that aids in the assimilation of new input when acquiring new language. Krashen (1983) believes this device is stimulated under the appropriate conditions. These stipulations are: (1) listener must receive comprehensible aural input (not after grammar exercises), (2) input must contain significant quantities of the acquirer's \textit{i + 1}, and (3) listener must have a low affective filter.

**Language Disorder** - Verbal output that is linguistically incorrect.

**Motherese** - Special vocabulary, higher pitch, and exaggerated speech that adults (usually mothers) use to speak to infants.
Musical din - the term used in this research to refer to the din that occurs after exposure to a foreign language if that din is triggered from song input.

Natural Order Hypothesis - We acquire (not learn) the rules of language in a predictable order; there is a statistically significant average order.

Oral grammar - The ability to orally choose the proper suffix or prefix of a word, to place words in the proper order, or to correctly structure a sentence.

Phoneme - the smallest unit of sound that makes a difference in meaning.

Phonology - the study of sounds and distinct phonemes of a particular language system.

Pronunciation - A language student’s ability to pronounce sounds and phonemes, properly use intonation, inflection, etc.

Song Stuck In My Head Phenomenon - The involuntary mental rehearsal when the input of material is from song.
CHAPTER 2

REVIEW OF THE LITERATURE

The research presented in this chapter is divided into six sections. The first section furnishes some general information on music methodologies that incorporate music and/or utilize songs as a major learning component in the foreign language curriculum. The second section reviews the physiological responses to music. The third section covers the research done with music in subjects other than foreign languages. Included in this section are studies done on the various stages from pre-birth to older children. The fourth section outlines some of the research on music and the brain. Included here is a section on music as a memory aid. Section five discusses involuntary mental repetition, the din, and language acquisition theory as it is directly related to music. The sixth and final section outlines the benefits of using songs as they effect the various aspects of second language acquisition.

Music Methodologies

There are numerous indications that people believe in music as seen by the increase in methodologies that now use songs to teach a foreign language. This first segment is devoted to an overview of methods that incorporate songs as a pedagogical tool for language learning. These methods are often not based on any particular research, however they are presented here to inform the reader that many believe in the pedagogical benefits of music without citing research. Many of these programs were typically designed to teach children through song, but more recently programs have been geared with the older learner in mind.
Methods that will be discussed, including Suggestopedia, and the Contemporary Music Approach.

**Suggestopedia**

An unusual foreign language methodology for the classroom was introduced in 1978 by the Bulgarian psychotherapist and physician Georgi Lozanov. His method, called *Suggestopedie* (Suggestopedia), has been the subject of numerous research articles written on the use of music in the foreign language classroom. Although the basis is psychological, this method uses classical music (believed to be an essential element for learning to take place) to relax the student. Lozanov (1978) emphasized the importance of whole-brain stimulation for optimal acquisition to take place and suggests that the relaxation techniques help learners tap into subconscious resources to aid in acquisition and greater retention of vocabulary and language structures. According to Botha and Puhl (1988), “Lozanov stumbled upon using the power of suggestion in a waking state as a way of teaching that fits well with the processes of the human brain” (p. 3).

This optimal condition for acquisition was in tune with later second language acquisition theories by Stephen Krashen (1985), who believes that Lozanov’s method creates a type of superlearning identical to subconscious acquisition, that was the result of providing comprehensible input in a low-anxiety situation. Krashen agreed with these relaxation efforts, since one of his basic principles for language acquisition states that the language student must have a low level of anxiety in order for the message to be acquired naturally.
Suggestopedia is described as a holistic method that directed learning to both the left and right hemispheres of the brain. Soft lighting, baroque music, cheerful room decorations, comfortable seating, and dramatic techniques aim at totally relaxing students, a state which heightens mental activity and concentration. Evidence of this mental activity was seen in the technology used by Morrissey (1996) in brainwave biotek-sm which furnishes graphic data for all four of the brainwave frequency ranges (delta, theta, alpha, and beta), and the corresponding amplitudes for each.

Employing brainwave biotek in the classroom has identified a low, suppressed beta state as optimal for learning which can in fact accompany prolonged concentration. If accelerated learning results are demonstrated to coincide with the regular and consistent inducement of this prolonged state of concentration, then Lozanov’s research would be confirmed, and a beta suppressed brainwave state would be identified as optimal or ultimate for learning during input of new material. (p. 489)

Music was an important means used to achieve the relaxation and harmony needed to increase learning effectiveness. The music was carefully chosen and prescribed to induce a mental state in which material was more easily absorbed and retained. It was said to produce an alpha state in which the mind was relaxed and meditative but remained receptive (Williams, 1983). Nevertheless, all of the results could not be attributed to the use of music, since music was only one aspect of the method; however, experiments indicated that suggestology was extremely effective. The method’s application in the United States was reported to reduce language learning time by one-third or more. In remedial reading experiments in Atlanta, 75 to 80% of the students gained a year
or more on the Spache oral and silent reading subtests after only 14 weeks in the program (Bancroft, 1983).

**The Contemporary Music Approach**

In the Contemporary Music Approach (CMA) methodology begun by Anton (1990), song is used as a memory prompter. Anton believes that "music is one of the most effective memory aids available to us, especially for recalling grammatical structures" (p. 1169). The CMA method of teaching various grammatical structures of the language through different styles may accompany any textbook (See http://www.viamc.com/About.htm).

With CMA, different styles of music and rhythms are correlated with the various grammar lessons, because Anton believes that a certain beat reminds students of the song, and the song in turn reminds them of the grammar. He discusses the approach as a way of combining singing and psychology with language learning. The CMA uses a step-by-step approach to combine active and nonverbal processes of the right hemisphere of the brain with verbal and logic-based processes governed by the left hemisphere to reduce inhibitions and allow the student to learn and remember certain grammatical features. “In a survey of students taking the CMA approach, 98% felt it helped them learn Spanish and 92% played the songs for family and friends” (p. 1169).

**Language Learning Textbook Methodologies**

One of the earliest teaching methodologies provided for teachers of German is the “Singlingual Method,” published by Langenscheidt under the title of *Eine kleine Deutschmusik*. This method, consisting of a well-presented book
and a cassette, employs useful phrases from everyday speech set to well-known
tunes.

Another early method called the Audio-Singual Method by Kind (1980)
uses familiar songs to teach the English language. He contends that because the
 tunes are familiar, a satisfying feeling of recognition helps the learner overcome
 any fear and resistance to the unknown or fear that a student learning a second
 language may experience. Kind’s Audio-Singual Method has been developed
 and tested at Harvard University and other American and European schools.
 According to Kind, “It has been found that foreign languages can be taught more
 rapidly, more effectively and with greater recall through the use of song, rather
 than the mechanical classroom drills” (p. 49).

Educators who have noticed a lack of available materials for classroom
 use often create their own program. To address the need of incorporating foreign
 language standards including songs, pedagogical supplementary materials were
 produced for teachers. SAM (Keefe-Singer & Lafayette, 1999) and Colección
 complementos serie didáctica (Dejuán, 1997) offer lesson plans that combine
 some Spanish songs with particular themes for practical classroom activities.

Foreign language publishers have also begun to supply teachers with
 alternate methods for introducing content, which include materials for using
 songs in the classroom. Songs are incorporated into the methods with varying
 degrees of commitment, from a minimal supplemental entry to the complete basis
 of the instruction.
One early commercial effort to introduce songs in teaching beginning Spanish is *Sing, Dance, Laugh, and Eat Tacos!* (McArthur, 1990). This 60-minute CD for children offers traditional Spanish songs about animals, body parts, days of the week, family, and more for language learning presentation. Accompanying lyrics book and suggested activity books are available. Demand for more of these materials have prompted numbers two and three in the series, and more will surely follow. Teachers are accepting of materials such as these that allow for enjoyable and successful second language teaching.

The *Cantando y Aprendiendo* (Singing and Learning) collection for kids teaches Spanish through songs that are fun, and that present basic themes such as animals, days of the week, colors, letters, shapes, and many more. Two cassettes are sold with an accompanying teacher’s manual for each.

*Los Trotamundos* (Globetrotters) is a Spanish course for elementary school children in the form of cartoons and games. One or more songs are added to each unit content, and they are well matched with the unit’s theme. For example, for the topic on health and how you’re feeling, the song “*El burro enfermo*” (the sick donkey) utilizes appropriate vocabulary for sickness and indicates the hurt parts of the body. Students are encouraged to sing and dance with textbook cassettes, and the publishers now offer two Karaoke videotapes for students to view and sing along with the 14 songs.

*Shout!* (Nolasco, 1998), an English as a second language course, has a more traditional approach with the addition of a song every two chapters. The student workbook practices language skills and grammar use. The units cover
various topics similar to other basic language texts (sports, free time, family life, etc.), and a song is provided as part of that topic. For example, for the topic school subjects, the song is “Wonderful World” that mentions several subjects (history, geography, algebra, etc.) in the lyrics. Activities are suggested for practice with the song. In this case, students are asked to write down the school subjects they hear. Fill-in-the-blanks and other word activities are based on the printed lyrics of the song.

Enjoy the Music (Rubíes, 1997) is designed as a short course using songs as the foundation for second language teaching, English in this case. Each chapter is built around the content of a particular song and includes writing exercises, lyrics, worksheets, cultural information about the singing groups, as well as before, during, and after listening activities. Many songs are easily recognized as American pop classics.

Another music-based course, Gente que canta: canciones para estudiantes de español (People who sing: Songs for Spanish students) (Corpas, 1999) also offers before, during, and after listening activities. It consists of a music compact disc and accompanying textbook activities. The music was created specifically for Spanish language students; therefore it is not authentic language material, but it correlates well with topics covered in basic language textbooks. For example, the song about department store sales mentions the articles of clothing, their colors, fabric types, and descriptive adjectives. The music is intentionally slow, repetitive, and well articulated, which could decrease the enjoyment for those students who would prefer current popular music. The
book supplies linguistic aspects, cultural notes, and karaoke group singing activities with each song.

A program using songs specifically to teach grammatical points is *Singing Grammar* (Hancock, 1998). Although based on music, this second language course for learning English dissects each song according to its syntactic structures. Each unit has a song as the basis for the lesson; however, all the songs were unfamiliar to this researcher. Since the songs are not commonly heard in the culture, they do not serve as examples of authentic language use and may not provide catchy popular tunes. There are exercises to practice the grammar in the song, for pronunciation and vocabulary usage, as well as comprehension of the song’s meaning by checking the appropriate drawing. This text did have one unique feature, in that there is a variety of related games provided, one for each unit, which the entire class may play.

Publishers’ catalogues offer more musical material that I have yet to evaluate: *Canciones para cantar* (Songs to sing), *Gramática Rítmica* (Rhythmic Grammar), *Spanish Rap*, and *Teach Grammar with Mariachi Music*.

Online resources offering musical programs to teach foreign language are becoming more and more available. A comprehensive teaching plan called *Musical Spanish* is available online at [http://www.musicalsSPANISH.com](http://www.musicalsSPANISH.com). The program author, who calls herself the “Musical Linguist,” provides lesson plans, pronunciation tools, interactive games, activities, and teacher guides. The CD includes 10 traditional folk songs in a catchy pop style.
Teaching Spanish through 28 songs for students age 10 to adult, ¡Viva La Música! (Long live music!) comes with a lyric booklet that provides English translations and teacher notes. Songs teach specific grammar and vocabulary for beginning and advanced students. Available online at http://elisesumner.com/index_alt.php.

1,2,3, SALSA! includes various musical styles such as Salsa Rap, Hip-Hop, Salsa-Dances, etc., with lyrics of very simple Spanish. From ABC melody in Australia, Cool Songs for Learning Languages offers a CD with a teacher guide for instruction in English, Japanese, French, and Spanish. Instrumental versions of the same songs are provided so that students may sing along once they have learned the song.

A commercial computer-based language tool called Cantare was developed in Canada and offers this description: “Cantare is a software program designed to promote language learning through songs. The program allows teachers to build lessons for language learning around songs on a compact disc. Students can listen to a song from a compact disc, read the lyrics on screen and access a dictionary and notes.”

Before singing was considered acceptable as a classroom methodology, Richards (1975) developed a method called “El español por las canciones” (“Spanish through songs”). The method consisted of a three-step approach for children. First, students learned new words through comprehension exercises, not translation. Once students understood the song’s content and main vocabulary items, they are taught to sing the song. Actions are used with the
song whenever possible. The final step, the written song, is introduced along with some writing exercises or grammatical explanations—but only if the child is already proficient in reading in the first language.

A similar approach is suggested by García-Sáez (1984) who teaches the general meaning of a song on the first day it is introduced. The second day of instruction would cover lyrics and any questions dealing with vocabulary, grammar, and meaning, then the same song would be heard once more. Students sing together on the third day, thus giving a sense of class unity. By the fourth day they have it memorized.

This same approach for the first three days is used by Gatti-Taylor (1980), who follows a gradual and generally effective method for learning approximately one song every two weeks. García-Sáez (1984) writes: “The songs that will be studied in class need to be selected with a definite learning strategy in mind so that they will provide practice in vocabulary, verb forms, pronouns, pronunciation, and the acquisition of idiomatic expressions, as well as active oral participation” (p. 4). He concludes that the greatest benefit from the use of song in language classes is that it creates an atmosphere that helps the student develop a positive attitude toward language learning.

One of the most aggressive language learning with music courses is sponsored by the Concordia Summer Language Camps. Each summer, Concordia offers a music camp, a living and learning experience focused almost entirely on using music as the basis for learning language. Singing permeates the whole atmosphere as campers are taught to play and sing songs. They are
exposed to authentic songs as they naturally would be in the country where the target language is spoken. Staff report that “Songs can be a valuable model for grammatical patterns and kids almost always sing with excellent pronunciation” (p. 6). Program information available online at:

Songs as a language learning tool are only recently being recognized as a methodology to be used in the foreign language classroom on all levels. As research continues to justify the use of music to teach language skills, textbook developers will continue to increase publication of materials that focus on teaching with music. The degree to which it may be emphasized depends on the method. As reviewed, some texts introduced an additional song with suggestions for lesson planning; others created programs which used music for specific purposes, such as grammar or vocabulary instruction; while others employed songs as the basis for the course. In the latter instance, songs are presented as the learning foundation to cover all aspects of second language learning, including culture, pronunciation, vocabulary, and grammar. In the most innovative examples, methods traveled beyond the traditional classroom to home listening, relaxation therapy, or total immersion summer camps that rely on the authentic use of songs from the target culture to teach the language.

To understand why some teachers choose not to use musical instruction, Edwards (1997) conducted a survey to find out whether English as a Second Language (ESL) classroom teachers incorporated music into the classroom, how they applied it, and what discouraged greater use. Not surprisingly, the lack of
money to buy the materials was listed as the greatest reason for why teachers (88%) were not using music to a greater degree in ESL instruction. Lack of training was also listed as a significant problem, although “72% of teachers were very interested in getting training on ways to implement new strategies utilizing music in ESL instruction” (pp. 55-56).

Music has not gained popularity among some faculty according to Nuessel and Cicogna (1991) because there is usually no assessment to follow up the singing. They state that whenever material is introduced into the second language curriculum, this subject matter must be tested to assess its "worth as a valid pedagogical instrumentality" (p. 481).

**Physiological Response to Music**

Music has been shown to have physiological as well as pedagogical benefits. Physiological benefits include lowered anxiety, heart rate, pain, and blood pressure, as well as improved respiratory rate, recovery, and tension relief. Listening to music has been shown to “cause changes in blood pressure, blood flow, posture, respiratory rate, pulse rate and general activity” (Bancroft, 1985, p. 7). The human heartbeat ranges from 70-100 beats per minute; therefore, music that has a tempo of 60 to 80 MM/min tends to aid relaxation as it corresponds to the students’ physiological rhythm. Music from the Baroque and classical eras are suggested by Botha and Puhl (1988) and Lozanov (1978) and for best results in relaxation and concentration, due to meter, tempo, and instrumentation. Botha & Puhl stated,”Using classical music to relax students has defocused brain activity from one small area in order to be receptive to a much
wider range of input. They can now absorb more easily and in greater quantities because they are using abilities of the whole brain, not only cognition” (p. 2).

As early as 1950, Pickrell, Metzger, Wilde, Broadbent, and Edwards found that music helped alleviate tension in operating room personnel. In later studies, two reports (Clark, McCorkle, & Williams, 1981 and Hanser, Larson, & O’Connell, 1983) cite significant stress reduction during music therapy-assisted childbirth. In the Hanser, Larson, and O’Connel, study, seven mothers participated in an experiment to test the effectiveness of music in decreasing responses to pain during labor. The purpose of the music was to cue rhythmic breathing, to assist the women in relaxing by prompting positive associations with the music, and as a diversion from discomfort and extraneous hospital sounds which might signal anxiety.

Results indicated that the presence of background music significantly affected behavioral manifestations of tension in specific areas of the body. Background music also significantly affected verbalizations associated with pain in all subjects, as compared to the same setting with no background music. The behavioral measure supported patients’ verbal reports of music’s effectiveness in assisting relaxation.

In a more recent report, Reilly (2000) compared the physiological recovery of patients after a medical procedure. She found that patients who volunteered to listen to music during surgery used post-operative medication 47% less often than patients who had not listened to music during surgery.
Other studies have found music to be effective in the easing of anxiety such as McGrew (1953), who reported the effects of music on customers waiting in a bank line, and Devereux (1969), who found music effective in reducing the tension and boredom associated with routine work (See also Smith, 1961 and Uhrbrock, 1961). To add to these studies Stanton (1973) studied the use of background music with subjects who listened to classical music during test taking and those who did not. The tendency for the music condition to produce better results overall was apparent, though it did not attain significance. However, analysis of variance indicated that highly anxious students achieved superior results when they were exposed to background music. The tertiary-level students who scored high on the Test Anxiety Scale (TAS) were apparently assisted by the music.

Some researchers believe that music can not only relieve stress, but also influence the immune system. Charnetski and Brennan (1998) tested male and female college students who were exposed to one of four conditions for 30 minutes: (1) tone and clicks; (2) Muzak’s Environmental Music; (3) comparable radio broadcast; and (4) silence. Immunoglobulin A (IgA), whose levels elevate during increased activity of the immune system, was measured before and after the treatments. IgA was significantly increased by the Muzak condition only. The authors believe that music can strengthen immune activity and promote health. One might ask if the subjects are able to somehow stimulate this response by telling themselves to relax. Förser and Strack’s (1998) experiment investigated whether beliefs about music’s influence on learning could actually affect learning
and memory. College students were divided into groups which were either told that music facilitates learning or that it inhibits learning. Then they memorized a word list in the presence of music. Their later memory for these words was worse if they believed that music inhibits learning. Thus, the efficacy of music in learning can be affected by negative beliefs. By the same token, relaxation and physiological response also may be affected by the subjects' beliefs in a positive way, through relaxing music.

Stratton and Zalanowski (1984) also found significant correlations between the degree of relaxation and the liking for the music. Music preference may therefore be an influential factor that should be taken into consideration when providing music to students for relaxation purposes. The human heartbeat’s change in response to music may be due to the listener’s enjoyment of the music rather than the type of music.

**Music Research in Areas Other than Foreign Languages**

**Infant and Pre-infant Studies**

In recent years, the listening capabilities of infants have been explored to determine at what stage of human development musical capabilities appear. Infants as young as five months old were found to be able to discriminate differences in frequency that were much less than the differences between two adjacent notes in the musical scale. Trehub, Bull, and Thorpe (1984) at the University of Toronto, Mississauga in Ontario, Canada, studied the musical capabilities of infants in relation to known capabilities of adults. For example, adults perceive melody not by remembering the exact pitches but rather by
remembering the relationships between notes. We recognize melodies as the same while paying attention to the increases and decreases of pitch and the “contour” of a melody, regardless of whether these musical aspects are played by instruments that differ in pitch or by the same instrument in a different key. Researchers found that importantly infants 8-11 months of age did perceive and remember melodic contour, revealing that infants use the adult-like strategy of listening to global pitch relationships, rather than the detailed notes themselves.

Adults organize sound sequences by grouping them into discrete phrases. Professor Trehub’s laboratory testing discovered that infants also mentally segment sequences of sound into “chunks.” In addition, adults recognize the same melody, independent of how rapidly or slowly the melody is played. When presented the same melodies at different rates, infants did not respond to a change in tempo of the same melody, rather they displayed the same listening strategy as adults. Changes in rhythm from the background music were instantly detected by infants, as it is also easily detected by adults. In addition, infants have surprising adult-like capabilities in perceptions and attendance to musical stimuli. According to Trehub, Bull, & Thorpe (1984), “The Musical Infant” not only exists but in fact represents the normal human infant.

These musical abilities may actually appear before infancy. Perhaps at birth or even as soon as the functional development of the auditory system in utero. Hepper (1991) studied neonates 2-4 days of age who had been exposed to a popular TV theme tune while their mothers were pregnant. When the same tune (watched 360 times during the pregnancy) was presented after birth, the
neonates exhibited a significant decrease in heart rate and change in movements as compared to a control group. Remarkably, fetuses of 29-37 weeks gestational age also showed specific behavioral responses to tunes played earlier in pregnancy. A follow-up experiment used a different piece of music to which the mothers and fetuses had never been exposed. In both experiments, behavioral responses were specific to the tune to which they had been exposed. These results seem to indicate that the learning and remembering of a melody can occur not only before birth but actually before or at the beginning of the third trimester.

A study by Kaminski and Hall (1996) started with the premise that noxious noise levels in the nursery can interfere with neonatal efforts to achieve physiological and behavioral homeostasis. To determine if music could facilitate homeostasis, twenty normal term neonates were monitored for the number of high arousal behavioral states and state changes during a control and an experimental period during which soothing, lyrical music was played. There was a significant decrease in arousal states during music. The results suggest that soothing music may be a feasible intervention to help newborns demonstrate fewer high arousal states.

Other impressive studies reporting postnatal development being superior for babies in a prenatal music group, as compared to a control group, are assessed through the mothers’ judgments; therefore, unconscious bias cannot be absolutely ruled out. Nevertheless, these pre-speech studies seem to indicate that musical features have great importance in language acquisition.
Preschool Studies

Bryant, MacLean, and Bradley (1990) studied 65 preschool children in a longitudinal study. Children were ages 3 and 4 at the beginning of the study and ages 6 and 7 at the conclusion. They were tested on their rhyming abilities as a phonological skill. This repetition of sound patterns with minimal pairs is a vocabulary building technique which incorporates one component of songs in the memory pattern. Alliteration, the repetition of initial sounds, was also investigated. The authors stated there was a strong predictive link between sensitivity to rhyme and alliteration and success in learning to read.

A study of the Kodály method of instruction by singing, which involved the accompaniment of music with rhythmic movements, as well as the verbal or physical representation of songs, was completed by Kalmar (1982). She measured the effect of the instruction by several methods. One group of 3 year olds was assigned to the experimental group, which received twice-weekly special singing lessons over a three year period; the second group, the control group, attended only regular nursery school programs. After a long term study, she reported several positive effects of singing in normal children. There were no differences in drawing ability or overall I. Q. between the two groups, yet the experimental group showed greater improvement than the control group on measures of motor development (particularly coordination), abstract conceptual thinking, play improvisation, originality, and verbal abilities. The findings both document the potential benefits of singing education on cognitive and motor development and also show that measurable developmental benefits need not
involve I. Q. scores. The motor development was likely due to the movement aspects of the program.

Rauscher, Shaw, Levine, Ky, and Wright (1994), researched musical training and the abstract cognitive ability to mentally rotate objects, a means of assessing spatial abilities. One group of preschool children received daily group singing lessons and weekly keyboard instruction, while the matched control group received no special experiences. After four months, the music group was superior to the control group on the test of spatial abilities but not on other tests of intelligence. Improvement was even greater after eight months. These studies indicated that music studied for its own sake has beneficial “side effects” on cognition.

**Primary School Studies on Math and Reading**

A study done with third-grade students was reported by Madsen (1979). A randomly selected class from the public school system was divided; half were shown listening discriminations being taught via televised tapes that could be done by a classroom teacher with no musical training, the other half was the control group. Data were analyzed on the basis of correct academic responses and pre-posttest music gain scores. Results showed that although both groups were receiving regular music instruction from their music teacher, the control group evidenced almost no gain in music listening skills, while the group that received special music lessons on tape evidenced significant improvement in music listening skills.
The other data that was collected was correct responses to math problems. The control group actually had lower math scores toward the end of treatment, while the experimental group showed almost a 20 point gain. These findings replicated previous findings by Dorow (1976) and Madsen, Dorow, Moore, and Womble (1976).

The report of a study in which children who were provided a curriculum which increased music instruction at the expense of language and mathematics was summarized by Overy (1998). Results showed that students in the music instruction group became better at language and reading, yet no worse at mathematics than students who had spent more time on these subjects, without the additional music instruction. The transfer effects between music and other subjects was probably specific, as are many other known transfer effects, because they are based on similarities between the two activities. Learning to listen for changes in pitch in music may promote the ability to sound out new words.

There seems to be a correlation between language and music reading abilities. Some very early studies (Cooley, 1961; Dalton, 1952; Hutton, 1953; Maze, 1967, and Wheeler & Wheeler, 1952) showed varying degrees of correlation, all positive, between language reading ability and music reading ability. Dalton compared the language reading ability scores with the music reading scores of 278 children in grades three through six. Her results, supported in further research, indicated that better music readers were superior to poorer
music readers in reading language. Correlations between the language reading test and the musicality test reached high levels of significance in the Maze study.

Children identified as having learning difficulties participated in a study done by Bygrave (1995) on the development of receptive vocabulary skills through a program of music activities. Four groups of children with reading difficulties, 6 to 9 years of age, participated in two programs for the development of listening skills. The programs, presenting either music or story-telling, were implemented daily by class teachers over a 30-week intervention period. Tests were administered before the program, after two school terms (23 weeks), and again 7 weeks later (postposttests) to investigate the possibility of retention effects. Independent testers used the Peabody Picture Vocabulary Test-Revised (PPVT-R) and did not know from which class the student came.

The music class consisted of singing, musical instrument playing, movement, creativity, and listening activities. The story-telling program was aimed at developing language skills for early reading such as listening, organization, comprehension, and memory skills. Data may have been influenced by the different teaching styles and attributes of the class teachers. Results showed an improvement in the receptive vocabulary skills of the students participating in the music program. This music effect on the PPVT-R was not apparent until the postposttest. This suggests that a longer period of time may be needed for a significant music effect to show. The finding appears consistent with studies by Hurwitz, Wolff, Bortnick, and Kokas (1975), who found that the
development of reading skills in young children involved in a music program tended to accelerate over a prolonged period of time.

In a 1972 study, Nicholson wanted to know if music study could improve reading readiness skills. She tested 50 slow learners who were 6 to 8 years old using a 16-week intervention program. Both the experimental group and the control group were given musical activities. The experimental group, however, added body movements to music, reading music, singing tones, and longer listening times. By the end of week one, there was a dramatic difference between the groups on post-test increases, which continued in all subsequent weeks. Test scores were measured, using the Metropolitan Readiness Test and The Botel Test of Reading Achievement. At the end of the year, the experimental group showed considerable improvement in certain reading readiness skills, such as increased attention span and discrimination for paired groups of letters. She concluded that music had a statistically significant effect on language reading readiness.

Douglas and Willatts (1994) reported on correlations between musical abilities and reading achievement. Seventy-eight boys and girls (Mean age = eight years) were tested on vocabulary, reading, and spelling as well as on some of their musical skills, e.g., ability to detect slight differences among rhythms. The authors found a significant correlation between rhythm performance and both reading and spelling. Because correlations alone do not show a causal relationship, they also ran a small study on the effects of a six month program of music instruction designed to develop discussion skills (e.g., descriptive,
imaginative and comparative). At the end of six months, the music students showed a significant improvement in reading compared to the controls, who did not change. These findings suggest that music instruction can cause an improvement in reading.

According to Turnipseed (1976) “auditory discrimination has been found to be the ‘leading factor’ in reading readiness” (p. 1). She tested auditory acuity in relation to reading readiness by introducing music in the classroom. Children in the experimental group participated in a music listening program, whereas the control group did not. The experimental group scored significantly higher than the control group in reading, mathematics, and language arts tests. They also made greater improvements in auditory discrimination, originality, and flexibility; the students even missed fewer days of school than the control group (p < .01). She concluded that listening to music involved psychophysical processes similar to those used in discrimination of speech sounds.

In Albuquerque, New Mexico public schools, a study of children examined whether students in music programs performed better on CTBS (California Test of Basic Skills) tests than those who did not participate in the programs. Results demonstrated that in all areas of comparison involving CTBS scores, fifth graders who participated in instrumental music classes scored higher than their peers who had no music instruction. The longer pupils were enrolled, the better they achieved. Those students who were involved in music programs for two or more years scored consistently higher than those who participated for one year. In 1979, students with two or more years in band scored 10% higher in reading
than the total group of fifth graders. They scored 12% higher in language than the others (Robitaille & O’Neal, 1981).

The effect of reading accuracy on three methods of shared reading, when paired with music, was examined by Colwell (1994). The study considered 27 kindergartners, participants in a music program that supplemented their entire language curriculum. One class employed a song rehearsal of their textbook which was set to music, while the second class practiced both spoken and song rehearsal. The third class only participated with spoken text rehearsal. Subsequent text readings of the subjects were analyzed for word substitutions and omissions. The first two classes, exposed to music treatment, demonstrated greater reading accuracy than the third, strongly suggesting that song rehearsal facilitated reading accuracy by serving as a structural prompt.

Hurwitz, Wolff, Bortnick, and Kokas (1975) studied whether music training improved reading achievement in primary grade children. The experimental group received Kodàly training, which incorporates folk songs to emphasize melodic and rhythmic elements. The control groups consisted of children who tested for corresponding characteristics of age, I.Q., and socioeconomic status at the inception of the study. The music instruction was intensive, extending for five days a week for 40 minutes a lesson, through seven months. Students were tested on reading ability twice—at the start of the school year, and then again at the end. The music group achieved significantly higher reading scores than did the control group, scoring in the 88th percentile versus the 72nd percentile. After
an additional year of the Kodály training, the experimental group again scored significantly higher than the control group.

Teaching reading to exceptional children through the use of musical television commercials was initiated after noting the tendency of children (8 to 10 years old) to hum or sing the television commercials. While working with a group of disadvantaged learners in Appalachia for 20 to 30 minutes per day per group, teachers noticed that, even though the children demonstrated a deficiency of language, followed by a reluctance to communicate orally, they could freely and joyfully sing many of the musical television jingles. Moreover, verbal fluency and pronunciation were excellent. Hirst and O'Such (1978) reported that students enthusiastically agreed to learn the words of the “television songs.” Teachers worked with one or two of the commercials each day, listening, reading, and singing along to these songs. Students were given a pretest and posttest for the school year that showed an average gain of 12.3 months during the year in reading for the 39 pupils taking part in the program, even though the experiment was conducted only during the last 3 months of the school year. Teachers reported that the children had more confidence in themselves, and exhibited more fluency and ease in reading; as a result, pointing and word by word reading decreased.

Movsesian (1967) attempted to evaluate the transfer of music reading skills to reading vocabulary and reading comprehension of children in grades one through three. He found that the experimental groups who learned how to read music made more gains than the control group that did not receive music
reading lessons. In fact, the students became significantly more efficient in basic reading skills when they were concurrently taught skills in music reading. The majority of the research indicates a positive correlation between language reading and music reading abilities.

According to Frith (1985), there are three stages in how children usually learn to read; (1) visually recognizing words, (2) learning the correspondences between visual parts of words (“graphemes”) and their spoken sounds (“phonemes”), and then (3) achieving visual recognition of words without going through the earlier stages. Children “sound-out” syllables and words while they are learning to read (stage 2) which they discard when they reach stage 3. He says it seems that music facilitates reading by improving the second, phonemic stage. If students have similar 1,2,3 stages in learning to read a foreign language as stated by Music and Cognitive Achievement (2000), the second phase (phonemic) being imperative, music might help not only with increased pitch discrimination, but also with the sound-symbol phonemic correspondence for the language being taught.

A study by Lamb and Gregory (1993) determined the relationship between musical sound discrimination and reading ability in first grade. In addition to some standard reading tests, children were tested on their ability to “sound out” nonsense syllables they viewed on cards (phonic reading) and pitch awareness, in which they heard pairs of musical notes or chords in sequence and reported whether the notes sounded the same or different. They were also tested with notes that had the same or different timbres. Finally, phonemic awareness was
assessed by listening to spoken words and telling whether the words began or
ended with the same sound.

The experimenters then determined the relationships between
performance scores on the various tests. They found a high degree of correlation
between how well children could read in both standard and phonemic materials,
and how well they could discriminate musical pitch. Timbre awareness seemed
unrelated to reading. These findings support the conclusion that good pitch
discrimination benefits learning to read by enhancing the second, phonemic
stage of learning. Therefore, the findings that music training facilitates learning to
read may be understood as being mediated by enhanced pitch discrimination.

Other studies were performed by Mhanty and Hejmadi (1992) who tested
for ability to learn the names of body parts and creativity. Three treatments were
used; a non-training control group, a verbal instruction group, and a verbal
instruction plus acting out-movements groups, and a music and dance group.
The music/dance group was given instructions by song, as well as acting-out
movements. After twenty days of training, all experimental groups exhibited
higher test scores than the control group, but the music/dance group showed the
greatest improvement in learning about body parts and creativity. Thus,
improvement in cognitive abilities can result from a variety of training
experiences, but music is the most effective of these treatments.

Hove-Harding (1989) reports on the relationship between music and
language achievements in early childhood. She chose a random sampling of
third graders from public schools. Parents were given a questionnaire and asked
to report on the musical experience of their children. The group was designated as either high and low in relation to previous musical experience. Students were then given standardized tests in mechanical language, expressive language, reading, and spelling. In three of the four language skill areas tested, the group with high musical experience scored significantly higher than did the group with low musical experience. Mechanical language was the only area where a significant relationship was not found between language skill and musical experience, although the high group did score better. She speculated that this difference exists due to the fact that the skills tested in mechanical language were not expressed orally, but rather were written and visual. Music, on the other hand, utilizes an oral type of learning based on sound discrimination. The major conclusion reached was that a strong relationship existed between early musical experience and three areas of language development in early childhood.

Wolff (1979) compared the effects of general music education on (1) academic achievement in math and reading; (2) perceptual-motor development, (3) creative thinking, and; (4) school attendance with two classes of first graders. The experimental group received 30 classes in general music, once a day for five months. The addition of the general music class to the first graders’ schedule did not affect reading scores, and there was no significant difference in math scores among the high-achieving male group. However, all students from the experimental group, ranked significantly higher in creative thinking. The greatest impact was on perceptual-motor skills. Wolff addressed the lack of difference in reading skills knowledge level by saying “a very basic perception of music is
unlikely to influence what is already a comparatively sophisticated perception of language” (p. 146).

According to McDonald (1975), “one of the curricular areas where music seems particularly useful is in the development of language and reading readiness skills” (p. 872). McDonald summarized a 1965 article in Time magazine, reporting: “a reading program which introduced new vocabulary through the medium of folk songs was credited with significant improvement in the reading skills of disadvantaged children” (p. 873).

According to Tucker, (1981) “Using music as a tool for the teaching of reading not only secures music in the curriculum but may enhance the outcomes of reading instruction. The use of music with older students, even college students, as a tool for enhancing reading ability, is not as well documented, mainly because of the scarcity of research fusing music and reading beyond the primary grades” (p. 16).

Many schools have used the Shurley Method to teach language skills in English class through repetition and the use of all learning styles. Shurley (2002) asserts that “students are able to learn using not only visual but also auditory and kinesthetic learning styles. When students see, hear, and say their answers, retention increases. The first element of this method is the use of jingles. Students begin learning the parts of speech by using definitions in jingle form. These rhythmic definitions are chanted or sung by the class to help them initially remember the role of each part of speech” (p. 2). Schools throughout 19 of Louisiana’s parishes have adopted this method. Although the majority of the
methodologies that advocate learning language with song are primarily based on content themes or culture, a few methods similar to the Shurley method could be adopted by the state to teach Spanish such as Gramática Rítmica, Teach Grammar with Mariachi Music. A collaboration between language teachers and song writers could create a system that practices grammar with jingles.

**Music and the Brain**

**Left and Right Hemispheres**

The use of music as a problem solver to enhance learning is justified by Gardner (1985) who states that “all normal (non brain-damaged) people possess some musical intelligence” (p. 285). Tapping the musical intelligence in the classroom combines the theory of multiple intelligences with actual classroom learning. Foreign language teachers could use the students’ musical intelligence and their musical interests to achieve mastery of language skills. Thus the function of music becomes that of a teaching tool, similar to audiovisual material, realia, or computer software.

The left hemisphere of the brain expresses thoughts in words, while the right hemisphere of the brain controls actions, problem resolution, memory, and emotions. Most learners use the right hemisphere of the brain to process music, and since most instruction relies heavily on left brain approaches, music opens an opportunity to learners who have a strong right brain orientation. As Guglielmino (1986) states, “Songs bridge the [brain’s] hemispheres, strengthening retention through a complementary function as the right hemisphere learns the melody, the left, the words” (p. 20). That connecting bridge
is also mentioned by Claerr and Gargan (1984), who propose music’s benefit as relaxing and motivating, a natural bridge between native and foreign languages, motivating students to increase language practice.

Anton (1990) found that “when a learning activity combines both left and right hemispheres simultaneously engaged in a particular activity, an ideal learning situation is established and the most productive learning occurs” (p. 1170). This ideal learning situation facilitates flexible thinking and helps to explore new ways of expressing ideas. Using nonverbal “right-brain” skills, such as actions, emotions, and music aids improvement of creativity, memory, and the ability to imitate, which is considered one of the most useful strategies in language learning.

One approach to understanding the power of music and song in the classroom may be found in studies involving speech and the brain. Geschwind (1970) states that language disorders resulting from brain damage (lesions), almost always on the left side (96%), are called aphasias. The dominance of the left side of the brain for speech is the most striking example of this phenomenon. “These language disorders can occur without impairment of hearing, vision, or other intellectual abilities” (p. 941). The speech of these patients is not only impaired at the phonemic level, the patient fails to produce correct English sentences-small grammatical words and endings are omitted. These patients show a similar disorder in personally written output, yet comprehend spoken and written language normally. However, in striking contrast to these performances, the patient may retain his musical capabilities. It is a frequent but most dramatic
finding to observe a patient who produces single substantive words with great
effort and poor articulation and yet sings a melody correctly and even elegantly.
As an example, Geschwind and associates followed a patient nine years after
brain damage:

During this period she showed no evidence of language
comprehension in the ordinary sense and never uttered a sentence
of propositional speech. In striking contrast were her language
performances in certain special areas. She would repeat perfectly,
with normal articulation, sentences said to her by the examiner. She
would, however, go beyond mere repetition since she would
complete phrases spoken by the examiner. For example, if he said,
“Roses are red,” she would say, “violets are blue, sugar is sweet,
and so are you.” Even more surprising, it was found that she was
still capable of verbal learning. Songs which did not exist before her
illness were played to her several times. Eventually, when the
record player started she would begin to sing. If the record player
was then turned off she would continue singing the words and
music correctly to the end, despite the lack of a model. This would
seem logical if we accept the notion of “chunking.” The connections
of rhythm and music that were made to the speech area could still
be activated even though “other portions of the brain could not
reach the speech areas. (p. 943)

Creating an ideal situation for optimal learning and flexible thinking may
be a key to making connections between subject matter. Bruner (1960), on
discussing transfer of learning between the disciplines states: “it is indeed a fact
that massive general transfer can be achieved by appropriate learning, even to
the degree that learning properly under optimum conditions leads one to ‘learn
how to learn’” (p. 6).

A connection to this notion was accomplished when Borchgrevink’s (1982)
study concluded that the speech hemisphere portion of the brain controlled
musical rhythm and the act of singing:
For the “normal” righthander the left hemisphere controls speech perception, speech production, prosody (local dialect/stress/intonation), musical rhythm and the act of singing; whereas the right hemisphere controls pitch and tonality in singing (but not in speech!)... As musical rhythm and pitch/tonality are seen to be controlled by different cerebral hemispheres, singing and almost any musical performance implies extensive integration and cooperation between the hemispheres. (154-156)

This indicates that music possesses an invaluable key to incorporate the whole brain in the learning process. This theory may provide principles to design more effective learning experiences. By using a variety of input methods, including music, there may be more opportunities for students to connect to their present knowledge base and add new knowledge. Music not only helps to store bits of information, but it is a means by which the brain releases that same information for use.

**Music as a Memory Aid**

Music is an effective memory aid for the classroom. “Many people often remember rhyme, rhythm or melody better than ordinary speech” (Falioni, 1993, p. 98). “How many remember how a simple rhythm helped recall the spelling of ‘Mississippi’” (Schmidt, 1976, p. 96)?

Several researchers (Chazin & Neuschatz, 1990; Geschwind, 1970; Gfeller, 1983; Isern, 1961; McElhinney & Annett, 1996; Morrongiello & Roes, 1990; Prickett & Moore, 1991; Serafine, Crowder, & Repp, 1984; Serafine, Davidson, Crowder, & Repp, 1986; Tulving & Thomson, 1973; and Wallace, 1994) expound the benefit of music as a memory aid. The studies that were not discussed in the previous section, will be summarized in the section that follows.
Wallace (1994), when comparing recall ability, found that spoken text was the least frequently recalled, followed by rhyming text, and then with melodic text as the easiest to remember. Wallace compared immediate and long-term recall of spoken texts to texts learned with music. Results of the study indicated that recall was significantly greater for the sung condition than for the spoken condition, revealing that “music, when repeated, simple, and easily learned can make a text more easily learned and better recalled than when the same text is learned without any melody” (pp. 1473-1474). The study suggests that simple musical song transforms ordinary text into information that is effectively retained and recalled when needed. In addition, melody provides sequential information, line and syllable length information, chunk linking, and rhythmical information which has the potential for making accurate reconstruction of the text. Even when there was missing unrealled text that, the subjects for the sung condition more clearly indicated what was missing, such as how many lines, words, and even syllables. As Wallace explained, “A repeating, simple melody can provide a recall aid above and beyond what is provided in the text alone or even in the poetic properties of a text such as rhyme” (p. 1481). He inferred that, “music facilitates recall in the initial learning phase as well as in the delayed-recall task; simply, recall of the text is greater when the text is sung than when it is spoken” (p. 1475).

Thus, the overall conclusions from Wallace (1994) about memory processes and structures are that:

The presence of structural characteristics within the material to be remembered, the ease of observing and acquiring those
characteristics, and the contributions of those characteristics in terms of organizing, constraining, or cueing recall will all affect the memorability of material. Music accomplishes all three of these conditions and therefore can facilitate learning and recall of text. (p. 1483)

On a cautionary note, the experiments revealed that when the music was too difficult or the melody remained unlearned, it had the opposite effect on recall. In other words, the pivotal relationship construct between the melody and the text relies on simplistic melody in order to combine and facilitate recall, rather than interfere with the text.

Wallace (1994) states that music’s power in aiding text recall is in the interconnections of the musical characteristics to the text. The music has an inherent capability to accentuate the abstracted characteristics of the text, strongly linking the abstractions to the text string. Some component of the melody will cue or echo the parallel component of the text. “Once encoded together, the richness of information provided in the melody serves as an effective recall cue” (p. 1472). This same text integration effect was confirmed by Serafine, et al. (1984) and Serafine, et al., (1986), who found that “melodies were recognized better when they were paired with their original text than when paired with another text, even if that text was equally familiar” (p. 129).

This melody-text integration is closely related to what researchers Tulving and Thomson (1973) call encoding specificity. They state that when a word occurs in a particular learning context, that context can be a better aid to retrieval than the target word itself. For example, they presented the word “glue” as a potential learning aid, next to the target word “chair”. Later, people were better
able to recall “chair”, given the cue “glue”, than they were able to remember “chair” when it was presented alone for recognition. The context apparently had changed the representation of the target (encoding specificity), just as Serafine, et al. (1986) claim the text and melody change each other when presented together in a song. While the text example above reflects mental changes, melody and text have physical effects on each other.

Morrongiello and Roes (1990) sought to examine whether preschool children remembered a song primarily by the tune, the words, or a combination of these two features. They evaluated whether components were integrated in memory, or stored independently. For this study, adults were used for a comparison involving 40 subjects, 20 children (Mean age = 5.6 years), and 20 adults (Mean age =23.4 years). Subjects learned three new tunes with rhyming text, and then those same three tunes with non-rhyming text. Respondents were then given tests with either:

1. an original song
2. a new song (with words and tune)
3. a mismatch (such as the tune of one song, but with words of another)
4. old words with new tune
5. new words with old tune

Subjects were asked to decide whether the song was; (a) exactly the same; (b) somewhat the same; or (c) not at all the same. Listeners were best able to recognize the text with its original tune, which supports the notion that tune and text are integrated in memory for a song. The magnitude of integration, however,
increased with age. The results revealed some integration of text and tune for both children's and adults’ memory of a song, however, the degree of integration was greater for adults than for children. For adults, tune and text were highly integrated in memory, and the presence of one familiar component facilitated their memory for the other—but not as much for children. It was the words that were particularly salient in children's memory of a song, and consequently, their judgment of song similarity varied directly with the words. Thus, both adult and child listeners are more likely to judge as old, those songs that comprise the exact word-tune pairing originally presented to them.

As previously stated, the “staying” power of a song may be due to the connection formed between the tune and the words as it is put in memory, or the chunking effect. As many researchers agree (Anton, 1990; Blakelee, 1980; Morrongiello & Roes, 1990; Serafine, et al., 1984; Serafine, et al., 1986; Tulving & Thomson, 1973; and Wallace, 1994), the tune and text of a song are to some extent integrated in memory rather than stored independently. According to McElhinney and Annett (1996), “The integration of the temporal aspect of a tune with the text might promote better organization of material and consequently enhance recall” (p. 399).

Evidence of this integrative effect may be a factor for the lack of anticipated results in the Dominguez (1991) study, where the subjects were 51 preschool Spanish-speaking migrant children. Two groups were tested for vocabulary and language use. Both groups were provided vocabulary and language through the use of the basal reader, but the experimental group had this vocabulary set to
familiar children’s songs. Treatment was twice daily during a six-week summer camp program after which the Houghton Mifflin Reading Test was administered as the posttest.

Dominguez (1991) found no significant difference in the mean scores of these groups. One reason for the lack of difference in the scores could be the short time of the study. In addition to the study length, another possible reason could be the fact that the vocabulary was set to songs that were familiar to the children. If the findings of Serafine, et al. (1984), and Serafine, et al. (1986), hold true, there was interference in memory from the words the children had already learned with these familiar tunes. The hypothesis is that the brain learns the music and the text together, therefore the tune of these familiar songs would have actually been an interference to the learning of new vocabulary. Put another way, learning of the new vocabulary during this experiment may have been impeded by interference from the vocabulary that had previously been learned with the tune. In that case, the time that would be needed to learn, or attach new vocabulary, to an already familiar tune would be prolonged.

This researcher’s experience attests to that hypothesis. While attending a church service in Spanish, the English words from hymns learned during childhood are brought to mind when the music begins playing. There is interference from the original learning of the song. By the same token, songs that have been learned for the first time in Spanish often cause the same interference when attending an English-speaking church service. A similar event is often experienced by bilingual speakers when they seem to be unable to remember a
simple word in their first language, so they use a word from the second language within the sentence. The situational context that helps trigger the vocabulary may be stronger in the second language.

A study done by Prickett and Moore (1991) tested ten patients with Alzheimer’s disease who resided in an intermediate care facility. They were assessed for recall of material, both sung and spoken, with which there was lifelong familiarity. They were also assessed in the same fashion when presented new information. Songs and spoken pieces such as “What a Friend We Have in Jesus,” “Amazing Grace,” and Psalm 23 were selected because of their familiarity for lifelong residents of a region often known as “the Bible Belt.” The Disney song “It’s a Small World” was chosen as the unfamiliar song, as no patient appeared to recognize the song.

In each session, the therapist sat with the patient at the keyboard. Another therapist videotaped the patient’s faces, and their voices were augmented with a remote microphone. Patients were invited to sing along as soon as they recognized the song. Patients recalled the words to songs markedly better than they recalled spoken words, including rhymed speech or newly presented information. Across all trials for all participants, performance percentages were relatively similar for reciting long-familiar words (Mean = 47.43), recalling a newly presented song (Mean = 42.19), and reciting a simple new poem (Mean = 39.33), but decidedly more accurate for the words to long-familiar songs (Mean = 71.8). Prickett and Moore (1991) feel that, “This suggests that the musical context noticeably facilitated recall. Even though the poem contained rhyme and rhythm
(as did the song), was a great deal shorter, and dealt with supposedly familiar ideations, in actual practice it appeared to be as challenging to recall as a much longer song” (p. 108).

McElhinney and Annett (1996) attempted to replicate the main findings of Prickett and Moore (1991) but with non-Alzheimer participants. McElhinney and Annett examined the effect of music on recall of verbal material using non-familiar tunes and lyrics. They used non-familiar tunes to reduce any confounding effect in prior association of alternative lyrics since they believed it is “unlikely that the tune and the words of a song are stored independently” (p. 395). The lyrics to be remembered were either sung or read aloud by the teacher. Two conditions, prose and song, were the variables for three trials.

Subjects were 20 volunteers. All were final year students in psychology with a mean age of 21, and an equal number of males and females. Each group listened to their respective tapes three times. After each presentation, they were asked to freely recall and to write as much as they could remember from the tape. Recall was assessed by counting the number of words correctly recalled by each participant without regard to order. For trial 1 there was no significant difference between groups in number of words recalled. Over subsequent trials, the total number of words recalled increased.

Results showed that using song to aid recall was effective. Subjects had better overall recall when song was employed to present information. Matched-pair tests showed that the number of words per unit recalled by the song group was significantly higher than that for the prose group on all three trials. There was
evidence for greater chunking of material in the song condition. No unfamiliar words in this study could have contributed to the desired results.

A study by Chazin and Neuschatz (1990), however, indicates that information does not have to be familiar. They tested the effects of a musical mnemonic on the recall of unfamiliar scientific information among 8-year-olds and young adults. Results showed that for material that was presented either as a song or a lecture, there was higher recall of information from the musical condition than from the traditional lecture. The scientific information may have been unfamiliar, but the actual words were understood if they were in the learner’s native language. Isern (1961) had also found that material which was sung was retained longer than that which was spoken in a study with mentally retarded children on the influence of music on the retention of instructional content.

In the study to examine the effectiveness of melodic-rhythmic mnemonics as an aid to short-term memory, Gfeller (1983) used the variables of group membership (learning disabled or normal) and rehearsal mode (musical or verbal) with 30 normal and 30 learning disabled males, ages 9-12. She found in the first experiment that with the two variables alone—group membership and rehearsal mode—both the normal subject membership and verbal rehearsal resulted in significantly greater recall. In the second experiment, the variables for teaching method (repetition versus repetition with modeling and cuing) and time were added. Results of the second experiment showed that extended rehearsal of the musical mode in conjunction with modeling and cuing of the strategy
resulted in significantly greater recall for both normal and learning disabled students. Gfeller stated, “This study indicates that musical mnemonics may be a useful aid to retention for both learning disabled and normal students. However, the manner in which the strategy is presented and encouraged appears to be a crucial factor in that strategy’s effectiveness: without modeling of appropriate use and encouragement of application, even the best strategy may be rendered ineffective” (p. 188).

A multitude of studies, some of which were presented in this section, lends strong support to the belief that music serves as an effective mental process that aids the retrieval of information stored in memory when that information was stored along with music.

**Involuntary Mental Rehearsal**

This segment deals with the mental playback known as involuntary mental rehearsal, din, and the Song Stuck In My Head Phenomenon (SSIMHP). Involuntary mental rehearsal is the general term used in psychology, while din is the term for the same phenomenon after a period of contact with a foreign language. The SSIMHP refers to songs and tunes that perpetuate repeatedly in our heads. When these songs that playback in our heads occur from exposure to a foreign language, I term the phenomenon the “musical din”.

Psychologists such as De Guerrero (1987) believe that mental rehearsal may be viewed as a conscious strategy for remembering. It is defined by as the “overt or covert repetition of material that is to be learned” (p. 538).
The din phenomenon was first described in literature by Barber (1980), after a trip to Eastern Europe (Appendix B). She explained the din as “words, sounds, intonations, and phrases, all swimming about in the voices of people I talked with” (pp. 29-30). Krashen (1983), who also defines the din as “an involuntary rehearsal of words, sounds, and phrases” (p. 41), hypothesized that this mental playback is an indication that the natural language acquisition process is taking place. Therefore, din may be described as a natural process in the acquisition of new language.

The results of the studies by Bedford (1985), Parr and Krashen (1986), and de Guerrero (1987) show the extent to which language learners experience the din. Of a combined total of 581 second language learners, 74% said they experience the din “sometimes” to “very frequently.”

Numerous studies (Bedford, 1985; de Guerrero, 1987; Krashen, 1983; McQuillan & Rodrigo, 1995; Parr & Krashen, 1986; and Salcedo & Harrison, 2002) have confirmed that the din is widespread among second language learners, particularly after activities involving second language listening activities. McQuillan and Rodrigo (1995) have confirmed the widespread presence of the din phenomenon when using reading activities, while Murphey (1990) believes the din is directly related to music. Salcedo and Harrison (2002) confirmed the widespread occurrence of the din after exposure to songs. Their findings indicate that music and singing, as well as reading, are strong primary sources of input that provide extended mental interaction with the material and have a profound effect on the second language acquisition process.
Krashen (1983) believes the din is the result of the stimulation of the language acquisition device (LAD) and that this stimulation occurs only after comprehensible input. He believes it will not occur after output practice without input and it will also not occur after pattern drills or grammar exercises. While Krashen states the input must be understood, Barber (1980) had to look up words in the dictionary that she did not understand from her din experience.

“According to this scenario, the Language Acquisition Device (LAD), sparked by listening and subvocalizations, activates a din in order to chew on elements and schemas for acquisition which would lead eventually to comprehension, later contributing to reading and ultimately production” (Murphey, 1990, p. 58).

In other words, din is caused by the stimulation of the LAD. Krashen states that the LAD stimulation requires two corollaries;

1) din is set off by comprehensible input

2) input must contain significant quantities of the acquirer's $i + 1$

In Krashen’s hypotheses, the $i$ stands for input that the student understands, and the 1 stands for input the learner has not yet acquired but is ready to acquire in the natural order sequence. Krashen also hypothesizes that it takes one to two hours of good input to activate the din.

Bedford (1985), who performed a study based on Krashen’s findings, also noted that spontaneous playback was widespread, stating that many second language acquirers report that they often experience spontaneous playback of the language; “that they are hearing bits and pieces of it insistently in their minds”
Subjects from the study mentioned over and over that playback happened as they went about doing mechanical chores (driving, shopping, mowing the lawn, etc.) and many people mentioned that “at times they have an insistent playback of music” (p. 283).

Bedford offers a refinement to corollary 1 in that students reported that spontaneous playback is set off by comprehensible aural input. While playback occurs more often after listening and conversation, Krashen (1983) alludes to the comparative effect of aural and written input on playback. Although McQuillan and Rodrigo (1995) confirm that the listening din figure was higher than the reading din, they suggest that both input methods are important in triggering a second language din.

Krashen (1983) states, as suspected from corollary 2, that din occurs less with advanced performers since “advanced learners will receive less input containing $i + 1$, having already acquired most of the target language” (p. 43). The example is used of fellow professor Terrell (Krashen & Terrell, 1983), a very advanced Spanish speaker, who stated from personal experience that the din was triggered in French after three hours of input, but that din no longer occurred in Spanish.

Some conflicting evidence to these corollaries is found in the De Guerrero (1987) and Bedford (1985) studies that report their advanced students still experienced a din. De Guerrero (1987) even found that with more proficiency, the chances of hearing the din rose slightly. She found that students often rehearse unfamiliar words heard in class or on tapes as a possible means to cope with the
McQuillan and Rodrigo (1995) question the interpretation of these studies, suggesting that most students placed in the “advanced” group were probably not very advanced.

Krashen also states that at least 1-2 hours of input are required for the din to begin. This time may be excessive, as De Guerrero (1987) and Salcedo and Harrison (2002) report that subjects reported the din beginning almost immediately. McQuillan and Rodrigo’s (1995) research states the beginning of the din ranged from immediate to two hours.

Murphey (1990) believes that this language din is more effectively triggered by music and when this din occurs with music, he calls it the Song Stuck In My Head Phenomenon or SSIMHP. He believes that both the din and the SSIMHP could be manifestations of the LAD. There may, however, be a difference between the din and SSIMHP, since the previously mentioned corollaries for din may not be necessary for SSIMHP. Involuntary rehearsal of language from music may be triggered with much smaller amounts of input time (or be triggered by output) and the speaker frequently does not understand the input.

While Krashen (1983) indicated that the din seems to wear off after a few days (p. 44), many language learners insist the SSIMHP stays with them for years. McChesney (1985) pointed to the fact that adults were still able to sing the singing games learned in early childhood. R. Lafayette (personal communication, Aug. 27, 2002) commented that he can still sing many musical parts (bass, tenor, etc.) of a song he learned over 40 years ago. He remembered the lyrics
associated with the music, even though at the time, he did not understand the meaning of the words in Latin.

Table 1 compares the specifics of the din. On the left are characteristics of the din from spoken and written input and on the right are contrasts to these characteristics if the input is in song form.

Table 1. A Comparison of the din and the Song Stuck In My Head Phenomenon (SSIMHP)

<table>
<thead>
<tr>
<th>DIN</th>
<th>SSIMHP</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Set off by comprehensible input, NOT output.</td>
<td>1. Set off by easily learned tune with repetitive text.</td>
</tr>
<tr>
<td>2. Increases with immersion.</td>
<td>2. Increases with singing.</td>
</tr>
<tr>
<td>3. Input must contain $i + 1$</td>
<td>3. Experienced without comprehension of what is dinning.</td>
</tr>
<tr>
<td>4. Rarely occurs in advanced performers</td>
<td>4. Occurs in beginner and advanced performers.</td>
</tr>
<tr>
<td>5. 1-2 hours for din to begin.</td>
<td>5. Begins almost immediately and may din the whole day long.</td>
</tr>
<tr>
<td>6. Wears off after a few days.</td>
<td>6. Sometime triggered years later.</td>
</tr>
</tbody>
</table>

Listeners may have an advantage in hearing songs rather than reading. In the case of songs and aural input, as opposed to reading, listeners can often use other clues such as context, pitch, their personal experiences, etc., to comprehend without linguistic meaning.

Postovsky’s (1974) and Kadota’s (1987) studies suggest that a listening period preceding reading and production is most efficient. Kadota contended that if silent readings or vocabulary work were involved as input for the din, they were probably in the form of subvocalizations in the reader’s own voice. Kadota felt
that such input would help later when actual production was the goal, because
the reader would have already said to himself silently whatever was read.

However, there may be a problem with the premature use of reading
materials. The problem with this scenario, as stated by Murphey (1990), is this:

Reading done too soon as the main source of input, and hearing
one’s own voice subvocally, may partially account for the fact that
many adults keep a strong non-native accent in a foreign language,
while children who are principally listeners not readers, seem to
have little problem becoming native-like. Extensive reading by
adults too soon would provide great reinforcement for their non-
native subvocalized production.
(p. 58)

This concept may help explain why many adults maintain a strong non-
native accent after years of language learning. Scovel (1969) offers little hope for
achieving native-like accent by saying that it is practically impossible for adults to
lose their strong accent. If more instruction is presented in the form of aural input
from an authentic source such as songs, there may be hope for adults to more
closely achieve the native accent they hear aurally rather than their own non-
native accent heard subvocally during reading.

If involuntary rehearsal is the humming of the efficient Language
Acquisition Device, Murphey (1990) reminds that,

Music and song may initially play an associative facilitating role in
engaging and stimulating it [LAD]. The song lyrics in written form
can be used to reinforce what is heard auditorially and promote a
deeper activation of the SSIMHP. Finally, it would seem that some
things, like songs, have more staying power and that studying the
how and why of the din and the SSIMHP phenomena may allow us
to use them more advantageously for things we want to stick in our
minds. (p. 61)
Music provides a residual effect in the learning process. “As the song or melody persists in one's head long after the audible singing has stopped, the music continues to enhance the learner’s mental stimulus” (Wilcox, 1996, p. 10). Her explanation of the SSIMHP is that this cyclical process of involuntary mental rehearsal is a form of residual repetition. The brain activates a continued learning process to extend the physical output practice as an internal mental exercise that the person seems unable to stop.

**Music and Aspects of Language Acquisition**

Researchers have proposed music in the foreign language classroom to:

1. lower anxiety and motivation (Aida, 1994; Horowitz, 1986; Jolly, 1975; Trapp, 1991)


4. improve speaking pronunciation (Eterno, 1961; Leith, 1979; Poliquin, 1988; Purcell, 1992; Techmeier, 1969)

5. enhance cultural awareness and sensitivity (Abrate, 1998; Deliére & Lafayette, 1985; Falioni, 1993; Gatti-Taylor, 1980; Griffen, 1977; Hamblin, 1991; Martínez, 1994; Purcell, 1992; Salcedo, 1996) and
6. contribute to the development of the whole being through the aesthetic domain (Abeles, Hoffer, & Klotman, 1994; Claerr & Gargan, 1984; Falioni, 1993; Foster, 1993; García-Sáez, 1984; Giauque, 1985; Jolly, 1975; Zola & Sandvoss, 1976)

A review of the literature in these areas provide little empirical evidence showing the effect of music on the various aspects of language acquisition.

Some research studies done in these areas, as well as suggestions from important leaders in the field of foreign languages will be discussed in the sections that follow.

**Music and First or Second Language Acquisition**

Language researchers agree (Fiske, 1993; Heller & Campbell, 1981; Sloboda, 1985; Swain, 1986) that there seems to be some sort of symbiotic relationship between the underlying principles and the mental processing of language and music at the meta level. It has been asserted that infants learn their native language by principles that make sense of aural information; therefore, it seems reasonable to approach second language acquisition in a similar way (Jackendoff, 1994). Since music is also acquired through the aural sense, musical activities are suggested to aid in first or second language acquisition.

Hungarian studies reviewed by Marquart (1992) have concluded that remarkable differences exist between children who are sung to daily, versus those who are not, especially in the area of speech and language acquisition. Marquart explains the background of these studies:

Most of these studies are based on the philosophy of Kodàly, the Hungarian musicologist, composer, researcher and philosopher, who believed that music played a significant role in the development of mankind. He also believed that it was important to
begin music education at the youngest possible age. His philosophy was that music's place in the curriculum was one of a core subject. His research indicated that classes receiving daily music instruction academically surpassed classes receiving less frequent instruction. Noted improvement in other academic areas, particularly math, was an unexpected result in Kodály’s first experiment. The results of his studies convinced the Hungarian Ministry of Education to expand the Singing Primary Schools.

Lowe (1995) wanted to know whether the incorporation of a music program would reinforce both the learning of music, as well as the learning of a second language. The subjects of her study were 53 second-grade students of the French Immersion program in Canada that were set up in interdisciplinary music and French classes. Students were given eight weekly units of five 15-minute music lessons that were incorporated into the regular French second-language classes. Daily lesson plans for both classes were prepared together by both teachers using the same educational materials and curriculum content. The results showed that the group that received the additional music lessons performed significantly better than the control group in all music tests and in the oral grammar and reading comprehension French tests, even though the principal emphasis was on musical instruction. Her findings lead to the conclusion that the study of music and foreign languages are mutually beneficial.

Music has been used more extensively in the ESL classroom since teachers have more access to songs in English. In Switzerland, adolescents are in contact with between 8-12 hours a week of english language music, double or triple the number of hours of English classes in school (Murphey, 1987). Such contact may just be making learning English in school easier if, as Lyczak (1979)
concluded, prior exposure to language does affect subsequent learning, even when this exposure is not linguistically meaningful. For an extensive list of commercial ESL materials using music, see Lems (1996).

The purpose of Cormier’s (1985) study was to determine the extent of the relationship between selected music and French second language variables. Subjects encompassed 79 students in grades 4, 5, and 6, who were enrolled in French Immersion (including music) classes. Students were tested for six days with standardized tests for music and reading, with French tests created by the researcher. The French variables included: retention of aural information, comprehension, vocabulary, diction, pronunciation, language reading and imitation. The music variables included: tonal imagery, rhythm imagery, phrasing, music reading and pitch discrimination. Results of this study found the music variables to be significant predictors of the speech variables, implying that music and speech, both aural expressions, may involve similar learning processes. The final conclusion was that a relationship exists between French second language and music variables for grades four, five and six subjects when mental ability is taken into consideration. This is supported by the theories of Bruner (1960), Gagné (1977), and Thorndike (1913) who suggested that learning transfer occurs through similar elements, shared between subject areas.

Medina (1990) reported on the effectiveness of music and story illustrations in the English vocabulary acquisition of second-grade limited English proficient students. The dependent variable of vocabulary acquisition was crossed with instructional medium (Music/No Music) and extralinguistic support
After a four day treatment, mean vocabulary gain scores were consistently higher for music treatment groups and illustration groups. The gain scores for vocabulary acquisition were highest for the group that used both music and illustrations. Data obtained one and a half weeks after treatment showed mean gain scores were still consistently higher for the combined effects of both music and illustrations. The investigation provided empirical support that music is a useful tool for second language acquisition.

Music and Pronunciation

Most adults who learn a foreign language speak with an accent which derives in part from phonological and phonetic differences between their native language (L1) and the target foreign language (L2). Music can be effective in improving phonetic skills in a variety of ways. Leith (1979) stated, “There is probably not a better nor quicker way to teach phonetics than with songs” (p. 540). Gatti-Taylor (1980) believed that phonetic instruction was one good use to which songs could be put, even in beginning classes, stating, “It is relatively easy to find song lyrics that stress a particular phoneme” (p. 466). García-Sáez (1984) agreed stating, “the use of song is an excellent way to practice Spanish phonetics and it is not at all difficult to find examples of songs that contain sounds the majority of students have trouble producing” (p. 4). The melody, combined with the lyrics, provides an excellent opportunity to review pronunciation and enjoy music at the same time.

Traditional pronunciation texts have emphasized or implied that students should strive for perfect pronunciation or near-native pronunciation. Morely
(1996) contended that this would be an unrealistic goal, an important shift in language instruction now tends to emphasize a communicative focus: “one that views the proper place of pronunciation in the L2 curriculum as an integral part of communication, not a separate drill-based component set aside from the mainstream of spoken discourse” (p. 151).

Techmeier (1969) stated that the most difficult skill in learning a foreign language is proper pronunciation. He felt that if the child does not pronounce a word well, the problem may be that the child does not hear the word correctly. According to Techmeier, as well as Urbanic and Vizmuller (1981), singing helped to develop better hearing skills and, as a result, promoted and reinforced good articulation of words.

Poliquin (1988) suggested that the particular value and effectiveness of using songs in language instruction, was specifically to improve pronunciation skills. He explained that semantic comprehension is controlled by the left brain and that musical tones and rhythm are controlled by the right. He therefore encouraged the pedagogical use of songs to develop cognitive skills, to demonstrate the relationship of language rhythm and song rhythm, and to teach a second or third language.

Karimer (1994) formulated a study using ESL students to find out if acquiring a native-like fluency would be faster using nursery rhymes, chants and songs. Students were Southeastern Asian adults, who were divided into ethnic groups. This division was made since the Lao Hmong group’s culture practiced a courtship ritual requiring the man to look for two qualities in a wife, sewing and
singing. The man sang an original love song to his intended, who then responded by matching his intonation patterns exactly. No difference was noted with this nationality since only three subjects from this group remained in the final results.

The subjects' task was to distinguish between minimal pairs defined as two words that differ in one phoneme only—for example “fill/pill, buzz/bus.” Both groups were given a pre-test that distinguished between phoneme sounds, then they were given a treatment consisting of 20 minutes of instruction, twice a week, and over a two week period. The control group was asked to listen to a word list of 10 minimal pairs, while the experimental group was asked to listen to various songs and rhythmic chants which presented the same sounds contextually. The students were given a post-test similar to the pre-test after the two week period. An advantage in test scores was seen in the experimental group. Since the control group had tested higher on the pre-test, the improvement scores were used to compare between the groups. The improvement score for the control group was 3.9 while the experimental, songs and chant group gained 10 points. These results indicated a definite advantage for the experimental group, after only two weeks of treatment. In addition to the rhythm of the language, what might have been an important factor in this case was contextual learning, or learning the use of a language as it naturally occurs.

Eterno (1961), in a study of Spanish pronunciation and musical aptitude, found a direct relationship between musical aptitude and/or musical training and foreign language pronunciation. This might suggest that although teachers
present the material to a group of students, those who (perhaps unknowingly) have a musical aptitude may be more affected by language when that language is presented in song form.

Arellano and Draper (1975) considered 79 students in fifth grade, who had experienced previous exposure to Spanish. Subjects were tested on 15 variables. Researchers viewed the relationship between discriminatory abilities—pitch, intensity, rhythm, timbre, and tonal memory—and the capacity to achieve in the area of Spanish accent and Spanish language comprehension. Overall results indicated musical ability and Spanish accent were strongly correlated, even when the possible common relationship with I. Q. was taken into consideration. Researchers concluded that the close relationship found to exist between musical ability and second language learning may suggest that the learning of music and second language can be mutually reinforcing.

Scovel (1969) discussed the relationship between cerebral dominance and a speaker's accent. He states that the onset of cerebral dominance, which seems to occur around the age of twelve, inhibits the ability of a person to master the sound patterns of a second language without an impinging foreign accent. He believes that adults cannot master the sound patterns of a second language with the fluency of a native speaker. The basis for this opinion is the fact that children learn language in a different way—with actual objects in the environment and their names, the largest being visual-auditory and tactile-auditory association. When adults learn a second language, it is primarily done by translating from the first language, i.e., by auditory-auditory associations, not by
dealing directly with the environment. Different anatomical regions are used in the two cases.

Speakers in Scovel’s study (1969) were asked to say a simple sentence twice. The listeners, junior high school students, were able to judge whether the speakers were native born Americans with an 85% accuracy. His point is that speakers must achieve a native accent before the age of twelve or they will never be able to sound native. He presents the possibility that it is the nature of the brain, specifically the phenomenon called cerebral dominance or lateralization, that accounts for the ability of children to learn languages fluently. He states that there is strong circumstantial evidence that the maturational development of cerebral dominance is closely linked to the ability to acquire language. He believes it is nature, not nurture, which determines our ability to speak without a foreign accent.

What he pointed out as the different ways that children learn a language, and different anatomical regions used in learning, may well be attributed to nurture in the way that adults are taught. The traditional method has been to teach adults using the first language as the foundation. Perhaps we could teach adults with actual objects in the environment, as well as allow them the same listening period (Kadota, 1987; Postovsky, 1974) or silent period (Krashen, 1985) that is present under natural acquisition circumstances where they hear the native sounds until they are ready to produce speech.

Evidence for pronunciation factors was given by Elliot (1995), who tested 12 variables believed to be related to pronunciation accuracy, but found only
three that related significantly to pronunciation accuracy. These were; (a) attitude or individual concern for pronunciation, (b) subjects’ degree of Field Independence (FI), and (c) subject’s degree of right hemisphere specialization. Field Independent (FI) individuals were analytical, reflective, highly detailed, ambiguity-tolerant, and left-cerebrally-dominant. They often maintain social distance. Field Dependent (FD) individuals were more globally oriented, impulsive, holistic, and right-cerebrally-dominant. They tend to be outgoing, empathetic, and perceptive. As for language acquisition, FI individuals did better at written tasks, learning grammar rules and manipulation of linguistic forms, while FD individuals would prefer speaking. He suspected FD individuals would have better pronunciation since they were more social and interested in communication. However, FI individuals tended to have better pronunciation. No reason was suggested for this, but it may be due to FI individuals’ tendency to high detail and a preference to analyze the sounds.

What Scovel (1969) termed cerebral dominance, Elliot (1995) called hemispheric specialization, but both referred to which side of the brain was more likely to be used for individual cognitive learning styles and preferences. “The left hemisphere is better at such tasks as reading, speaking, analytical reasoning, and arithmetic. The right side is better at spatial tasks, recognizing faces, and music. It is commonly believed that the left hemisphere is primarily responsible for language production and comprehension, although the right is responsible for the analysis of voice intonation, as well as for deciphering linguistic pitch and rhythm” (p. 358). Elliot’s results suggested that “although Field Independence
and Right hemisphere specialization related to accurate target language pronunciation in certain tasks, attentiveness or concern for pronunciation accuracy proved to be the most significant factor” (p. 356). The total number of years of formal instruction in Spanish also had a small effect on pronunciation, but the most significant predictor of pronunciation accuracy was attitude (speaker’s desire to pronounce correctly). It seems that using music to bridge the hemispheres may be the necessary connection between language comprehension controlled by the left side and pitch, intonation, and rhythm controlled by the right side. If instruction is focused on language form only, then students may lack the fine tuning skills of pronunciation including pitch discrimination.

Improving students’ pronunciation through the sounds heard in song may be an answer to Scovel’s (1969) statement that adults can never acquire a native-like accent. Listening to the natural sounds and features of the sung language may be one possible reason why comments are often made by listeners that they presumed I was a native Spanish speaker, although I am a native of Louisiana.

Pimsleur, Stockwell, and Comrey (1962) reported over forty research studies pertaining to the factors within students which bear upon their abilities to learn a foreign language. One of the important sub-headings of that review was devoted to studies dealing specifically with the relationship of the ability for discriminating pitch to the ability for learning a foreign language. Early work from Dexter (1934) had shown a viable connection between pitch discrimination and
accent rating; interestingly “the correlation of pitch with accent increases as age of subject decreases” (p. 717). Both studies (Dexter, 1934 and Pimsleur, Stockwell, & Comrey, 1962) confirmed the trend of significant correlations between pitch discrimination and various criterion measures of achievement in several foreign languages on the high school and college, as well as intensive course (Army Language School) levels. Correlations between pitch discrimination and foreign language achievement are largest in high school, the lowest level in these studies; the correlations became progressively smaller as the individual proceeded through college and intensive course levels. These correlation changes may be due to the change in teaching methods used for the older learner.

To examine the relationship between pitch discrimination and accent, Arellano and Draper (1972) gave 79 children a six-week period of audio-lingual instruction. There was no exposure to written Spanish. Each child, 10 years of age, received 30 minutes of instruction per day in Spanish. In keeping with the age and relatively limited attention span of the subjects, a teaching approach built around games, songs, rhymes, and “The Three Bears” folktale was pursued in all classwork.

Results indicate that musical ability and Spanish accent achievement are strongly related, even when their common relationship with I. Q. is taken into consideration. “The rather close relationship found to exist between certain musical acuities and Spanish learning in young subjects suggests the possibility
that music and second-language learning may, during early childhood and over a protracted time period, be mutually reinforcing” (p. 114).

**Music and Motivation**

Students in two Japanese conversation courses were asked to rate songs usefulness by Jolly (1975). He showed that 80 and 91% of students rated songs as being “very useful” (p. 13). Students commented that songs created a relaxed and enjoyable atmosphere and that they felt more receptive to the lessons.

According to Falioni (1993), “The addition of music to the foreign language classroom as a teaching method may be a way to focus students’ attention, and produce a more committed learner” (p. 104). In a study of English-speaking students in a Montreal high school who were studying French, Gardner and Lambert (1959) reported that students who had positive attitudes toward the French Canadian community and were interested in interacting with or becoming part of it (i.e., were integratively motivated) tended to be more successful language learners than those students who were learning French merely as a requirement for school and had no interest in the French Canadian community (i.e., were instrumentally motivated). In this case, the community of French speakers may have provided a motivator for some students. When students do not live in the community where the target language is spoken, using music may be a way to introduce the culture and motivate students to learn the target language.

Nambari (1993) recommends recent pop songs to enhance motivation in the younger generation: “Songs deal with the whole realm of human emotions
and students are often willing to sing a song in a foreign language even if they do not fully understand the meaning of the words” (p. 336). Songs also allow timid students to hide behind the music and take the pressure off.

Murphey (1987) discusses the use of musical activities using two learning experiences in teaching English as a second language. Murphey stated that an interest in music and related movement was a strong motivator for language learning. He proposed that language courses should be taught for a specific purpose (with specific subject matter) to stimulate normal communicative activity. He suggested a course about songs to be taught in the target language, rather than a music-based language course. In this way, students implement the language in a natural way while teachers structure true learning through the students’ environment and interests. When music was the subject matter, the class was not studying language; rather, they were studying music which allowed for a host of language learning opportunities and the improvement of their language skills. “They [students] were concentrating on the messages and ideas as they would in their native language” (p. 7). Murphey stated that in the case of song activities, “students are doing something with language: they are participating actively in the game called communication” (p. 8).

Effective natural communication can not exist without the exchange of relevant information. Songs used as teaching aids in the foreign language classroom, facilitate the development of a natural rhythmic response that is needed in the acquisition of a foreign language (Jolly, 1975).
**Music and Grammar and Vocabulary**

Unlike spoken conversation, music contains pitches, melodies, rhymes, beats, and measured phrases that may help students remember vocabulary or grammatical structures and aid in comprehending the general meaning. Practically all grammar points and a wide variety of vocabulary can be found in musical texts. As Falioni (1993) states, "The new structures that may seem isolated or out of context in pattern drills, are seen in a different perspective when they are part of a song" (p. 101). Fluency in the use of the language was one of the most valuable contributions of songs, according to Bartle (1962), who believed that: “some songs lend themselves to the incidental revision of grammatical points or of verb tenses. Songs are a definite advantage in memorization of phrase constructions. They are more easily learned and tend to ‘stick’ longer than straight-out grammatical examples” (p. 11).

Salcedo (1996) suggested another way to use music for grammatical reinforcement of tenses by using multimedia computer software with incorporated music video clips. As the video clip is viewed, users could choose to show the written lyrics on the screen, which has some general discussion of vocabulary and phrases as well as specific words and phrases in hypertext form. Students could click on these linked words in the song lyrics and get an explanation of the grammatical structure as it is used in that particular song.

In response to criticism that music is fun only, I began a song and grammar chart (Appendix C). The grammatical structures taught during the basic language courses are listed with some corresponding songs that contain these structures.
in the song lyrics. After covering a particular language structure in class, students listen to a song stressing that particular structure. Better than traditional pattern drills, songs demonstrate authentic language use while reinforcing syntax. For example, there are numerous love songs in Spanish that repeat the informal tú commands in telling a loved one what to do. These commands stress the imperative verb forms as well as demonstrate object pronoun placement. The table gives practical examples to support Jolly’s (1975) statement that “It does not require much time to locate songs which contain grammatical structures identical to those being taught in class” (p. 13).

**Music and Cultural Awareness**

In addition to the grammar content, songs could be chosen that relate to cultural aspects being presented in class, such as social situations, historical events, geographical descriptions, and others. The use of songs, according to Jolly (1975), gives students the opportunity to acquire a greater understanding of the culture underlying the target language. When Edwards (1997) asked teachers to rank their reasons for utilizing music in educational training, the highest value was placed on vocabulary, then cultural awareness and appreciation (only slightly lower on the scale).

Many researchers (Abrate, 1988; Deliére & Lafayette, 1985; Gatti-Taylor, 1980; Griffen, 1977; Purcell, 1992; Salcedo, 1996; Thompson, 1991; and Willis & Mason, 1994) give suggestions for adopting the *chanson / canción* (song) as a primary source for teaching language and elements of culture. “A student may
often relate to and express himself through a country’s music more readily and easily than he can through its language” (Whitaker, 1981, p. 4).

Purcell (1992) related how one might, for example, use the song "Las mañanitas" to explain the early morning serenade in Mexico for a person's santo (birthday-like name saint celebration) and how that differs from the traditional North American birthday celebration. One might also use the same song for a geography lesson explaining "los llanos de Tepic" (the hills of the region). Purcell asserted that "the teacher has only to decide what function the song will have in the curriculum, and how it is to be used; then any number of songs available might be employed" (p. 195).

Folk songs for classroom use were also advocated by Sheehy (1973) who stated that, “Folk songs grow out of the needs and aspirations of people. Their very essence is change and adaptability both in melody and words. The rhythm and melody are simple and basic, providing a flexible frame within which stories and emotions are easily expressed” (p. 43). Some words of caution were provided for cultural sensitivity by Falioni (1993). She asserted that one must incorporate a variety of famous music because: “By using certain songs (e.g., some traditional folk music) we may confirm a student’s stereotype or imply an outdated presentation of a culture’s music” (p. 104). Another way to use music incorrectly, according to Griffen (1979), is to use borrowed songs (e.g., translated American pop) “implying that other cultures have nothing to offer and that they only imitate” (p. 943).
Summary

The first section of this chapter presented some methods that incorporate music in second language instruction for the classroom. As can be seen from the more recent publication dates on the majority of these programs, this is a current trend that will likely continue. The frustration felt by language teachers who lacked musical materials is fast becoming a thing of the past. Subsequent sections presented the benefits of music for physiological purposes, and research done with music showing a benefit for children’s achievement. Included in this section are studies done on the various stages from pre-birth to older children. The majority of studies indicate that music provides academic reinforcement and that musical experience in early childhood is mutually beneficial for learning musical skills and language skills.

The fourth section asserted that music was one of the most effective memory aids available. Research indicated that verbal information may be stored as an integral unit with the tune. Advertisers are experts at using this technique to promote catchy slogans and jingles that we sometimes just can’t forget! In Murphey’s (1990) opinion, “Perhaps the advertisers have some secrets teachers could learn” (p. 57). Can anyone recite the alphabet without hearing the learning tune resound in their heads, or tell the story of the Itsy Bitsy Spider without the tune? Advertisers realized that if the media jingle is assimilated along with the product name, the repetition of the tune will remind consumers of the product. How many are able to audibly complete the following phrases without hearing the accompanying tune?
I’d like to buy the world a ____ (coke).
The best part of wakin’ up, is ____ ____ ____ ____ (Folgers in your cup).
Plop, plop, fizz, fizz, oh ____ ____ ____ ____ ____ (what a relief it is).

Section five discussed involuntary mental repetition, the din, and language acquisition theory as it is directly related to music. The present study, which will be discussed in the next chapter, hopes to add to the knowledge base regarding the theories that were represented in this section.

The last section outlined the benefits of songs in second language acquisition. Although empirical evidence on the effects of music on various aspects of language acquisition is rare, a variety of reasons educators might include music as a valuable component of any classroom were presented.

The overwhelming majority of research reviewed in this chapter shows the advantages of incorporating songs into the foreign language curriculum. Music and song, when incorporated into a classroom as pedagogical techniques designed to reinforce comprehension and acquisition of language patterns, might be considered “sleeping giants” in the improved transfer of knowledge in second language classrooms. This chapter has provided research showing music’s cognitive role in helping students learn and remember—specifically, the target language.
CHAPTER 3
MATERIALS AND METHODS

The pilot studies produced so many failed attempts and changes that it seemed unlikely that a main study would ever be completed. The pilots discussed here are three that were carried out according to instructions. All three were from universities with very different student populations, language requirements, classroom environments, and instructors. The first pilot study was directed by this researcher, the second and third by two different instructors. Results of the first study served as inspiration, since the results were more impressive than expected. Data was collected on the Song Stuck In My Head Phenomenon (SSIMHP) only.

The second and third pilot studies were conducted during the same semester in which the main research study was carried out. Any information that might have influenced the treatment parameters of the main study failed to materialize. In each of these studies, subjects were drawn from two classes of the same level taught by the same instructor and were tested for memory recall, as well as the occurrence of the din.

**Pilot Studies**

The first study was done to discover whether students experienced the involuntary mental repetition after songs that Murphey (1990) calls the Song Stuck in My Head Phenomenon (SSIMHP). Subjects were 28 college students already enrolled in intermediate-level Spanish class. One additional optional class of choral singing was held. The class was provided with a copy of the
written lyrics. A guitarist played while the class sang. Students were encouraged to sing in chorus with various traditional Mexican folk songs including *Cuando calienta el sol*, *Cielito lindo*, *Allá en el rancho grande*, *Guantanamera*, and others. One particular song, *Cuando calienta el sol*, was repeated at intervals throughout the class period. The tune was easily learned, and the lyrics were of simple grammar and common vocabulary. Students were given a questionnaire (Appendix A) three days following the class and asked to report on the SSIMHP experienced and to ascertain which song most often accompanied the mental repetition. The song that had been sung most often *Cuando Calienta el Sol*, was in fact the song that most often triggered the SSIMHP according to students’ responses.

Exhibiting a difference from the corollaries of the din, the SSIMHP was initiated within 45 minutes of listening to the songs. Another corollary states that the input must be understood, yet students reported that they did not understand many of the words that were repeating in their heads. Yet another corollary states that the din stops in a few days but students din experience had already continued more than three days.

The pilot study results confirmed earlier studies on the widespread occurrence of the din, which had been conducted by Bedford (1985), Parr and Krashen (1986), and de Guerrero (1987). The present findings also seemed to support Murphey’s (1990) theory that the SSIMHP stimulated with song may function with different characteristics on language learners than the din. The amount of mental rehearsal, or SSIMHP, reported by students in the first pilot
study was 79%-almost identical to the results reported by de Guerrero (1987) of 78.9%.

Because there were encouraging results about the power of song in connection to mental repetition in the first pilot study, other studies were implemented to test the power of music to repeat in the memory and to be a facilitator in recall ability.

For these studies, one class was exposed to the musical mode, while the second heard recorded spoken text. The listening treatment was administered six times over the course of 2 to 3 weeks, depending on whether the class met twice or three times a week. A native speaker of the same gender and nationality as the popular recording artist of the song was used to recite the song lyrics. At the end of the listening treatment, students were given written fill-in-the-blank (cloze) tests. The total number of remembered items was then tabulated and compared among classes.

The second pilot study was conducted with third semester Spanish students. The two classes heard the song Todo tiene su final by Hector Lavoe and Rubén Blades, but Class A heard the rendition as a song, while Class B heard the song as recorded text. Students from both classes reported the occurrence of the din at the end of the treatment. The percentage of students who reported experiencing the din was 75% for the musical class and 55% for the text class.

For the text recall component, scores comparing the classes were very similar. The text class received slightly higher recall scores than the music class.
One explanation for the lack of contrast between the groups could be that all students registered in the class were used as subjects for the data collection. The background questionnaire in this study asked for gender and age only, as opposed to the questionnaire given for subsequent studies (Appendix D). The more complete questionnaire might have eliminated some students who were not beginners, thus influencing the total data outcome.

A third study, using identical procedures, was conducted with second semester level students. In this study, students with four or more years of previous Spanish instruction and those who had Spanish speakers as members of the immediate family were omitted from the total analysis, as these students should have been placed in more advanced classes. The song heard was *No Puedo Estar Sin Ti* by José Feliciano. Results were similar to the previous study. Only a slight difference was seen between the groups in the text recall scores; however, there was again a large difference in the occurrence of the din. The students that heard text reported a much lower occurrence of the din than students that heard music. These din results are shown on the table below.

**Table 2. Comparison of din results from the pilot studies**

<table>
<thead>
<tr>
<th>DIN</th>
<th>University 1</th>
<th>University 2</th>
<th>University 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Class A (music)</td>
<td>79%</td>
<td>75%</td>
<td>79%</td>
</tr>
<tr>
<td>Class B (text)</td>
<td></td>
<td>55%</td>
<td>57%</td>
</tr>
</tbody>
</table>

**Discussion of Results of the Pilot Studies**

The first pilot study shows the power of the SSIMHP. With only a single additional class period of singing, students reported several songs that had stuck
in their heads. The second and third study used two groups, thereby permitting a comparison of the occurrence of this phenomenon among the two groups. In study 2, this comparison revealed a difference as to whether the class heard music or not. More repetition was experienced by the class that heard music. This study also had a text recall component, which showed little difference between the classes.

Results from the third study were very similar to those of study 2. Once again, very little difference was seen in the text recall scores. However, there was a large difference in the amount of din occurrence reported. Students from the class that heard music experienced much more mental repetition than students from the class that heard spoken text.

More investigation is needed to determine whether the lack of text recall difference was due to the length of the study or to the type of song. The difficult level of words and melody might have worked against retention in these pilot studies, especially in the second study since the song selection had a difficult melody (Salsa) together with colloquial text unfamiliar to Spanish students at the intermediate level. In other words, to gain optimal results in text recall, the melody should be simple and the vocabulary understood, in order to combine and facilitate recall rather than having the music interfere with the text.

In both those studies, the students from the classes that heard music reported a much higher occurrence of the din than the students from the text classes. The amount of din from the first pilot study was comparable to the amount of din experienced by the students in the music classes of studies 2 and
3. In summary, the din occurrence was reported with more frequency by students in the classes that heard song rather than text.

Pilot study results from the three universities show the average din occurrence is 69%; however, division of the groups according to input method reveals an advantage for the music groups. The average din experience reported for the music groups was 78%, while the average din occurrence reported from the text groups was 56%.

**Purpose of the Study**

The purpose of this research was to expand on the subject that music and text may be learned together as one unit by administering a recall test that compared words learned in spoken form with words learned in sung form. In addition, the study contributes to the information on the occurrence of the din.

The effects of musically based foreign language instruction is examined in three principal areas: (1) the students’ ability to recall song lyrics heard through song versus recall of the same song lyrics heard through text passages, including one group’s ability to recall song lyrics while listening to the tune of the song during testing, (2) the students’ delayed recall of song lyrics, and (3) the occurrence of the din for students exposed to songs as compared to the amount of din occurrence for students exposed to song lyrics recorded as spoken text.

**Research Questions and Hypotheses**

The study attempted to answer the following research questions:

1. Is there a significant increase in text recall when that text is learned through the use of songs? **Hypothesis 1**: Students who hear foreign language
passages in song will show a significant difference in total recall scores on text retention tasks than students who learn the same passages through aural recordings.

2. Is there a significant difference in delayed text recall of students who learned the text with song, compared to those who learned the text with spoken recordings? **Hypothesis 2:** Students who learned texts with song will show a significant difference in text retention on delayed recall tests, compared to those who learned the same text by listening to recorded speech.

3. Is there a significant difference in the recall results when one song group hears the melody of the song during the cloze recall test? **Hypothesis 3:** Students who learn foreign language passages in song will perform significantly different on text recall tests if the melody of these songs is heard during testing.

4. Is there a significant difference in the occurrence of involuntary mental rehearsal (din) after listening to song rather than text? **Hypothesis 4:** Students who hear texts with song will report a more frequent occurrence of din than students who hear texts with recorded speech.

**Research Design**

This educational research study approximated the conditions of a true experiment; however without the control or manipulation of all variables, it must be considered a quasi-experimental research design (Issac & Michael, 1990).

This study was similar to one conducted by McElhinney and Annett (1996), a 2X2 factorial design incorporating four trials of prose and song, and assessed by counting the total number of words that were written correctly. This study
differed in that a 3X3 factorial design with three trials was used, and experimental units were tested on three variables. Subjects were assessed in text recall by counting the total number of words that were correctly written in the blanks that replaced deleted words.

A one way ANOVA test was performed, in order to test for significance of the means of treatment in regard to the dependent variables between the classes. The construct presented a fixed effects model, since specific treatments are viewed, such as song, text, and melody.

The selection process of experimental units, in this case the students, was accomplished in such a way as to fulfill the randomization criteria. The cohort group was formed through the normal university registration process, with the non-random cohort highly representative of classes in that particular level of the target population. Whole class assignment into the comparison groups, however, was randomly done from the classes registered to a singular teacher. The cohort group was made more homogeneous by deletion of those students who were not beginning language learners. Those who had indicated previous experience with Spanish on the background questionnaire (Appendix D), subsequently were deleted from the analysis.

The music treatment was administered during six class periods and conducted as regular class time by the same teacher. This method was applied in order to avoid variances in environment, teaching methodology, or student-teacher rapport. The instruction in all classes remained the same throughout the semester except for the addition of the treatment. Group A heard texts during
class in the form of songs. Group B heard the same texts, but as recorded speech, while Group C served as the control group for song 1, then as the melody group for songs 2 and 3. Group D served as the control group for songs 2 and 3. Students were able to view the words of the song during class time, and were aided in the comprehension of the lyrics, but were not allowed to take written lyrics out of the classroom. The spoken text group had the option of reading aloud, while the song groups had the option of singing with the songs.

**Data Organization**

Students were provided a background questionnaire at the beginning of treatment (Appendix D). Responses were used to differentiate the actual beginners from those students who had previous Spanish language experience, even though they were registered in a beginning course. Data was collected after each song, after a delay period, and at the end of the treatment. The table below displays a 3X3 factorial design, 3 conditions (music, text, or melody), and 3 variables (immediate recall, delayed recall, and din occurrence).

**Table 3. Data collection chart**

<table>
<thead>
<tr>
<th>Treatment groups</th>
<th>Variables:</th>
<th>Immediate Recall</th>
<th>Delayed Recall</th>
<th>Immediate Recall</th>
<th>Immediate Recall</th>
<th>Din</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Song 1</td>
<td>Cloze test 1</td>
<td>Nothing 2 weeks</td>
<td>Delayed Cloze of Test 1</td>
<td>Song 2</td>
</tr>
<tr>
<td>A. Song</td>
<td>√</td>
<td>√</td>
<td>√</td>
<td>√</td>
<td>√</td>
<td>√</td>
</tr>
<tr>
<td>B. Speech</td>
<td>√</td>
<td>√</td>
<td>√</td>
<td>√</td>
<td>√</td>
<td>√</td>
</tr>
<tr>
<td>C. Melody for 2 &amp; 3, Control for 1</td>
<td>√</td>
<td></td>
<td></td>
<td>Delayed Cloze of Test 1</td>
<td>√</td>
<td>√ melody</td>
</tr>
<tr>
<td>D. Control</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>√</td>
<td>√</td>
</tr>
</tbody>
</table>
The table shows the type of data and the instrument used to collect the data for each group, in chronological order during the semester. All instruments (questionnaires and cloze tests) were administered by the instructor.

**Statistical Procedures**

An ANOVA test was performed to analyze data gathered on the variables of the 3X3 design, and to observe the interaction effect among these variables. For text recall, a cloze test was administered to all four groups, these scores were compared showing the total number of missing words that students were able to recall. The SAS program performed the Least Significant Difference (LSD) test with the Bonferroni adjustment to make pair-wise comparisons between the treatment groups. SAS default was at 5% level of significance.

Students from classes A, B, and C were asked to report on the occurrence of the din. A frequency procedure was applied giving a percentage of din occurrence from each class. A chi-square categorical analysis was also done to determine significance of percentage comparisons.

**Description of Subjects Used**

Subjects for this study were 94 students enrolled in four classes of beginning-level college Spanish at a large regional university in the southern United States. Students of beginning level are presumed to be at a similarly low language-proficiency level, since all have enrolled as novice learners. However, a background questionnaire (Appendix D) was presented to ascertain information about the student’s previous Spanish experience. The university had no mandatory placement test, therefore anyone might register for beginning
Spanish. Students who registered for Spanish 101, therefore, actually might not be beginning learners.

Information from the questionnaire was used to omit some students. Data from those students who previously had taken high school Spanish classes for three years were removed from statistical results. However, three years of Spanish classes were discounted as a reason for omitting student data if at least six years had passed since the classes were taken. Although time spent in a Spanish-speaking country was suspected to indicate non-novice learners, the results did not reveal any advantages for those who had lived more than six months in a Spanish-speaking country. In addition, the fact that a student’s family member spoke Spanish was not considered an important factor, since it was not known how much interaction in Spanish existed between the student and that family member.

The mean age was calculated using the remaining subjects. Of the 94 total students used in the data analysis, there were 33 male and 61 female students with ages ranging from 17 to 41 with a mean age of 22.

**Instruments**

1. Students were asked to fill out a background questionnaire for reference purposes (Appendix D).

2. Students were shown copies of the song lyrics as they were used (Appendix E) during the listening activities. These same song lyrics were used to create the Cloze tests, with every seventh word deleted, to test recall of song lyrics (Appendix F). One test was given for each song used during the semester. The
first cloze test was re-administered to the groups again after a two week delay to
determine delayed recall ability. Cloze tests can be created using the software
product called Clozemaker by Visa Software, which automatically deletes words
at user-specified intervals. For this study, the words were hand counted and
blanks replaced every omitted word.

3. At the end of the semester, students from group A, B, and C were asked to
respond to a questionnaire (Appendix G). The main purpose of the questionnaire
was to elicit responses in regard to the din occurrence: what activities might have
accompanied this occurrence and whether the student was able to control the
din. Other questions were asked in order to find out student opinion of the
listening activities implemented during the semester.

4. A copy of the consent form was made available to all students. Students were
given basic information about the study, explaining the main parameters of the
study, without specifying the expected outcome results (Appendix H).

5. Audio material needed for the study included the CD musical recording of
three songs in Spanish, together with a professionally recorded CD of the
identical song lyrics that were recited in spoken form by a native speaker.

**Procedures**

Three comparison groups and a control group were used. Each group was
a beginning semester Spanish 101 college class. The treatment consisted of
listening activities using compact discs (CD). Group A was the music group that
heard a commercially recorded song in Spanish. Group B was the text group that
heard the same song as recorded speech. For each song, a native speaker of the
same gender and nationality as the popular recording artist was used to recite the song lyrics. Group C was the control group for song 1 and became the melody group for songs 2 and 3. The melody group received the identical treatment as Group A (heard songs) however the testing was different. During the cloze tests, group C heard the melody of the songs, the tune without the lyrics, during the text recall (cloze) test. Group D was added as the control group. The scores from the control group were used to omit any items that could be consistently guessed due to the context of the surrounding language. Treatment occurred at the same intervals for all classes. At the end of the 6 treatments of listening activity, all students took a cloze test. After a two-week delay of no treatment, groups A and B took the same cloze test (for delayed recall of song 1).

Data Analysis Plan

For research question 1, all groups took the cloze tests with missing words at intervals of seven (Appendix F). Students filled in as many of these missing items as they recalled. Tests were scored for total number of correct items and a comparison was made between the groups.

For research question 2, groups A and B were given the previously taken cloze test to determine the amount of retention after a two-week delay.

For research question 3, students of Group C heard the music CD during treatment, then heard the melody only of the song while taking the cloze test.

For research question 4, students were given a post-treatment questionnaire and asked to respond to questions reporting the occurrence of involuntary mental rehearsal (Appendix A).
Limitations

One limitation could be the size of the sample. Even though the sample is small, an ANOVA was run to adjust the results for class size differences. There was no need to compensate for loss of students in each group since the ANOVA adjusted for this. Another limitation was possible confounding variables, such as the time of the day or the classroom. It was not possible, however, to give the treatment to all groups at the same time of day since the same instructor taught all groups in order to minimize any variation in performance that might result from differences in accent, presentation of materials, or teaching effectiveness.

There is internal validity of sampling, because the sample resembles the population of interest. External validity is judged by the cohort group representation, presumed to be at very similar ability levels. Omission of subjects according to questionnaire information helped assure that the remaining students were a homogeneous group. Validity for the cloze test instruments was authenticated by various instructors. Students’ items responses during pilot studies were similar to other students within the group. Teachers stated that the missing items were representative of content being taught in class; therefore, they were rated as reliable. In the university setting, groups are separate; therefore, little or no interaction is observed among groups.

Song Selection and Analysis of Songs

Murphey (1987/1992) analyzed the content of fifty of the most popular songs from Music and Media’s Hot 100 Chart of September 12, 1987. They were analyzed looking at word count, content, time, place, gender, and words per
minute. He determined that the Popular Song (PS) Register is at the level of the simplest graded English readers or the reading level of a native-speaker child after five years of school. The analysis concluded that songs provide repetition, high frequency words, easy vocabulary and high interest subject matter. Murphey said, “Popular songs offer short, affective, simple, native texts with a lot of familiar vocabulary recycled” (p. 773).

The speed of pop songs is 75.49 words per minute, or about half the normal speed of speech. The words are highly similar to conversation, yet repeated an average of three times. This repetition is not considered unusual in song, yet in speech it would seem redundant. Trapp (1991) reminds, “The more repetition you give your students, the more likely it is that they will retain the message” (p. 438). Since 94% of pop songs have no time marker, 80% have no specific place indicator, and 62% lack gender referents, the song’s story occurs when, where, and by whom it is heard: “Their vague references allow learners to fill them with their own content” (Murphey, 1992, p. 774). Pop songs’ frequent pauses make the songs more understandable to learners, and may allow the listener time to search his own life experiences for an association, therefore strengthening a personal “owning” of the feelings expressed in the song. Thus, pop songs become rich learning material with natural texts, seemingly better than authentic spoken discourse, due to the manageable speed and vocabulary repetition.

Recordings of modern popular music are generally brief in duration (from 3-6 minutes), so they will capture the students’ attention. The music and the lyrics
are an audio representation of the living language, rather than an artificially constructed pattern, often found in grammar textbooks (Urbancic & Vizmuller, 1981). Songs frequently are closer to the real life experiences of the students than most textbook material, with lyrics that exemplify good examples of authentic language (Willis & Mason, 1994).

Songs for the pilot studies varied somewhat from those of the main study. The first pilot study used famous Mexican folksongs. I had a copy of the written lyrics to these songs and they had been repeating in my mind. One of the students was a musician, so he was asked to play the tunes on the guitar while the class sang. Since older folksongs have some idiomatic expression, the students were aided in the comprehension of the songs lyrics. The songs for the second and third pilot studies were chosen for convenience. A Puerto Rican male was available and willing to record the spoken text of the song lyrics; therefore, songs recorded by Caribbean male singers were chosen.

The main study began with songs by Luis Miguel. Several teachers had commented on the quality of voice and the clarity of articulation of this Mexican singer. In addition, I am very familiar with the lyrics and have an ample collection of his recordings, therefore it would be easy to choose one of his songs based on either content or syntax. The song chosen for song 1 was Somos Novios, then Usted was chosen for song 2. The last song was chosen since it was the end of the fall semester and the topic related to Christmas. However the students and the instructor disliked the song and it was changed on the first day. The replacement song, Milagro, was a more popular song by Gloria Estefan and was
chosen by the instructor. She believed the song was more enjoyable for beginning-level students.

Therefore, most of the songs were either traditional folksongs or romance ballads as mainstream popular songs had been deemed too difficult for beginning Spanish students. If songs are always selected according to the musical taste of the instructor, song type may be limited. On the other hand, most instructors will not tolerate listening to a song at least six times if they dislike it. Students’ preference and instructor’s preference of musical selection may be very different.

Summary

This study investigated the effects of songs in a beginning Spanish classroom and collected data to answer the research questions. Data examined consisted of cloze tests that determined the number of words that students remembered from the song. At the end of the semester, data was collected as to the amount of mental repetition students reported. These results are important to expand upon studies that provide empirical evidence on the topic of songs in the foreign language classroom and to add to the knowledge base which instructors may use when choosing to teach a second language through songs.
CHAPTER 4
RESULTS

Overview of Statistical Procedures

An ANOVA test was performed to analyze data gathered on the variables of the 3X3 design. For the text recall component, the SAS program performed the Least Significant Difference (LSD) test with the Bonferroni adjustment to make pair-wise comparisons (t tests) between the treatment groups. SAS default was at 5% level of significance.

For the din component, students were given questionnaires and asked to report on whether or not they experienced the din. A frequency amount was calculated giving a percentage of din occurrence from each class. A categorical analysis was then run as the dependent variable can take only two values, yes or no. The chi-square test of independence was performed to check for significance.

Treatment during the fall semester began on September 10, 2001. Since the initial treatments continued the next two days, the instructor relayed concerns of attendance. In response to the September 11th terrorist attacks on the country, some students were absent that day from class. Other classes were suspended. The following day, in addition to the higher absentee rate for all the classes, there was a somber tone to instruction as reported by the instructor.

To address this issue, a covariate correlation procedure was run to ascertain any correlation present between the total scores obtained on the text recall task and the number of times students heard the material (exposures to the treatment). No correlation was found.
Results of Research Questions

Research Question 1

1. Is there a significant increase in text recall when this text is learned through the use of songs? The results of this question were analyzed, with data obtained from three songs. After the song, a cloze test with missing words at intervals of every seventh word was given to the three groups. Students wrote as many missing items as they recalled and total words were tabulated for memory. Group A was the music class, Group B was the text class, and Group C was the control group. Due to missing values, 76 of the 94 total observations were used in the analysis of song 1. The comparison of results for song 1 showed no significant difference on the ANOVA test—the p value was 0.0861; however, the pair-wise comparison showed a significant difference (0.0504) between the music class, and the text class.

The null hypothesis \( (H_0) \) is that if the average score of each group is found, then those 3 averages would be similar in number, proving that the difference in sample averages displayed a chance variation, due to sample selection procedures. If this were confirmed, then the groups would represent 3 equal samples from the same population. The alternative hypothesis would be that the average scores are different.

From the SAS output, we have the F-value as 2.28. SAS used a default of 5% level of significance for the analysis. With the p-value being .08, which is greater than .05, we fail to reject the null hypothesis. There is a high probability of getting the average scores of the groups almost the same. This is likely to
happen in more than 5% of the cases and hence we cannot reject the null hypothesis. There is a strong evidence in favor of $H_0$.

With the p-value of .08 being greater than .05, no more comparisons need to be made. However, the pair-wise comparison between the groups (t-test) was run at the same time. The difference between the music class and the text class was .05 which is considered significant. It can be concluded from the results that there is a small significant difference between the groups when comparing for the variable text recall on the basis of song 1.

For song 2, the previous three groups were again tested, as well as a fourth group of the same level taught by the instructor. Group A was the music class, Group B was the text class, and with Group C now the melody group, and the fourth, Group D, was the control group. Of the total, 64 observations were used for this analysis. The F-value from SAS output was 2.97, and in the corresponding test, $p$-value = 0.0387, showing a significant difference between the groups.

The pair-wise comparison was thereby analyzed. Although the t-test showed a significant difference between the control group and all other groups, the outcome was not relevant, since the control group received no treatment. No significant difference was shown between the music Group A (4.067), the text Group B (2.701), and the melody Group C (2.573). Although the music class performed better than the text class, these scores were not significant. It is interesting to note that the melody group, which had also received the musical treatment scored even lower than the text group for this song.
It can be concluded from the results that there is no significant difference between the treatment groups, when comparing for the variable text recall on the basis of song 2.

The groups remained the same for song 3. Of the 94 total students, 56 were used in this analysis. The F-value from SAS output was 2.64, and the p-value from the corresponding test was 0.0590. Text recall results for Song 3 showed that the music class performed significantly better than the text class, demonstrating a significance of 0.0345.

It can be concluded from the results that there is a significant difference between the groups when comparing for the variable text recall on the basis of Song 3.

To summarize research question results as to whether there is a significant difference in memory recall for the music class as compared to the text class, there was no significant difference for song 2, however there was a significant difference for song 1 and also for song 3. The students from the music showed greater memory recall and scored significantly higher than the students from the text class in songs two of the three songs tested.

Research Question 2

2. Is there a significant difference in delayed text recall of students who heard text in song as compared to those who heard text in recorded speech. Here our null hypothesis was that there would be no significant difference between the two groups when tested for delayed text recall. Groups A and B, having heard song 1, were given the cloze test for the first song after a two week
delay, to determine the amount of memory retention. In this test, as in all the tests, the music group performed better than the text group. However, this difference did not reach significance. The F-value from SAS output was 0.94, while the p-value from the corresponding test was 0.3989; a result greater than .05. Hence, we fail to reject the null hypothesis. It may be concluded from the results that there is no significant difference between the groups when comparing for the variable of delayed text recall, on the basis of song 1.

**Research Question 3**

3. Is there a significant difference in the recall results when one group of students from the two musical groups hears the melody of the song during the recall test? Here our null hypothesis was that there was no significant difference between the groups when testing for the melody during testing variable. For this question, students of Group C heard the same music CD during treatment as group A, but Group C then heard the melody only of that same song while taking the cloze test. This treatment remained the same for Songs 2 and 3.

Recall results for Song 2 showed no significant difference between the melody and the other treatment groups. Results showed that the melody group not only scored lower than the music group-even though they had received the same treatment—but they also scored lower than the text group. In Song 3, the melody group moved much closer to the music class performance in this song. The melody group performed better than the text group, and nearly as well as the music group. However, this difference did not attain significance.
It can be concluded from the results that there is no significant difference between the groups when comparing for the variable text recall on the basis of melody. Summary results of the text recall component of analysis for research questions 1, 2, and 3 show that the music group consistently scored higher than all other groups. There was no significant difference in delayed recall or in recall of song 2 between the class that heard song and the other classes. There was also no significant difference between the group that heard the melody and the other groups. Students from the music group scored significantly higher than students from the text class for songs 1 and 3.

**Research Question 4**

4. Is there a significant difference in the occurrence of involuntary mental rehearsal (din), after listening to song rather than text? Here our null hypothesis is that there is no significant difference between the four groups when reporting for the occurrence of involuntary mental rehearsal.

For Research Question 4, all students were given a post-treatment questionnaire, and asked to report on the occurrence of involuntary mental rehearsal or din, in this case (Appendix D). The definition of this phenomenon was explained to all groups.

Comparison results showed a marked difference between the musical groups (A and C), and the text group (B). Group D was not given the questionnaire since the questions pertained to the special listening activities done during the semester, and group D had been given none of these activities. Therefore, 44 subjects who completed the survey were used for this analysis.
Students from the groups that received the song treatment reported a much higher occurrence of the din than did students from the text group. In the musical class, 66.67% of the students reported experiencing the din. The text class showed the exact opposite frequency with only 33.33% of students reporting the din experience. The melody class showed 78% of students reporting the din phenomenon experience. A comparison of din scores are shown on the following figure.

![Din occurrence](image.png)

**Figure 1.** Percentage of din occurrence from main study

The melody class, Group C, heard the same amount of songs during the treatment, although in effect, the group heard the tune of the songs an additional
time. These students also heard the tune of the song while testing. Thus, the students in the melody group got another exposure to the music.

The null hypothesis for research question 4 states that the group averages will be within the same range with no significant difference between groups A, B, and C. We have nominal data for categorical analysis as the dependent variable can take only two values, yes or no. The chi-square test of independence was performed to check for significance. Results of the chi-square value was 7.2209 and the p-value was 0.0270 which shows that there was a significant difference between the classes. There is strong evidence to reject the null hypothesis, therefore, it can be concluded from the results that there is a significant difference between the groups when comparing for the variable din occurrence.

Further analysis was done to compare two groups at a time and determine the significance between specific groups. Statistical results revealed a significant difference between the text class (B) and the melody class (C). Students of the melody class heard the song in the same manner as students of the music class, and then they heard the song during testing. Chi-square values and p-values for each group are shown on the table below.

**Table 4. Statistical results of din comparisons from the main study**

<table>
<thead>
<tr>
<th></th>
<th>Class A (music)</th>
<th>Class B (text)</th>
<th>Class C (melody)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Class A (music)</strong></td>
<td></td>
<td>Chi-square</td>
<td>Chi-square</td>
</tr>
<tr>
<td></td>
<td></td>
<td>p value</td>
<td>p value</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3.2142</td>
<td>.4654</td>
</tr>
<tr>
<td></td>
<td></td>
<td>.0729</td>
<td>.4950</td>
</tr>
<tr>
<td>Class B (text)</td>
<td>Chi-square</td>
<td>3.2142</td>
<td>Chi-square</td>
</tr>
<tr>
<td></td>
<td>p value</td>
<td>.0729</td>
<td>p value</td>
</tr>
<tr>
<td><strong>Class C (melody)</strong></td>
<td></td>
<td>3.2142</td>
<td>Chi-square</td>
</tr>
<tr>
<td></td>
<td>Chi-square</td>
<td>.4654</td>
<td>p value</td>
</tr>
<tr>
<td></td>
<td>p value</td>
<td>.0729</td>
<td>.0109</td>
</tr>
<tr>
<td></td>
<td>Chi-square</td>
<td>.4950</td>
<td>.0109</td>
</tr>
</tbody>
</table>
Limitations include sample size since some students chose not to report on the question about the din, therefore with a small sample size each observational unit carries more weight toward the total results.

**Summary**

The overall results of the research questions are briefly summarized here. Immediate recall of text showed higher scores for the music class in all three songs. This difference reached significance in Songs 1 and 3. The greatest significance was seen in Song 3. It can be concluded that the students who heard songs scored significantly higher than students who heard spoken text in two out of three trials. Delayed text recall showed no significant difference between the classes.

For the group that heard background melody during testing, there seemed to be no advantage to this type of testing. In Song 2, the students from the melody group tested lower than those from the text group. It appears that the melody did not facilitate recall while taking a test; rather, it may have negated any effect gained by hearing the song before testing. Results of scores for students of the melody class were much improved for Song 3, however scores were not as high as the music class. It can be concluded that there is no significant difference between the group that heard the melody during testing and the groups that did not.

Overall results for the din occurrence showed a significant difference between the classes. Scores indicated that students in the classes that heard music reported a much higher occurrence of this phenomenon than did those
who heard only spoken text. Student scores from the music class showed twice the frequency as those of the text group, but this difference did not reach significance. Significance was reached when comparing percentages of student reports of the melody group to those of the text only class. Students of the melody group reported a significantly higher frequency than did students from the text group. It can be concluded that students in the melody group who heard songs had a significantly greater occurrence of the din phenomenon than did those students from the text class who heard only recorded speech.
CHAPTER 5

DISCUSSION AND CONCLUSIONS

The numerous benefits of song have been extolled by the research studies summarized in the previous chapters, as well as by foreign language teachers. Nuessel and Cicogna (1991) sum up the pedagogical techniques that utilize song and music implementation as a medium for “pronunciation, morphological or syntactic patterns, vocabulary-building, and cultural aspects, to name but a few possibilities. A song constitutes an ideal text that is admirably suited to a multiplicity of learning/acquisition activities carried out in the language classroom” (pp 476-477).

The benefit of song has been promoted by discussing the findings of this research study in the areas of text recall and involuntary mental rehearsal. In addition, student comments from questionnaires done by Gatti-Taylor (1980) offered a view of what students believed to be the benefit of songs in the curriculum. All students agreed that the association of words and music made memorizing less difficult. Most said that the music added enjoyment to class meetings: “It created a pleasantness that was always present. A number of students volunteered remarks to the effect that they played the songs at home, or that they occasionally found themselves spontaneously singing the refrains in the course of their daily routines” (p. 468).

Purcell (1992), said that the benefits of song even resound in the songs themselves. As the last refrain from the famous folksong reminds, *porque*
Restatement of the Objectives of the Study

The objectives of this study were to compare the effect of music on the memory recall of Spanish language song lyrics using cloze tests (Appendix F), compare delayed text recall results, and compare the occurrence of the din phenomenon as reported by students (Appendix G). The data collected attempted to answer the four research questions. The answer reached for each research question is discussed in the following section.

Discussion of the Main Study Results

The answer to Research Question 1, “Is there a significant increase in text recall when that text is learned through the use of songs?” varied with the song. There was a significant increase of text recall for the music group in Songs 1 and 3. No significant test results were reached for Song 2. Results of this variable were intended to add research knowledge in regard to the integration of melody and text in memory. The theory of melody-text integration as discussed by Serafine, et al. (1984) and Serafine, et al. (1986) stated that the melody and the text of songs are learned together as one integral unit. According to that scenario, the song is stored in memory as one unit, and the melody will serve as a memory trigger for the text. Results of the present study seem to lend support for that theory in song 1 and song 3. However, since one song did not approach significance, these findings can not support or dispute this theory.
The control group performed better than the text group in Song 1, indicating that students were able to guess the meaning of some of the missing words. Whether or not this group consisted of high performers was unclear, since there were no standardized Spanish tests given as pre-tests.

Test results for Song 1 and 3 reached significance when testing for the amount of items recalled. The scores from the students in the music group were significantly greater than the scores from the students in the text group. Song 2 did not reach significance between the comparison groups. Reasons for the lower student scores could be due to the song choice. The song, *Usted*, is a romantic ballad written in 1951. Lyrics provide rich yet antiquated vocabulary, and poetic text with complicated syntax structures. The smooth singing style of the singer and the accompanying orchestra provide a wonderful piece for enjoyment or relaxation. However, the text may have been too difficult for beginning level students to retain given the length of exposure. Is may also be possible that the song was not enjoyable for these particular students.

It should be noted that the greatest significance appeared in Song 3, the last song of the semester. By the end of the semester, beginning students have a better grasp of the language, comprehended more of the words, and therefore were able to retain more of the lyrics. In addition, the song, *Milagro*, is considered a more popular, contemporary song that was sung by a more popular singing artist (Gloria Estefan). Students may have enjoyed song 3 more than the others, which may have increased motivation to learn the lyrics the subsequently aided in higher recall scores.
It should also be noted that the cloze tests for Song 1 and 2 were administered to students the next class period. Thus, there was a two or three day delay between treatment and testing. Ideally, students should have been given the tests on the day listening treatment ended rather than providing a short delay period. This could have seriously lowered recall results in songs 1 and 2. Students at this level of Spanish language proficiency were probably not able to store the song into long-term memory with only six treatments. For Song 3, however, the instructor was reminded to administer the recall test on the same day of the last listening treatment, thus making the recall task more immediate. This could be another reason for the strong significance in Song 3.

The response to research question 2, “Is there a significant difference in delayed text recall of students who learned the text with song, as compared to those who learned the text with spoken recordings?” was negative. The findings showed no difference in delayed text recall between the groups, indicating that neither the music students nor the text students retained the material long enough for storage into long-term memory. Several studies indicate that the time between treatment and the delayed recall task may have been too short. The time lapse after the last listening treatment was only two weeks. Bygrave’s (1995) study showed an improvement in the receptive vocabulary skills of the students participating in the music program. However, this music effect on retention was not apparent until the test given 7 weeks after the posttest.

These findings appear consistent with studies by Hurwitz, et al. (1975), who found that the development of reading skills in young children involved in a
music program tended to accelerate over a prolonged period of time. This suggests that a longer period of time may be needed for a significant music effect to show.

The two studies mentioned above suggest a longer delay period is necessary in order to see the effects of music. In contrast to my study, both results were observed with children that were being tested in their native language. Further study might administer the delayed recall test after a longer delay period than the present study employed. It is doubtful that this would have made a difference in these results since I suspect the words were not stored in memory. It is important to remember that students in the present study are not only dealing with a foreign language, but also with some difficult and poetic language. Perhaps instead of lengthening the delayed recall time, the initial learning time should be increased in order to allow enough processing time for text to store in memory.

The data collected to answer the Research Question 3, “Is there a significant difference in the recall results when one group of students from the song groups hears the melody of the song during the recall test?” began with Song 2. For Song 2, students of the melody group scored lower than students of the text group. Playing the melody while testing may have removed any positive effects gained through the musical treatment. Since the melody group students received the same treatment as the music group students, the background tune may have served as a distractor rather than a facilitator. Some students may prefer quiet during a test taking task without the distraction of the melody.
The test results for the melody group were much improved for Song 3. In Song 3, although students of the melody class had been exposed to the same songs, they continued to perform lower than students of the music class. However, the melody group performed almost as well as those of the music group. Were the students more accustomed to hearing music during testing or did the type of song help make the melody more effective in triggering learned text? The only difference in the groups was the background melody during testing, therefore, we can infer that the difference in results is based solely on the testing situation. This would indicate that college students prefer to test without distractions.

To summarize the results of the text recall component, under the parameters of this study, music aided in the immediate recall task, but did not aid in delayed recall or recall while hearing the melody. It can be concluded from these findings that the amount to which music aids in memory may depend on several variables not yet fully investigated.

In Question 4, “Is there a significant difference in the occurrence of involuntary mental rehearsal (din) when taught with song rather than text?” the results reported on the din were significantly different when the text is taught with song rather than text. Students from the classes that received the musical treatment consistently reported a higher occurrence of the din than did those from the classes with text only (See Figure 1).

In addition, students from the musical class commented on the Song Stuck In My Head Phenomenon. Many reported that they could not get the song out of
their head. Many students commented that the chorus of the song was the part of the song that most often stuck in their heads. More study is needed to determine if this is due to the fact that the chorus is repeated several times during a song or due to the students comprehension of the phrases in that particular chorus which then facilitated its repetition in the mind?

The advantage that music has in increasing the din occurrence appears clear. As postulated by Krashen (1983), the din may be an indication that language acquisition is taking place. In the present study, din was increased by the use of song, therefore, it is to the students' advantage to increase stimulation of the language acquisition device by having more instruction in the form of songs. How the din may affect specific aspects of second language acquisition needs more investigation.

**Relation of Results to Previous Studies**

In other text recall studies, texts with antiquated language or difficult idiomatic expressions were excluded. This was not possible here since these types of expressions were naturally occurring in the available songs. Songs were selected to accompany an available speaker that matched in gender and nationality; therefore, these expressions could not be excluded.

From the studies reviewed in Chapter 2, it is apparent that many researchers (Cormier, 1985; Fiske, 1993; Hove-Harding, 1989; Heller & Campbell, 1981; Lowe, 1995; Sloboda, 1985; and Swain, 1986) believe a symbiotic relationship exists between language and music. Previous musical instruction, ongoing musical instruction, or a tested musical aptitude may have a
positive correlation on the learning of a second language. The present study did not address such a correlation, since its purpose was to demonstrate the effects of song on a group of individuals, regardless of their musical experience. Songs are an effective way to organize language input, even for those learners who have not received regular musical training.

The present study holds some similarities to the McElhinney and Annett (1996) study of the effect of music on recall, where the recall of classes was compared in regard to prose or song. Subjects listened to the text three times, then wrote remembered words (free recall) in any order. However, in the present study, subjects heard the text six times, and then recalled missing words in a cloze test. A cloze test is more restricting, in that items must be completed in relation to their order within the surrounding text. A free recall of words would be very difficult to grade in a foreign language, since students would try words that may not even exist; therefore, graders must try to figure out what word the test taker meant to write. In native language testing of recall, even if one does not remember the right word for the particular blank, at least the word the subject writes is a correct word in that language.

Both studies reported better overall recall in the song model; the song group scored significantly higher than the prose group. The present study showed recall was greater in the song condition for all songs, while the song group scored significantly higher than the prose group for Songs 1 and 3. The McElhinney and Annett (1996) study used a non-familiar tune to avoid interference from text that may have previously been learned by chunking, or
storing lyrics into memory with the familiar tune. For the same reason, this study also used non-familiar tunes, although the use of familiar, popular songs that had been translated into Spanish might have increased students’ interest. Another important aspect about the McElhinney and Annett study is that there were no unfamiliar words. In the present study there were many unfamiliar words that were incomprehensible for beginning Spanish language students, although the instructor was asked to assist students in the comprehension of the lyrics.

The concept of interference is the reason popular songs by bilingual artists were not used. Theories by Serafine, et al. (1984) and Serafine, et al. (1986) in discussing chunking bits of information with the tune in memory, stated that students had experienced interference with these familiar songs from the English words already learned. If the brain had stored the music and the text as one unit, the tune of familiar songs would have brought to remembrance the connected vocabulary, and thus would have been a hinderance to the learning of new vocabulary.

Wallace (1994) compared spoken texts and text learned with music under three conditions: melodic text, rhyming text, and spoken text. When the present study compared melodic text and spoken text, the end results were similar. Nevertheless, Wallace reported a significantly greater recall of text for the sung condition. This research also showed a significantly greater recall of text for the sung condition as well, yet not for every song.

Wallace noted that this significance occurred only when the tune was simple and repeated. Songs selected for the present study might have been
simpler tunes with more repetitious lyrics, to enable a thorough learning of the melody. It should also be noted that subjects from Wallace’s study were asked to recall text from their native language that had been learned in childhood, whereas subjects of this investigation were not only making an effort to understand text items-some for the first time—but also recalling those items.

Japanese students, exposed to song on a consistent basis in two language courses, were asked by Jolly (1975) to rate the value of songs. A significant majority of the students (80% and 91%) rated the songs as being very useful for language study. Jolly reported that the songs affected the students’ moods, creating a relaxed and enjoyable mood in the classroom. The relaxed mood relieved the usual tedium, thus making students more responsive to learning, and livened up the pace of the lessons as well. Jolly concluded that songs served both educational and psychological needs.

Similarly, students in the first pilot study reported (Appendix A) with 86% frequency that the Spanish class became more enjoyable after songs were introduced; 75% felt that the use of music helped them learn. The opinion of most of the students was that they would benefit from a foreign language class based on music.

Students in the main study were asked if they thought the listening activity was a positive addition to the Spanish class. The following percentages compare by groups:

1. 100% of the music class reported that the songs were a positive addition to the class.
2. 76% of the text class reported the listening activity as positive.

3. The melody class reported in an 86% frequency, that the listening activity was positive.

   Results of percentages reported from the melody class are higher than those reported from the text class; however, they are not as high as the music class percentage. One possible difference is that the melody class heard the background melody while testing. Many students stated that they did not like the distraction of the background melody. One student requested that the instructor turn off the CD player.

   Din results seen in this researcher’s studies are comparable to those from other researchers (Bedford, 1985; de Guerrero, 1987; Krashen, 1983; McQuillan & Rodrigo, 1995; Parr & Krashen, 1986). Combined totals of the studies by Bedford (1985), Parr and Krashen (1986), and de Guerrero (1987) show the extent of din among language learners. Of a total of 581 second language learners, 74% said they experienced the din.

   The study that I conducted also indicated that this phenomenon is widespread and occurs in foreign language learners, regardless of which method of input they experienced. Contrasts, however, were seen between the groups exposed to different input methods. Din occurrence reported from the text class was only 33%, while the students of the music class averaged 67% of din occurrence. Students from the melody class showed a 78% reporting of the din.

   From these results we can conclude that there is a much greater occurrence of the din when it is activated by music. Therefore, results indicate
that what is termed as a “musical din” marked a more efficient way to trigger mental rehearsal that may in turn stimulate language acquisition.

Many students from Bedford’s study (1985) mentioned an “insistent playback of music.” Others reported that this playback happened during mechanical chores like driving, mowing the lawn, etc. Students from the present study also reported on this insistent playback of music, stating that they were “unable to stop it.” Further, students reported that the mental repetition happened during mentally mechanical activities. These actions were most often driving and walking to the parking lot. This strongly suggests that when active mental focus was relaxed, the din was more active and was allowed to function in a language enhancing mode.

Implications for Foreign Language Teachers

The results of the studies reported here could influence the use of songs in foreign language classroom practice. The findings indicated that music has a definite pedagogical value. Results of the scores showed an advantage in memory recall results for two of the three songs analyzed. Additionally, the findings indicated a clear advantage in using songs to activate the din experience and increase subvocal language practice.

When the Language Acquisition Device (LAD) activates a din in order to practice elements for acquisition, the presence of the din therefore is an indication that natural language acquisition is taking place. Pilot studies, as well as the main study, demonstrated that the din is activated more often with music than with text. Since the songs provided prolonged practice with the language
through the musical din, the use of music and songs to present material appears to be an effective method for stimulating the acquisition process.

Kadota (1987), Krashen (1982), and Postovsky (1974) suggest that students should be allowed a silent period preceding production. During this listening period students hear authentic communication without forced communication. Postovsky believes that forcing students to produce out loud in the beginning stages of learning may even inhibit later production. Songs provide a way for beginning students to repeatedly hear the native pronunciation in a natural occurrence until they are comfortable enough to produce speech.

The use of songs could replace excessive readings which would not only relieve some language performance anxiety but also possibly improve the long-range potential for better pronunciation. In the case of songs, students would hear the correct sounds rather than their own strong non-native pronunciation that is heard when they read.

Another argument is made for using songs to increase the memory of material to be learned. A memory advantage was confirmed for students who listened to songs in two of the songs presented in this study. Memory after songs may also be connected to the phenomenon of involuntary mental repetition. When the learner gets input in the second language, the mind often involuntarily repeats the material over and over (din). This rehearsal may aid recall and production in the long run. When the input is in the form of song, the mental repetition of the language is heard more often as evidenced in the present study.
Memory, then, may be further aided by more repetition. According to Wilcox (1996):

> The residual effects of singing, as the music persists in the mind long after the vocal activity is complete, may be the key for increased practice, both silent and audible, with the target language. This increased practice through residual singing in the mind, may assist in memory of vocabulary pronunciation in the L2, as well as the association effects of singing input. Music may aid memory of vocabulary by extending the time frame of active practice, so the vocabulary is remembered long enough to be reproduced. (pp. 2-3)

This increased amount of repetition that Wilcox calls the residual effects of music was evident in my study. Students reported that the music persisted in their minds long after the listening activity was over. The extended time frame described by Wilcox, however, probably refers to much longer periods of time than were tested in my study. Production tests to verify that students could repeat the tune were not done in my study and it is unlikely that students learned a tune that was not “catchy” in only six treatments. In this scenario, one must be sure that students have learned the music well enough to provide extended audible practice.

As more music is incorporated into L2 instruction, decisions could be made to guide development of an interdisciplinary approach to curriculum designs for language and music development. Activities with song possess the “middle ground between linguistics and musicology, possessing both the communicative aspects of language coupled with the entertainment aspect of music” (Jolly, 1975, p. 11).
**Limitations of the Study**

Certain limitations were imposed in this study including geography, sample size, lack of song resources with simple, catchy tunes, and the lack of higher level language learners. This study should be replicated with a larger sample size, more than one language course level, a personality tests variable, and a pre-test placement exam. In the initial proposal of this study, the investigation was to be carried out with fourth semester level students.

The rationale for a study on students at a more advanced level is that they have already been taught the basic structures of the grammatical system. A higher level of proficiency would make it more unlikely that subjects encounter unfamiliar patterns in the song lyrics. If students more fully comprehend the song’s content, less of their efforts would be expended in trying to understand specific vocabulary. Instead, students might be more focused on contextual meaning, and thus experience the song topic emotionally. It would follow naturally, that the more intense and unhampered the focus on the song, the better the results in memory learning. Because of the restrictions imposed by limitations on this study, certain recommendations for future research are made.

**Future Research Suggestions**

Future research in dealing with music and text recall, or music and the occurrence of the din, would ideally incorporate the suggestions below:

- Tests of learning mode dominance should be added to investigate whether aural, visual, or kinesthetic students would benefit the most from the music/language integration.
• Data collection should be carried out with students in the higher levels of Spanish classes.

As an alternative, a song employing a lower level of language might be used. However, when the students are adults, it is difficult to find a basic language level in a song that also deals with topics that maintain the interest of adults. Songs that are clever or funny may provide interest, even though simplistic in nature.

• Fewer songs should be presented to allow more time on meaning.

Teachers should focus more on comprehension, taking the necessary time for students to understand the language in the lyrics before the musical input.

• Longer exposure time for each song so that more words may be stored in long term memory.

Because of the conflicting results on the text recall component of the studies discussed here, more time is needed for both song and text, especially at beginning and intermediate levels. Wallace (1994) reported that “subjects do not appear to be willing to reconstruct or guess the contents of a text if it is not well understood” (p. 1483). Students in these studies might have been unable to comprehend the text well enough to incorporate it into memory, and unwilling to guess the contents of the text.

• The melody of the song should be completely learned.
The residual effects of singing are not seen unless the tune is learned well enough to provide longer periods of mental repetition. An example of this is seen on television as advertisers use catchy jingles to keep products in mind longer. A study done on the NBC musical motto is a good example of simplicity. Despite hearing the three notes played on different musical instruments and in different pitches, as long as the combination of the three notes were kept in their original sequential order, the subjects were consistently able to correctly recognize the notes that represented NBC.

• Simple tunes or jingles should be used in an effort to produce greater recall results.

Better results are reported by Wallace (1994) when the tune is simple. When coupled with an easily learned tune, song lyrics may facilitate language acquisition by mentally repeating long enough to allow the text to be stored in memory with the music. This form of memory storage using melody to recall words, may be a more efficient memory aid than text alone.

• Song should contain no unfamiliar words (Wallace, 1994).

This may be especially important for second language learners. When the song heard is in the listener’s second language, the recall task is compounded with the task of comprehension. If the song heard is in the listener’s first language, the task is restricted to recall.
• The occurrence of the din should be compared among the various levels of language classes, in order to determine whether beginning or advanced students experience more din.

• The occurrence of the din should be tested after each song rather than at the end of the semester in order to determine which type of song is more efficient in activating the din.

• A description of the occurrence of the din should be reported by students.

Students could be given a checklist or questionnaire for recording the occurrence of the din outside of the classroom. Insight could be gained as to when, where, and during what activity the din is most often experienced. Information might be gained into some of the mental processes that occur in din production and how these mental processes may be effected.

“If we can get reliable reports from students on when the din is ‘on’ and when it is ‘off,’ it may tell us when our instruction is effective. In short, it may tell us when we are providing truly interesting and comprehensible input, and thus, when we are causing real second language acquisition” (Krashen, 1983, p. 44).

Song Selection Criteria for Future Studies

Little (1983) offered some song selection criteria for language teachers. The song should be popular (Monreal, 1982), meaningful to the student (Zola & Sandvoss, 1976), slow enough to test comprehension as well as clear enunciation on the part of the singer (Urbancic & Vizmuller, 1981; Monreal, 1982). Attention should also be paid to the level of language used. Urbancic and
Vizmuller (1981) suggested that “songs with simple colloquial expressions should be selected and that there should be no difficult idioms, slang or vulgarities” (p. 81). Terroux (1982) believes that there should be normal speech and word order with no distortion of normal word stress. Terroux suggests that “the song be catchy, easily remembered and age-appropriate” (p. 70). Thus, the choice of songs used in the foreign language classroom should contain simple text strings that are strongly linked to the musical characteristics.

Murphey (1992), suggests that pop songs may be particularly appropriate for language learning, because their discourse includes simple, affective language with riskless communication qualities, native texts, a high verb count, and familiar vocabulary. Certain songs may be easily remembered due to the quality of the melody and the text. Pop songs and advertisement jingles have melodies that are catchy and easily learned (Harrison, personal communication, April 14, 1997; Murphey, 1992; Wallace, 1994). Therefore, pop songs are well suited to the task of instruction in the classroom environment.

**Conclusion**

The goal of this study was to show that a drastic change in teaching methodology is not necessary for students to benefit from the addition of musical activities to the classroom experience. In addition to the quantitative results, the students felt that they benefitted from the experience. The majority of students from both of the classes that heard songs reported that music was a positive addition to the classroom; the melody class by 86% of students and 100% of students from the music class answered yes to this question.
As second language educators we try to provide students with the skills to understand authentic communication. A song is an ideal marriage of poetry and music, and is "one of the most authentic expressions of people, their feelings, and their everyday life" (Deliére & Lafayette, 1985, p. 412). Music can empower students with a real world communicative advantage. After all, a song tells a story set to music; therefore, one has examples of authentic speech that is slowed, rhythmic, and repetitious—a powerful tool to impress upon the individual learning experience.

I must stress that music is not presented here as a panacea, replacing all other methods as the only viable teaching tool. It should, however, be considered an important teaching method that is an acceptable tool for classroom instruction. As such, music and song may not only be entertaining, but also may provide numerous benefits to students. In effect, I echo Medina’s (1990) belief that “the use of music to promote second language acquisition should occupy a more important role in the second language curriculum. This can easily be accomplished by increasing the frequency with which songs are used in the curriculum” (p. 18).

It’s a tool every teacher can use, but as B. Dupuy (personal communication, April 3, 1997) puts it, people have to be into music to see its instructional potential.

The research presented here is part of a vast amount of literature that provides evidence for the benefits of music. The majority of the empirical studies conclude that music and song have a positive effect on the variables studied. The
plethora of articles on the use of music in subjects other than foreign languages has shown a distinct advantage of providing music instruction with other subjects. The correlation has also been shown between musical aptitude or training and academic skills.

Songs can be selected that will complement aspects of a thematic unit, another content area, or a topic of interest that students have requested. It is not difficult, as Willis (1994) states, to develop a lesson plan around a song that can be an avenue to teach grammar, phonetics, culture, geography, etc., where students may practice the five skills. If we can employ a song with enough resilience to stick in the mind long enough for students to experience success with certain language structures, learn a feature of the target culture, or achieve listening enjoyment and thus desire more language opportunities, then we will have accomplished the goals stated in the National Foreign Language Content Standards (1995).

The standards provide benchmarks of specific examples of what students should know and be able to do in a foreign language. The use of music and song in the target language is evident in each of the five content standards. There are other benchmarks that cover general topics such as skits, folklore, products, etc., in which songs could be easily interwoven. However, the following benchmarks describe the use of music as the specific way in which to introduce classroom materia that will help the student achieve the desired language skills in each area.

1. Communication [singing] (CM - 1 - D4, CM - 3 - B4, CM - 3 - D4)
2. Compare Cultures (CL - 1 - B3, CL - 2 - B2, CL - 2 - E2, CL - 2 - D2)

3. Connections - learn other disciplines [i.e., geography or music] (CN - 1 - D1, CN - 2 - D1)

4. Comparisons of the nature of language (CP - 2 - B3, CP - 2 - D4)

5. Communities - show evidence of becoming life-long learners by using the language for enjoyment and enrichment (CT - 1 - B4, CT - 1 - D4, CT - 2 - B4, CT - 2 - D4, CT - 2 - E4)

In conclusion, M. Parker (personal communication, May 17, 2001) shared an example of how she often sang simple tunes with a group of students in a summer study abroad program. She remembers how a particular song, De Colores, added pleasure to the travel. Each phrase repeats the title of the song, followed by a poetically beautiful phrase depicted in song. As one of those students, I also remember this experience and can, to this day, sing every line of that song learned more than 22 years ago.
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APPENDIX A

POST CLASS QUESTIONNAIRE OF FIRST PILOT STUDY

Responses (28 total)

1. Did you enjoy the music class more or less than the usual Spanish class?

<table>
<thead>
<tr>
<th>MORE</th>
<th>LESS</th>
<th>SAME</th>
</tr>
</thead>
<tbody>
<tr>
<td>24</td>
<td>3</td>
<td>1</td>
</tr>
</tbody>
</table>

2. Do you think the songs helped you learn anything?

<table>
<thead>
<tr>
<th>YES</th>
<th>NO</th>
<th>MAYBE</th>
</tr>
</thead>
<tbody>
<tr>
<td>21</td>
<td>5</td>
<td>2</td>
</tr>
</tbody>
</table>

3. Were you more comfortable to speak Spanish in discussing songs than in other classroom activities?

<table>
<thead>
<tr>
<th>YES</th>
<th>NO</th>
</tr>
</thead>
<tbody>
<tr>
<td>10</td>
<td>18</td>
</tr>
</tbody>
</table>

4. Did you find yourself at any time humming, whistling, or singing any of the songs after the class?

<table>
<thead>
<tr>
<th>YES</th>
<th>NO</th>
</tr>
</thead>
<tbody>
<tr>
<td>25</td>
<td>3</td>
</tr>
</tbody>
</table>

5. Was the occurrence intentional or involuntary?

<table>
<thead>
<tr>
<th>INVOLUNTARY</th>
<th>INTENTIONAL</th>
<th>NONE</th>
</tr>
</thead>
<tbody>
<tr>
<td>22</td>
<td>3</td>
<td>3</td>
</tr>
</tbody>
</table>

6. If you had a choice, would you prefer to learn language through music and songs to complement a textbook or stick to a more written format?

<table>
<thead>
<tr>
<th>MUSIC</th>
<th>WRITTEN</th>
</tr>
</thead>
<tbody>
<tr>
<td>19</td>
<td>9</td>
</tr>
</tbody>
</table>

7. If you were given tapes of Spanish songs, would you listen to them in your leisure time?

<table>
<thead>
<tr>
<th>YES</th>
<th>NO</th>
<th>MAYBE</th>
</tr>
</thead>
<tbody>
<tr>
<td>15</td>
<td>9</td>
<td>4</td>
</tr>
</tbody>
</table>
8. Which class did you enjoy most: Friday’s class with games or Monday’s class with songs?

<table>
<thead>
<tr>
<th>GAMES</th>
<th>MUSIC</th>
<th>SAME</th>
</tr>
</thead>
<tbody>
<tr>
<td>19</td>
<td>6</td>
<td>2</td>
</tr>
</tbody>
</table>

9. Which one do you think you learned the most from?

<table>
<thead>
<tr>
<th>GAMES</th>
<th>SONGS</th>
<th>EQUAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>15</td>
<td>10</td>
<td>1</td>
</tr>
</tbody>
</table>

10. What song produced the din?

<table>
<thead>
<tr>
<th>CUANDO CALIENTA EL SOL</th>
<th>AY AY AY</th>
<th>OTHER</th>
</tr>
</thead>
<tbody>
<tr>
<td>26</td>
<td>1</td>
<td>1</td>
</tr>
</tbody>
</table>

The results of this study can not be generalized beyond the scope of this sample, which was an intact group, no control group for comparison, and limitations of time, ages, and language level.
APPENDIX B

DESCRIPTION OF THE DIN


I spent last fall traveling in a dozen countries, mostly in Eastern Europe. Since I was working rather than touring, I had to communicate in any language I could. I had studied Russian 10 years ago and had read it some since, but I had never spoken it much; I had learned Modern Greek by travelling one summer in the backwoods of Greece, with some help from my classical Greek, but I had never read it and not used it at all in the intervening 17 years. French, which I had learned in a French schoolyard at age 12 and had studied in high school, and German, which I had studied one summer by correspondence, were more immediately serviceable: I had read and spoken both from time to time.

It turned out that the curators I was working with at the Hermitage in Leningrad spoke nothing but Russian. The first day I was tongue-tied, but by the third, I was getting along well enough. That is, we were managing to get the information back and forth to enjoy one another’s acquaintance, even though I was actually aware that I was making grammatical errors everywhere. But it was either that or hopelessly stall the conversation and the work. Any self-respecting adjective in Russian gives you on the order of 40 possible categories of forms to choose from, according to case, number, gender, and animacy, not to mention long and short forms and declension classes. If you have to dive into this labyrinth to select a form consciously, you find when you surface proudly with your hard-won morpheme that the conversation is 10 miles down the road. Either that, or your interlocutor is sound asleep. Social pacing turns out to be more important than grammatical correctness, even in a scientific conversation.

By the third day also, the linguist in me was noticing a rising din of Russian in my head: words, sounds, intonations, phrases, all swimming about in the voices of the people I talked with. This din blocked out all my other languages to a degree inversely proportional to how well I knew them. Many times on the trip, after a few days of a given language, my social signals always came out in the language, regardless of what I was trying to talk at the moment - except English, of course and interestingly, French. I had learned my basic French as a child, by child’s methods, and I have always retained the ability to switch in and out of it cleanly at a moment’s notice. And whereas German was difficult to switch to, Spanish, my most recent language, was hopeless.

The sounds in my head became so intense after five days that I found myself chewing on them, like so much linguistic cud, to the rhythm of my own footsteps as I walked the streets and museums. Whenever I noticed this din, the linguist in me would demand to know what I was saying. Half the time I had to look what I was saying up, or somehow reconstruct what it meant from the context in which I had heard it hours or days earlier. The constant rehearsal of these
phrases of course was making it easier to speak things quickly; things popped out as prefabricated chunks. But I had no control over what my subconscious fed into my “chewer” each day. It fed me what it considered to be memorable—not what I considered maximally useful. Nonetheless, my overall command of Russian improved more in a single week than it would have in a month or two of intensive reading.
## APPENDIX C

**SONG AND GRAMMAR CHART**

### Música que enseña (Music that teaches)

<table>
<thead>
<tr>
<th>GRAMÁTICA</th>
<th>CANCIÓN</th>
<th>ARTISTA</th>
<th>CD TITLE</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Adjetivos</strong></td>
<td>Corazón loco</td>
<td>Luis Enrique</td>
<td>Mi Mundo</td>
</tr>
<tr>
<td></td>
<td>Usted</td>
<td>Luis Miguel</td>
<td>Romance</td>
</tr>
<tr>
<td></td>
<td>Somos</td>
<td>Julio Iglesias</td>
<td>Calor</td>
</tr>
<tr>
<td></td>
<td>Ella es así</td>
<td>José José</td>
<td></td>
</tr>
<tr>
<td><strong>El presente</strong></td>
<td>Agua Dulce, Agua Salá</td>
<td>Julio Iglesias</td>
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<td></td>
</tr>
<tr>
<td>San Juan sin ti</td>
<td>Luis Enrique</td>
<td>Mi Mundo</td>
<td></td>
</tr>
<tr>
<td>Pronombres</td>
<td>Usted</td>
<td>Luis Miguel</td>
<td>Romance</td>
</tr>
<tr>
<td>Ese soy yo</td>
<td>Emmanuel</td>
<td>Ese Soy Yo</td>
<td></td>
</tr>
<tr>
<td>Eres Tú</td>
<td>Mocedades</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Piel Canela</td>
<td>Linda Ronstadt</td>
<td>Frenesí</td>
<td></td>
</tr>
<tr>
<td>No Sé tú</td>
<td>Luis Miguel</td>
<td>Romance</td>
<td></td>
</tr>
<tr>
<td>Siempre en mi corazón</td>
<td>Olga Tañón</td>
<td>Liévame contigo</td>
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<tr>
<td>Expresiones impersonales</td>
<td>Oye mi canto</td>
<td>Gloria Estefan</td>
<td></td>
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<tr>
<td>No me vuelvo a enamorar</td>
<td>Gloria Estefan</td>
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<tr>
<td>Verbos irregulares</td>
<td>¿Qué me importa? (Ser)</td>
<td>José José</td>
<td></td>
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<tr>
<td>La Quiero como es (Ser/Querer)</td>
<td>Julio Iglesias</td>
<td>Calor</td>
<td></td>
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<tr>
<td>Que tú te vas (Ir)</td>
<td>Luis Miguel</td>
<td>Nada es igual</td>
<td></td>
</tr>
<tr>
<td>Yo No Puedo Ser tu amante (Poder)</td>
<td>Luis Enrique</td>
<td>Mi Mundo</td>
<td></td>
</tr>
<tr>
<td>No Puedo Estar Sin ti (Poder)</td>
<td>José Feliciano</td>
<td>Mis Mejores Canciones</td>
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<tr>
<td>Me Voy Pa’ Cali (Ir)</td>
<td>Oscar D’Leon</td>
<td>El Rey de Los Soneros</td>
<td></td>
</tr>
<tr>
<td>Humo y Espuma (Ser)</td>
<td>Fernando Álvarez</td>
<td>100 años del Bolero</td>
<td></td>
</tr>
<tr>
<td>Yo Tengo un pecado nuevo (Tener)</td>
<td>Sonia “La única”</td>
<td>100 años del Bolero</td>
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<tr>
<td>Guantanamera (Ser)</td>
<td>Julio Iglesias</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tú sabes (Saber/Sentir)</td>
<td>Estelita Del llano</td>
<td>100 años del Bolero</td>
<td></td>
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<tr>
<td>Preguntas</td>
<td>¿Dónde estará?</td>
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<td></td>
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<tr>
<td>Dime cuándo</td>
<td></td>
<td></td>
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<td>¿Quién?</td>
<td>Mocedades</td>
<td></td>
<td></td>
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<tr>
<td>¿Porqué te tengo que olvidar?</td>
<td>José Feliciano</td>
<td>Mis Mejores Canciones</td>
<td></td>
</tr>
<tr>
<td>¿Cómo?</td>
<td>Luis Miguel</td>
<td>Romance</td>
<td></td>
</tr>
<tr>
<td>Gerundio</td>
<td>¿Qué es un gerundio?</td>
<td>¿Cómo se forma un gerundio?</td>
<td></td>
</tr>
<tr>
<td>--------------------------</td>
<td>----------------------</td>
<td>----------------------------</td>
<td></td>
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<tr>
<td>La Carretera</td>
<td>Julio Iglesias</td>
<td>La Carretera</td>
<td></td>
</tr>
<tr>
<td>Baila Morena</td>
<td>Julio Iglesias</td>
<td>La Carretera</td>
<td></td>
</tr>
<tr>
<td>Visa para un sueño</td>
<td>Juan Luis Guerra</td>
<td>Grandes Éxitos de Juan Luis Guerra 4.40</td>
<td></td>
</tr>
</tbody>
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<table>
<thead>
<tr>
<th>POR / PARA</th>
<th>¿Qué es POR / PARA?</th>
<th>¿Cómo se utiliza POR / PARA?</th>
</tr>
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<tbody>
<tr>
<td>Todo por su amor</td>
<td>Luis Miguel</td>
<td>Nada es igual</td>
</tr>
<tr>
<td>Un día más</td>
<td>Luis Miguel</td>
<td>Nada es igual</td>
</tr>
<tr>
<td>Posesivo</td>
<td>Tus Ojos</td>
<td>Gloria Estefan</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Mi Tierra</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Posesivo</th>
<th>¿Qué es un posesivo?</th>
<th>¿Cómo se forma un posesivo?</th>
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</thead>
<tbody>
<tr>
<td>Tus Ojos</td>
<td></td>
<td>Gloria Estefan</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Mi Tierra</td>
</tr>
</tbody>
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<table>
<thead>
<tr>
<th>Buenas Mezclas</th>
<th>¿Qué son las Buenas Mezclas?</th>
<th>¿Cómo se combinan las Buenas Mezclas?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Presente, subj. pasado, futuro, part. pasado, gerundio</td>
<td>Mal de amores</td>
<td>Julio Iglesias</td>
</tr>
<tr>
<td>Presente, pas, part. pas, subj. futuro</td>
<td>Volverás</td>
<td>Gloria Estefan</td>
</tr>
<tr>
<td>Part. pasado/adjetivo, presente, past perfect futuro, subj</td>
<td>Amaneció</td>
<td>Napoleón</td>
</tr>
<tr>
<td>Infinitivo como objeto mandatos, condicional</td>
<td>Espera un poco</td>
<td>José José</td>
</tr>
<tr>
<td>Buena mezcla</td>
<td>Uno</td>
<td>Julio Iglesias</td>
</tr>
<tr>
<td>Buena mezcla; objetivos, part. pasado, futuro, subj. pasado, condicional, mandatos, prêt, mand. indirecto, infinitivo, gerundio</td>
<td>Medley (Puedes, te he dejado de, andarás, tendrás, lejos estás, ...) Si quisieras, si un día fueras mía, tú serías, No sé, quiéreme, se fue, con quien estarás, Dile que me muero de tanto esperar, Que vuelva, estás perdiendo tiempo...)</td>
<td>Julio Iglesias</td>
</tr>
<tr>
<td>Futuro, presente como futuro, futuro (en subj)</td>
<td>Tuparic</td>
<td>The Authentic Indian Folklore from Ecuador</td>
</tr>
<tr>
<td>Pret., pret/imp., part. pas/adjetivo, subj para futuro</td>
<td>Rumbas (Medley)</td>
<td>Julio Iglesias</td>
</tr>
<tr>
<td>Infinitivo como subj, presente</td>
<td>Sin Excusa Ni Rodeos</td>
<td>Julio Iglesias</td>
</tr>
<tr>
<td>-------------------------------</td>
<td>----------------------</td>
<td>----------------</td>
</tr>
<tr>
<td>Good tense mix</td>
<td>Tu Mejor Amigo</td>
<td>Jon Secada</td>
</tr>
<tr>
<td>Carreras</td>
<td>El Primo</td>
<td>Juan Luis Guerra</td>
</tr>
</tbody>
</table>

* The code (X) after the song title indicates that the song lyrics contain explicit sexual content.

This chart is never ending, as songs can be constantly added to include recent recordings, as well as any other songs the teacher may find during travels. Songs will also vary greatly, depending upon the style of music the Instructor prefers to hear.

The same type of chart can be made in addition to grammar for specific aspects in teaching a foreign language. For example, an Instructor who teaches history might correlate folksongs retelling historical events or songs written during the time period covered.
APPENDIX D

BACKGROUND QUESTIONNAIRE

Please fill in the following form with information about yourself. This information will be seen only by the researcher(s) and will have no bearing on your grade. Your name will only be used for matching purposes, your response is completely confidential.

Name: ____________________________________________

Sex: _______________________

Age: _______________________

Have you studied Spanish before? YES / NO

If yes, check the grades in which you took a Spanish course:

K______ 1______ 2______ 3______ 4______

5______ 6______ 7______ 8______

9______ 10______ 11______ 12______

Do any of your family members speak Spanish? YES / NO

Have you lived in a Spanish-speaking country for 30 days or more? YES / NO

If yes, check the length of stay:

1-3 months______ 4-6 months______ 7-11 months______

1 year______ More than one year______
<table>
<thead>
<tr>
<th>Options</th>
<th>Value</th>
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</thead>
<tbody>
<tr>
<td>Very Often</td>
<td>5</td>
</tr>
<tr>
<td>Often</td>
<td>4</td>
</tr>
<tr>
<td>Occasionally</td>
<td>3</td>
</tr>
<tr>
<td>Rarely</td>
<td>2</td>
</tr>
<tr>
<td>Very Rarely</td>
<td>1</td>
</tr>
</tbody>
</table>

**How often do you have conversation in Spanish?**

<table>
<thead>
<tr>
<th>Options</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Very Important</td>
<td>5</td>
</tr>
<tr>
<td>Important</td>
<td>4</td>
</tr>
<tr>
<td>Neutral</td>
<td>3</td>
</tr>
<tr>
<td>Unimportant</td>
<td>2</td>
</tr>
<tr>
<td>Very Unimportant</td>
<td>1</td>
</tr>
</tbody>
</table>

**How important is it to sound like a native speaker when you speak Spanish?**
APPENDIX E
LYRICS OF SONGS USED

Somos novios
Somos novios,
pues los dos sentimos mutuo amor profundo
y con eso, ya ganamos lo más grande de este mundo.

Nos amamos, nos besamos, como novios, nos deseamos y hasta a veces sin
motivo y sin razón nos enojamos.

Somos novios,
manteniemos un cariño limpio y puro, como todos, procuramos el momento más
obscuro
para hablarnos para darnos el más dulce de los besos,
recordar de que color son los cerezos
sin hacer más comentarios somos novios.

para hablarnos para darnos el más dulce de los besos,
recordar de que color son los cerezos
sin hacer más comentarios somos novios.

[Siempre novios, yeah]

Usted
Usted es la culpable
de todas mis angustias, y todos mis quebrantos
Usted llenó mi vida
De dulces inquietudes, y amargos desencantos

Su amor es como un grito
Que llevo aquí en mi alma y aquí en mi corazón
Y soy aunque no quiera
Esclavo de sus ojos, juguete de su amor

No juegue con mis penas, ni con mis sentimientos
Que es lo único que tengo
Usted es mi esperanza, mi última esperanza
Comprenda de una vez
Usted me desespera
Me mata, me enloquece
Y hasta la vida diera por vencer el miedo
De besarla a usted

Su amor es como un grito
Que llevo aquí en mi alma y aquí en mi corazón
Y soy aunque no quiera
Esclavo de sus ojos, juguete de su amor

No juegue con mis penas, ni con mis sentimientos
Que es lo único que tengo
Usted es mi esperanza, mi última esperanza
Comprenda de una vez

Usted me desespera
Me mata, me enloquece
Y hasta la vida diera por vencer el miedo
De besarla a usted

Usted me desespera
Me mata, me enloquece
Y hasta la vida diera por vencer el miedo
De besarla a usted

**Milagro**

Cuando se miran sus ojos
cuando se escucha su voz
es más linda la mañana
nos alumbrá más el sol

Cuando nos brinda su risa
cuando nos dan su candor
brota una manantial
de agua fresquita en el corazón

Ellos son el tesoro
ellos son la alegría
Es por ellos que la vida
se vuelve más dulce
se vive mejor

**CORO:**
Son los hijos la bendición, el milagro de nuestro amor nos enseñan como amar como abrir nuestro corazón

Son los hijos la bendición el milagro de nuestro amor son la escencia del hogar un regalo de Dios

Ellos son la esperanza ellos son la ilusión Es por ellos que la vida se vuelve más dulce se vive mejor

OTRO CORO --

Su mirada serena su inocente verdad es un calorcito que llena de alegría la soledad

Mensajeros del alma sembradores de paz de un mañana pleno de respeto y de libertad

Ellos son el tesoro ellos son la alegría Es por ellos que la vida se vuelve más dulce se vive mejor

OTRO CORO --
Somos novios, pues los dos sentimos ______________ amor profundo y con eso, ya _______________ lo más grande de este mundo.

____________________ amamos, nos besamos, como novios, nos ___________________ y hasta a veces sin motivo ___________________
sin razón nos enojamos.

Somos novios, ___________________________ un cariño limpio y puro, como ____________________________, procuramos el momento más obscuro para _____________________________ para darnos el más dulce de _____________________________ besos, recordar de que color son _____________________________ cerezos
sin hacer más comentarios somos ____________________________.

para hablarnos para darnos el más ____________________________ de los besos, recordar de que ____________________________ son los cerezos sin hacer más ____________________________, somos novios.

[Siempre novios, yeah]
Fill in the blanks with the missing word.

Usted es la culpable
de todas ________________ angustias, y todos mis quebrantos
Usted ________________ mi vida
De dulces inquietudes, y ________________ desencantos

Su amor es como un ____________________
Que llevo aquí en mi alma ________________ aquí en mi corazón
Y soy ____________________ no quiera
Esclavo de sus ojos, ____________________ de su amor

No juegue con ____________________ penas, ni con mis sentimientos
Que ____________________ lo único que tengo
Usted es ____________________ esperanza, mi última esperanza
Comprenda de ____________________ vez

Usted me desespera, me mata, ____________________ enloquece
Y hasta la vida diera ____________________ vencer el miedo
De besarla a ____________________
Nombre: 

Fill in the blanks with the missing word. The ones that are *striked through* are repetitions of previous words and will not be counted.

Cuando se miran sus ojos
cuando ____________________ escucha su voz
es más linda ____________________ mañana
nos alumbran más el sol

____________________ nos brinda su risa
cuando nos ____________________ su candor
brota una manantial
de ____________________ fresquita en el corazón

Ellos son ____________________ tesoro
ellos son la alegría
Es ____________________ ellos que la vida
se vuelve ____________________ dulce
se vive mejor

**CORO:**

Son los ____________________ la bendición,
el milagro de nuestro ____________________
nos enseñan como amar
como abrir ____________________ corazón

[over]
Son los __________ XXXXX ____________ la bendición
_________ XXXXX ____________ milagro de nuestro amor
son la ______________________ del hogar
un regalo de Dios

________________________ son la esperanza
ellos son la __________________________
Es por ellos que la vida
________________________ vuelve más dulce
se vive mejor

OTRO CORO --

________________________ mirada serena
su inocente verdad
es __________________________ calorcitio que llena
de alegría la __________________________

Mensajeros del alma
seembradores de paz
________________________ un mañana pleno
de respeto y __________________________ libertad

Ellos son el tesoro
ellos __________________________ la alegría
Es por ellos que __________________________ vida
se vuelve más dulce
se __________________________ mejor

OTRO CORO --
APPENDIX G

POST-TREATMENT QUESTIONNAIRE

Nombre: __________________________

Please answer the following questions. Your name is used for matching purposes only. Your response is completely confidential and has no bearing on your class grade.

1. What was your reaction to the CDs being played in the classroom?

2. Do you think the CD listening activity was a positive addition to the Spanish class?

3. Did the words from the CDs heard in class ever repeat in your head without your intention (OTHER than during the listening activity in class)?

4. When did this repetition occur? (While doing what other activity?)

5. Were you able to purposefully stop this mental repetition or did it continue to repeat as if stuck in your head?

6. Any additional comments or suggestions for future use of this activity?
The Effects Of Listening Activities In The Foreign Language Classroom.

The purpose of this research is to study the effect of specific listening activity on the ability to remember words in a foreign language. The investigator wishes to evaluate this memory using a fill-in-the-blank test.

You will be asked to listen to a short recorded passage six times, then asked to fill in blanks for words that have been omitted. This will be repeated four times during the semester. You may be asked a few interview questions at the end of the semester. Your participation will provide information on classroom practices and may benefit other Spanish students. There are no known risks involved, and your privacy is strictly protected. Your anonymity is assured since all written data is confidential and will be seen only by the investigators. Data will be kept confidential unless release is legally compelled. Your participation in this study is voluntary and you may withdraw at any time without penalty.

The study has been discussed with me, and all my questions have been answered. I may direct additional questions regarding study specifics to the investigators. If I have questions about subjects’ rights or other concerns, I can contact the LSU Institutional Review Board, (225) 388-8692. I agree to participate in the study described above and acknowledge the researchers’ obligation to provide me with a copy of this consent form if signed by me.

Subject Signature __________________________ Date ______________

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VITA

Claudia was born January 28, 1958, in Baton Rouge, Louisiana, to parents Claude and Doris Smith, and brothers Stanley and Myron. She attended parochial elementary schools, then got a high school GED. She graduated from Louisiana State University in 1982 with a bachelor’s degree in Spanish and a minor in psychology. She married Carlos Salcedo and began graduate school. They soon moved to Hawaii to raise three wonderful children. Claudia returned to Louisiana briefly in 1990 to graduate with a master’s degree in Spanish Linguistics. She then taught Spanish at the University of Hawaii, Chaminade University of Honolulu, Tripler Army Medical Center, and Hawaiian Mission Academy. She received a grant for video production in Mexico from the University of Hawaii. The family moved back to Louisiana in 1994 and Claudia taught Spanish at Louisiana State University. She then became a full time student in the College of Education to pursue a doctoral degree. During her doctoral career, she created computer software for Spanish students, took a doctoral level course at a Mexican university, was the editor of foreign language classroom teaching materials, published two articles, and presented technology for the foreign language classroom at national conferences. She will graduate December, 2002 in curriculum and instruction with a major in foreign language instruction and a minor in educational technology.