

THE RELATIONSHIP BETWEEN ELEMENTARY SCHOOL FOREIGN
LANGUAGE STUDY IN GRADES THREE THROUGH FIVE
AND ACADEMIC ACHIEVEMENT ON THE IOWA TESTS OF BASIC SKILLS
(ITBS) AND THE FOURTH-GRADE LOUISIANA EDUCATIONAL
ASSESSMENT PROGRAM FOR THE 21ST CENTURY (LEAP 21) TEST

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

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December 2003

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DEDICATION

This dissertation is dedicated to the loving memory of my parents,
Joyce Carolyn Taylor and Rayl Taylor, who are still very much a part of my life.

ACKNOWLEDGEMENTS

I would like to express my heartfelt gratitude to my husband, Roger K. Ward, for his steadfast support and encouragement throughout this worthwhile journey and for being a constant source of joy in my life. I would also like to thank my sister Cindy for her faith in me and for the love and support she has shown me throughout my life. I am thankful for the place her children Michael, Katie and Sarah hold in my heart. Thank you to my Aunt Gladys whose presence is a gentle reminder of my mother's warmth and kindness. In addition, I extend my appreciation to Jocelyne Tromelin and her daughters Sophie and Florence, who many years ago, started out as my French host family, but have since become treasured family members. Sincere thanks go to Linda Monsell, David Dunbar, Josiane Woodman, Dr. Ruth Antosh and Dr. Thomas Goetz, my former teachers and professors whose passion for their calling inspired me to become an educator.

My dear friend, Dr. Taylor Powers, lent her reassurance during the difficult periods of writing this dissertation. I thank her for her remarkable compassion and for always knowing the right words to say to help me keep things in perspective. I owe a tremendous debt of gratitude to Dr. Xiujuan Yuan who graciously helped me map out the research design and conduct the data analyses. I am also grateful to Dr. Amy Dellinger for her expertise in coaching me through reporting the statistical analyses. Thank you, Dr. Marieanne Holloy, for providing me with the ITBS and LEAP data, which enabled me to carry out the quantitative portions of my study. A note of appreciation is extended to Courtney Donatto for efficiently transcribing the teacher interviews. Thank you to Dr. Bonnie Smith Boulton for her welcomed

advice and encouragement as “one who has gone before.” Thanks to Perry Waguespack, who has worked with foreign language programs at the Louisiana Department of Education for some 30 years. His insights into Louisiana’s support of foreign language programs have been very enlightening. Warm thanks go to the teachers of the student participants in my study for taking time out of their hectic schedules to answer my survey and participate in the interviews.

I am indebted to Dr. Robert C. Lafayette, for serving as my major professor and for being my mentor. I will be forever grateful for his guidance and support. I admire the significant contributions he has made over the years to the teaching of foreign languages in Louisiana. My admiration and appreciation also go to Dr. Denise Egéa-Kuehne for setting high academic standards for her students and for inspiring in me the desire to pursue my studies. Her strong work ethic and love of scholarship set a positive example for her students to follow. I offer my sincere gratitude to my other committee members: Dr. Janice Hinson, who has made extensive contributions to my education, Dr. Earl Cheek, whose valuable insights are very much appreciated, and Dr. Joseph Ricapito, for serving as the Dean’s representative.

Finally, I would like to express my deep admiration for the many dedicated foreign language teachers in Louisiana who truly make a difference in the lives of children, by helping them acquire second language ability while fostering in them an appreciation for other cultures.

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ABSTRACT

The passage of the federal educational legislation, No Child Left Behind Act of 2001, established foreign languages as a core curricular content area.

Nonetheless, educational policy makers at the state and local levels often opt to allocate greater resources and give instructional priority to content areas in which students, and ultimately the school systems themselves, are held accountable through high-stakes testing. Although foreign languages are designated as a core content area, instructional emphasis continues to be placed on curricular areas that factor into state educational accountability programs.

The present study employed a mixed-methodology design. The primary goal was to explore quantitatively whether foreign language study on the part of first-year third-grade foreign language students who continue their foreign language study through and including the fifth-grade in Louisiana public schools contributes to their academic achievement in curricular areas tested on the Iowa Tests of Basic Skills (ITBS) and the Louisiana Educational Assessment Program for the 21st Century (LEAP 21) test. Concurrently, a qualitative aim, using a survey and interviews, was to examine how foreign language teachers of students in the present study perceive that they link instruction to the reinforcement of English language arts, mathematics, science and social studies content standard skills.

The findings of the present research indicate that foreign language students significantly outperformed their non-foreign language counterparts on every subtest of the LEAP 21 test and were more successful passing this test. Moreover, foreign

language students significantly outperformed their non-language peers on the language portion of the fifth-grade ITBS.

CHAPTER 1

INTRODUCTION

This chapter provides a brief historical overview of foreign language study in the United States highlighting major events, policies and trends that have had a strong impact on its development. Initiatives of foreign language professional organizations shaping the direction of foreign language teaching and learning are presented. Percentages of students enrolled in a course of foreign language study as well as trends of prominent teaching methodologies employed are highlighted. This is followed by a brief description of the types of elementary foreign language programs of study in America. Next, Louisiana's movement to promote and support foreign language study, including a description of the Louisiana Foreign Language Elementary School and Immersion Programs, is presented to offer insights into Louisiana elementary students' language learning experiences. The concluding elements specifically address the present study, namely: the statement of the problem; the rationale/purpose of the study; the significance of the study; delimitations of the study, limitations of the study; and the definition of terms.

Historical Context of Foreign Language Study

Throughout the history of the United States, world events and social factors have shaped the face of foreign language study. The following is a brief overview of historical and social factors influencing the rise and fall of foreign language enrollments as well as teaching methodologies espoused during these periods. During the antebellum period, Latin and Greek, valued for their ability to enhance intellectual development, were prevalent in American secondary educational

settings, yet it was not until the post Civil War era that modern languages made their way onto the American educational scene beginning with French and German. French was valued for its use in matters of diplomacy and was made popular through the writings of French Enlightenment authors, while German took root as waves of German immigrants reached America's shores during the nineteenth century (Grittner, 1977). Spanish would not be taught in public schools until later in the twentieth century as great numbers of Hispanophones immigrated to the U.S. In addition, Americans realized the importance of increased understanding of Latin America and thus incorporated the teaching of Spanish into American schools in the southwestern states (Curtain & Pesola, 1994).

In 1883, the Modern Language Association was founded and became a voice for the advocacy of foreign languages in the American curriculum. In order for modern languages to gain acceptance alongside the esteemed classical languages, teaching practices mirrored those of the classical languages by drawing heavily on translation and grammatical analysis. Thus, the Grammar Translation method was employed whereby students translated both from the native language into the target language and vice versa. Grammar was learned deductively through examples and explanations. Listening and speaking skills were not emphasized. Students learned vocabulary from word lists in the native and target languages.

From 1910-1915, nearly 83% of all American high school students were pursuing a course of foreign language study. As America entered World War I, foreign language enrollments in German decreased markedly due to a backlash of anti-German sentiment. Negativity toward anything German influenced the public's

perception of the study of other foreign languages and consequently, enrollments sharply declined (Grittner, 1977).

From 1929 until World War II, the fundamental aim of foreign language instruction was to produce students who could read a foreign language. The Reading Method of instruction was employed to produce students who possessed reading knowledge of the target language. Here vocabulary and grammatical structures were introduced gradually through simplified texts. This focus on reading proficiency left students unable to speak the target language (Grittner, 1977).

Between World War I and World War II foreign language study waned. The root causes of this decline are attributed to several forces: "...anti-intellectualism in American society, utilitarianism in education, isolationism in politics, and immigrants' tendency to reject the culture of the 'old country'"(Grittner, 1977). The popular view that education should be functional, thus student classroom experiences centered on practical situations they would likely encounter in their daily lives, rendered the study of foreign languages less important, and therefore, less prevalent in the curriculum. Despite the need for a multilingual society, higher education policy-making would work to the detriment of foreign language enrollments. In 1945, the *Harvard Report* recommended that the study of modern languages be reserved solely for students pursuing a college preparatory curriculum. A further setback to foreign language enrollment during this time came in the form of widespread university initiatives to drop language entrance and degree requirements.

By the mid 1950s, merely 24% of American high school students opted to study a foreign language (ACTFL, 2003). During this period, the Situational Method of language teaching was common. Ramirez (1995) relates that this approach made use of structural patterns of the target language framed in a context drawing upon habit formation and repetition of language. Students participated in mechanical drills, then progressed toward using the language in a simple question-answer format before advancing to more complex language production. Another common approach at this time was the Direct Method, which emphasized listening and speaking skills and required the exclusive use of the target language. Learning scenarios were created around topics or situations in which students would have to communicate. Meaning was attached to words through objects and actions. Exposure to new vocabulary was done orally and the presentation of grammar was done inductively, rather than providing students with grammar rules.

In 1954, the MLA publication, *The National Interest and Foreign Languages*, written by MLA head, William Riley Parker, urged that, in the wake of the events of World War II and in light of international relations and foreign policy development, foreign language study was vital to American national security. This publication stirred national awareness and paved the way for a reexamination of the need for foreign language study as a required component of the curriculum.

On the heels of Riley's call to action, America received a jolting wake-up call with regard to the necessity of heightened emphasis on foreign language study. The year 1957 brought the orbit of the Russian satellite, Sputnik, whose existence had been discussed in Russian journals prior to its launching. This historic event

raised the status of foreign language study, bringing it on par with mathematics and science. The resulting initiative was the National Defense Education Act (NDEA) of 1958, which funded teacher training and the creation of teaching materials for educators of German, French, Spanish and Russian at the elementary and secondary school levels. Thus began the widespread implementation of Foreign Language in the Elementary School (FLES) programs. A teaching method developed by the United States Army during World War II, using the Audio Lingual Approach (ALM), was rapidly put in place to begin FLES programs. ALM, rooted in behavioral psychology (Skinner, 1938) and structural linguistics (Bloomfield, 1933), revolutionized foreign language teaching in the 1960s by calling for language competence through habit formation. Curtain and Pesola (1994) give us a glimpse of the impact ALM would have on instruction in the foreign language classroom:

Inductive grammar and oral drill replaced grammatical analysis in English while listening and speaking practice in the classroom and language laboratory replaced reading and translation exercises... a whole generation of language teachers began modeling dialogues, conducting pattern drills, and practicing the art of mimicry-memorization (p. 17).

The ALM method enjoyed popularity until the mid 1960s when the emphasis of foreign language study shifted from memorization and rote learning of sentence patterns that could, at some point, be used to relate information, to using the language itself as a vehicle for communication. In short, there was a growing awareness in the profession that knowing about the structure of the foreign language was less important than actually communicating or conveying meaning through the target language. By 1962, high school foreign language enrollments across the nation had risen to 31%, up from 24% during the mid-1950s (ACTFL, 2003).

In 1967, The American Council on the Teaching of Foreign Languages (ACTFL) was founded. Among the earliest tasks with which it charged itself was to promote cohesion among state foreign language professional organizations in an effort to move forward the study of foreign languages. This initiative gained momentum at a time when, according to Grittner (1977), social unrest of the 1970s filtered down into the schools giving rise to, “cultural pluralism, skepticism of traditional social values, and students’ desire for self-expression” (p.12). To render foreign language course offerings more appealing, and to make learning more relevant, students were allowed to work on individualized assignments at their own pace. Moreover, communicative skills were emphasized with the idea that if students could produce the language rather than merely comprehend it, the language-learning endeavor would have more tangible benefits. Furthermore, instruction placed a stronger emphasis on the teaching of culture to provide students with insights into the way of life of the people whose language was being studied. As a practical justification for foreign language study, students were made aware of career opportunities that would require proficiency in a foreign language.

To cater to the educational needs of the 1970s, the Structural Approach was commonly implemented in foreign language instruction. This approach, described by Ramirez (1995), called for the teaching of language through the use of linguistic patterns, such as subject-verb-object. Language development took place sequentially by skill building. The first skill to be developed was listening, followed by speaking, then reading and finally writing. In addition to this method, the Functional Notional Approach gained acceptance in the 1970s, first in England

and France, then subsequently in the United States, especially in the teaching of English as a Second Language. Ramirez (1995) explains that the Functional Notional Approach provided a model of sequenced curriculum, typically within a social context, that linked functions of language with form and grammar. Thus, the function of communication, such as asking for assistance, inviting someone to dinner, expressing an opinion, etc., happens in a given social situation, which governs the structural elements of the language to be taught. This approach placed greater emphasis on communication than grammatical competence.

In 1970, foreign language enrollment in America had reached 28% (Chastain, 1976). During the early 1970s, on a widespread scale, universities would again drop foreign language entrance and exit requirements, although, several factors would cause the pendulum to sway back in favor of foreign language study later in the decade. The establishment of international corporations and increasing international trade as well as the oil crisis underscored America's inevitable dependence on relations with foreign governments (Curtain & Pesola, 1994). The 1979 *President's Commission of Foreign Languages and International Studies* released a report that conveyed the urgent need for Americans to study language beginning in the elementary school. Following this call to action was Gardner's report, *A Nation at Risk*, issued in 1983, which urged that language learning be an integral part of American education by stating,

Achieving proficiency in a foreign language requires from four to six years of study and should therefore be started in the elementary grades. We believe that it is desirable that students achieve such proficiency because study of a foreign language introduces students to non-English speaking cultures, heightens awareness and comprehension of one's native tongue, and

serves the nation's needs in commerce, diplomacy, defense, and education (p. 26).

Another significant event occurred in 1989 when the American Council on Education Commission on International Education pushed for the establishment of longer sequence of foreign language study. The rationale was that extended exposure to the target language would increase students' proficiency.

Myriad foreign language teaching approaches made their way onto the educational scene in the 1980s, many of which are still in place in today's foreign language classrooms. These approaches will be discussed in greater detail in Chapter Two. A pervasive movement in foreign language teaching methodology that took root in the 1980s was Communicative Competency, which gave rise to understanding language and using it in real-life, contextualized situations. This placed a greater emphasis on the role of culture in the foreign language classroom. No longer would students' language proficiency be measured by the number of seat hours of exposure to the target language. Rather, it would be measured based on learning outcomes, which gauged how well students used the target language. In 1986 the American Council for the Teaching of Foreign Languages (ACTFL) released proficiency guidelines that spelled out learning goals for students in the four skills areas (listening, speaking, reading and writing). Students' performance on communicative tasks could be evaluated and used as the basis for determining their particular level of proficiency (novice, intermediate, advanced, or superior). The Communicative Competence movement laid the foundation for various foreign language teaching approaches. Among them is the Comprehension Approach which is based on the premise that the learner must comprehend language before he can

produce it. The teacher is charged with making the language comprehensible to the learner through simplifying expression, using repetition and other means by which to convey meaning, such as using gestures. Only when the students feel comfortable with producing the language, should they be required to do so. Total Physical Response (TPR) (Asher, 1972) and the Natural Approach (Krashen & Terrell, 1983) are closely linked to the comprehension approach. TPR utilizes movement whereby the teacher gives commands upon which students must act. When students are ready, they themselves give commands to the teacher and classmates requiring them to carry out specific tasks. The Natural Approach unfolds in three phases. First is the preproduction stage when students are exposed to activities which help them comprehend the language, followed by the early speech production phase, whereby students are expected to respond to yes/no-type or one-word answer questions, finally building up to the students' ability to converse on personally relevant topics.

In 1993, ACTFL, in collaboration with several other national foreign language organizations, received funding to create K-12 national foreign language education standards. This funding came from *America 2000* under the George H.W. Bush administration and subsequently from the Clinton administration's *Goals 2000: Educate America Act*. This coalition of ACTFL and other national foreign language organizations carved out performance expectations – what students should know and be able to do – in the target language studied. Since the release of the ACTFL National Foreign Language Standards in November 1995, states around the

nation have fashioned their own foreign language standards using the national document as a framework.

Recently, Rhodes, and Branaman (1999) through the Center for Applied Linguistics conducted a study of school participation in foreign language programs and foreign language enrollments. Their findings showed that in 1997, 31% of all elementary schools taught foreign language. This figure represents a 9% increase in schools offering elementary foreign language programs as compared to 1987. The 1997 figures indicate elementary foreign language school offerings as follows: 79% Spanish, 27% French, 5% German, 3% Japanese, 2% Hebrew or Italian and 1% or less offered one of thirteen less commonly taught languages. In terms of elementary student enrollment during 1997, over four million students out of 27.1 million studied a foreign language. With regard to secondary school foreign language participation and enrollments, in 1997, 68% of all secondary schools taught foreign languages as compared to 69% in 1987. Approximately twelve million out of 21.7 million secondary students were enrolled in foreign language classes in 1997.

This brings us to the present time. In light of the events of September 11, 2001, foreign language education is currently receiving more attention than it has since the 1979 *President's Commission of Foreign Languages and International Studies*, which itself made foreign language learning a significant educational priority. In a recent hearing on national defense, a 2002 House Permanent Select Committee on Intelligence expressed grave concern about homeland security. The committee related that the United States finds itself vulnerable to terror attacks because it lacks citizens proficient in various world languages who are needed to

assist with intelligence and counter terrorism initiatives. It attributes the United States' lack of foreign language proficiency to general international isolation, limited study abroad, and limited foreign language study within the United States.

Although significant, Americans' inability to understand and communicate in foreign languages is only part of this urgent problem. Beyond Americans' linguistic deficits lies their lack of fundamental knowledge of the history and cultures of nations around the world. Brademas (1987) foresaw the urgent need for rectifying American ignorance of foreign language and cultures. He commented on Congressional hearings into the Iran-Contra Affair and made this foreboding revelation pertinent to the present focus on the war on terrorism.

They have also exposed an astonishing lack of knowledge about Iran, its society, religious traditions, and political system. Our ignorance, which extends to countries around the globe, seriously compromises our position in the world. Colleges and universities in the past 20 years have been partly to blame for this problem; they must now become part of the solution (p. 6).

Here Brademas appeals to higher education to help lift American society out of this pervasive ignorance. However, a 1984 statement of the position of the Joint National Committee for Languages (JNCL) and the Council for Language and International Studies (CLIS) appeals for a broader base of support in the endeavor to educate Americans as global world citizens. It states,

The educational establishment, despite all its diversity and resources, cannot alone assume the responsibility for providing the means for language study and encouraging learners to achieve mastery; government, at all levels, business, industry, cultural and other public and private institutions must support this effort as well (p. 44).

If America is to overcome its language and cultural deficits, a more comprehensive partnership, such as the one advocated by JNCL and CLIS is of paramount importance in this endeavor.

Title IX, Part A, Section 9101 of the current federal educational legislation, *No Child Left Behind Act 2001*, designates foreign languages as part of the core curriculum along with English language arts, math, science, civics and government, economics, arts, history and geography content areas. Federal funding is provided for foreign language study through the *Foreign Language Assistance Act of 2001*, which is Title V, Part D, Subpart 9 of the *No Child Left Behind Act of 2001*.

Funding of foreign language programs, particularly at the elementary level, helps improve the quality and extent of foreign language instruction. Although foreign languages are designated part of the core content area under the *No Child Left Behind Act of 2001*, the foreign language professional community is concerned that educational policy makers at the state and local levels often opt to place greater instructional emphasis on content areas in which students, and ultimately the school systems themselves, are held accountable through testing. As a result, curricular areas such as foreign languages and the arts in schools across America often take a back seat to English language arts, math, science, and social studies. Relative to this issue, in the state of Maryland, Baranick and Markham (1986) conducted a study of attitudes of 268 elementary principals regarding foreign language teaching. They found that while principals were generally in support of foreign language programs, many felt that implementing foreign language programs was not a priority for them. They relate the principals' attitudes as follows:

Regarding the group of principals who are against or even strongly against foreign language programs at the elementary level, it is evident that their major concern is the perceived lack of time for course offerings in foreign languages. This finding may imply that many elementary principals (46% in this study) regard foreign language instruction as a peripheral, relatively unimportant entity (p. 483).

The National Association of State Boards of Education (NASBE) is concerned that the arts and foreign languages are not part of state assessments and do not factor into state accountability measures, thereby compromising their status in favor of more traditionally prominent core content areas. NASBE is also dismayed that the arts and foreign language, when present in the curriculum, are often reserved for students from higher socio-economic backgrounds. To investigate, and hopefully to help rectify these issues surrounding arts and foreign language education, NASBE is currently conducting a study of the role of the arts and foreign languages in the American curriculum through its project, "The Lost Curriculum: The Arts and Foreign Language in a Standards-Based System." The findings and recommendations of this study will be released at the 2003 NASBE Annual Conference in Baltimore, Maryland.

With regard to national student performance, foreign language will be tested on a voluntary basis for the first time in 2004 at the national level. The National Assessment for Educational Progress (NAEP) will be administered to 8,000 twelfth grade students of Spanish in 331 schools across the United States. Participants must have studied Spanish for at least two years. The results will yield students' performance on assessment tasks as well as descriptive information obtained through responses to foreign language teacher and student questionnaires.

To help improve the status of foreign language education in the United States and to produce American citizens proficient in world languages, the United States Departments of State, Education, and Defense will partner with ACTFL and other foreign language professional organizations to make 2005 the *Year of Languages in the U.S.* This initiative has the support of the United States Senate. In June 2003 during the 108th congressional session, Senators Dodd and Cochran submitted Senate Resolution 170 designating the years 2004 and 2005 as Years of Foreign Language Study. This resolution states,

It is the sense of the Senate that foreign language study makes important contributions to a student's cognitive development, our national economy, and our national security... the Senate designates the years 2004 and 2005 as "Years of Foreign Language Study", during which foreign language is promoted and expanded in elementary schools, secondary schools, institutions of higher learning, businesses, and government programs; and requests that the President issue a proclamation calling upon the people of the United States to encourage and support initiatives to promote and expand the study of foreign languages and observe the "Years of Foreign Language Study" with appropriate ceremonies, programs and other activities.

It will be interesting to see what world language educational initiatives develop under the leadership of this unprecedented coalition and its resulting impact on Americans' proficiency in world languages.

Types of Elementary School Foreign Language Programs in American Schools

Gladys Lipton (1998) explores three broad categories of elementary school foreign language programs: Foreign Language Exploratory (FLEX), Foreign Language in the Elementary Schools (FLES), and Immersion. While each program strives to promote language learning and foster an appreciation for other cultures on the part of students, the programs differ in intensity and exposure to the target language.

FLEX programs usually offer an introduction to one or more foreign languages. A chief focus is exposing students to the interconnection between language and culture. FLEX programs are designed to motivate students to continue more in-depth study of foreign languages and cultures in later grades. Program design allows for flexibility in implementation and duration may be from two to nine weeks per foreign language offered. The language skills students acquire from participation in FLEX courses are minimal.

FLES programs provide more in-depth exposure to the language and culture than FLEX programs. Students in FLES programs study one language for a minimum of two years for typically 30-55 minutes daily, thereby enabling them to experience greater proficiency in the language studied. Longer exposure to the language allows for increased opportunities to acquire the language and develop proficiency in it. The teaching of culture remains an integral component of FLES program content.

Of all three types of elementary foreign language programs, immersion programs provide the most sustained exposure to the language, resulting in greater language proficiency among learners. In immersion classrooms, teachers use the target language as the vehicle for communication and instruction for core content areas such as math, science and social studies. Three main types of immersion programs exist: total, partial and two-way. Total immersion programs teach all subjects including reading in kindergarten through grade two in the foreign language. English instruction is introduced in grade three where it assumes 20%-50% of instructional time. Partial immersion programs teach up to 50% of subjects

in the target language and reinforce concepts in English. Two-Way Immersion programs' dual focus emphasizes both English and languages other than English. The student body consists of native speakers of English as well as native speakers of a language other than English.

Louisiana's Promotion of French and Foreign Language Study

Louisiana enjoys a history steeped in diverse languages and ethnicities. Prior to the founding of Louisiana, a number of Indian populations (Biloxi, Creek, Chickasaw, Natchez, Istrouma, Mugulashas, Mongulachas, Quinipisas and Houma) were indigenous to the region. The vast expanse of the Louisiana territory was settled by the French in 1682 and remained a French territory for 80 years until it was ceded to Spain on November 3, 1762. After 41 years of Spanish rule, France regained possession of Louisiana on November 30, 1803 until it was transferred to America twenty days later, on December 20, 1803. Southern Louisiana became the new home of French-speaking Acadian refugees deported from Nova Scotia, Canada in 1755 during the French and Indian War. Some of the outcast Acadians found their way to New Orleans where they started to settle in 1764. Today, descendents of the Acadians, called Cajuns, mostly live across southern Louisiana in a 22-parish region called Acadiana. The 2000 census revealed that nearly 200,000 Louisianans indicated French as the primary language spoken in their homes.

In addition to French and Canadian ancestry, some contemporary Louisianans, although fewer in number, are descendants of Haitian, Caribbean, or African refugees, who arrived in colonial Louisiana toward the latter part of the 1700s. Campbell and Marston (2000) explain that Canary Islanders, subjects loyal

to the Spanish throne, made their way to colonial Louisiana as early as 1777, settling in regions along the southeastern Gulf coast to bolster the Spanish population.

Merrill (2003) relates that by 1830 nearly 7,000 Germans had settled throughout Louisiana. A large influx of German immigrants, nearly 12% of New Orleans' population, settled there during the antebellum period, rendering it "the largest German colony in America below the Mason-Dixon line" (p. 47). During this period, the area of southeastern Louisiana along the Mississippi River in St. John the Baptist and St. James Parishes was dubbed the *German Coast*.

During the same period Louisiana was home to a significant Italian population. According to Margavio and Salomone (2003), by 1850, 924 Italians lived in Louisiana making it the state with the largest Italian-born population in the United States (p. 55). Margavio and Salomone (2003) also assert that from 1820 to 2000, approximately 70,000 Italian immigrants had settled in Louisiana (p. 53).

Despite the infusion of English-speaking population into Louisiana which began in earnest in the early 1800s, French remained the primary means of communication for descendants of francophone ancestry until the Louisiana constitution of 1921 mandated that English be the language of instruction in Louisiana schools. This action had a devastating impact on the status of the French language. It marginalized the francophone population by setting them apart from the mainstream native English-speakers. Francophone children refrained from speaking French in public settings for fear of reprisal and ridicule.

In 1968, at a point when the French language was on the brink of extinction, former Congressman James Domengeaux through *Louisiana Legislative act 408-409* pushed the legislature to found the Council for the Development of French in Louisiana (CODOFIL), specifying its mission to,

do any and all things necessary to accomplish the development, utilization, and preservation of the French language as found in Louisiana for the cultural, economic and touristic benefit of the state (Act 408 of the 1968 Louisiana Legislative Session).

Perry Waguespack, Foreign Language Program Officer for the Louisiana Department of Education, has worked for the Department with foreign language programs for over thirty years. He relates that one of the first causes championed by CODOFIL was to salvage the French language by reintegrating the teaching of French in Louisiana public schools at all levels. In 1969 Domengeaux sought the assistance of the French government by meeting personally with President Georges Pompidou to request his assistance in establishing a program whereby French national teachers would teach the French language and French cultures in Louisiana public schools. This led to a partnership between CODOFIL, the Louisiana Department of Education and the French government – one that continues today. In the early 1970s accords were signed between France and Louisiana to galvanize their resolve to promote the teaching of French and of Francophone cultures to Louisiana students. Soon after, Canada joined the cause and signed similar agreements with Louisiana pledging to furnish French-Canadian teachers of French. By the mid 1970s the Louisiana and the Belgian governments signed accords, and in 1975, the first Belgian teachers arrived in Louisiana to carry out their mission. Currently, CODOFIL and the Louisiana State Department of Education, in

collaboration with the governments of France, Canada, and Belgium maintain a strong foreign associate teacher of French program.

Throughout the duration of the foreign associate teacher program, various foreign language professionals have conducted evaluations to discern the program strengths and areas in need of improvement. In 1978, a team of American, French, and French-Canadian foreign language educational specialists, headed by André Paquette, was hired to conduct an evaluation of the foreign associate teacher of French program. One of the principal findings was the need for a “sequential and uninterrupted implementation of the program from an early grade through grade 12” (p. 1).

Because of the popularity of the foreign associate teacher of French program, school districts began to request foreign associate teachers of Spanish as well. As a result, in the late 1970s, the Louisiana Department of Education partnered with the Cordell Hull Foundation for International Education in recruiting and training foreign associate teachers of Spanish from Mexico and eventually Guatemala. Although the Louisiana Department of Education no longer solicits the help of the now defunct Cordell Hull Foundation in maintaining the program, it carries on the initiative by recruiting and training teachers of Spanish from Spain as well as from countries throughout Central and South America. At various points from the late 1970s through the year 2000, Louisiana signed accords with Mexico and Spain to promote the teaching of Spanish and Hispanic cultures in Louisiana elementary schools.

Two important events would have a major impact on the teaching of foreign languages in Louisiana, both of which had the strong support of CODOFIL. The first came in 1975 when the Louisiana Legislature passed Legislative Act 714 giving parents the power to petition parish school boards to implement a second language program. If the petition carried more than 25% of the signatures of the total number of those deemed head of households of students attending a given school, the school board was required, under law, to implement an elementary foreign language program. Act 714 of the 1975 Louisiana Legislative Session states,

The second language curriculum shall be so established as to include a program extending upward through all grades, commencing in the first grade and extending upwards to the twelfth grade, in a well articulated, sequential manner so as to afford all school children in the state the opportunity of attaining proficiency in a second language.

The second initiative that elevated the status of foreign language learning in Louisiana public schools took place in 1984 at a time when the Louisiana Board of Elementary and Secondary Education (BESE) directed that public hearings be held across the state to revise its state educational policy as mandated in *Louisiana Handbook for School Administrators: Bulletin 741*. Aware that the public hearings were taking place, proponents of foreign language study in Louisiana schools communicated the findings of the 1978 program evaluation to the Louisiana Department of Education *Bulletin 741* revision committee members restating the recommendation for sequential, continuous foreign language study beginning at an early age and continuing through grade twelve. As the public hearings unfolded, parents in attendance requested that BESE policy establish a mandate for the implementation of foreign language programs in grades one through eight. The

requests met with some opposition from parents who were concerned that the study of a foreign language, especially during children's formative years of education, may detract from their mastery of basic skills. A compromise was reached resulting in the nation's first state-mandated foreign language program for students in fourth through eighth grades. Louisiana's foreign language mandate, which stands today, appears in Bulletin 741 as follows:

An articulated elementary foreign language program for 30 minutes daily in Grades 4 through 6 shall be required for academically able students and shall be optional for all others. An academically able student is defined as one who is functioning at grade level as determined by the local school system (p. 115).

An articulated elementary foreign language program shall be required in grades 7 and 8 for 150 minutes per week in the subject area(s) designated by the local school board (p. 115).

What impact does the BESE mandate have on current Louisiana foreign language enrollments? Although foreign language study can be offered from pre-kindergarten through eighth grade in Louisiana's elementary schools, school participation in foreign language programs varies widely according to the needs, resources, and wishes of individual schools. Certain schools have insufficient funding to staff the mandated fourth through eighth-grade foreign language program. Schools without the financial means to support the foreign language program may apply for waivers for full implementation of the program from the Board of Elementary and Secondary Education. Some schools are satisfied with and financially able to fund minimal implementation of the foreign language program and thus adhere to the state mandate and offer foreign language to students in grades four through eight. Yet other schools opt to offer foreign language programs in

earlier grades, exposing their students to a second language to build a solid foundation of second language learning before they participate in fourth through eighth grade foreign language study. Certain schools have a strong parent base of proponents of foreign language study and have established immersion programs in French, and Spanish. Their goal is to produce bilingual students.

According to the Louisiana Department of Education's 2001-02 foreign language statistics, 50,335 or 17% of students in fourth through the eighth grade were enrolled in the Louisiana Foreign Language Elementary School program as students of French, Spanish, German, or Latin. In addition, for this same academic year, 17,067 Louisiana pre-kindergarten through third grade students were enrolled in a FLES French or Spanish course of study. Louisiana 2001-2002 kindergarten through eighth-grade French and Spanish Immersion program student enrollments show that 2,558 students participated. This brings the grand total of 2001-2002 Louisiana foreign language enrollment to 69,960 students.

During the regular session, 2003, Louisiana House Concurrent Resolution Number 114 was introduced to the Legislature in an effort to gauge the pulse of the French language in Louisiana. The purpose of Resolution 114 is to set in motion House Concurrent Resolution Number 191 adopted in 2001 designed to,

Create the Louisiana Commission on French and the Louisiana French Study Committee to assess the condition of the French language and French language education in the state and recommend a plan of action for the further development, utilization, and preservation of French (Concurrent Resolution Number 114, Louisiana Legislature, 2003 Ordinary Session).

Members designated to serve on these committees represent various entities such as: the CODOFIL, Louisiana Department of Education, BESE, Louisiana Consortium

of Immersion Schools, the Governor's and Lieutenant Governor's offices, Senate, and House of Representatives. This collective body is charged with submitting a report of its findings and recommendations to specified House and Senate committees prior to December 31, 2003.

Two studies were conducted by the Louisiana Department of Education to determine the impact of foreign language study on student achievement in other academic areas. According to Webster's Third New International Dictionary (1981), *achievement* is defined as, "...performance by a student in a course; quality and quantity of student's work during a given period" (p. 16). Rafferty (1986) looked at achievement on the 1984 and 1985 Louisiana Basic Skills Test of third, fourth and fifth grade students enrolled in a foreign language course of study as compared with their non-foreign language peers. The results found that the foreign language students at all grade levels examined showed higher achievement rates on the English Arts portions of the Louisiana Basic Skills Test than did non-foreign language students in the same grades. Although math achievement was not as extensive across grade levels as was the English Language Arts, math scores for fifth grade foreign language student participants surpassed those of non-foreign language student counterparts.

In another investigation of the effect of foreign language study on student academic achievement, Lang (1990) used 1990 scores from the reading and English Language Arts portions of the state-administered norm referenced test taken by Louisiana fourth, sixth and ninth grade students in a relational study on elementary foreign language study and student performance. Lang's two-part study first

examined whether foreign language students performed differently in English Language Arts skills from their non-foreign language peers. The second aspect discerned whether students with two or more years of participation in the Louisiana foreign language elementary program performed differently in English Language Arts skills as compared to students with one year of program participation and students not enrolled in the program. The conclusions drawn from the study were that in all instances, students participating in the foreign language program outperformed their non-language counterparts. Moreover, students with more years of participation in the foreign language program outperformed students with fewer years of participation in the program.

Louisiana's FLES Programs

As discussed above, widespread implementation of Louisiana FLES programs began in the early 1970s after the establishment of the Council for the Development of French in Louisiana (CODOFIL). Since its implementation during the 1985-1986 school year, the Louisiana Board of Elementary and Secondary Education's foreign language mandate stipulates that students receive 30 minutes daily foreign language instruction in grades four through six and 150 minutes weekly in grades seven and eight. The primary goals of Louisiana's FLES programs are as follows: basic foreign language listening and speaking proficiency coupled with limited proficiency in reading and writing; the promotion of cross-cultural understanding and cultural diversity; and, limited amount of subject content taught in the target language. These goals pave the way for future foreign language study at the secondary level and beyond. The rationale is that if students' foreign

language learning experiences are positive and rewarding, they will look favorably upon furthering their foreign language study.

Elementary foreign language teachers conduct the vast majority of classroom instruction in the target language, as target language exposure is crucial to students' second language learning. Oral communication is emphasized over written communication and students' oral participation is regularly encouraged, thereby enhancing their oral language proficiency. Students are expected to make use of the target language in communicating ideas, desires, feelings, opinions etc. rather than studying about language form, structure and grammatical composition.

In 1997 the Louisiana Department of Education published guidelines for curriculum development within the framework of articulated fourth through twelfth-grade foreign language programs. The guide offers suggestions to local school districts developing their own foreign language curriculum. Since the Louisiana foreign language mandate requires consecutive foreign language study in grades four through eight, the guidelines commence with indicators for foreign language study at the fourth-grade level. Grounded in the Louisiana Foreign Language Content Standards, these guidelines relate both course content and non-language specific linguistic concepts to be addressed progressively in grades four through twelve. Grade-level expectations take into account how foreign language learning should be integrated with other disciplines as a means of reinforcing content through the medium of the foreign language. Since the present study examines students' language learning at the third, fourth and fifth-grade levels, a brief description of the guidelines pertinent only to fourth and fifth-grade students will be related here.

Fourth-grade foreign language students learn about school, people around them, weather, animals, holidays and celebrations, fairy tales, and numbers including age and time. At this level, the targeted grammatical concepts to be acquired include: making agreement; using definite and indefinite articles; using common verbs; using personal pronouns; constructing negative and affirmative sentences; using prepositions; and posing commonly-asked questions.

Fifth-graders recycle and reinforce the content learned during the previous level, but they also learn about community, clothing, exercise, food, housing, and class trips. At this age-level, the grammatical concepts students acquire include: adjectives, imperative verb forms, possessive adjectives, common regular verbs, simple interrogative adjectives, and partitive articles.

Louisiana's Immersion Programs

During the 2001-2002 school year 50,335 fourth through eighth-grade Louisiana students were enrolled in FLES programs, whereas 2,558 were enrolled in immersion programs in grades kindergarten through eight. Although Louisiana's immersion programs are fewer in number than FLES programs, they typically remain strongly supported by the school communities in which they have been established, particularly in regions with French or Spanish heritage.

Louisiana's first French immersion program made its debut in 1971 in St. Martin Parish. One decade later, the first Spanish immersion program was established at La Belle Aire Elementary School in Baton Rouge. Presently elementary immersion grade configurations include kindergarten through the eighth grade. According to foreign language enrollment statistics reported by the

Louisiana Department of Education during the 2001-02 school year, French immersion enrollments were as follows: 2,226 students in 30 schools within eight parishes (Acadia, Assumption, Calcasieu, East Baton Rouge, Lafayette, Orleans, St. Landry, and St. Martin). Spanish immersion figures for the same period show that 332 students were enrolled in seven schools in the parishes of Calcasieu, East Baton Rouge and Orleans.

The predominant immersion program model in existence in Louisiana elementary foreign language programs is categorized as early partial immersion. Typically students begin foreign language study in kindergarten or first-grade and continue through grade eight. At least half of the daily instructional time is spent learning core content area subject matter, such as mathematics, science, and social studies with the exception of reading and English language arts, through the medium of the target language. Generally speaking, the immersion program goal is for student participants to achieve functional proficiency in the target language while continuing to develop English language skills. Moreover, participants must master grade-level content skills while cultivating an appreciation for and an understanding of the target languages and cultures. It is important to note that specific program design remains flexible and varies according to the needs of individual school systems whose programs typically enjoy fairly strong parental collaboration and support.

Guidelines for Louisiana immersion programs were set forth by the Louisiana Consortium of Immersion Schools and presented to the Louisiana Board of Elementary and Secondary Education nearly a decade ago, and have been

recently updated and referenced in Louisiana's educational policy, *Bulletin 741*. These goals pertinent to kindergarten through fifth grade students remain the same with regard to current programs and include: acquire native second language ability in communicating on age-appropriate topics; maintain performance on standardized tests on par with non-immersion counterparts; develop an awareness of the contributions of foreign language communities to the United States and the world; foster cultural appreciation among student participants while simultaneously cultivating a deeper awareness of one's own culture; maintain first language (English) proficiency so as to continue learning both first and second languages; appreciate cultural diversity while constructing one's own cultural identity; acknowledge other ways of being within the context of a global world; and develop a greater awareness of the Cajun and Creole populations in Louisiana.

Louisiana's Curriculum Initiatives and High-stakes Testing

It is important to examine how Louisiana curriculum initiatives shape the content of high-stakes state standardized tests. In particular, the Louisiana Educational Assessment Program (LEAP 21) test will be examined here, for it is closely correlated to the English language arts, mathematics, science, and social studies Louisiana content standards. The Louisiana Department of Education (2001) reported that in 1997, content standards across disciplines including English language arts, mathematics, science, social studies, foreign languages and the arts were approved by the Louisiana Board of Elementary and Secondary Education and began their implementation in elementary and secondary classrooms across the

state. The Department describes the purpose of the content standards and how they came into existence.

These standards reflect the essential knowledge and skills that content teams of expert Louisiana educators deemed necessary for students to become good scholars and productive citizens (p. 2).

Table 1.1 presents specific English language arts, mathematics, science and social studies content standards measured by the LEAP 21 and Graduation Exit Exam (GEE 21) Tests. By looking at the content standards, it is clear that foreign language learning lends itself to the acquisition of skills inherent in these core content area content standards.

Table 1.1
English Language Arts, Mathematics, Science, and Social Studies Content Standards Measured by the LEAP 21 and Graduation Exit Exam (GEE 21)Tests

	English Language Arts	Mathematics	Science	Social Studies
Content Standards Measured by LEAP 21 and GEE 21	Read, comprehend, and respond to a range of materials	Number and number relations	Science as inquiry	Geography: Physical and Cultural Systems
	Write competently	Algebra	Physical Science	Civics: Citizenship and Government
	Use conventions of language	Measurement	Life Science	Economics: Independence and Decision Making
	Apply speaking and listening skills (not assessed)	Geometry	Earth and Space Science	History: Time, Continuity, and Change
	Locate, select, and synthesize information	Data analysis, probability, and discrete math	Science and the Environment	
	Read, analyze, and respond to literature	Patterns, relations, and functions		
	Apply reasoning and problem-solving skills			

Embedded in all curricular areas are the Louisiana Foundation Skills. The Louisiana Department of Education describes the objectives of the foundation skills as follows:

Common threads that form a base for all content standards are the foundation skills, which were also identified as essential competencies needed to meet the demands of the classroom and the world beyond. These foundation skills, used to make learning more meaningful are as follows:

1. Communication
2. Problem solving
3. Resource access and utilization
4. Linking and generating knowledge
5. Citizenship (p. 2).

Here foreign language learning is situated within the context of the Foundation Skills. In the foreign language classroom, communication is a fundamental goal. Languages are vehicles for expression and natural conduits for conveying meaning. With regard to problem solving, the real-life, contextualized environment of foreign language learning in Louisiana FLES-type foreign language programs offers students a wealth of opportunities to engage in problem solving through the foreign language. Occasions for students to access and use resources abound in the foreign language-learning environment. Students engaged in consulting maps, dictionaries, publications, and Internet sites in order to meet the demands of a lesson are common occurrences in foreign language classrooms. Foreign language study can be linked to vast bodies of knowledge encompassing all subject areas making the possibilities for interdisciplinary connectivity virtually limitless. Finally, citizenship is developed naturally among foreign language learners, for when children come to know about other cultures and customs; they do so in reference to their own lived

experiences. Thus, the opportunity to examine how others live reinforces ones own values and beliefs.

Statement of the Problem

Research carried out on early FLES programs in the United States concluded that foreign language study did not impede learning in other academic areas. Moreover, several studies (Brega & Newell, 1967; Donoghue, 1965; Johnston, Ellison & Flores, 1961; Johnston, Flores & Ellison, 1963; Leino & Hack, 1963; Lopato, 1963; Potts, 1967) found that foreign language study actually enhanced students' basic skill achievement in other content areas. Studies examining immersion programs (Bamford & Mizokawa, 1991; Genesee, 1985; Lambert & Tucker, 1972) reveal similar findings. Given that early FLES studies were conducted at a time when the teaching of foreign languages took place within the context of teaching methods very different from those used in today's classrooms, more current research in this area is needed.

The present study poses the following questions:

1. Do third-grade students participating in the Louisiana Foreign Language Elementary School program for the first year have significantly higher scores than their non-foreign language peers on the Iowa Test of Basic Skills which includes the combination of reading, language, math, science, and social studies subtest scores?
2. Do fourth-grade students participating in the Louisiana Foreign Language Elementary School program for the second year have significantly

higher scores than their non-foreign language peers on the Louisiana Educational Assessment Program for the 21st Century (LEAP 21) which includes the combination of English language arts, math, science and social studies subtest scores?

3. Do fifth-grade students participating in the Louisiana Foreign Language Elementary School program for the third year have significantly higher scores than their non-foreign language peers on the Iowa Test of Basic Skills which includes the combination of reading, language, math, social studies, and science subtests?
4. After adjusting for prior performance on the third-grade Iowa Test of Basic Skills, do fourth-grade students after two years of participation in the Louisiana Foreign Language Elementary School program make significantly greater academic gains on the combination of fourth-grade LEAP 21 subtest scores than their non-foreign language peers?
5. After adjusting for prior performance on the fourth-grade LEAP 21, do fifth-grade students after three years of participation in the Louisiana Foreign Language Elementary School program make significantly greater academic gains on the combination of fifth-grade Iowa Test of Basic Skills subtest scores than their non-foreign language peers after they progress from fourth-grade to fifth-grade?
6. After adjusting for prior performance on the third-grade Iowa Test of Basic Skills, do fifth-grade students after three years of participation in the Louisiana Foreign Language Elementary School program make significantly

greater academic gains on the combination of fifth-grade Iowa Test of Basic Skills subtest scores than their non-foreign language peers after participating in the program from third-grade to fifth-grade?

In addition, in order to investigate teachers' perceptions of effective classroom practices that promote foreign language acquisition while reinforcing students' acquisition of skills in other content areas, the following question will be explored:

1. How do teachers of student participants in the Louisiana Foreign Language Elementary School program perceive that they link foreign language learning in their classrooms to skills and concepts their students learn in English language arts, math, history, geography and science?

Rationale/Purpose of the Study

Recently, there has been a call in the profession for more research investigating how foreign language study benefits elementary and secondary students. Lipton (1998) cites the need for an examination of, "the short-term and longitudinal results of studying a foreign language in the elementary school and the effect on English language skills and achievement in different subject areas" (p. 7). The present study endeavors to assist in answering this call by examining the Louisiana Elementary School Foreign Language Program over a three-year period to discern its effects on student participants. In particular, the purpose of the present research is to examine the relationship between the study of foreign language in the Louisiana Elementary School Foreign Language Program and student achievement. A second goal is to examine teachers' perceptions of how they reinforce students'

academic skills in the English language arts, mathematics, science and social studies content areas.

Significance of the Study

The present study endeavors to contribute to previous research done which examines the effectiveness of elementary foreign language programs. It seeks to clarify the role foreign language learning can play in the acquisition of skills in core content areas. One potential end-result of the study could reveal that foreign language study has no impact on, or even hinders achievement in skills in other subject areas. Another very different potential scenario shown by the findings could be that foreign language study improves students' skills in other academic areas, thereby giving credence to proponents of foreign language study who see it as a necessary component of curriculum in American schools. In either instance, the present study could aid school policy makers in making decisions regarding foreign language offerings in school systems.

Delimitations of the Study

This study will confine itself to the examination of students whose initial participation in the Louisiana Foreign Language Elementary School Program begins in the third-grade and continues through and including at least the fifth-grade. For purposes of homogeneity of student language learning experiences, students enrolled in foreign language immersion programs will not be considered within the scope of this study.

Limitations of the Study

The present study is not framed in a true experimental research design with random assignment of subjects to treatment and control groups. Therefore, the causal comparative design used decreases the generalizability of the results to all American foreign language programs. However, since the research design utilizes student-level data, the results can provide valuable information to Louisiana school systems which could assist them in making informed decisions regarding sustaining existing foreign language programs, or implementing new ones.

Definition of Terms

Communicative Approach: A model of foreign language learning which calls for learning language and using it in real-life, contextualized situations, thereby emphasizing culture in the foreign language classroom. Students' language proficiency is measured based on learning outcomes, or performance tasks, which gauge how well students use the target language.

Content-Based Teaching: A teaching method that integrates foreign language instruction with skills and concepts learned in core content academic areas. It serves to reinforce students' knowledge and general academic skills through the medium of the target language.

The Five C's of Foreign Language Learning: Broad categories, or goal areas of foreign language education as stated in both the National Foreign Language Content Standards document and the Louisiana Foreign Language Content Standards document.

Communication – Communicate in Languages other Than English

Cultures – Gain Knowledge and Understanding of Other Cultures

Connections – Connect with Other Disciplines and Acquire Information

Comparisons – Develop Insight into the Nature of Language and Culture

Communities – Participate in Multilingual Communities at Home and
Around the World

FLES: Foreign Language in the Elementary School. These programs vary in program design, but involve learning one language for a minimum of two years for roughly 30-55 minutes daily, resulting in students who become proficient in the target language.

FLEX: Foreign Language Exploratory. These courses are flexibly designed and generally last from two to nine weeks meeting bi-weekly. FLEX courses introduce students to one or more languages and the cultures represented by these languages. A chief aim of FLEX is to sensitize students to languages and cultures while cultivating in them an interest in further language study. Students gain minimal language proficiency from participation in FLEX programs.

GEE 21: As part of the Louisiana Educational Assessment Program for the 21st Century, the GEE 21 (or graduate exit examination) is a criterion-referenced test administered to Louisiana students in grades ten and eleven to gauge how well they have mastered Louisiana content standards. Students' test results in each subject area place them at one of the following achievement levels: *Advanced, Proficient, Basic, Approaching Basic, or Unsatisfactory*. One of the criteria for Louisiana tenth and eleventh grade students toward earning a high school diploma is that they score

in the *Approaching Basic* category or above on the English language arts, mathematics, and the science or social studies portions of the test.

Immersion: Foreign language learning environment whereby the content area subjects are taught entirely in the target language.

Iowa Test of Basic Skills (ITBS): A norm-referenced achievement test published by Riverside Publishing of Itasca, Illinois, which measures standards and skills across the curriculum. The ITBS is administered to Louisiana students in grades three, five, six, and seven and includes the following areas: reading (vocabulary and reading comprehension); language (spelling, capitalization, punctuation, usage and Expression); mathematics (concepts, estimation, problem solving, data interpretation and computation); social studies; science; and sources of information (maps and diagrams, reference material).

LEAP 21: Louisiana Educational Assessment Program for the 21st Century. A criterion-referenced test given to Louisiana students to gauge how well they have mastered Louisiana content standards. The test is administered to students in grades four and eight. Students' test results in each subject area place them at one of the following achievement levels: *Advanced, Proficient, Basic, Approaching Basic*, or *Unsatisfactory*. Students at the fourth and eighth grade levels must score in the *Approaching Basic* category or above in order to be promoted to the next grade level.

Louisiana Foreign Language Content Standards: Performance-oriented statements which describe what students should know and be able to do with the target language throughout the various stages of their language acquisition. They are

closely modeled after the National Foreign Language Teaching Standards and incorporate the five C's as defined above.

Louisiana Foreign Language Elementary School Program: A program whereby Louisiana students follow a course of foreign language study in at least the fourth through eighth grades, as prescribed by a state mandate established in 1984. School districts determine language offerings and student eligibility for program participation, although it is the view of the State that all students be encouraged to take part. The program emphasizes standards-based language learning delivered through the communicative approach.

Louisiana Foundation Skills: Underlying themes prevalent in all subject areas of the Louisiana Content Standards leading to meaningful learning both within the confines of the classroom and beyond. The foundation skills include: communication, problem solving, resource access and utilization, linking and generating knowledge, and citizenship.

School Performance Score (SPS): A score measuring student academic performance attributed to each school as part of the Louisiana School Accountability Program. The SPS formula for elementary schools is derived as follows: 60% LEAP 21 performance; 30% ITBS performance; and 10% school attendance.

Chapter one provided a historical backdrop of foreign language study in the United States and presented the types of foreign language programs in existence. It pointed out Louisiana's initiatives to support foreign language study from 1968 to the present. It also gave an overview of Louisiana's FLES and immersion programs

and provided recent elementary foreign language enrollments for these programs. In addition, Louisiana's curriculum initiatives and statewide assessment programs were highlighted. The concluding sections laid the foundation for the present study by relating its problem statement, rationale, significance, delimitations, limitations, and definition of terms.

CHAPTER 2

REVIEW OF THE LITERATURE

Chapter Two reviews the literature pertinent to the present study. The opening sections establish a brief theoretical framework relating key elements of second language acquisition as well as cognitive and affective factors in elementary second language learning. Next, recent foreign language teaching approaches and methodologies – those established in the profession since the 1970s are highlighted with particular emphasis on methodologies that shape foreign language teaching practices currently utilized in Louisiana Elementary Foreign Language Program. Finally, the principal section of Chapter Two is presented – a review of research, which examines foreign language study and student achievement from the 1960s through the 1990s.

An Overview of Key Elements of Second Language Acquisition

Krashen's Input Hypothesis

The Input Hypothesis, proffered in the 1980s by Steven Krashen, is currently one of the most widely accepted contemporary second language acquisition theories shaping present foreign language instruction. Krashen (1985) explains that the Input Hypothesis encompasses five separate but interrelated hypotheses: the Acquisition-Learning Hypothesis; Natural Order Hypothesis; Monitor Hypothesis; Input Hypothesis; and the Affective Filter Hypothesis. Each will be presented briefly here.

The Acquisition-Learning Hypothesis establishes two ways of developing second language ability. The first is *acquisition*, which is a subconscious process

closely related to that of first language learning. The second is *learning*, which is a conscious process that leads to “knowing about language” (p.1). For example, when students learn to apply grammatical rules, they are learning *about* language.

Krashen favors language acquisition over language learning as a means of achieving second language competence.

The Natural Order Hypothesis is based on the notion that language rules are acquired in a predictable order, whereby certain rules precede others. In this way language acquisition happens not as a result of learning about grammatical structures, but occurs naturally, in a progressive, logical order, as does first language learning.

The Monitor Hypothesis clarifies the role of acquisition and learning in target language production. It states that second language production happens as a result of the learners’ subconscious knowledge and acquired competence. The role of conscious knowledge is that of monitor, or editor. Krashen explains that two criteria must be met for monitor use: “the performer must be consciously concerned about correctness; and he or she must know the rule” (p. 2). Furthermore, he points out that attention to form can lead to increased grammatical accuracy. The drawback, however, is that communication is often compromised when language use is overly monitored or edited by the one producing the language.

The Input Hypothesis states that the only way humans acquire language is “...by understanding messages, or by receiving comprehensible input” (p. 2). According to Krashen, target language exposure is the key to language acquisition. He conceptualizes this exposure as input that must be comprehensible to the learner

and relates that the way language is acquired is by understanding input that is one level above the level at which the learner currently functions. This prime level of input is referred to as input + 1 or commonly termed $i + 1$. Input too far beyond the learner's $i + 1$ range, is ineffective because the learner cannot grasp what is being conveyed.

The Affective Filter Hypothesis is described as, "...a mental block that prevents acquirers from fully utilizing the comprehensible input they receive for language acquisition" (p. 3). This notion deals with the extent to which the learner is comfortable in the learning environment and motivated to learn the target language. A low affective filter would result from a low anxiety environment in which the learner is at ease. Under these conditions, the comprehensible input can be well received by the learner. In contrast, students who are not motivated to learn the target language or feel vulnerable or anxious in their learning environment experience a heightened affective filter. This result is that language learning is impeded.

Age-related Factors in Second Language Acquisition

An important aspect of second language acquisition theory involves the consideration of age factors in second language learning. Early theorists held that younger, rather than older learners are better equipped to learn a foreign language. Penfield and Roberts (1959) advocated that optimal language acquisition happens in early childhood. Lennenberg (1967) extended this period asserting that the greatest window of opportunity for foreign language acquisition occurs from early childhood until the age at which children reach puberty.

Research suggests that when native-like pronunciation is the objective for foreign language study, children outperform adults. Asher and Garcia (1969) and Oyama (1976) examined age with regard to second language acquisition and found that older second language learners were less likely than their younger counterparts to attain native-like pronunciation. In contrast, Snow and Hoefnagel-Hohle (1982) report on a study they carried out to test this hypothesis which looked at the pronunciation of Dutch by English speakers of various ages in a longitudinal study. The findings reveal that participants twelve to fifteen years of age progressed the fastest during the initial language-learning experience. Those in the eight to ten and twelve to fifteen year old groups had reached the greatest native-like pronunciation, while the scores of the youngest participants – ages three to five – were the lowest in each instance.

When foreign language proficiency is the targeted outcome, older learners are at an advantage, but younger learners eventually catch up, and often surpass older learners over time. Cummins (1983) relates the findings of several studies (Cummins, 1980; Ekstrand, 1977; and Genesee, 1978) which hold that learners exhibit more rapid progress toward second language acquisition because of their cognitive maturity and lived experiences, yet younger learners ultimately achieve greater language proficiency due to their length of exposure to the target language. Similarly, Krashen, Long, and Scarcella (1979) have reviewed literature pertaining to the debate over the optimum age for foreign language study. Regarding research done on this topic, Krashen (1985) posits, "...older acquirers progress more quickly

in early stages because they obtain more comprehensible input, while younger acquirers do better in the long run because of their lower affective filters” (p.12). Lee (1977) makes an important point with regard to adolescents’ language learning inhibitions impeding their language acquisition. He suggests that it is difficult for shy, sometimes self-conscious teens who are susceptible to social pressures to take part in language learning activities.

Age-related Factors in Acculturation

Age implications are relevant not only to second language proficiency, but also to the extent to which children are willing to accept others. Allen (1978) relates that after age ten, children’s attitudes toward people from different cultures become more firmly rooted and can lead to the development of stereotypes. Thus, prior to age ten is a critical period for fostering an awareness of and appreciation for cultural diversity among children. Lambert and Klineberg (1967) support this view by relating that as early as ten years of age, children leave the stage of egocentricity and progress toward that of reciprocity. Thus, it is crucial that children’s receptivity be tapped into prior to this period.

Weatherford (1986) posits that when begun at an early age, foreign language study can shape children’s acceptance of others. He asserts that foreign language study tends to help dissolve misconceptions and often helps create feelings of sympathy for native speakers of the language, especially if the study is begun early and pursued for a long period of time (p.4).

Here Weatherford addresses the importance of elementary language study that is sustained over time. Thus, he advocates articulated foreign language programs beginning in the elementary grades. If initial foreign language learning is put off until later adolescence, the learner is less open to accepting different ways of being.

Cognitive Benefits of Foreign Language Study

Research provides an important knowledge base about the potential for foreign language study to enhance students' cognitive functioning. Moreover, foreign language study helps children better understand their own language. Landry (1974) examined sixth-grade FLES students who had studied a foreign language since the first grade in comparison with their non-FLES counterparts and found that divergent thinking skills among the former were higher.

In this vein, Cummins (1983) argues that bilingual children spend a great deal more time analyzing and interpreting language than their monolingual peers, which accounts for their superior language acquisition skills. Cummins explains that this view is consistent with Vygotsky's (1962) who asserted that studying different languages provides the learner with increased awareness of linguistic operations. Cummins also suggests that this view is echoed in the work of Lambert and Tucker (1972) who posit that when students develop bilingual skills, they "practice 'incipient contrastive linguistics' whereby they compare the syntax and vocabulary of their two languages" (p. 120). Hakuta (1990) investigated the translation skills of bilingual students. The rationale was that the ability to translate, and by extension, interpret meaning, promotes the development of metalinguistic skills. The study analyzed the amount of time it took bilingual children to translate

passages from English to Spanish and from Spanish to English and looked at the types of errors students made. The results showed that bilingual student participants were very adept at translation, which enhanced their literacy skills.

The research of Bamford and Mizokawa (1991) adds to the body of knowledge of cognitive and language development among bilingual learners. They looked at nonverbal problem solving as well as native language development. With regard to the nonverbal problem solving, they compared students' performance on the *Raven's Coloured Progressive Matrices* and found that immersion students outperformed their monolingual peers. The Peabody Picture Vocabulary Test-R was used to discern participants' native language development. The results of student performance on this measure revealed that the non-immersion students were performing on par with their monolingual counterparts. This evidence supports the notion that second language study does not interfere with native language ability.

Affective Benefits of Foreign Language Study

Foreign language study provides students with the opportunity to examine cultures and ways of being that are different from their own. Exposure to other languages and cultures encourages students to have a broader perspective of the world. Carpenter and Torney (1973) convey the importance of instilling intercultural competence in children early on in their education citing that, "children who are not afforded second culture experiences are sentenced to being alienated by human differences rather than understanding and even growing by participation in diverse ways of viewing life" (p. 9). Within this context, foreign language study enables students to be confronted with ideas that are different from the way in which

they perceive the world. The result is that children become more open to and accepting of diversity.

Research by Genesee and Cloud (1998) echoes the view of Carpenter and Torney. They relate that being able to communicate in more than one language allows people to expand their view of the world and leads to “greater intercultural understanding and tolerance” (p. 63). They point out that, “linguistic and cultural differences can be a source of conflict, or enrichment and interest” and that, “multilingualism is a key step in understanding and appreciating differences” (p. 63).

Riestra and Johnson (1964) examined the attitudes of Illinois fifth-grade elementary children enrolled in FLES Spanish programs toward peoples from various countries. Students of Spanish were matched with students in neighboring schools not participating in a foreign language program on grade level, chronological age, socio-economic background, sex, and intelligence. Both groups answered a questionnaire asking them to indicate how they felt about people from given foreign countries. Results indicated that the language students exhibited significantly more positive attitudes toward people from Spanish speaking countries than did their peers not enrolled in the FLES Spanish program. Riestra and Johnson concluded that, “teaching foreign language to elementary-school children in its cultural setting is a potent force in creating more positive attitudes toward the peoples represented by that language” (p. 69).

In a position statement, the Joint National Committee for Languages (JNCL) and Council for Language and International Studies (CLIS) (1984) made an appeal

for foreign language study. They underscored its potential for bridging America's cultural divide as well as enhancing Americans' understanding of historical and international issues that have shaped our contemporary world.

Those who are proficient only in English should have the opportunity and should be encouraged to achieve proficiency in other languages and to know and appreciate the history and culture of other peoples. It is through the knowledge of languages and cultures that we best begin to know and comprehend the scope and significance of human experience in history, from ancient times to modern; it is through the knowledge of languages and cultures that we best learn to tolerate and appreciate cultural and linguistic diversity at home, to understand our contemporaries abroad, and so achieve our full potential as citizens of the world (p. 44).

Beyond enabling young learners to appreciate cultural diversity and to develop an awareness of the contributions of people from around the world, elementary foreign language study reinforces students' sense of self. Furthermore, by examining the cultures of others, children develop a greater awareness of their own values and beliefs.

Contemporary Foreign Language Teaching Approaches and Methodologies

Richards and Rodgers (2001) clarify the distinction between foreign language teaching approaches and foreign language methodologies. They explain that approaches evolve from established sets of theories about how language learning and teaching take place. Approaches remain flexible and adaptable to various learning situations. In contrast, methodologies draw upon specific instructional designs based in language learning theory and are thus more prescriptive in nature. Due to this more stringently applied set of rules, methodologies are often more short-lived than teaching approaches because they are "often linked to very specific claims and to prescribed practices that fall out of favor

as these practices become unfashionable or discredited” (p. 245). Larsen-Freeman (2000) provides an insightful overview of foreign language teaching methods from a learner-centered orientation. Those from the 1970s to the present include: The Silent Way, Suggestopedia, and Total Physical Response. These teaching methods will be presented briefly here.

Larsen-Freeman (2000) explains that the Silent Way, established by Gattegno (1972), draws upon learners’ “inner resources” such as, “perception, awareness, cognition, imagination, intuition, creativity, etc.” in the learning environment (p. 54). The Silent Way makes use of a sound-color chart and colored rods that represent sounds in the target languages. These rods are used in aiding the learner to progress from forming syllables to words, until ultimately, they are able to form sentences. The teacher acts as a support system when needed, but otherwise remains silent. Here the role of the teacher is in stark contrast with Krashen’s notion that, in order to develop communicative competence, learners must be exposed to large amounts of comprehensible input.

Suggestopedia was created by Lozanov (1978) and is founded on the premise that the teacher must work to tear down students’ psychological barriers that impede learning. This is accomplished by providing an inviting, comfortable and non-threatening learning atmosphere whereby students are reassured that they can be successful in learning the target language. Larsen-Freeman claims that a principle tenet of this method is that the teacher must put to rest, or “desuggest” students’ fear of failure. Heavy emphasis is placed on communication and on

learning vocabulary. In contrast, minimal emphasis is given to grammar instruction. It is believed that grammar is best acquired in the absence of formal instruction.

Total Physical Response (TPR) came about through the work of James Asher (1996) who posits that the fastest way to learn a language is in a low-anxiety setting by physically responding to instructions given in the target language, thereby activating memory. Asher reasons that meaning is conveyed through actions, both by observing them and acting them out. TPR calls for students' comprehension of the target language before they are required to produce. TPR holds that students will produce the language when they feel ready to do so. During students' pre-production phase, the teacher directs students' actions by modeling with a small group of students. Once all students can perform the oral commands, they learn how to read and write them. At this point, students are ready to begin producing the target language. During this production phase, the roles reverse, whereby the students give directions to their classmates and teacher.

Here some of the most prominent foreign language teaching approaches from the 1970s to the present will be presented as outlined by Richards & Rodgers (2001). These approaches include: Communicative Language Teaching; Competency-Based Language Teaching; Content-Based Instruction, Cooperative Language Learning, and The Natural Approach. Each will be discussed in turn.

Communicative Language Teaching arose from the view in the profession that language learning should focus on developing learner proficiency rather than knowledge about the structure of language. Richards and Rodgers (2001) assert that Communicative Language Teaching is often broadly interpreted, but that certain

practices are inherent in this approach. Namely, great emphasis is attached to conveying meaning rather than understanding form. It is through the trial and error experiences of conveying meaning that students learn about the target linguistic system. Students must be exposed to a great deal of the target language; therefore, use of their native language is made sparingly. Also, language-learning experiences are situated within a context that would occur naturally in the target culture and are commonly referred to as *real-life settings*. This promotes frequent opportunities for students to interact with their peers. Finally, when students can actually communicate in the target language, rather than merely know about its structure, they become intrinsically motivated to continue their language study.

Competency-Based Language Teaching draws upon communicative competence by offering the learner opportunities to communicate in social contexts for specific purposes, but adds an additional important element—that of measured progress. Richards and Rodgers (2001) define Competency-Based Language Teaching as, “...an educational movement that advocates defining educational goals in terms of precise measurable descriptions of knowledge, skills, and behaviors students should possess at the end of a course of study” (p. 141). Expected outcomes of students’ language proficiency are clearly specified throughout the language-learning experience. Moreover, students are given feedback on their progress through competency-based assessments. These assessments ascertain what students can do with the language and what specific skills and knowledge the students have acquired. Richards and Rodgers caution that Competency-Based Language Teaching has met with some criticism and that according to Tollefson

(1986), it is perceived as being too prescriptive since it follows a reductionist approach whereby, “the sum of the parts does not equal the complexity of the whole” (p. 148). On the other hand, in the wake of pervasive federal and state educational accountability programs, Competency-Based Language Teaching may gain the support of educational policy makers. To this end, a chief aim of the National Association of State Boards of Education (NASBE) study as mentioned in Chapter One, is to investigate incorporating foreign languages and the arts into state accountability measures thereby rendering them an integral part of the American curriculum.

Content-Based Foreign Language Instruction involves the learning of subject area content through the medium of foreign language. This model is widely prevalent in immersion programs wherein students learn a second language as a byproduct of their study of various curricular subject areas, rather than focusing on language form. Similarly, in the 1990s, Writing Across the Curriculum took place in classrooms throughout the United States in an effort to improve students’ written language skills. Here writing was reinforced in non-language curricular areas such as mathematics, social studies and the sciences. An appeal of Content-Based Foreign Language Instruction is that skills in core content areas can be reinforced while building proficiency in the target language. Again, in today’s climate of widespread educational testing and accountability, this approach could readily justify the existence of foreign language programs for their potentially valuable contributions to student academic achievement. Richards and Rodgers (2001)

point out an important drawback: typically foreign language teachers are trained to teach language as a skill, not as a vehicle for content instruction.

Cooperative Language Learning falls under the umbrella of Collaborative Learning whereby students are often engaged in paired and small group classroom activities. The role of the teacher is to assist students in building social skills that promote positive interaction, and by extension, support their language learning. In addition, the teacher assigns students to groups ensuring that their composition will include students with a variety of ability levels and backgrounds. The rationale is that students will benefit from each other's lived experiences that each individual brings to the group. It is important to note that while students function in groups, individual members are held accountable. Language learning activities serve the dual purpose of enhancing students' second language proficiency while promoting social skills. Robert Slavin has made valuable contributions to the educational field with regard to cooperative learning. Slavin (1991) offers practical guidelines for teachers wishing to incorporate cooperative learning environments in their classrooms.

The Natural Approach is very much in step with the tenets of Communicative Language Teaching whereby the principal language-learning goal is that of conveying meaning. Comprehensible input factors in heavily as well. Ideally, students are exposed to a great deal of the target language at a level that is just beyond their current level of proficiency. In addition, as we saw in Asher's Total Physical Response, students do not produce the language until they have the footing to do so. This helps promote a learning environment where anxiety is

reduced. To further contribute to a low anxiety atmosphere on the part of the learner, the teacher also refrains from correcting student errors. Topics of high interest to the students, and a variety of learning activities are used to enhance student motivation in the language learning setting.

Aspects of many of the teaching approaches discussed here are prevalent in Louisiana's elementary foreign language programs, the foremost being the Communicative Approach, whereby students collaborate in using the target language to express their ideas and convey meaning in contextualized settings. The fact that these approaches are less prescriptive than methodologies, allows teachers to take creative license in borrowing from their ideologies to fashion their own foreign language teaching approaches.

Review of Foreign Language Study and Student Achievement

As discussed in Chapter One, FLES programs were implemented in elementary schools in the United States as a result of funding through the National Defense Education Act of 1958, which was spurred on by Russian advances in technology. Foreign language study was perceived as vital to the interest and promotion of American national security. As such, it received a great deal of attention and financial support for its integration into the American educational curriculum.

Empirical research on foreign language study and student achievement has been carried out since the early 1960s at a time when FLES programs were taking root across America. Upon examining this research, several categories closely related to FLES study and achievement emerged. Research on student achievement

relative to the study of Latin, secondary-level foreign language study, and foreign language immersion study, all offer important insights that support findings of studies investigating FLES and student achievement.

Early Research

The principal aim of early FLES and academic achievement research was to investigate whether allocating time for elementary foreign language study had any negative effects on student achievement in other academic areas. During the 1959-60 school year, Lopato (1963) looked at the academic achievement of third grade students in a New York City public school as well as suburban third grade students in neighboring Long Island. The treatment groups – one at each locality – received roughly fifteen minutes of daily French ALM instruction, while the non-foreign language counterparts adhered to a curriculum devoid of foreign language instruction. Both groups were matched on the basis of grade assignment, age, intelligence and socio-economic status. Pre-test and post-test measures of the Stanford Achievement Test revealed that no significant difference in reading and language achievement was evidenced between the control and experimental groups at the Long Island school. Differences did exist in favor of the experimental group, but they were not significant. The experimental groups did, however, show a significant advantage in achievement gains in spelling and arithmetic. With regard to the New York City school participants, differences in reading and language gains favored the experimental group, although they were not significant. However, experimental group achievement gains in arithmetic were significant. Differences in spelling, although not significant, favored the control group. The Lopato (1963)

study affirms that foreign language study has no adverse effects on student achievement. Moreover, an important finding of this study was that student participants were not gifted students; therefore, foreign language study should not be reserved merely for high performing students.

Similarly, Johnson, Ellison, and Flores (1961) conducted a pilot study of third grade students in the Champaign, Illinois public schools that would be expanded in 1963. The 1961 study looked at differences in academic achievement between two third grade classes. The treatment group received 25 minutes of daily Spanish instruction beginning in the spring semester, while the control group received no Spanish instruction. As a pre-test measure, both groups took form A of the Science Research Association Achievement Series Test at the beginning of the 1958-59 school year. At the end of the school year both groups were administered form B of the pre-test instrument. The results reveal that the treatment group showed greater or equal gains in four out of seven measures as compared to the control group. The control group's superior performance on three measures was so minimal that it was not deemed significant. Thus, the study concluded that shortening the instructional time allotted for other subject areas to implement elementary foreign language study does not reduce the extent of average gain in student achievement test scores.

Johnson, Flores and Ellison (1963) carried out a more comprehensive study in the Champaign, Illinois schools by using two groups of 90 pupils each drawn from ten fourth grade classes. The treatment group's instructional time in language arts, social studies and arithmetic was shortened to accommodate 20 minutes of

daily Spanish instruction. The control group continued with the regular course of study devoid of any Spanish instruction. The control group consisted of 90 pupils from five fourth grade classes. The treatment and control groups were matched in age, intelligence quotient, and the ratio of boys to girls. The Iowa Test of Basic Skills was administered in the fall of 1959 as a pre-test and again the following spring as a post-test. The data obtained from these measures allowed the researchers to discern differences in students' mean achievement in reading, vocabulary, reading comprehension, language skills, work study skills, and arithmetic. The collective difference in mean gains in these areas favored the control group; however, the difference was not significant. Therefore, measurements on the Iowa Test of Basic Skills echo the results of the previous pilot study—that foreign language student participants demonstrated no significant loss in achievement in other curricular areas.

In tandem with Lopato (1963), Johnson, Ellison, and Flores (1961) and Johnson, Flores and Ellison (1963), who looked at intermediate elementary children, Potts (1967) examined the impact of second language instruction on reading proficiency and general achievement of early elementary students. In particular, Potts wanted to investigate whether second language learning interferes with beginning reading in the native language. The subjects were 43 first-graders and 37 second-graders in New York randomly assigned to one of two groups at each grade level. Each of the four groups participating was divided into random halves so that one half of a class served as the experimental group while the other half was designated as the control group. The pre-test instrument administered to both

groups was the California Test of Mental Maturity and Index of Social Position used to control for student differences in social position. The experimental group was exposed to fifteen minutes of daily French instruction for one academic year taught through the Audio Lingual Method. The control group was given dance instruction in place of French. At the conclusion of the school year the California Achievement Test (CAT) and California Reading Test (CRT) were administered as post-tests. The total number of correct answers on the CRT revealed no difference in English reading proficiency between the foreign language and non-foreign language groups. The total number of correct answers on the CAT suggested that there was no difference in general school achievement among the control and experimental groups.

Leino and Hack (1963) conducted a dual-purpose longitudinal study from 1960-63 in St. Paul, Minnesota public schools in one of the earliest instances of delivering Spanish instruction through the medium of television. The primary aim was to investigate the impact of time taken from the regular curriculum to incorporate foreign language study on student achievement. A second goal was to discern students' ability to learn a foreign language at various grade levels. The study was carried out over a three-year period and involved a total of over 4,000 fourth, fifth and sixth grade students. Six control and six experimental groups were formed using intact classes from six schools. Students in the experimental group were exposed weekly to three fifteen minute telecasts of Spanish coupled with two fifteen-minute Spanish sessions using audio tapes. In order to make time for Spanish instruction, time from other curricular areas was deleted for experimental group

students. Control and experimental groups were matched by socio-economic status as well as equivalency of school programs. All students in control and experimental groups were administered a battery of subject area tests as well as a test of intelligence as a means of controlling for potential differences. To gauge the Spanish proficiency of the experimental group, participants took a locally developed Spanish test annually throughout the duration of the study. With regard to the focus on Spanish proficiency levels, the data showed that increments of language gains were about equal among grade groups. The sixth grade group scored higher than the fifth graders. The researchers concluded that it is not possible to generalize that age and/or maturity affects the size of language gains based on the findings of this study. They did however conclude that since there was a positive correlation between intelligence and measured achievement in Spanish, students of lower intelligence should focus on reinforcing skills in reading, spelling, writing and arithmetic. This claim stands in stark contrast to the view of Garfinkel and Tabor (1991) whose study will be discussed in the next section. In terms of taking time from subject areas to study foreign language and the effect of achievement in those subject areas from which time was taken, achievement for the experimental groups in these areas was either no different or actually greater than the control groups' measures of achievement.

Early FLES research by and large found that making time for foreign language instruction in the elementary curriculum had no adverse effects among student participants. More comprehensive findings of recent research on FLES and academic achievement now will be examined.

Recent Research

Research on FLES and academic achievement conducted in recent decades maintains a less restricted scope than that of the 1960s since it examines facets of elementary foreign language teaching and learning as well as student achievement in other subject areas. Armstrong and Rogers (1997) studied the effects of foreign language instruction on reading, math and language arts achievement. Like previous studies, theirs sought to examine concerns that time taken from other curricular areas for foreign language study might hinder students' basic skills. The study was conducted in 1994 during the fall semester and included 100 third graders in two Pittsburgh, Kansas city schools. The students were randomly placed in classrooms before the academic year began. It should be noted that students in all classes varied with regard to socio-economic status and intelligence. Within each school one treatment group and two control groups were selected. The treatment group was exposed to 30 minutes of Spanish instruction three days per week which heavily incorporated instruction using the Total Physical Response teaching method. All the treatment and control groups took a pre-test and post-test comprised of reading comprehension, language and math sections. The *Level 2 Primary Test* was used as the pre-test and the *Otis Lennon School Abilities Test* served as the post-test. Results revealed that the treatment group did demonstrate significant differences in basic skill achievement. While the reading scores of the treatment groups were not significantly different from the control group counterparts, the treatment groups did demonstrate significantly different math and language scores over the control group students.

Di Pietro (1980) investigated the impact of foreign language study on student achievement among Arlington, Virginia children taking part in content-based foreign language programs in grades one through six. Student data was collected with regard to attendance, report card grades, ratings of academic performance by regular classroom teachers, and scores on standardized reading and math tests both before and after participation in the fourteen week foreign language study program. The foreign language instruction reinforced concepts students were learning in math and social studies classes. Moreover, weekly lessons helped the students explore the customs, history and artistic backdrop of the target cultures of the languages studied. Results showed that children's reading ability exhibited marked improvement upon completion of the fourteen weeks of foreign language exposure.

Garfinkel and Tabor (1991) conducted a study comparing the English reading scores of children who were exposed to a third or fourth grade introduction to Spanish and who did and did not continue their study of Spanish a full one to two years in the fifth and sixth grades. In addition to looking at English achievement of foreign language students, Garfinkel and Tabor also investigated the role of intelligence in student achievement. Findings show that with regard to the low ability group, a significant difference in sixth grade reading achievement existed between those who did and those who did not continue their study of Spanish. The high ability group did exhibit a difference, although it was not significant. Of considerable importance regarding children of average intelligence is that a significant correlation exists between improved reading scores and taking a full year

or two of foreign language. Garfinkel and Tabor (1991) relate that, “Psychologists assure us that intelligence scores are not a measure of purely innate characteristics and that they can be influenced by experience” (p. 379). They caution foreign language educators not to overlook children of average or below average intelligence because this population can benefit equally if not greater than their more academically able counterparts—a finding in contrast with Lopato’s position nearly 30 years prior to the 1991 Garfinkel and Tabor study.

Oller and Nagato (1974) looked at the long-term effects of foreign language study between seventh, ninth and eleventh graders who did and those who did not follow a sequence of FLES study. According to this study, FLES did not have a lasting impact on student achievement. The student participants were girls educated in private elementary and secondary schools in Japan. A control group (students not previously exposed to FLES) and a treatment group (students previously exposed to FLES) at each of the three grade-levels (seven, nine, eleven) were established. In order to examine the impact of foreign language study on English proficiency, students took a cloze test tailored to their grade level. The results show that non-FLES participants outperformed their FLES counterparts on the cloze measure by the time they reached the eleventh grade. Therefore, Oller and Nagato claim that FLES study did not have a lasting positive effect and that FLES students will not progress more rapidly than non-FLES students when participating in secondary and postsecondary foreign language study.

A recurring theme among these more recent studies is the examination of FLES study on students’ verbal and mathematic skills. The present study seeks to

broaden the scope of this investigation to include Louisiana FLES students' achievement not only in English and math, but also in the disciplines of social studies and science.

Louisiana Studies

Three studies conducted by the Louisiana Department of Education examine foreign language study and student achievement. The first, conducted in 1984 by the Bureau of Accountability, compared attainment rates and scores of FLES and non-FLES students in reading, writing and mathematics. It reported the number and percent of students reaching and not reaching a 75% performance standard on the Louisiana Basic Skills Testing Program during the 1983-84 school year. In all instances, FLES students significantly outperformed non-FLES students.

Secondly, Rafferty (1986) compared the 1985 Basic Skills test scores of Louisiana FLES and non-FLES students in grades three, four and five. Rafferty built on previous district-level research done on Louisiana foreign language immersion programs in East Baton Rouge and Calcasieu Parishes. In separate studies, Matthews (1985) of East Baton Rouge Parish and Pugh (1985) of Calcasieu Parish examined math and language scores of student immersion participants as compared to non-foreign language students and found that in each instance, the immersion students outperformed their non-foreign language schoolmates. Rafferty's FLES study matched treatment and control groups for race, sex, and grade-level. The academic level of all student participants was determined by results of their previous Basic Skills Tests, which indicates level of mastery of English language arts and reading skills. 13, 200 students were randomly selected from a population of

students who had no foreign language exposure at home, were fluent in English, and had not repeated a grade in 1985. The results corroborate the previous Louisiana study with regard to language arts scores. All third, fourth and fifth grade FLES students, despite race, sex, or academic level, scored higher on the language arts portions of the Louisiana Basic Skills Tests than did their non-FLES peers. Rafferty relates, “This finding supports the notion that, beginning as early as the third grade, second language study facilitates the acquisition of minimum skills in the native tongue” (p. 11). With regard to participant achievement on math portions of Basic Skills Tests, FLES groups showed neither a significant advantage, nor significant disadvantage. By the fifth-grade, FLES students’ math scores were higher than that of non-FLES participants, although not statistically significantly so. Rafferty explains the role of language scores in predicting math achievement by stating, “Insofar as foreign language study is related to increases in language scores, and language scores predict math scores, one would expect that foreign language study would eventually help raise math scores” (p. 12).

The most recent Louisiana study conducted by Lang (1990) explores the relationship of FLES study on English language achievement on the norm-referenced California Achievement Tests. Lang compared FLES and non-FLES groups at the fourth, sixth, and ninth grade levels to determine whether students with various length of foreign language exposure (none, one year, and two years) perform differently on tests of English language skills. Separate analyses were conducted for students performing on grade level and those performing below grade level. Students were matched according to reading level, socio-economic status (as

determined by participation in free and reduced lunch program), the length of participation in foreign language study, and whether or not they qualified for participation in Chapter One educational remediation programs. The results showed that FLES students scored significantly higher in English language arts and reading tests as compared to non-FLES students regardless of whether they were functioning at or below grade level.

Past research examining achievement among students participating in Louisiana FLES programs has contributed valuable insights into the tangible benefits of foreign language study. Since the release of the last study examining Louisiana FLES programs, significant changes in program characteristics have come about. Principally, the Louisiana Foreign Language Content Standards as well as the Louisiana Curriculum Guidelines for Articulated Language Programs Grades 4-12 were released in 1997 and integrated into curriculum designs throughout the state. Of major importance is the aim of current foreign language instructional practice to engage students in making connections to other disciplines within their foreign language learning environments. These developments should have brought about profound changes in the way Louisiana foreign language teachers deliver instruction and assess student participants. By extension, students should be in a better position to develop their foreign language proficiency while demonstrating significant academic achievement in other content areas as a result of their foreign language study. Therefore, the present study is needed to examine the impact of current Louisiana elementary foreign language programs on student achievement.

Latin Study and Achievement

Research looking at the effects of the study of Latin on student achievement offers important insights into the positive contributions of language learning. According to a number of studies, learning Latin enhances students' academic skills. Masciantonio (1975) conducted a study involving Massachusetts fifth and sixth-graders who were part of a Latin program designed to boost reading skills while providing cultural enrichment. Pre and post-test measures on the vocabulary portion of the Stanford Achievement Test were administered to Latin program student participants and their non-language peers. The results indicated that 11% more Latin students scored above grade level as compared to those not participating in the Latin Program.

Similarly, a study conducted by Offenbergl (1971) found that Latin study had a positive impact on student achievement. He investigated the performance of 4,000 fourth, fifth, and sixth grade students receiving 15-20 minutes daily Latin instruction in the Philadelphia School District. His research revealed that Latin students' performance on the Iowa Vocabulary subtest was a full year higher than their matched, non-language counterparts.

A study done in the Indianapolis Public School system by Sheridan (1976) compared the performance of 400 sixth grade students who were exposed to Latin instruction for 30 minutes daily with that of non-program participants. Pre-test and post-test measures on the Metropolitan Achievement Test showed that the experimental group significantly outperformed the control group on measures of math and spelling; however, reading scores favored the control group.

The Los Angeles Unified School District (1976) conducted a study involving approximately 1,300 fifth and sixth grade Latin students compared with matched non-language students. The Comprehensive Tests of Basic Skills were employed as pre-test and post-test instruments. Findings revealed that Latin students significantly outperformed their non-language peers. The mean vocabulary gain for the fifth-grade treatment group was eight months, whereas the control group gain was six months. With regard to sixth graders' scores, the treatment group's mean gain was nine months as compared to the control group's gain of six months.

The District of Columbia Public Schools (1971) examined the performance of approximately 1,100 sixth graders comprising three groups: those exposed to Latin instruction for one year; those exposed to French or Spanish instruction for four years; and those having no foreign language instruction. All groups were measured on the Comprehensive Tests of Basic Skills. Results showed that the performance of students with one year of Latin study was equivalent to that of students who had learned French or Spanish for 38 months. Latin students enjoyed a five-month difference in total reading growth as compared to non-language students.

Scanlan (1976) investigated the effect of Latin study on the verbal achievement of college freshman. Student participants took a standardized vocabulary test prior to beginning a computer assisted instruction course designed to improve English verbal skills by providing intensive study of Latin and Greek derivatives of English words. Students took the same test at the conclusion of the

course. The results show that all students improved their scores, some by as much as 40 percentile ranks.

Given the marked benefits of Latin study, it proves to be a valuable asset to the American curriculum. Beyond improving students' academic skills, the study of Latin can instill in students an awareness of and an appreciation for elements of Roman culture such as mythology, architecture, and principles of law.

Secondary-level Foreign Language Study and Achievement

Research on secondary-level foreign language study and its impact on post-secondary academic performance has also added an important dimension to the body of research which examines the role of foreign language study in enhancing academic achievement. Hart (1993) investigated whether there is a correlation between intelligence and foreign language achievement among high school students. More specifically, Hart conducted a study to determine if there is a correlation between tenth-grade students' high school entrance exam scores and achievement in foreign language after one year of study. According to the findings, math and language were the most significantly correlated with foreign language achievement. Foreign language and reading were also significantly correlated, but to a lesser degree. Perhaps the most prominent finding of this study is that students' cognitive skills quotient and foreign language achievement had the least significant correlation, which signals that IQ plays a minimal role in predicting students' foreign language achievement.

Wiley (1989) examined students at another transitional educational period—those beginning post-secondary studies. She sought to determine the relationship

between high school foreign language study and grade point averages of college freshmen. Wiley concluded that secondary students who have studied foreign languages at the secondary level perform better in college than their non-language peers of equal ability.

Eddy (1981) and Cooper (1987) investigated the role of foreign language study on students' verbal scores on the Scholastic Aptitude Test (SAT). Eddy (1981) found that when verbal ability is controlled, students having longer periods of exposure to foreign language perform better on SAT sub-tests and SAT-verbal portions than those who have studied less foreign language. He also concluded that studying two foreign languages had no significant effect on standardized scores. Moreover, the particular language studied bears no differential effect on standardized measures. Eddy (1981) reports that higher grades in foreign language study increase the effect of foreign language study on SAT reading and vocabulary sub-scores. That is to say, the higher the grades earned in foreign language study, the greater the impact this foreign language study has on students' SAT reading and vocabulary sub-scores. Finally, the effect of foreign language study manifests itself more strongly in vocabulary development than it does with regard to English structure use.

A study conducted by Cooper (1987) supports Eddy's findings, in that the length of foreign language study was significantly correlated with student performance on the SAT-verbal. Cooper explains that the more foreign language study, the better. In contrast to Eddy's study however, Cooper found that on a continuum from highest to lowest, students of German had the highest SAT-verbal

scores followed by students of French, Latin and then Spanish. An important finding of this study was that students from lower socio-economic backgrounds performed on par with their peers from higher socio-economic backgrounds. The research presented here has shown that, in general, foreign language study at the secondary level mirrors that of FLES study. Both reap positive benefits for student participants with regard to verbal skill achievement.

Immersion Study and Achievement

The corpus of research conducted on academic achievement of immersion students has also made noteworthy contributions to the understanding of the value of foreign language study. However, before discussing implications of this research, some brief background information on immersion programs will be presented.

Anderson (1984) provides an excellent overview of immersion programs. She explains that in 1965 Canadian immersion programs began with kindergarten children in St. Lambert, Quebec. The immersion program was established by English-speaking parents who were concerned that existing French programs did not adequately develop their children's French proficiency. In the United States, the Canadian immersion movement sparked the attention of educators and parents. Following the lead of its neighbor to the north, Culver City, California instituted the first American immersion program in 1971 offering instruction through the medium of Spanish. Since that time immersion programs have spread across America in states including, but not limited to, Louisiana, Maryland, Massachusetts, Ohio, New

York, Utah, Wisconsin, teaching predominantly through the medium of Spanish and French, although some immersion programs do include German.

Genesee (1985a) reports on the academic achievement of students in some of the early immersion programs in California, Maryland and Ohio. He explains that since its inception, the Culver City, California immersion program has enjoyed the support of various departments at the University of California, Los Angeles (UCLA). UCLA has conducted several longitudinal studies of the Culver City program. According to Genesee, the results of these studies mirror outcomes of Canadian immersion programs. Genesee relates findings of one such study carried out by Cohen (1974). During kindergarten and first grade, when no English language arts are taught, participants' English language development was inferior to non-immersion students. After receiving one year of English language arts instruction, immersion students performed as well as their non-immersion peers on standardized measures of English language arts skills.

Subsequent studies similarly conclude that immersion study has no detrimental effect on student academic achievement. Genesee (1978), compared student participants in the Montgomery County, Maryland immersion program with their non-immersion schoolmates on measures of English language proficiency. Genesee found no differences among the groups with the exception of spelling and punctuation for which non-immersion students outperformed their immersion counterparts.

An extensive evaluation of the Cincinnati immersion program conducted by Genesee (1985b) found that no significant differences in English language

development were evidenced between immersion students and their non-immersion schoolmates. The immersion students' stanine scores revealed that their performance was in tandem with average kindergarteners across the nation. Genesee, Holobow, Lambert, Cleghorn, and Walling (1985) examined the English language development, French language proficiency, and academic achievement of fourth grade students. With regard to the latter focus of their investigation, the researchers compared the academic achievement of a control group of fourth-grade students participating in their first year of a French immersion program with that of a treatment group of students who had been participants in a French immersion program since the second grade. A comparison of their standardized test scores measuring mathematical computation and concepts as well as reading comprehension, English vocabulary, and spelling revealed that there were no significant differences between the two groups.

Caldas and Boudreaux (1999) narrowed the focus of investigation into the benefits of participation in foreign language immersion by examining the academic performance of students from low socio-economic backgrounds. They report that immersion students from high poverty backgrounds fared better than non-immersion counterparts on English language arts and mathematics standardized test measures.

The body of research examining the effect of student participation in immersion programs on academic achievement demonstrates that immersion study does not hinder the academic achievement of student participants. The notion that foreign language immersion study is of particular benefit to students from impoverished backgrounds warrants closer and more widespread investigation.

The present chapter has conveyed a theoretical framework relating chief aspects of foreign language acquisition as well as cognitive and affective factors in second language learning. In addition, it related teaching methodologies that shape current foreign language teaching practices. Finally, a review of the literature examining foreign language study and student achievement from the 1960s through the 1990s was presented. Now let us turn to Chapter Three for an explanation of the research methodology that will be employed in the present study.

CHAPTER 3

MATERIALS AND METHODS

Chapter Three presents the research methodology of the present study. It begins with the restatement of the problem, followed by the research questions. Next, a description of the subjects is presented as well as an overview of the research design. The final elements include data collection and data analysis procedures at which point the research questions are reformulated into Null Hypotheses.

Restatement of the Problem

The purpose of the current research is to discern the effects of the study of foreign language in Louisiana elementary school foreign language programs on student achievement. Specifically, this research attempts to evaluate the impact of elementary foreign language study on students' standardized test scores in the following assessment areas: reading, language, math, social studies, and science. Relative to this aim, the research will also examine to what extent elementary foreign language teachers reinforce students' skills in core content subject areas through their foreign language classroom lessons. Concurrently, it endeavors to seek teachers' insights as to how foreign language instruction in their classrooms reinforces skills in other content areas in which students' academic performance is held accountable through school testing accountability measures.

Research Questions Regarding Student Comparison Scores

The present study asks the six following research questions requiring statistical analyses. These questions pertain to students' performance in academic

areas in which they are tested by means of state standardized tests. It should be noted that the following research questions will be formulated into Null Hypotheses in the *data analysis* section of this chapter:

1. Do third-grade students participating in the Louisiana Foreign Language Elementary School program for the first year have significantly higher scores than their non-foreign language peers on the Iowa Test of Basic Skills which includes the combination of reading, language, math, science, and social studies subtest scores?
2. Do fourth-grade students participating in the Louisiana Foreign Language Elementary School program for the second year have significantly higher scores than their non-foreign language peers on the Louisiana Educational Assessment Program for the 21st Century (LEAP 21) which includes the combination of English language arts, math, science and social studies subtest scores?
3. Do fifth-grade students participating in the Louisiana Foreign Language Elementary School program for the third year have significantly higher scores than their non-foreign language peers on the Iowa Test of Basic Skills which includes the combination of reading, language, math, social studies, and science subtests?
4. After adjusting for prior performance on the third-grade Iowa Test of Basic Skills, do fourth-grade students after two years of participation in the Louisiana Foreign Language Elementary School program make significantly greater academic gains on the combination of fourth-grade LEAP 21 subtest

scores than their non-foreign language peers?

5. After adjusting for prior performance on the fourth-grade LEAP 21, do fifth-grade students after three years of participation in the Louisiana Foreign Language Elementary School program make significantly greater academic gains on the combination of fifth-grade Iowa Test of Basic Skills subtest scores than their non-foreign language peers after they progress from fourth-grade to fifth-grade?
6. After adjusting for prior performance on the third-grade Iowa Test of Basic Skills, do fifth-grade students after three years of participation in the Louisiana Foreign Language Elementary School program make significantly greater academic gains on the combination of fifth-grade Iowa Test of Basic Skills subtest scores than their non-foreign language peers after participating in the program from third-grade to fifth-grade?

Research Question Regarding Participants' Teachers

The question below is related to teachers' perceptions of effective foreign language teaching and will allow the researcher to discern how these teachers may link foreign language instruction to skill-building in the academic areas in which students are required to take standardized tests. For this purpose, a teacher questionnaire was administered to the teachers of students enrolled in foreign language study. In addition to responding to the questionnaire, seven teachers agreed to be interviewed by the researcher, either by telephone, or in person. This allowed the researcher to gain deeper insights into the teachers' foreign language programs as well as their instructional practices.

1. How do teachers of student participants in the Louisiana Foreign Language Elementary School program perceive that they link foreign language learning in their classrooms to the skills and concepts presented to their students in English language arts, mathematics, science, and social studies?

Subjects

For the purposes of the present research, the treatment and control groups were derived through the non-probability means of purposive sampling. Cohen and Manion (1985) define purposive sampling as that in which, “the researcher handpicks the cases to be included in his sample on the basis of his judgment of their typicality” (p. 100).

Treatment Group Profile

The treatment group consists of all students who were in the third-grade during the 1999-2000 school year (n=1050), in the fourth-grade during the 2000-2001 school year (n=849), in the fifth-grade during the 2001-2002 school year (n=609) and who, during this three-year period were enrolled in Louisiana public schools offering FLES-type programs commencing in the third-grade and continuing through at least the fifth-grade. Moreover, after beginning their foreign language study during the 1999-2000 school year, students in the treatment group remained enrolled in these FLES-type programs for second and third consecutive years.

The total number of schools with this program grade configuration is sixteen. The parishes and corresponding numbers of schools in each parish that began offering foreign language study in the third-grade and continuing through and

including at least the fifth-grade from 1999 to 2002 are as follows: Orleans (6); St. Charles (1); Livingston (1); Bogalusa City Schools (1); Lafourche (2); St. John the Baptist (1); Acadia (1); Cameron (1); Rapides (1); and West Carroll (1). Of the sixteen schools offered foreign languages, eight offered French and eight offered Spanish. Each of the schools comprising the treatment group employed one foreign language teacher responsible for teaching French or Spanish to students in grades three through at least grade five, with the exception of the schools in Lafourche parish which employed two French teachers per school. The present research examined the academic performance on standardized test measures of these children as third-graders, and those who remained enrolled in the program as fourth-graders in 2001-2002 and then those who continued program participation as fifth-graders in 1999-2002. Although the present study employed purposive sampling of intact groups in identifying the treatment and control groups, student-level data was used to compare achievement of students in these groups at and between grade levels.

In order to select the treatment groups, it was necessary to determine in which Louisiana schools' FLES-type foreign language instruction begins in the third-grade and continues through and including at least the fifth-grade. To identify schools fitting this profile, the researcher looked through 1999-2002 parish foreign language enrollment information provided by the Louisiana Department of Education. Once the schools were identified, the researcher organized them by parish and then by educational region. By process of elimination, the researcher was able to identify all schools not offering foreign language programs within parishes that comprise the treatment group.

Schools beginning foreign language instruction in the third-grade and continuing through and including at least the fifth-grade were selected to be included in the treatment group because the researcher felt it was important that students in these schools have similar length of exposure to the target language. Although some Louisiana schools begin foreign language study in pre-kindergarten, or the lower elementary grades, they were not included in the treatment group population because the language learning exposure of students in these schools would surpass that of students whose initial exposure to the target language begins in the third-grade. Moreover, targeting schools whose students commence foreign language study in the third-grade approaches the grade designation of foreign language programs as stipulated by the Louisiana Foreign Language Mandate which requires that foreign language programs be offered in grades four through eight.

It is important to note that schools whose students learn foreign languages in immersion settings are not included in the treatment group, as their language-learning environment differs markedly from that of the FLES model.

Control Group Profile

The control group is made up of students in Louisiana public elementary schools not offering a foreign language within parishes that do offer foreign language in some public elementary schools, with the exception of Lafourche, St. John the Baptist and Acadia Parishes. All elementary schools in these three parishes have foreign language programs. Therefore, treatment group schools in Lafourche, St. John the Baptist and Acadia parishes were matched to schools in adjacent parishes within the regions in which they are located. The control group students

were in the third-grade during the 1999-2000 school year (n=802), in the fourth-grade during the 2000-2001 school year (n=636), and in the fifth-grade during the 2001-2002 school year (n=399).

The control group schools have been granted waivers from the Louisiana Board of Elementary and Secondary Education releasing them from the Louisiana mandated required fourth through eighth-grade program of foreign language study. Typically, waivers are granted to parishes because they demonstrate to the Board of Elementary and Secondary Education that they lack funding to employ foreign language teachers.

Students in the schools comprising the treatment and control groups were matched with regard to several factors. The first was the socio-economic status of the schools' student body, as evidenced by the number of students eligible for free or reduced lunch. The mean percentage of treatment group students eligible for free and reduced lunch was 70.9% and the mean percentage of control group students eligible for free and reduced lunch was 73.7%. The second was the schools' locality. Louisiana is divided into eight geographical/educational regions composed of five to fourteen parishes per region (see appendix A). The third factor was the schools' total enrollment figures. The final factor was the schools' urbanicity. Schools were categorized either as urban, suburban, or rural for purposes of matching.

In terms of finding the attributes upon which treatment and control groups were matched (figures of students eligible for free and reduced lunch, total school enrollment figures, and urbanicity) the researcher consulted the National Center for

Education Statistics' website to obtain this information for all schools in the control and treatment groups. Given the fact that students in both the treatment and control groups have taken three standardized tests by the time they are in the fifth-grade, (ITBS as third-graders in 2000, LEAP as fourth-graders in 2001, and ITBS as fifth-graders in 2002), the researcher was able to examine a fairly broad scope of the effect of foreign language study on individual student academic achievement in other subject areas. This three-year window of investigation also allowed any potential difference in outcomes on broad-based academic achievement to be evidenced as students in the treatment group were exposed to subsequent years of foreign language study.

Teachers of Foreign Language Program Student Participants

The subjects were the eighteen foreign language teachers of student participants comprising the treatment group of the present study. The schools in which they teach are located throughout the state of Louisiana as indicated in the previous section. These individuals were designated to respond to the questionnaire and participate in telephone or face-to-face interviews eliciting information about how they reinforce students' skills in core curricular areas in their foreign language classrooms.

Research Design

Comparison of Student Test Scores

The present research design is causal-comparative, since the schools comprising the control and treatment groups were already intact and are matched on specific criteria, rather than being randomly selected and matched. It is vital that

both control and treatment groups be as similar as possible, so as to minimize the risk that differences in performance on the ITBS and LEAP Tests could be attributed to differences among group characteristics, thereby increasing the validity of the study.

As previously discussed, schools were matched on several variables, namely: socio-economic status of students enrolled, the locality of the school, the total school enrollment, as well as the schools' urbanicity. It is necessary to match these schools on these criteria in an effort to make comparison groups as similar as possible. With regard to socio-economic status, it is important to compare schools whose populations are composed of students from similar socio-economic backgrounds. Children from more economically privileged backgrounds may have a stronger educational footing than children from lower income families. Equating groups as closely as possible according to school enrollment figures helps to compare students attending similarly sized schools. Matching groups according to their geographic location is necessary since the way of life in regions throughout Louisiana can differ widely based on factors such as cultural heritage and political factors which have an impact on the operation of local government. Closely linked to locality is urbanicity, which is an important consideration when matching groups. Urbanicity has an impact on the type of local industry and resources by which the economy base of a given region is supported. Furthermore, greater opportunities for exposure to diverse populations of people, and therefore, cultures and ways of life exist in urban settings than in rural ones.

Description of Standardized Test Instruments

The following is a description of the Iowa Tests of Basic Skills (ITBS) and Louisiana Educational Assessment Program for the 21st Century (LEAP 21) tests. In addition, an explanation of how these scores are reported is provided.

The ITBS are norm-referenced achievement tests published by Riverside Publishing of Itasca, Illinois. The format of the ITBS consists entirely of multiple-choice items. The scores are nationally standardized which allows for the comparison of local student performance to students who are tested in a national sample. The ITBS results are reported at the state and district levels using student standard scores, percentile ranks, stanines, and normal curve equivalents. Louisiana students in grades three, five, six, and seven take the ITBS in the spring. The ITBS encompass the following areas: reading (vocabulary and reading comprehension); language (spelling, capitalization, punctuation, usage, and expression); mathematics (concepts, estimation, problem-solving, and data interpretation with computation tested in grade three only); social studies (history, economics, geography, and government and society); science (scientific inquiry, life science, earth and space science, and physical science); and sources of information (maps and diagrams, and reference materials).

The LEAP 21 is a criterion-referenced test given to Louisiana students to gauge how well they have mastered Louisiana content standards in the areas of English language arts, mathematics, science, and social studies. The format of the LEAP 21 test includes multiple-choice items as well as constructed responses in the form of short answer, extended response, and essay items. The LEAP 21 is

administered to Louisiana students in the spring in grades four and eight. Students' test results are reported as scaled scores ranging from 100-500 in each subject area placing them at one of the following achievement levels: *Advanced, Proficient, Basic, Approaching Basic, or Unsatisfactory*. Students at the fourth and eighth-grade levels must score in the *Approaching Basic* category or above in both the English language arts and mathematics tests in order to be promoted to the next grade level. As indicated in Table 3.1, the scaled score ranges for fourth-grade students according to achievement level are presented as indicated in the 2000-2001 *Louisiana Interpretive Guide*. The results, in addition to being reported on individual students, are also reported on district and state test performance.

Table 3.1
Grade Four LEAP 21 Achievement Levels

GRADE FOUR				
	English Language Arts	Mathematics	Science	Social Studies
Achievement Level	Scaled Score Range	Scaled Score Range	Scaled Score Range	Scaled Score Range
Advanced	408-500	419-500	405-500	399-500
Proficient	354-407	370-418	360-404	353-398
Basic	301-353	315-369	306-359	301-352
Approaching Basic	263-300	282-314	263-305	272-300
Unsatisfactory	100-262	100-281	100-262	100-271

2000-2001 Louisiana Interpretive Guide

Table 3.2 compares the skills and subject areas tested on the LEAP 21 and ITBS tests. The difference between the LEAP 21 and ITBS language measures lies in the assessment of writing. Whereas the LEAP 21 tests students' ability to *write competently*, the ITBS does not contain a writing portion. With regard to mathematics, the areas tested are quite similar; however, the LEAP 21 additionally

assesses students' understanding of *patterns, relations, and functions*. In science, the LEAP 21 and ITBS test the same areas, with the exception of the added component of *science and the environment* on the LEAP 21 test. The same areas of social studies are assessed on both the ITBS and LEAP 21 tests.

Table 3.2
Comparison of LEAP 21 and ITBS Content

	English Language Arts	Mathematics	Science	Social Studies
Content Standards Measured by LEAP 21 and GEE 21	Read, comprehend, and respond to a range of materials Write competently Use conventions of language Apply speaking and listening skills (not assessed) Locate, select, and synthesize information Read, analyze, and respond to literature Apply reasoning and problem-solving skills	Number and number relations Algebra Measurement Geometry Data analysis, probability, and discrete math Patterns, relations, and functions	Science as inquiry Physical Science Life Science Earth and Space Science Science and the Environment	Geography: Physical and Cultural Systems Civics: Citizenship and Government Economics: Independence and Decision Making History: Time, Continuity, and Change

	Reading	Language	Mathematics	Science	Social Studies	Sources of Information
Areas Measured by ITBS	Vocabulary Reading Comprehension	Spelling Capitalization Punctuation Usage Expression	Concepts Estimation Problem-solving Data Interpretation Computation (tested in Grade 3 only)	Scientific Inquiry Life Science Earth and Space Science Physical Science	History Geography Economics Government and Society	Maps Diagrams Reference Materials

Description of Teacher Questionnaire

The instrument used in gathering data from foreign language teachers of student participants is a 36-item questionnaire (see appendix C). The purpose of the teacher questionnaire was to gain insights into how teachers perceive that they link foreign language instruction to the acquisition of skills in other academic areas such as English language arts, math, science, and social studies.

The formulation and validation of the teacher questionnaire is related here. In designing the teacher questionnaire the researcher consulted Jakobovits (1970) who explores various types of scales pertaining to attitudes regarding foreign language study. In addition, Nunan (1992) provides an excellent overview of various types of closed questions, such as the list, category, ranking, scale, quantity and grid (p. 144).

Schumacher and McMillan (1993) draw an important distinction between face validity and content validity by stating, “face validity is a judgment that the items appear to be relevant, while content validity evidence establishes the relationship more specifically and objectively” (p. 224). To ensure the face validity of the teacher questionnaire, two elementary foreign language teachers agreed to complete the questionnaire and provide comments and suggestions for clarification and improvement of the instrument. The researcher requested that the volunteers pay particular attention to the language of the questionnaire to ascertain whether it was biased, leading, or misleading. The researcher also sought the professional opinion of a psychometrician in determining the content validity of the instrument to

ensure that the questions elicit information closely within the scope of the topic being examined.

Cohen & Manion (1985) offer valuable insights regarding procedures to follow in questionnaire administration. Their suggestions are research-based and provide information on best practices that promote successful return rate. Acting on recommendations of Cohen & Manion (1985), the researcher provided the subjects with a presurvey letter explaining that a questionnaire was forthcoming and asking for their assistance in completing and returning it (see appendix B). The questionnaire was accompanied by a cover letter that conveyed the importance of receiving a response, pointed out the importance of the study to the foreign language profession, and ensured confidentiality (see appendix D).

Here is a description of the content of the questionnaire items. Items one through eight pertain to foreign language teachers' professional qualifications and teaching experience. Items nine and ten pinpoint the number of daily instructional periods and daily instructional minutes, respectively, that students spend learning the target language. The extent of support for foreign language study on the part of school administrators and parents is examined in items eleven and twelve. Items thirteen through sixteen ask about weekly instructional time spent linking students' foreign language learning with skill development in other academic areas as well as teachers' collaboration with colleagues in preparing lessons across the curriculum. Items seventeen through thirty-four investigate to what extent teachers reinforce English language arts, mathematics, science and social studies content standard skills in the foreign language classroom. Examples of how teachers reinforce

students' skills in other content areas are elicited in item thirty-five. Item thirty-six addresses the effect Louisiana state student accountability programs have on foreign language programs. Finally, item thirty-seven invites teachers to share insights as to why their foreign language program is successful.

Data Collection Procedures

Data Collection of Student Comparison Scores

The researcher obtained the 1999-2000 third-grade ITBS student reading, language, math, social studies, and science standard subtest scores, the 2000-2001 fourth grade LEAP student English language arts, math, science, and social studies standard subtest scores, and the 2001-2002 fifth-grade ITBS student reading, language, math, social studies, and science standard subtest scores for both the control and treatment groups included in the present study from the Louisiana Department of Education Division of Student Standards and Assessments.

The SAS software program, which performs statistical analyses, was used to analyze individual student scores, serving as dependent variables. These data were organized into tables for both treatment and control groups.

Data Collection of Teacher Questionnaire

This section explains how the teacher questionnaire was administered initially and then how it was administered a second time. During the month of December, 2002 a pre-survey letter (see appendix B) was mailed to the eighteen teachers whose students comprise the schools in the treatment group informing them that a survey questionnaire (see appendix C) would be forthcoming in January, 2003. It invited the recipients to complete the questionnaire and return it to the

researcher. Moreover, the letter explained the valuable contributions their participation would make in carrying out the present study. The questionnaire was mailed to teachers of the student participants in early January 2003. The mailing also included a cover letter explaining procedures for completing the questionnaire and a stamped self-addressed envelope in which teachers could return the completed questionnaires. In addition, a consent form for teachers to sign and return with the completed questionnaire was included in this mailing (see appendix F). Data collection began in January 2003. In early February 2003, a second mailing of the questionnaire was sent to non-respondent teachers of the student participants in the same manner as the initial questionnaire was sent (see appendix D). A follow-up letter accompanied the questionnaire assuring participants that it was not too late to contribute their valuable insights to the study (see appendix E).

Data Collection of Teacher Interviews

This section relates how teachers were selected to participate in the interviews, as well as the procedure used to conduct the teacher interviews. Once the completed surveys were returned, the researcher identified teacher participants with regard to factors such as: the number of years they had been teaching foreign language; the number of years they had been teaching in their present school; the extent to which they reinforced English language arts, math, social studies and science skills through their foreign lessons; the number of years their foreign language program had been in existence; and the extent to which their foreign language programs were supported by parents and school administrators.

The researcher determined that, above all, it would be most beneficial to interview teachers who had taught the student participants in the present study a minimum of two academic years during the period of investigation from 1999 to 2002. The researcher contacted by telephone all teachers meeting this two-year minimum criterion. Of the thirteen teachers fitting this profile, seven agreed to be interviewed. The choice of whether to do a telephone or face-to-face interview was left to the teachers' discretion. Four teachers chose to be interviewed by telephone and three chose to be interviewed in person.

The interview consisted of questions that related to segments of the survey questionnaire and elicited information about the following: support for foreign language programs; cooperative planning; examples of lessons that reinforce other content skills; the nature of instructional practices; whether foreign language grades are reflected on report cards; and how foreign language programs endure.

Data Analysis Procedures: Comparison of Student Test Scores

Research Questions Stated as Null Hypotheses

The reformulation of the research questions as Null Hypotheses will facilitate the examination of the statistical analyses and are indicated as follows:

1. Third-grade students participating in the Louisiana Foreign Language Elementary School program for the first year do not have significantly higher scores than their non-foreign language peers on the Iowa Test of Basic Skills which includes the combination of reading, language, math, science, and social studies subtest scores.
2. Fourth-grade students participating in the Louisiana Foreign Language

Elementary School program for the second year do not have significantly higher scores than their non-foreign language peers on the Louisiana Educational Assessment Program for the 21st Century (LEAP 21) which includes the combination of English language arts, math, science and social studies subtest scores.

3. Fifth-grade students participating in the Louisiana Foreign Language Elementary School program for the third year do not have significantly higher scores than their non-foreign language peers on the Iowa Test of Basic Skills which includes the combination of reading, language, math, social studies, and science subtests.
4. After adjusting for prior performance on the third-grade Iowa Test of Basic Skills, fourth-grade students after two years of participation in the Louisiana Foreign Language Elementary School program do not make significantly greater academic gains on the combination of fourth-grade LEAP 21 subtest scores than their non-foreign language peers.
5. After adjusting for prior performance on the fourth-grade LEAP 21, fifth-grade students after three years of participation in the Louisiana Foreign Language Elementary School program do not make significantly greater academic gains on the combination of fifth-grade Iowa Test of Basic Skills subtest scores than their non-foreign language peers after they progress from fourth-grade to fifth-grade.
6. After adjusting for prior performance on the third-grade Iowa Test of Basic Skills, fifth-grade students after three years of participation in the

Louisiana Foreign Language Elementary School program do not make significantly greater academic gains on the combination of fifth-grade Iowa Test of Basic Skills subtest scores than their non-foreign language peers after participating in the program from third-grade to fifth-grade.

The dependent variables are the ITBS reading, language, math, social studies, and science subtest scores as well as the LEAP 21 English language arts, math, science and social studies subtest scores. The independent variable is student participation or non-participation in the Louisiana Foreign Language Elementary School Program.

In order to answer Research Questions One, Two, and Three, three multivariate analyses of variance (MANOVA) were performed to determine if groups differed on more than one dependent variable. Gall and Borg (1996) define MANOVA as, “a statistical procedure that compares the amount of between-groups variance in individuals’ scores with the amount of within-groups variance” (p. 395). After performing MANOVA procedures to examine the difference in students’ overall academic performance between groups, follow-up ANOVA procedures were performed to compare differences in scores in each subject area of the third and fifth-grade ITBS and fourth-grade LEAP 21 tests.

Multivariate analyses of covariance (MANCOVA) were used in order to investigate Research Questions Four, Five, and Six. According to Davis (2003), “MANCOVA determines whether there are statistically reliable mean differences among groups, after adjusting a newly created dependent measure on one or more covariates.” (p. 1). The covariates for the research questions are indicated here.

For Research Question Four, students' third-grade ITBS reading, language, math, social studies, and science subtest scores are used as covariates. For Research Question Five, the LEAP 21 English language arts, math, science, and social studies subtest scores are used as covariates. For Research Question Six, the third-grade ITBS reading, language, math, social studies, and science subtest scores are used as covariates. For Research Questions Four through Six, after employing MANCOVA procedures to investigate the overall difference between the groups' academic performance, follow-up t-tests were then performed for these questions to compare differences in the groups' scores in each subject area of the fifth-grade ITBS and fourth-grade LEAP 21 tests. In the present study, the MANCOVA procedures allowed for an examination of the longitudinally cumulative effect of students' participation in the Louisiana Elementary Foreign Language Program. Furthermore, they revealed how foreign language contributes to gains in the treatment groups' academic performance. For all statistical procedures, the hypotheses were tested at the .05 level of significance. For each procedure, effect size is calculated using the Eta^2 value. The Eta^2 value is the proportion of variation in groups' performance that is attributable to the particular effect, which in the case of the present research is foreign language study.

Data Analysis Procedures: Teacher Data

Teacher Questionnaire

In order to analyze the teacher questionnaire, the researcher looked for common themes and trends among responses. These themes and trends were then organized into domains so as to facilitate the reporting and analysis of the results.

Teacher Interviews

The interviews were recorded and transcribed to facilitate the reporting and analysis of the results. The researcher organized the information contained in the transcriptions by placing it into categories according to topic. Questions posed during the interviews were an extension of those to which teachers had responded on the survey.

In summary, Chapter Three presented the research methodology of the present study. It provided a restatement of the problem and introduced the research questions. A description of the subjects was presented as well as an overview of the research design. Next, the data collection and data analysis procedures were explained. Finally, the research questions were reformulated into Null Hypotheses.

CHAPTER 4

RESULTS

Chapter four provides a summary of the results of the present study. First, an overview of the MANOVA and MANCOVA statistical procedures used to examine the research questions pertaining to student participants' academic achievement is given, followed by a presentation of the results of each of these research questions. Next, survey and interview results are presented for the research question exploring how student participants' teachers perceive that they link foreign language learning in their classrooms to skills and concepts learned in English language arts, math, history, geography and science. Finally, information is conveyed that was yielded from the survey responses and interviews offering insights into the teachers' backgrounds, classroom practices, and schools' foreign language programs.

Overview of Statistical Procedures

To investigate Research Questions One, Two, and Three, a Multivariate Analysis of Variance (MANOVA) procedure was performed for the variables in each question to compare the means between the treatment and control groups. If warranted by overall statistically significant differences, follow-up ANOVAs were then performed for each subset to determine where differences in these groups' academic performance on ITBS and LEAP 21 subtests occurred.

To investigate Research Questions Four, Five and Six, in which a covariate was included, Multivariate Analysis of Covariance (MANCOVA) procedures were performed for each question. This procedure allowed for an examination of whether

the overall academic performance of the treatment (foreign language) and the control (non-foreign language) groups differed after adjusting for the covariate. Since there are multiple subtests of the Iowa Test of Basic Skills (ITBS) as well as the Louisiana Educational Assessment Program (LEAP 21), and since ITBS scores are inter-correlated as are LEAP 21 scores, a MANCOVA is an efficient procedure to use because it can take into account the covariance among ITBS or LEAP 21 subtest scores, and can answer questions about the differences between the control and treatment groups on the ITBS or LEAP 21 test as an overall academic performance index. Whereas the MANOVA procedures for Research Questions One, Two and Three were followed-up with ANOVA procedures, the MANCOVA procedures were followed-up with t-tests in order to discern differences in subtest scores. For each procedure, effect size is noted and discussed using the Eta^2 value. The Eta^2 value is the proportion of variation in groups' performance that is attributable to the particular effect, which in the case of the present research is foreign language study.

Results of Data: Research Questions Investigating Student Participants' Academic Achievement

Research Question One

Do third-grade students participating in the Louisiana Foreign Language Elementary School program for the first year have significantly higher scores than their non-foreign language peers on the Iowa Test of Basic Skills which includes the combination of reading, language, math, science, and social studies subtest scores?

The dependent variables for Research Question One were the reading, language, mathematics, social studies, and science subtests of the third-grade ITBS. The independent variable was participation in the Louisiana Foreign Language Elementary School program. Results of the MANOVA procedure indicated that there were statistically significant differences between the treatment (foreign language) and control (non-foreign language) groups as demonstrated by Wilks' Lambda ($5, 1737) = .988, p < .05$ (see Table 4.1). Although this is indicative of overall differences between the two groups, group membership explained slightly more than one percent of the variation in ITBS scores.

Follow-up ANOVA results obtained from the third-grade ITBS subtest scores show that the treatment group had higher scores in reading, language, math, and social studies; however, these scores were not significantly different. The science subtest shows that the control group students significantly outperformed those in the treatment group ($F = 6.20; p < .05$).

Given these results, the null hypothesis that third-grade students participating in Louisiana Foreign Language Elementary School program of study for the first year do not have significantly higher scores than their non-foreign language peers on the combination of the reading, language, math, and social studies subtests of the Iowa Test of Basic Skills is rejected as indicated by the statistically significant multivariate test, Wilks' Lambda reported above. Post hoc examination of univariate differences indicated that science was the only subtest yielding significant differences such that non-foreign language students outperformed their foreign language counterparts.

Table 4.1

Summary of MANOVA Results on Foreign Language and Non-foreign Language Students' Third-grade ITBS Subtest Scores

	Experimental Group			Control Group			F-value	p-value	Eta ²
	Mean Standard Score	Standard Deviation	n	Mean Standard Score	Standard Deviation	n			
Reading	175.35	19.03	1050	174.92	18.78	802	3.04	.081	.002
Language	184.95	24.13	1042	183.96	22.31	721	0.33	.565	.000
Math	178.25	19.83	1042	176.91	19.15	793	0.27	.603	.000
Social Studies	176.18	18.19	1048	175.40	17.21	798	0.59	.441	.000
Science	175.38	19.42	1048	176.24	20.05	798	6.20	.012**	.004
Wilks' Lambda			F-value	Numerator DF	Denominator DF	p-value			
.988			4.11	5	1737	.001***			

* Denotes statistical significance at $\alpha = .05$

** Denotes statistical significance at $\alpha = .01$

*** Denotes statistical significance at $\alpha = .001$

**** Denotes statistical significance at $\alpha = .0001$

Research Question Two

Do fourth-grade students participating in the Louisiana Foreign Language Elementary School program for the second year have significantly higher scores than their non-foreign language peers on the Louisiana Educational Assessment Program for the 21st Century (LEAP 21) which includes the combination of English language arts, math, science and social studies subtest scores?

The dependent variables for Research Question Two were the English language arts, mathematics, science, and social studies subtests of the LEAP 21. The independent variable was participation in the Louisiana Foreign Language Elementary School program.

Table 4.2 shows the results of the MANOVA procedure performed for Research Question Two. The null hypothesis was rejected based on statistically significant overall differences between the treatment (foreign language) and control (non-foreign language) groups as indicated by Wilks' Lambda (4, 1979) = .987, $p < .05$).

Follow-up ANOVAs done on the fourth-grade LEAP 21 subtests show that the treatment group had significantly higher scores on each subtest in the following order of magnitude: language ($F = 18.71$; $p = .0001$); social studies ($F = 15.46$; $p = .0001$); science ($F = 12.70$; $p = .0004$) mathematics ($F = 11.51$; $p = .0007$). The largest effect size was for the difference in language subtest scores ($\eta^2 = .012$). This is indicative of a small difference (Cohen, 1977).

Table 4.2

Summary of MANOVA Results on Foreign Language and Non-foreign Language Students' Fourth-grade LEAP 21 Subtest Scores

	Experimental Group			Control Group			F-value	p-value	Eta ²
	Mean Standard Score	Standard Deviation	n	Mean Standard Score	Standard Deviation	n			
Language	312.42	55.04	849	299.41	60.28	635	18.71	.0001****	.012
Math	315.87	53.18	849	305.79	61.09	635	11.51	.0007***	.008
Science	300.74	54.84	849	289.70	61.27	636	12.70	.0004***	.008
Social Studies	301.51	53.48	849	289.93	56.72	636	15.46	.0001****	.010
Wilks' Lambda			F-value	Numerator DF	Denominator DF	p-value			
.987			4.91	4	1479	.0006***			

- * Denotes statistical significance at $\alpha = .05$
 ** Denotes statistical significance at $\alpha = .01$
 *** Denotes statistical significance at $\alpha = .001$
 **** Denotes statistical significance at $\alpha = .0001$

In order to more fully investigate Research Question Two, numbers and percentages of students comprising both the treatment (foreign language) and control (non-foreign language) groups scoring at each performance level of the fourth-grade LEAP 21 English language arts, mathematics, science, and social studies subtests were determined. This allowed for a comparison of each group's performance level attainment on all LEAP 21 subtests. LEAP 21 performance level designations were presented in Chapter Three (p. 82) (see Table 3.1). They are, in order of highest to lowest achievement category, as follows: *Advanced, Proficient, Basic, Approaching Basic, and Unsatisfactory*. It should be noted that students must score in the *Approaching Basic* level or above in order to pass a given subject area.

Table 4.3 shows the numbers and percentages of students scoring at each performance level of the LEAP 21 English language arts subtest. Table 4.4 represents these percentages in a bar graph, which enables the reader to visualize the differences in both groups' attainment at each performance level. When comparing percentages of both groups' attainment at each performance level, the treatment group had one percent more students scoring at the advanced level, two percent more at the proficient level, and five percent more at the basic level than did the control group. Both groups had an equal number of students scoring at the approaching basic level. Six percent more students in the control group scored in the unsatisfactory category as compared to those in the treatment group. Whereas 84 percent of the treatment group students passed the English language arts subtest of the LEAP 21, only 76 percent of the control group students did. This is a difference of eight percent in favor of the treatment group students.

Table 4.3

Numbers and Percentages of Foreign Language and Non-foreign Language Students Scoring at Each Performance Level of the English Language Arts Subtest of the Fourth-grade LEAP 21

	Experimental Group (N=849)		Control Group (N=635)	
	N	%	N	%
Advanced	25	3	11	2
Proficient	150	18	102	16
Basic	337	40	224	35
Approaching Basic	193	23	149	23
Unsatisfactory	144	17	149	23
		% Passing		% Passing
		84		76

Note: Passing constitutes scoring at the Approaching Basic, Basic, Proficient, or Advanced performance level.

Table 4.4
Percentages of Foreign Language and Non-Foreign Language Students Scoring at
Each Achievement Level of the Fourth-Grade LEAP English Language Arts Subtest

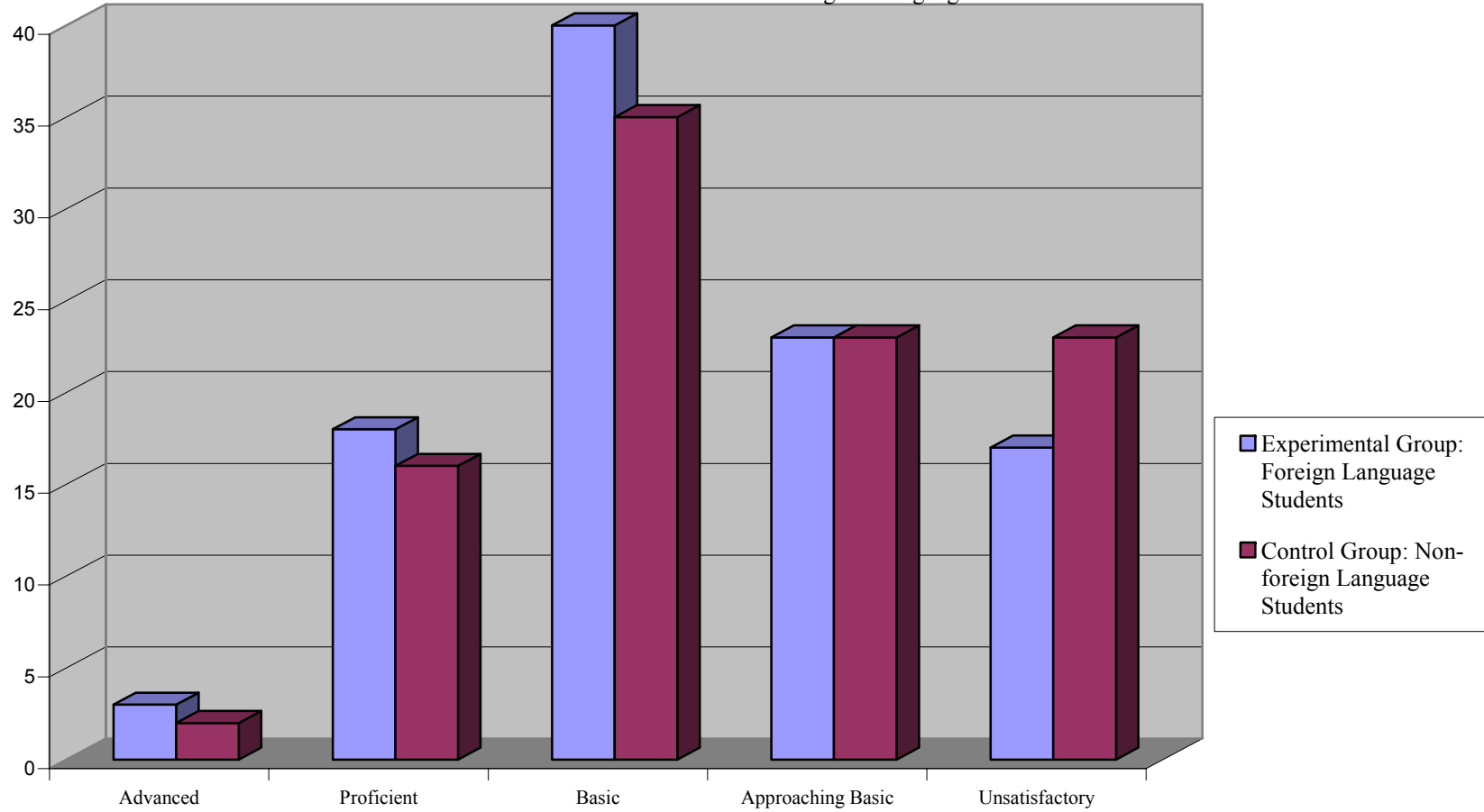


Table 4.5 shows the numbers and percentages of students scoring at each performance level of the LEAP 21 mathematics subtest. Table 4.6 represents these percentages in a bar graph. When comparing percentages of both groups' attainment at each performance level, each group had an equal number of students scoring at the advanced level. The treatment group had two percent more students scoring at the proficient level and four percent more at the basic level than did the control group. One percent more students in the control group scored at the approaching basic level as compared to those in the treatment group. Six percent more students in the control group scored in the unsatisfactory category as compared to those in the treatment group. Whereas 75 percent of the treatment group students passed the mathematics subtest of the LEAP 21, only 70 percent of the control group students did. This is a difference of five percent in favor of the treatment group students.

Table 4.7 shows the numbers and percentages of students scoring at each performance level of the LEAP 21 science subtest. Table 4.8 represents these percentages in a bar graph. When comparing percentages of both groups' attainment at each performance level, each group had an equal number of students scoring at the advanced level as well as the approaching basic level. The treatment group had one percent higher attainment at the proficient level and six percent higher attainment at the basic level than did the control group. Seven percent more students in the control group scored in the unsatisfactory category as compared to those in the treatment group. Eighty percent of the treatment group students passed the science subtest of the LEAP 21, yet only 73 percent of the control group students did. This seven percent difference favors the treatment group students.

Table 4.5

Numbers and Percentages of Foreign Language and Non-foreign Language Students Scoring at Each Performance Level of the Mathematics Subtest of the Fourth-grade LEAP 21

	Experimental Group (N=849)		Control Group (N=635)	
	N	%	N	%
Advanced	16	2	12	2
Proficient	94	11	56	9
Basic	360	42	243	38
Approaching Basic	171	20	132	21
Unsatisfactory	208	24	192	30
		% Passing		% Passing
		75		70

Note: Passing constitutes scoring at the Approaching Basic, Basic, Proficient, or Advanced performance level.

Table 4.6
 Percentages of Foreign Language and Non-Foreign Language Students Scoring at Each
 Achievement Level of the Fourth-Grade LEAP Mathematics Subtest

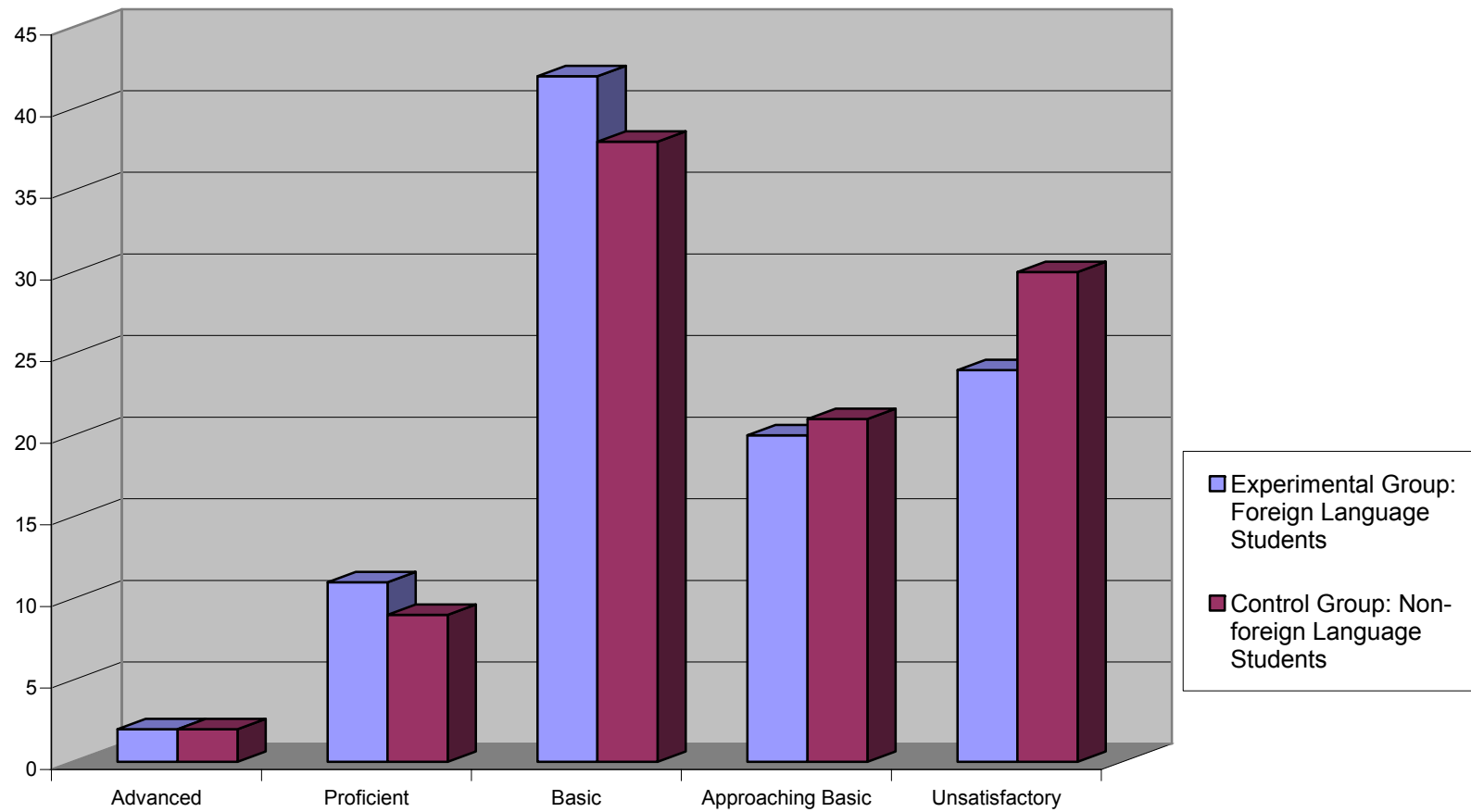


Table 4.7

Numbers and Percentages of Foreign Language and Non-foreign Language Students Scoring at Each Performance Level of the Science Subtest of the Fourth-grade LEAP 21

	Experimental Group (N=849)		Control Group (N=636)	
	N	%	N	%
Advanced	7	1	8	1
Proficient	93	11	64	10
Basic	346	41	223	35
Approaching Basic	233	27	172	27
Unsatisfactory	170	20	169	27
		% Passing		% Passing
		80		73

Note: Passing constitutes scoring at the Approaching Basic, Basic, Proficient, or Advanced performance level.

Table 4.8
Percentages of Foreign Language and Non-Foreign Language Students Scoring at
Each Achievement Level of the Fourth-Grade LEAP Science Subtest

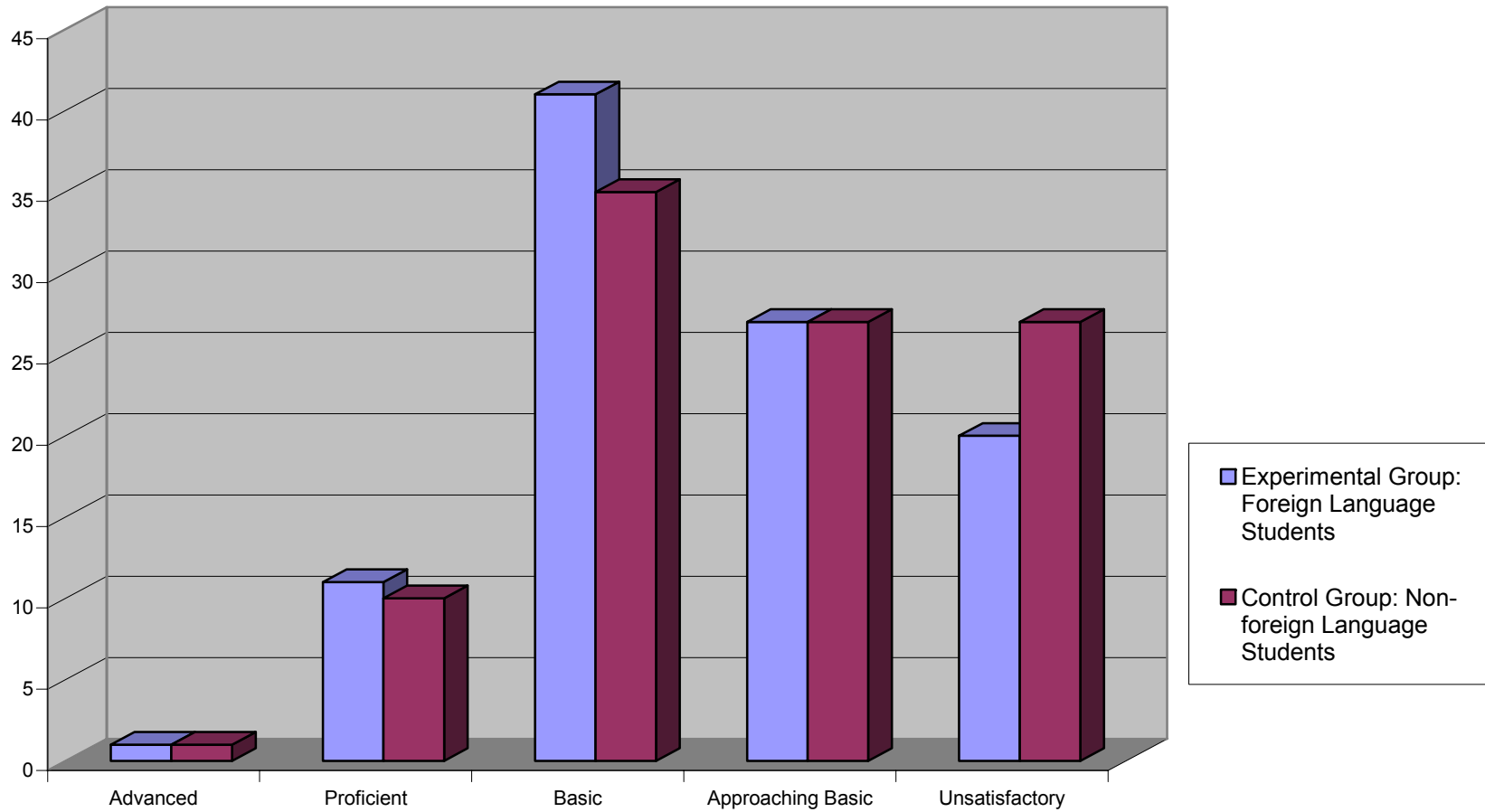


Table 4.9 shows the numbers and percentages of students scoring at each performance level of the LEAP 21 social studies subtest. Table 4.10 represents these percentages in a bar graph. When comparing percentages of both groups' attainment at each performance level, the treatment group had one percent higher attainment at the advanced level and five percent higher attainment at the proficient level than did the control group. Both groups had an equal number of students scoring at the basic level. The control group had one percent higher attainment at the approaching basic level, while five percent more students in the control group scored at the unsatisfactory level as compared to those in the treatment group. Whereas 74 percent of the treatment group students passed the social studies subtest of the LEAP 21, only 70 percent of the control group students did. This is a difference of four percent in favor of the treatment group students.

Research Question Three

Do fifth-grade students participating in the Louisiana Foreign Language Elementary School program for the third year have significantly higher scores than their non-foreign language peers on the Iowa Test of Basic Skills which includes the combination of reading, language, math, social studies, and science subtests?

The dependent variables for Research Question Three were the reading, language, mathematics, social studies, and science subtests of the fifth-grade ITBS. The independent variable was participation in the Louisiana Foreign Language Elementary School program.

Table 4.9

Numbers and Percentages of Foreign Language and Non-foreign Language Students Scoring at Each Performance Level of the Social Studies Subtest of the Fourth-grade LEAP 21

	Experimental Group (N=849)		Control Group (N=636)	
	N	%	N	%
Advanced	19	2	7	1
Proficient	116	14	58	9
Basic	309	36	227	36
Approaching Basic	190	22	154	24
Unsatisfactory	215	25	190	30
		% Passing		% Passing
		74		70

Note: Passing constitutes scoring at the Approaching Basic, Basic, Proficient, or Advanced performance level.

Table 4.10
Percentages of Foreign Language and Non-Foreign Language Students Scoring at Each Achievement Level of the Fourth-Grade LEAP Social Studies Subtest

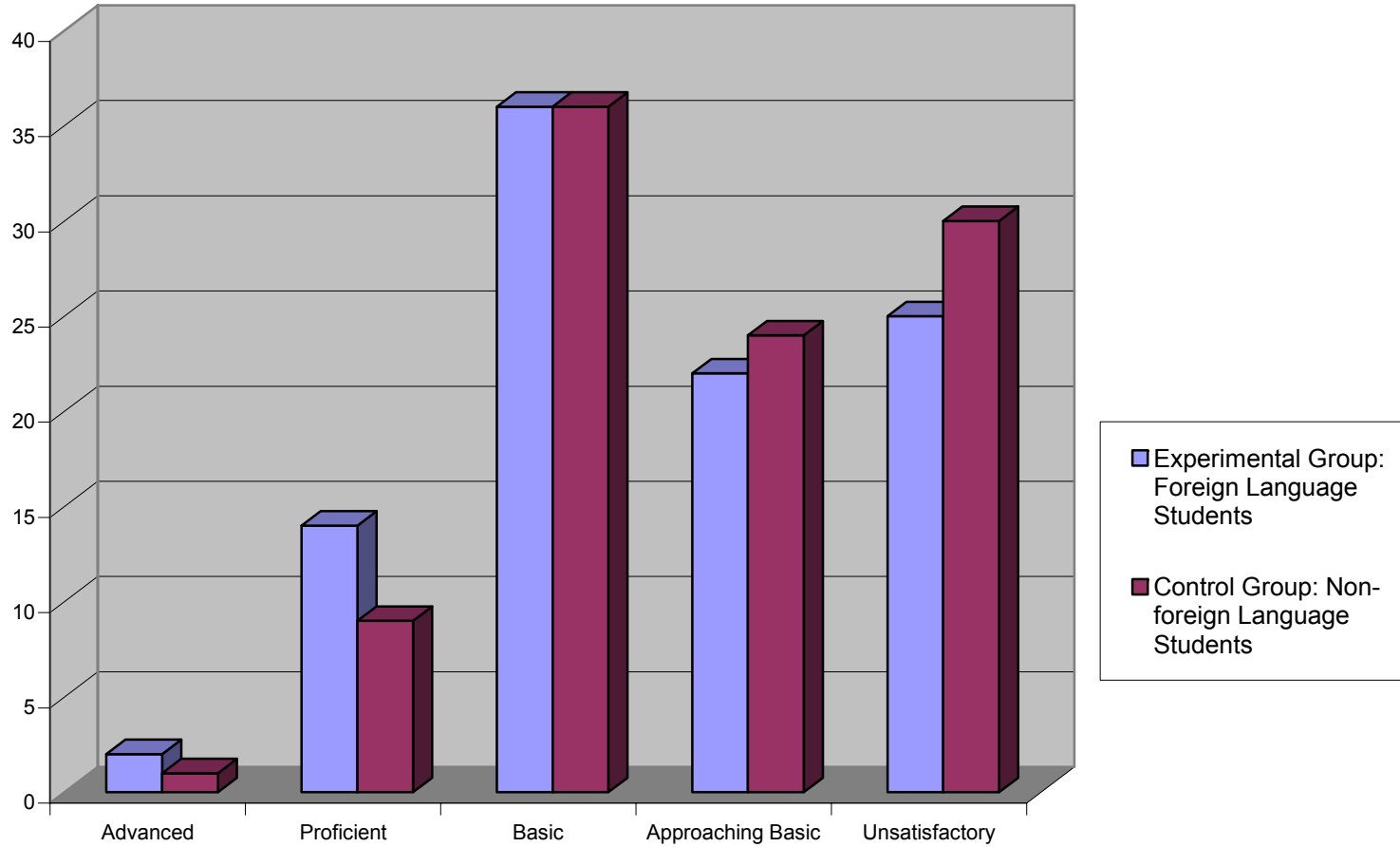


Table 4.11 shows the results of the MANOVA performed to investigate Research Question Three. There were significant differences overall between the treatment (foreign language) and control (non-foreign language) groups as indicated by Wilks' Lambda ($5, 1002$) = .963, $p < .05$. Given these results, the null hypothesis of an overall difference was rejected.

The ANOVAs performed on the fifth-grade ITBS subtests show that there were no statistically significant differences between groups on measures of reading, math, and science. However, the treatment group and control group differed significantly in mean performance on measures of social studies ($F = 5.83$; $p = .015$) and language ($F = 6.55$; $p = .010$). These results were mixed in that the control group outperformed the treatment group in social studies; however, the treatment group's language scores were statistically greater than that of the control group.

Research Question Four

After adjusting for prior performance on the third-grade Iowa Test of Basic Skills, do fourth-grade students after two years of participation in the Louisiana Foreign Language Elementary School program make significantly greater academic gains on the combination of fourth-grade LEAP 21 subtest scores than their non-foreign language peers?

The statistical analyses performed for Research Question Four allowed us to see if Louisiana Elementary Foreign Language Program participants had significantly higher academic gains than their non-foreign language counterparts by controlling for students' third-grade ITBS scores.

Table 4.11

Summary of MANOVA Results on Foreign Language and Non-foreign Language Students' Fifth-grade ITBS Subtest Scores

	Experimental Group			Control Group			F-value	p-value	Eta ²
	Mean Standard Score	Standard Deviation	n	Mean Standard Score	Standard Deviation	n			
Reading	209.61	19.30	609	211.18	20.17	399	1.54	.214	.002
Language	223.52	26.57	609	219.10	27.18	399	6.55	.010**	.006
Math	214.11	22.02	609	215.43	21.89	399	0.87	.351	.001
Social Studies	210.90	24.77	609	214.70	23.68	399	5.83	.015*	.006
Science	212.97	30.99	609	214.70	31.28	399	0.75	.387	.001
Wilks' Lambda			F-value	Numerator DF	Denominator DF	p-value			
.963			7.60	5	1002	.0001****			

* Denotes statistical significance at $\alpha = .05$

** Denotes statistical significance at $\alpha = .01$

*** Denotes statistical significance at $\alpha = .001$

**** Denotes statistical significance at $\alpha = .0001$

The dependent variables for Research Question Four were the LEAP 21 English language arts, mathematics, science, and social studies subtest scores. The independent variable was participation in the Louisiana Foreign Language Elementary School program. The third-grade ITBS reading, language, math, social studies, and science subtest scores were used as covariates.

Table 4.12 shows the results of the MANCOVA performed for Research Question Four. Statistically significant overall differences as demonstrated by Wilks' Lambda ($4, 1396$) = .986, $p < .05$ were found between the treatment (foreign language) and control (non-foreign language) groups indicating that the null hypothesis was rejected.

Follow-up t-tests performed on the least adjusted squared means of the fourth-grade LEAP 21 subtests yielded statistically significant results in favor of the treatment group in three of four areas. That is to say, English language arts, science and social studies performance favored the foreign language students. While the treatment group achieved higher scores on the mathematics subtest, this difference was not significant. In contrast, the treatment group earned significantly higher scores on all other measures in the following order of magnitude: language ($t = -3.70$; $p = .0002$), social studies ($t = -3.42$; $p = .0006$), and science ($t = -3.04$; $p = .0024$). It should be noted that although the results are indicative of positive differences for the treatment group, the magnitudes of the differences are small ($\eta^2 \leq .008$) (Cohen, 1977).

Table 4.12

Summary of MANCOVA Results on Foreign Language and Non-foreign Language Students' Fourth-grade LEAP 21 Subtest Scores Including Students' Third-grade ITBS Reading, Language, Mathematics, Social Studies, and Science Subtest Scores as Covariates

	Experimental Group			Control Group			t	p-value	Eta ²
	LS Mean Standard Score	Standard Error	n	LS Mean Standard Score	Standard Error	n			
Language	313.27	1.16	849	306.48	1.41	635	-3.70	.0002***	.008
Math	316.12	1.18	849	313.28	1.44	635	-1.51	.1313	.001
Science	301.83	1.19	849	296.08	1.45	636	-3.04	.0024**	.006
Social Studies	302.39	1.08	849	296.50	1.32	636	-3.42	.0006***	.007
Wilks' Lambda			F-value	Numerator DF	Denominator DF	p-value			
.986			5	4	1396	.0005***			

* Denotes statistical significance at $\alpha = .05$

** Denotes statistical significance at $\alpha = .01$

*** Denotes statistical significance at $\alpha = .001$

**** Denotes statistical significance at $\alpha = .0001$

Research Question Five

After adjusting for prior performance on the third-grade Iowa Test of Basic Skills, do fourth-grade students after two years of participation in the Louisiana Foreign Language Elementary School program make significantly greater academic gains on the combination of fourth-grade LEAP 21 subtest scores than their non-foreign language peers?

The statistical analyses performed for Research Question Five allowed us to see if Louisiana Elementary Foreign Language Program participants had significantly higher academic gains than their non-foreign language counterparts by controlling their fourth-grade LEAP 21 subtest scores. The dependent variables were the fifth-grade ITBS reading, language, mathematics, social studies and science subtest scores. The independent variable was participation in the Louisiana Foreign Language Elementary School program. The fourth-grade LEAP 21 language, math, science, and social studies subtest scores were used as covariates.

Table 4.13 shows the results of the MANCOVA procedure performed for Research Question Five. Statistically significant overall differences existed between the treatment (foreign language) and control (non-foreign language) groups after adjusting for fourth-grade LEAP scores as evidenced by Wilks' Lambda (5, 988) = .966, $p < .05$. Individual t-tests on the least squared means were performed on the fifth-grade ITBS subtests. While the control group achieved higher scores on the math and science subtests, these differences were not statistically significant. In contrast, the control group did earn significantly higher scores on the reading

($t = 2.06$; $p = .0393$) and social studies ($t = 3.16$; $p = .0016$) subtests. The treatment group scored significantly higher than the control group on the language subtest ($t = -3.69$; $p = .0002$).

The null hypothesis was rejected overall. However, the differences were mixed in terms of subtest area and group membership. The greatest effect appeared to be the language subtest ($\eta^2 = .011$) with the foreign language treatment group outperforming their non-language counterparts.

Research Question Six

After adjusting for prior performance on the third-grade Iowa Test of Basic Skills, do fifth-grade students after three years of participation in the Louisiana Foreign Language Elementary School program make significantly greater academic gains on the combination of fifth-grade Iowa Test of Basic Skills subtest scores than their non-foreign language peers after participating in the program from third-grade to fifth-grade?

The statistical analyses performed for Research Question Six examined Louisiana Elementary Foreign Language Program participants' cumulative academic gains from third-grade to fifth-grade. This allowed us to see if foreign language participants had significantly higher academic gains than their non-foreign language counterparts over time after controlling for their third-grade ITBS subtest scores.

The dependent variables were the fifth-grade ITBS reading, language, mathematics, social studies and science subtest scores. The independent variable was participation in the Louisiana Foreign Language Elementary School program.

The third-grade ITBS reading, language, math, social studies, and science subtest scores were used as covariates.

Table 4.14 shows the results of the MANCOVA procedure performed for Research Question Six. Significant overall differences existed between the treatment (foreign language) and control (non-foreign language) groups as demonstrated by Wilks' Lambda ($5, 969$) = .967, $p < .05$, thus indicating that the null hypothesis of no difference was rejected.

Individual t-tests using adjusted means performed on the fifth-grade ITBS subtests yield these results. While the control group achieved higher scores on the reading, mathematics, and social studies subtests, these differences were not statistically significant. The treatment group achieved higher scores than the control group on the science subtest, but this difference was not significant. However, the treatment group achieved significantly higher scores on the language subtest ($t = -4.22$; $p = .0001$). These results produced a small effect ($\eta^2 = .015$) as indicated by a difference of approximately five points on the language subtest scores.

Having presented the results of the research questions pertaining to student academic performance on the ITBS and LEAP 21 tests, we will now see the results of the survey and interviews administered to teachers of student participants in the present study. Again, the focus of the survey and interviews was to discern how these teachers make connections between their foreign language teaching and students' acquisition of skills in other content areas.

Table 4.13

Summary of MANCOVA Results on Foreign Language and Non-foreign Language Students' Fifth-grade ITBS Subtest Scores Including Students' Fourth-grade LEAP Language, Mathematics, Science, and Social Studies Subtest Scores as Covariates

	Experimental Group			Control Group			t	p-value	Eta ²
	LS Mean Standard Score	Standard Error	n	LS Mean Standard Score	Standard Error	n			
Reading	209.52	.50	609	211.20	.63	399	2.06	.0393*	.004
Language	223.58	.73	609	219.23	.91	399	-3.69	.0002***	.011
Math	214.52	.57	609	214.85	.71	399	.36	.7158	.0001
Social Studies	210.99	.68	609	214.43	.84	399	3.16	.0016**	.009
Science	213.00	.88	609	214.32	1.10	399	.93	.3528	.0008
Wilks' Lambda			F-value	Numerator DF	Denominator DF	p-value			
.966			7	5	988	.0001****			

* Denotes statistical significance at $\alpha = .05$

** Denotes statistical significance at $\alpha = .01$

*** Denotes statistical significance at $\alpha = .001$

**** Denotes statistical significance at $\alpha = .0001$

Table 4.14

Summary of MANCOVA Results on Foreign Language and Non-foreign Language Students' Fifth-grade ITBS Subtest Scores Including Students' Third-grade ITBS Reading, Language, Mathematics, Social Studies, and Science Subtest Scores as Covariates

	Experimental Group			Control Group			t	p-value	Eta ²
	LS Mean Standard Score	Standard Error	n	LS Mean Standard Score	Standard Error	n			
Reading	210.53	.48	609	210.93	.61	399	.51	.6112	.0002
Language	224.38	.72	609	219.41	.92	399	-4.22	.0001****	.015
Math	214.78	.54	609	215.60	.69	399	.91	.3607	.0006
Social Studies	212.03	.68	609	214.00	.87	399	1.76	.0783	.003
Science	214.45	.86	609	213.96	1.10	399	-.34	.7309	.0001
Wilks' Lambda			F-value	Numerator DF	Denominator DF	p-value			
.967			6.71	5	969	.0001****			

* Denotes statistical significance at $\alpha = .05$

** Denotes statistical significance at $\alpha = .01$

*** Denotes statistical significance at $\alpha = .001$

**** Denotes statistical significance at $\alpha = .0001$

**Results of Data: Research Question Investigating
Linking Foreign Language Instruction to the
Acquisition of Other Content Skills**

A survey was administered to teachers of student participants in the Louisiana Elementary Foreign Language Program comprising the treatment group in the present study in order to examine their perceptions of how they link foreign language learning in their classrooms to skills and concepts learned in English language arts, math, history, geography and science. The survey was mailed in early January 2003 to the eighteen teachers of student participants in the sixteen schools involved in the present research. Twelve teachers (66%) responded to the first mailing. In early February, a second mailing of the survey was sent to the non-respondents. Six teachers (100%) responded to the second mailing.

Seven teachers (38%) consented to participate in interviews. Three teachers chose to be interviewed by telephone and four opted to take part in face-to-face interviews. All teachers participating in the interviews consented to having the interviews audio taped. The results of the survey instrument and interviews are related below.

Teacher Data: Background

Table 4.15 illustrates descriptive statistics of the demographic data requested on the survey and reported by teachers of student participants. The number of female respondents (66%; n=12) outnumbered male respondents (33%; n=6) by a ratio of two to one.

The teachers were asked to indicate their highest degree earned. While the majority of teachers (83%; n=15) reported having earned a bachelor's degree, 11%

(n=2) reported having earned a master's degree, and 5% (n=2) reported having earned an education specialist certificate.

The mean foreign language teaching experience reported by teachers was 8.5 years (SD=7.87). The median years of foreign language teaching experience was 5.5. The range of foreign language teaching experience spanned from one to 30 years.

Fifty percent (n=9) of the teachers reported being a third-grade foreign language teacher in a school included in the present study from 1999-2000. Seventy-two percent (n=13) of the teachers reported being a fourth-grade foreign language teacher in a school included in the present study during the 2000-2001 school year. Eighty-three percent (n=15) of the teachers reported being a fifth-grade foreign language teacher in a school included in the present study during the 2001-2002 school year. This information allows us to determine the number of years the respondents taught the student participants during the three-year period of the investigation of the present study. Recall that the teachers completed the questionnaire during the winter of 2003 – the academic year immediately following the concluding year of the investigation of the present study. Sixteen percent (n=3) of the teachers never taught the student participants. Eleven percent (n=2) of the teachers taught the student participants for only one of the three years. Twenty-two percent (n=4) of the teachers taught these students for only two years during this period. Fifty percent (n=9) of the teachers taught the students the entire three years of the period of investigation of the present study.

Of the teachers certified in countries other than, or in addition to the United States, 11% (n=2) are certified teachers in Canada, 11% (n=2) are certified teachers in France, 16% (n=3) are certified teachers in Mexico, and 5% (n=1) is certified to teach in Panama.

Table 4.15
Demographic Information About Teacher Participants

Demographic Variable	Data Reported for Population	
	n=18	
Gender		
female		n=12
male		n=6
Education		
bachelor's degree		n=15
master's degree		n=2
education specialist		n=2
Teaching Experience		Mean=8.5 years SD=7.87
Number who have taught in their current school during the 1999-2000 school year		n=15
Number who have taught in their current school during the 2000-2001 school year		n=13
Number who have taught in their current school during the 2001-2002 school year		n=15
Number who are certified to teach French or Spanish in a country other than, or in addition to the United States	Canada	n=2
	France	n=2
	Mexico	n=3
	Panama	n=1

Teacher Data: School Foreign Language Program Profile

Table 4.16 indicates the number of foreign language instructional minutes taught daily, as well as the number of years each school’s foreign language program has been in place. Student participants in the present study were provided a mean of 33 (SD=6.14) daily foreign language instructional minutes. The mean number of years the foreign language program had been in place in the schools included in the present study is 9.24 (SD=3.59).

Table 4.16
Items on School Profiles of Foreign Language Programs

Item	Data Reported for Population
Number of daily minutes of foreign language instruction per class	mean=33.61 SD=6.412
Number of years the foreign language program has been in place in their school	mean=9.294 SD=3.5968

Table 4.17 illustrates the level of support for foreign language programs on the part of both school administrators and parents of children who participate in elementary foreign language study. With regard to support given by school administrators, the majority of teacher respondents (50%; n=9) indicated that their school administration strongly supports their foreign language program. Thirty-three percent (n=6) received some supported, whereas 11.1 % (n=2) received very little support. Five percent (n=1) indicated tremendous support for the foreign language program on the part of school administration.

In terms of parental support, the majority of teacher respondents (50%; n=9) expressed that they received some parental support for their foreign language

program. Twenty-seven percent (n=5) reported receiving very little parental support, and 22% (n=4) indicated receiving very much support. None of the respondents expressed having tremendous support from parents of student participants in their foreign language program.

Table 4.17
Frequency Distribution for Items on Support for Foreign Language Programs

Item	Response Choice	Response	Percent
Support from school administration for foreign language program	1= very little	n=2	11.1%
	2= somewhat	n=6	33.3%
	3= very much	n=9	50%
	4= tremendous	n=1	5.5%
Parental support for foreign language program	1= very little	n=5	27.7%
	2= somewhat	n=9	50%
	3= very much	n=4	22.2%
	4= tremendous	n=0	0%

Teacher Data: Classroom Practices

Table 4.18 relates the extent to which teachers collaborated with colleagues in other disciplines to plan cross-curricular lessons that integrate the teaching of content skills in other curricular areas into foreign language lessons. While the majority of teachers (44%; n=8) reported engaging in cross-curricular planning, 33% (n=6) related that they never collaborate with other teachers. Sixteen percent (n=3) indicated that they often collaborate in cross-curricular planning. Five percent (n=1) reported often engaging in cross-curricular planning with teachers in other disciplines.

Table 4.18
 Frequency Distribution for Item on Collaboration with Other Content Area Teachers
 in Cross-curricular Lesson Planning

Item	Response Choice	Response	Percent
Frequency of cross-curricular lesson planning with other content teachers	1= never	n=6	33.3%
	2= occasionally	n=8	44.4%
	3= often	n=3	16.6%
	4= very often	n=1	5.5%

Table 4.19 indicates the percentage of weekly instructional time teachers reported spending on reinforcing English language arts, mathematics, history, geography, and science skills through foreign language instruction. Teachers reported utilizing a mean of 57% (SD=18.81) of their weekly foreign language instructional time reinforcing English language arts skills. Weekly instructional time for mathematics skills reinforcement reportedly received a mean of 31% (SD=9.19). A mean of 29% (SD=14.35) of weekly instructional time was used to reinforce history skills. Geography skills were reported to have received a mean of 31% (SD=7.35) weekly instructional time. Finally, a mean of 7% (SD=7.57) of weekly foreign language instructional time targeted science skills.

Table 4.19
 Reinforcing Content Area Skills through Foreign Language Lessons

Factor	Data Reported for Population	
% of weekly instructional time teachers estimate spending reinforcing English language arts content area skills through foreign language instruction	mean=57%	SD=18.813

Table 4.19 continued
 Reinforcing Content Area Skills through Foreign Language Lessons

% of weekly instructional time teachers estimate spending reinforcing mathematics skills through foreign language instruction	mean=31.64% SD=9.196
% of weekly instructional time teachers estimate spending reinforcing history skills through foreign language instruction	mean=29.42% SD=14.353
% of weekly instructional time teachers estimate spending reinforcing geography skills through foreign language instruction	mean=31.21% SD=7.356
% of weekly instructional time teachers estimate reinforcing science skills through foreign language instruction	mean=7.78% SD=7.573

Table 4.20 illustrates the frequency with which teachers of student participants in the present study estimate that they reinforced specific English language arts content standards skills through foreign language instruction. The majority of teachers (44%; n=8) responded that they often reinforced *reading, comprehending, and responding to a range of materials* skills. Twenty-two percent (n=4) reported that they occasionally reinforced these skills, as did 22% (n=4) who very often reinforced these skills. Eleven percent of teachers (n=2) reported that they never reinforced *reading, comprehending, and responding to a range of materials* skills.

The majority of teachers (70%; n=13) reported that they occasionally reinforced *writing competently* skills, and twenty-two percent (n=4) indicated that

they often reinforced them. Five percent (n=1) reported that they never reinforced *writing competently* skills, and none of the teachers expressed that they very often reinforced these skills.

Forty-four percent (n=8) of teachers reported occasionally reinforcing *conventions of language* skills, followed by 38% (n=7) who indicated that they often reinforced them. Sixteen percent (n=3) teachers reported reinforcing these skills very often and none of the teachers indicated that they never reinforced *conventions of language* skills. Conventions of language encompass grammar, usage, sentence structure, punctuation, capitalization, spelling, and handwriting.

With regard to *locating, selecting, and synthesizing* skills, 44% (n=8) reported occasionally reinforcing these skills, and 33% (n=6) indicated that they often reinforced them. Sixteen percent (n=3) reported very often reinforcing *locating, selecting, and synthesizing* skills, while 5% (n=1) indicated never reinforcing them.

Fifty percent (n=9) of the teachers reported that they occasionally reinforced *reading, analyzing, and responding to literature* skills, while 33% (n=6) reported never reinforcing them. Sixteen percent (n=3) indicated that they often reinforced *reading, analyzing, and responding to literature* skills. None of the teachers reported that they reinforced these skills very often.

In terms of *applying reasoning and problem-solving skills*, the majority of teachers, 55% (n=10) indicated that they occasionally reinforced these skills. Thirty-three (n=6) responded that they often reinforced them. Five percent of

respondents (n=1) indicated that they very often reinforced *applying reasoning and problem-solving skills*, as did 5% (n=1) who indicated never reinforcing these skills.

Table 4.20
Frequency Distribution for Items on Reinforcing English Language Arts Content Standards through Foreign Language Instruction

Item	Response Choice	Response	Percent
Read, comprehend and respond to a range of materials	1= never	n=2	11%
	2= occasionally	n=4	22.2%
	3= often	n=8	44.4%
	4= very often	n=4	22.2%
Write competently	1= never	n=1	5.5%
	2= occasionally	n=13	72.2%
	3= often	n=4	22.2%
	4= very often	n=0	0%
Use conventions of language	1= never	n=0	0%
	2= occasionally	n=8	44.4%
	3= often	n=7	38.8%
	4= very often	n=3	16.6%
Locate, select, and synthesize	1= never	n=1	5.5%
	2= occasionally	n=8	44.4%
	3= often	n=6	33.3%
	4= very often	n=3	16.6%
Read, analyze, and respond to literature	1= never	n=6	33.3%
	2= occasionally	n=9	50%
	3= often	n=3	16.6%
	4= very often	n=0	0%
Apply reasoning and problem-solving skills	1= never	n=1	5.5%
	2= occasionally	n=10	55.5%
	3= often	n=6	33.3%
	4= very often	n=1	5.5%

Table 4.21 illustrates the frequency with which teachers of student participants in the present study reinforced specific mathematics content standards skills through foreign language instruction. Thirty-eight (n=7) responded that they occasionally reinforced *applying number relations* skills, as did 38% (n=7) who often reinforced these skills. Twenty-two percent (n=4) of respondents indicated very often reinforcing *applying number relations*, while none of the teachers reported that they never reinforced these skills.

With regard to *measurement* skills, 61% (n=11) of teachers indicated occasionally reinforcing these skills, and 27% (n=5) responded that they never reinforced them. Five percent (n=1) responded that they often reinforced *measurement* skills, as did 5% (n=1) who very often reinforced these skills.

Fifty percent (n=9) of respondents indicated that they occasionally reinforced *patterns, relations, and functions* skills, and 27% (n=5) reported that they never reinforced them. Sixteen percent (n=3) of teachers reported that they often reinforced *patterns, relations, and functions* skills, and 5% (n=1) indicated very often reinforcing these skills.

Table 4.21
Frequency Distribution for Items on Reinforcing Mathematics Content Standards through Foreign Language Instruction

Item	Response Choice	Response	Percent
Number relations	1= never	n=0	0%
	2= occasionally	n=7	38.8%
	3= often	n=7	38.8%
	4= very often	n=4	22.2%

Table 4.21 continued
 Frequency Distribution for Items on Reinforcing Mathematics Content Standards through Foreign Language Instruction

Measurement	1= never	n=5	27.7%
	2= occasionally	n=11	61.1%
	3= often	n=1	5.5%
	4= very often	n=1	5.5%
Patterns, relations, and functions	1= never	n=5	27.7%
	2= occasionally	n=9	50%
	3= often	n=3	16.6%
	4= very often	n=1	5.5%

Table 4.22 demonstrates the frequency with which teachers of student participants in the present study reinforced specific science content standards skills through foreign language instruction. The majority of respondents, 61% (n=11) indicated that they occasionally reinforced *science as inquiry* skills, whereas 33% (n=6) reported never reinforcing them. Five percent (n=1) of teachers indicated that they often reinforce *science as inquiry* skills, and none of the respondents reported reinforcing these skills very often.

Fifty percent (n=9) of teachers indicated that they occasionally reinforced *physical science* skills, and 44% (n=8) reported that they never reinforced these skills. Five percent (n=1) of the respondents indicated that they often reinforced *physical science* skills; while none of the respondents reported that they very often reinforced these skills.

Life science skills were reportedly reinforced occasionally by 55% (n=10) of the teachers, while 38% (n=7) of teachers never reinforced them. Five percent (n=1) reported often reinforcing *life science* skills, and none of the teachers indicated that they very often reinforced these skills.

Earth and space skills were reinforced by the majority of teachers (44%, n=8), yet 38% (n=7) reported never reinforcing them. Sixteen percent (n=3) indicated that they often reinforced *earth and space* skills, while none of the teachers reported that they very often reinforced these skills.

The majority of teachers (55%, n=10) indicated that they occasionally reinforced *science and the environment* skills, while 27% (n=5) reported never reinforcing them. Sixteen percent (n=3) responded that they often reinforced *science and the environment* skills, while none of the respondents indicated that they very often reinforced them.

Table 4.22
Frequency Distribution for Items on Reinforcing Science Content Standards through Foreign Language Instruction

Item	Response Choice	Response	Percent
Science as inquiry	1= never	n=6	33.3%
	2= occasionally	n=11	61.1%
	3= often	n=1	5.5%
	4= very often	n=0	0%
Physical science	1= never	n=8	44.4%
	2= occasionally	n=9	50%
	3= often	n=1	5.5%
	4= very often	n=0	0%
Life science	1= never	n=7	38.8%
	2= occasionally	n=10	55.5%
	3= often	n=1	5.5%
	4= very often	n=0	0%
Earth and space science	1= never	n=7	38.8%
	2= occasionally	n=8	44.4%
	3= often	n=3	16.6%
	4= very often	n=0	0%

Table 4.22 continued
 Frequency Distribution for Items on Reinforcing Science Content Standards through Foreign Language Instruction

Science and the environment	1= never	n=5	27.7%
	2= occasionally	n=10	55.5%
	3= often	n=3	16.6%
	4= very often	n=0	0%

Table 4.23 indicates the frequency with which teachers of student participants in the present study reinforced specific social studies content standards skills through foreign language instruction. Thirty-eight percent (n=7) of teachers indicated that they often reinforced *geography: physical and cultural systems* skills, while 33% (n=6) responded that they often reinforced these skills. Twenty-seven percent (n=5) responded that they very often reinforced *geography: physical and cultural systems* skills, and none of the teachers indicated that they never reinforced these skills.

With regard to *civics: citizenship and government* skills, 38% (n=7) of the teachers responded that they occasionally reinforced these skills, while 33% (n=6) reported often reinforcing them. Sixteen (n=3) teachers responded that they never reinforced *citizenship and government* skills, and 11% (n=2) indicated that they very often reinforced them.

In terms of *economics: independence and decision-making*, 44% (n=8) indicated that they occasionally reinforced these skills, while 38% (n=7) reported that they never reinforced these skills. Sixteen percent (n=3) reported that they often reinforced *economics: independence and decision-making* skills, and none of the teachers indicated that they very often reinforced these skills.

The majority of teachers (50%, n=9) reported occasionally reinforcing *history: time, continuity, and change* skills, whereas 27% (n=5) indicated that they often reinforced these skills. Eleven percent (n=2) of teachers responded that they never reinforced *history: time, continuity, and change* skills, as did 11% (n=2) who indicated very often reinforcing these skills.

Table 4.23
Frequency Distribution for Items on Reinforcing Social Studies Content Standards through Foreign Language Instruction

Item	Response Choice	Response	Percent
Geography:	1= never	n=0	0%
Physical and cultural systems	2= occasionally	n=6	33.3%
	3= often	n=7	38.8%
	4= very often	n=5	27.7%
Civics: Citizenship and government	1= never	n=3	16.6%
	2= occasionally	n=7	38.8%
	3= often	n=6	33.3%
	4= very often	n=2	11.1%
Economics: Independence and decision-making	1= never	n=7	38.8%
	2= occasionally	n=8	44.4%
	3= often	n=3	16.6%
	4= very often	n=0	0%
History: Time, continuity and change	1= never	n=2	11.1%
	2= occasionally	n=9	50%
	3= often	n=5	27.7%
	4= very often	n=2	11.1%

Results of Teacher Interviews

The chief purpose for conducting interviews with the seven consenting teachers was to gain greater insights into the ways teachers of student participants in the present study made connections between foreign language instruction and the reinforcement of English language arts, math, social studies and science content

standard skills. Although the survey instrument essentially served the same purpose, during the course of the interviews, the researcher was able to seek clarification and gain a deeper understanding into teachers' practices than was discernable from their survey responses.

When conducting the telephone and face-to-face interviews, the researcher focused on topics explored by teachers in their responses to the survey questions. They are as follows: the extent of support for schools' foreign language programs; extent of cooperative lesson planning with other content-area teachers; examples of lessons taught that reinforce particular content skills in the foreign language classroom; the nature of instructional practices in teachers' own classrooms (specifically with regard to student interaction in the target language and means of foreign language assessment); whether or not students' report cards reflect grades for foreign language study; and what has enabled their schools' foreign language programs to endure. The data collected on each of these topics will be presented here.

Extent of Support for Foreign Language Program

Overall, teachers reported that their schools' foreign language programs are well supported by school administrators and parents alike. To the extent that funds are available, administrators were willing to provide instructional materials when requested by the teachers. Several teachers explained that they had used their own money to purchase classroom materials and supplies. For example, a Canadian teacher had purchased a variety of French books in Quebec during the summers to build up her classroom library. One teacher offered as evidence of her

administrator's support of the foreign language program, that although foreign language is considered a resource class, it has still maintained the same number of instructional minutes that it had been allocated when established at the school. Two teachers explained that their school principal supported them by consistently enforcing the discipline policy. This has aided in maintaining a classroom environment conducive to learning because students knew that they would be held accountable for their actions if they chose to engage in negative behavior.

With regard to parental support, one teacher commented that the parents of her students were very pleased that their children are learning French. Furthermore, children often practiced what they learned in French class with their grandparents, for whom French is the first language. This teacher explained that parents have expressed to her a sense of pride and gratitude that their children are recovering a bit of their cultural heritage by learning French. Generally speaking, parents would go over lessons with their children at home and were enthusiastic about, and involved in, their children's learning of French.

A Spanish teacher commented that the parents of her fifth-grade students were particularly supportive of her. She occasionally received notes from parents who were eager to provide any assistance needed to sustain her school's Spanish program. Another Spanish teacher related that on occasion, the parents of her students would tell her she was doing a good job and that their children would come home and talk about her and practice Spanish with their siblings. Yet another Spanish teacher explained that she greeted the parents of her students in Spanish when they came to her classroom. Although their conversations were almost

entirely in English, when appropriate, she interjected simple phrases in Spanish so as to expose parents to the language and draw them into the climate of Spanish that existed in her classroom for her students. She felt that parents enjoy this exposure to Spanish even though it was quite minimal. She indicated that this conveyed to the parents her sincere desire for others to learn Spanish.

Extent of Cooperative Lesson Planning with Other Content Teachers

While one of the teachers interviewed had structured time to plan lessons with other faculty members, the others did not. The teacher who had regular opportunities to plan lessons cooperatively participated in grade-level meetings with other teachers on Fridays after students' early dismissal. She explained that this planning time allowed her to ask teachers about the skills on which they would like her to focus in Spanish class in the coming weeks. Several other teachers mentioned that they found brief periods of time, either before or after school, or during lunch, to ask other teachers what they were teaching in a given week and which concepts students needed to revisit. Several teachers mentioned that they made it a point to approach other content teachers to find out how they could contribute to reinforcing specific skills tested on the LEAP 21 test. They asserted that they sensed the burden of fourth-grade teachers to sufficiently prepare students for the LEAP 21 test and offered their support in helping students meet this challenge. One teacher explained that on occasion, particularly during the months leading up to the LEAP 21 test, she would observe classes during her planning period to determine which concepts she could reinforce in Spanish class. She added

that the faculty was very receptive to her efforts to assist them in enhancing their students' learning of content subject matter.

The majority of the teachers interviewed did not have their own classrooms. Instead, they moved from classroom to classroom with their teaching materials in tow. Although some of these teachers expressed that this was a less than ideal situation, they all commented that they were able to observe the learning that went on in their students' classrooms. They took note of what was displayed on the walls and chalkboards and could often observe the end of a lesson given by the regular classroom teacher while waiting to conduct their foreign language lesson with the children. Some teachers commented that these experiences provided them with an awareness of what was being taught in other classes and enabled them to draw parallels between those skills and their foreign language instruction.

Examples of Lessons Taught That Reinforce Other Content Skills

By and large, the examples provided of how the teachers make connections between their foreign language instruction and other content areas were based on lessons geared toward mathematics and social studies content skills. To a lesser extent, some teachers shared that they often focused on French or Spanish cognates to help students build their English vocabulary. In a limited capacity, science was reported to have been integrated into French and Spanish lessons within the context of teaching students vocabulary of various species of animals and plants.

In terms of mathematics skills, the majority of teachers commented that their students participated in activities that required them to add, subtract, multiply, and divide in the target language. One teacher shared that she divided her class into two

teams and had students compete to solve problems correctly using decimals, fractions and percentages in the target language.

Several teachers explained that they incorporated measurement activities into their lessons, citing that this also provided opportunities to discuss countries that use the English system of measurement as opposed to those who use the metric system. One teacher indicated that she often had her students solve word problems in Spanish requiring them to calculate measurement, since word problems are commonly seen on the LEAP 21 test.

Another teacher commented that while students practiced mathematics skills in her class, they did so within cultural situations that they could encounter in French-speaking countries. For example, she recalled a lesson in which students took an imaginary trip to an open-air market to buy food for a special dinner. Students planned the menu for the event within a given budget and selected recipes accordingly. Students determined the quantities of food items needed to serve all the guests. Then they were required to purchase the necessary items staying within the budget.

A time zone activity related by one teacher drew upon mathematics as well as social studies and science skills. Having students work to solve problems within the context of determining time zones helped students better understand the concept of time zone differences in various geographic regions of the world.

One teacher mentioned that she enjoys traveling and would often share her experiences in francophone countries with her students. These experiences allowed her to explore geographical concepts such as continents, countries and regions,

moving from the broad to the specific. She commented that her students often did not realize that French is spoken in so many countries around the world. She mentioned that she took advantage of this awareness by helping students realize that if they would continue their study of French, they could travel to these countries and communicate with the people living there. She went on to say that in her classroom, geography was often the basis for cultural discussions. For example, she explained that her students enjoyed learning how people from various French-speaking countries celebrate certain holidays. She stated that by learning customs of French-speaking people around the world, students were also able to compare these cultural practices with their own.

Another teacher related that her school featured a different country to be studied each month. Teachers were asked to devise and do a variety of activities with their students to explore various cultural and geographical facets of that country. This teacher used a game called “conquer the world” whereby she divided her class into two teams and had students react and respond to task cards. Students worked together to locate various countries on a map and were required to put together a puzzle of a map of the world, situating the country chosen to be the country of the month.

One teacher of French, who is a native speaker, expressed that she feels it is very important that she share with her students Louisiana’s French, Spanish and Creole roots. She explained that she mainly drew on resources such as children’s stories and lesson materials given to her through professional development workshops sponsored by foreign governments and the Louisiana Department of

Education. She added that she feels it is important for children to have a greater awareness of and appreciation for Louisiana's diverse multilingual and multicultural heritage.

The Nature of Classroom Instructional Practices

The information gathered on this topic shed light on the use of the target language in foreign language classes, on the part of both students as well as teachers. It also helped identify how students' foreign language skills are assessed.

All teachers expressed that they stress oral communication with their students and that students did far less writing than speaking in their classes. The majority of teachers indicated that, on a daily basis, they would try to use the target language as much as possible with their students, resorting to English only in situations where they needed to fill in significant comprehension gaps, clarify instructions, or perhaps to enforce classroom discipline. Several teachers mentioned that they often used visuals and gestures, and incorporated vocabulary already familiar to their students in order to make themselves understood. A teacher mentioned that she felt her students did not need to understand every word she said as long as they had the general sense of what was being conveyed. She expressed that once students were used to the idea that her class is conducted almost exclusively in Spanish, they became accustomed to hearing Spanish the entire time they were in that classroom environment.

Several teachers expressed that they encouraged their students to communicate with them as much as possible in the target language, but that often students resorted to English because their second language skills were still in the

early stages of development. One teacher conveyed the importance of reassuring students and rewarding their efforts to speak French in class with praise and encouragement.

When asked about instructional practices, one teacher related that she taught by theme. One of her units enabled students to take an imaginary trip to France. As part of the unit, students learned vocabulary associated with food, clothing, weather, and tourist activities that would be encountered on the trip. Most of the learning activities associated with this unit required students to communicate orally, whether ordering food in restaurants, using public transportation, planning their daily sight-seeing schedule and deciding what to wear based on the weather forecast, or reading a city map in order to arrive at their destination. Aside from students writing a post card to a friend and using Microsoft Publisher to do a travel brochure on a particular region of France, which they presented to the class, all lesson activities that were completed and assessed for this unit required oral communication.

Another teacher explained that some of her lessons were based on French Canadian holidays and festivals. Her students worked in partners or groups to do speaking activities based on up-coming French Canadian holidays or festivals. They learned to sing songs related to various holidays and events and took part in creative projects that they made, then presented and described in French for the class demonstrating both their knowledge of French Canadian culture and their use of the French language.

When asked how teachers assess their students' mastery of French or Spanish skills, they explained that they used a variety of assessments that indicate to

them what the students could do with the language. They may have students work on projects and present them to the class, or have them carry out a task by communicating with one another in a given setting. On occasion, students demonstrated their comprehension of French or Spanish by taking part in listening activities requiring them to select appropriate responses based on information they heard in the target language.

Several teachers related that they have each student keep a binder of all the activities they complete in French or Spanish class. These notebooks were useful to parents who could keep track of their children's progress in their foreign language class. One teacher recorded students' grades in their binders and asked parents to sign a form indicating that they have reviewed the binder contents during a given marking period. This teacher also encouraged parents to get involved with long-term projects on which their children choose to work for Spanish class, so that the students could receive assistance at home.

Several teachers involved their students in school-wide productions or activities that showcase their second language skills. For example, some students learned a song in Spanish, which they performed at a school assembly. One teacher explained that her students took turns reciting the Pledge of Allegiance in French over the school intercom during a designated week at the beginning of the school day during the morning announcements.

Foreign Language Grades Reflected on Report Cards

With regard to whether students received a grade for Spanish or French study, a range of possibilities was reported. Teachers described three scenarios:

students did not receive a grade for foreign language study; students received a non-promotional grade; or students received a promotional grade. Two teachers indicated that students were not given any grade for participation in foreign language study. One of the teachers in this situation explained that she sought and was granted the approval from her principal to devise her own progress report for her students of Spanish. When students' report cards were issued, she would attach her progress report to the report cards of her students of Spanish. Five teachers reported that students received a non-promotional grade for foreign language study whereby students' report cards reflected either an A, B, or C, or a rating of satisfactory or unsatisfactory. One teacher reported that students earned an A, B, C, D or E on their report cards for Spanish study.

How Foreign Language Programs Endure

When the teachers were asked what made their foreign language programs endure, across the board, their responses reflected either support from the community, parents, school administration, or what they themselves brought to the foreign language program, or a combination of these elements. One teacher credited the support of her community, which has strong Cajun heritage, for the success of her program. In addition, she explained that she made learning French relevant to the lives of her students who live in a rural community. She drew upon their experiences with activities undertaken outside of school, such as hunting, fishing and raising farm animals and made these activities a focal point of her French lessons.

Another teacher related that the parents of her students played an important role in maintaining her school's foreign language program. They volunteered to assist with fundraising activities to purchase classroom materials and on occasion, would help coordinate field trips and find guest speakers from the community. She added that even the school personnel were supportive of her efforts to teach French. School bus drivers and cafeteria workers would often speak French with the children on the school campus.

Two teachers shared their perception that they have played an integral role in the success of their schools' foreign language programs. One indicated that she made Spanish class a welcoming and enjoyable environment for students. She tried to strike a balance between being strict, yet caring. Furthermore, she set high expectations for her students. She commented that she takes advantage of opportunities to get to know her students and to know their likes, dislikes and interests. Another teacher expressed her view that the success of her Spanish program was, in large part, due to the respect and trust she has earned from her school administrators, other faculty members, the parents of her students, as well as the students themselves. She expressed that she regards her children as human beings first and learners second. Being conscientious in her work and dedicated to her students' learning has helped her foreign language program become an integral part of her school's curriculum. Several teachers underscored their desire to make foreign language classes interesting and enjoyable for students, so as to instill in them a desire to continue learning French or Spanish. By using games and music,

students look forward to taking part in lessons and communicating in the target language.

This chapter reported the results of the present study. Included were the results of the MANOVA and MANCOVA procedures pertinent to each research question. In addition, descriptive statistics were provided regarding survey responses from the teachers of student participants in the current study. Finally, the results of the teacher interviews were reported.

CHAPTER 5

ANALYSIS AND DISCUSSION OF FINDINGS

Chapter Five presents an analysis and discussion of the findings of the present research. This chapter begins with a restatement of the objectives of the study and a summary of significant findings. Next, findings related to the research questions posed are discussed in relation to previous studies on foreign language study and academic achievement. Implications for elementary school administrators and educational policy makers as well as foreign language teachers are discussed followed by recommendations for future research and limitations of the study.

Restatement of the Objectives of the Study

The present research sought to clarify the role foreign language learning can play in the acquisition of skills in other academic content areas, particularly in the curricular areas factored into the Louisiana Department of Education's student accountability program. Specifically, it examined the relationship between the study of foreign language in the Louisiana Elementary School Foreign Language Program and student achievement on measures of the Iowa Tests of Basic Skills (ITBS) and the Louisiana Educational Assessment Program for the 21st Century (LEAP 21) tests. Secondly, the research investigated what teachers of student participants perceive to be effective teaching practices that promote second language acquisition among their students while reinforcing other content subject area skills.

Significant Findings of the Study

The performance of the treatment group (foreign language students) and control group (non-foreign language students) generally differed according to the test being investigated. The treatment group outperformed the control group as demonstrated by statistically significant scores on every subtest of the fourth-grade LEAP 21. Moreover, the treatment group outperformed the control group as evidenced by significant differences in fifth-grade ITBS language scores.

It is important to draw a clear distinction between the ITBS and LEAP 21 assessments. The ITBS is a norm-referenced test focusing on a narrow set of skills assessing prior knowledge and is entirely comprised of multiple-choice items. In contrast, the LEAP 21 is a criterion-referenced test whose content is specifically based on the Louisiana Content Standards in the following curricular areas: English language arts, mathematics, science, and social studies. The LEAP 21 also tests students' prior knowledge, but requires that students apply this knowledge by responding not only to multiple choice items, but to constructed response items and writing prompts, thereby invoking students' use of higher order thinking skills. Given this format requiring student-generated responses, partial credit is awarded to students when they demonstrate that they can apply content skills when given a particular task.

Appreciable differences were revealed when comparing groups' LEAP 21 test scores. In other words, the statistical procedures comparing both groups' performance on the fourth-grade LEAP 21 test indicated that the foreign language students significantly outperformed their non-foreign language counterparts on

every subtest of the LEAP 21 test. This outcome was further evidenced when comparing foreign language students' LEAP 21 performance to their non-language peers after two years of program participation using the prior year's ITBS scores as covariates. However, while the results of this latter procedure indicated that foreign language students' LEAP 21 mathematics scores were higher than those of the non-foreign language group, they were not significantly different. Even when third-grade ITBS subtest scores were accounted for, there were statistically significant differences in language scores favoring the foreign language students. Performance in language subtests on both the fifth-grade ITBS as well as fourth-grade LEAP 21 was significantly higher for foreign language students than for non-foreign language students.

The treatment group's performance on the language subtests of both the ITBS and LEAP 21 was consistently significantly greater than that of the control group, except for the first year of the study. When comparing the ITBS reading scores, however, a different pattern emerged. When examining student gains from the fourth to fifth-grade, the control group significantly outperformed the treatment group on reading measures. Why did the foreign language students not demonstrate a reading advantage over the non-foreign language students? The answer may lie in the teaching approach used by the foreign language teachers of student participants based on information they provided about their classroom practices. Several teachers related in their survey responses and during the interviews that when teaching students who are in the beginning years of foreign language study, they place much greater emphasis on developing students' ability to understand spoken

French or Spanish while providing opportunities for them to speak the target language than they place on developing reading and writing skills. Furthermore, 83% (n=15) responded that they never or only occasionally reinforce *reading, analyzing, and responding to literature* while 44% (n=8) indicated that they never or only occasionally reinforce *reading, comprehending and responding to a range of materials*. Given that the reading skills are not frequently incorporated into foreign language instruction, it stands to reason that foreign language students' performance in this domain was not superior to that of their non-foreign language counterparts.

Discussion of Research Questions Investigating Student Participants' Academic Achievement

Research Question One

Research Question One used a Multivariate Analysis of Variance (MANOVA) procedure and follow-up Analyses of Variance (ANOVA) to examine differences between the academic performance of non-foreign language students and foreign language students on the third-grade reading, language, mathematics, social studies, and science subtests of the Iowa Tests of Basic Skills (ITBS).

A marginal difference in the science subtest favoring the non-foreign language students was evidenced. Moreover, fifth-grade ITBS performance indicates that over time, this difference dissipated. Although foreign language students outperformed their non-foreign language peers on the fifth-grade ITBS science subtest, the difference was not significant.

Research Questions Two and Four

Research Questions Two and Four investigated academic performance on the fourth-grade Louisiana Educational Assessment Program for the 21st Century (LEAP 21) state-developed test. Research Question Two used a Multivariate Analysis of Variance (MANOVA) procedure and follow-up Analyses of Variance (ANOVAs) to examine differences among the academic performance of non-foreign language students and foreign language students on the LEAP 21 English language arts, mathematics, science, and social studies subtests. Research Question Four used a MANCOVA procedure and follow-up t-tests on the adjusted means to examine differences between the academic performance on the LEAP 21 English language arts, mathematics, science, and social studies subtests of non-foreign language students and foreign language students after two years of foreign language study. The MANCOVA procedure accounted for differences in student performance by controlling for third-grade reading, language, mathematics, social studies, and science ITBS scores.

The statistical analyses performed to answer Research Question Two revealed that the foreign language students scored significantly higher than their monolingual counterparts in all subtests of the LEAP 21. To examine whether these differences were prevalent if prior academic achievement was included in the model, third-grade ITBS scores were used to conduct the statistical analyses to answer Research Question Four. Even when third-grade differences were accounted for, fourth-grade LEAP 21 scores were significantly higher for foreign language

students in all areas except mathematics, although the difference in mathematics performance favored foreign language students.

Research Questions Three, Five and Six

Research Questions Three, Five and Six examined student academic performance on the fifth-grade ITBS. For each research question, language performance on the part of the foreign language students significantly surpassed that of the non-language students.

Research Question Three used a Multivariate Analysis of Variance (MANOVA) procedure and follow-up Analysis of Variance (ANOVAs) to examine differences between the academic performance of non-foreign language students and foreign language students on the fifth-grade reading, language, mathematics, social studies, and science subtests of the Iowa Tests of Basic Skills (ITBS). Here the treatment group significantly outperformed the control group on the language subtest. However, the control group significantly outperformed the treatment group on the social studies subtest.

Research Question Five used a Multivariate Analysis of Covariance (MANCOVA) procedure and follow-up t-tests on the adjusted means to examine differences in academic performance on the fifth-grade reading, language, mathematics, social studies, and science ITBS scores of non-foreign language students and foreign language students after three years of foreign language study. The MANCOVA procedure accounted for differences in student performance by controlling for fourth-grade LEAP 21 English language arts, mathematics, science, and social studies subtests.

When taking into account students' fourth-grade differences in LEAP 21 performance, the results were consistent with those yielded from investigating Research Question Three. That is to say, language scores significantly favored the treatment group while social studies scores significantly favored the control group. Research Question Five also revealed that reading scores significantly favored the control group.

Research Question Six used a Multivariate Analysis of Covariance (MANCOVA) procedure and follow-up t-tests on the adjusted means to examine differences in academic performance on the fifth-grade reading, language, mathematics, social studies, and science ITBS scores of non-foreign language students and foreign language students after three years of foreign language study. The MANCOVA procedure accounted for differences in student performance by controlling for third-grade reading, language, mathematics, social studies, and science ITBS scores. As evidenced when using the criterion referenced fourth-grade LEAP 21 test scores as covariates, using third-grade ITBS scores as covariates also yielded differences in language performance significantly favoring the treatment group. However, no other significant differences between the groups' performance were discerned. The small differences found in the third-grade science ITBS scores favoring the control group were no longer significant by the fifth-grade. Language performance was the only area that remained consistently significantly greater in favor of the treatment group.

Discussion of Results in Relation to Previous Research on Foreign Language Study and Academic Achievement

Whereas previous research compared the performance of foreign language and non-foreign language students on measures of reading, language, and mathematics performance, the present study broadens the scope of investigation to include student academic performance in social studies as well as science. With regard to reading, language, and mathematics achievement, the present study generally supports similar findings in prior research done on Louisiana students (Rafferty, 1986; Lang, 1990). In addition to this prior research conducted on Louisiana students, the current study corroborates certain findings of the more recent research of Armstrong and Rogers (1997) and Garfinkel and Tabor (1991).

Rafferty (1986) compared the criterion-referenced standardized math and language arts test scores of third, fourth and fifth-grade Louisiana students who were and were not enrolled in foreign language study. Rafferty found that fourth-grade foreign language students significantly outperformed their non-language peers on language arts measures. When examining third and fourth grade mathematics scores, non-foreign language students outperformed their foreign language counterparts. However, by the fifth-grade, foreign language students' math performance surpassed that of the non-foreign language students. The present research supports Rafferty's findings with regard to language performance. However, fourth-grade mathematics performance examined in the present study significantly favored foreign language students. In addition, when investigating mathematics performance differences from third to fourth-grade, although not significant, these differences still favored foreign language students.

Lang (1990) sought to determine if foreign language study had a negative or positive influence on English skill development. He found that fourth, sixth, and ninth-grade foreign language students significantly outperformed their non-foreign language counterparts on reading and language measures of the norm-referenced California Achievement Tests. Furthermore, students who remained enrolled in foreign language study for more than one year evidenced higher scores than those enrolled for only one year. The present study supports these findings in that foreign language students significantly outperformed non-language students on language measures of the norm-referenced ITBS. However, the present research found that the initial advantage foreign language students demonstrated over non-language students on third-grade ITBS reading measures was not maintained in the fifth-grade as evidenced by non-foreign language students' higher scores on the fifth-grade ITBS reading test.

Armstrong and Rogers (1997) found a positive relationship between foreign language study and academic achievement. They compared reading, language and mathematics scores of third-grade foreign language and non-foreign language students on the Metropolitan Achievement Test. They found that reading scores favored non-language students, but were not significantly different. In contrast, language and mathematics scores significantly favored foreign language students. When comparing these findings with the third-grade ITBS performance examined in the present study, the present research indicates that after only one year of foreign language study the foreign language students' performance in reading, mathematics,

and language exceeded that of non-foreign language students, but was not significantly different.

After sustained enrollment in the Louisiana Elementary Foreign Language Program, the foreign language students examined in the present study significantly outperformed their monolingual peers. In a related study, Garfinkel and Tabor (1991) examined the effect of foreign language study on academic achievement among students who did versus those who did not continue their third and fourth-grade foreign language study a full third and fourth year in the fifth and sixth-grade after their initial foreign language exposure. They found that students who remained enrolled in foreign language study experienced greater academic gains in reading test measures than those who did not. These findings, as well as those of the present research, highlight the positive effect continued foreign language study has on academic achievement and support the notion that foreign language study should begin during the early elementary grades and continue in an uninterrupted sequence throughout the elementary school years.

The primary goal of early research on the effects of foreign language study was to determine if making time in the instructional day for foreign language learning hampered student academic achievement in the content areas from which instructional minutes were taken in order to provide foreign language instruction. Lopato (1963), Johnson, Ellison, and Flores (1961), Johnson, Flores and Ellison (1963), Potts (1967), and Leino and Hack (1963) found that allocating time for foreign language learning in the elementary curriculum had no harmful effects on student participants' academic achievement in other subject areas.

As the Louisiana Board of Elementary and Secondary Education has mandated since 1984 that foreign language study be offered Louisiana students in grades four through eight, the present research did not examine whether taking time out of the instructional minutes allocated to other curricular areas had adverse effects on student performance in these subject areas. However, findings of the present research did parallel some of the conclusions drawn from these early studies. As was discerned in the present study, Lopato (1963) found that when comparing foreign language and non-foreign language students' performance on third-grade measures of reading and language achievement, the foreign language students surpassed the non-foreign languages students, but not significantly so. In a similar study whose findings complement those of the present research, Johnson, Ellison, and Flores (1961) found that third-grade foreign language students outperformed their non-language peers on tests of language and arithmetic, yet little difference between the two groups was detected in reading performance. A longitudinal study of fourth, fifth, and sixth-graders conducted by Leino and Hack (1963) showed either no difference in ITBS performance between foreign language and non-foreign language students, or slight differences favoring foreign language students.

Discussion of Research Question Investigating Linking Foreign Language Instruction to the Acquisition of Other Content Skills

This research question explored how teachers of student participants in the present study made connections between their foreign language instruction and the reinforcement of English language arts, mathematics, science, and social studies content standard skills. In order to investigate this question, teachers of the student

participants completed a survey whereby they reported on the integration of other content area skills into their foreign language instruction. Follow-up telephone and face-to-face interviews were conducted with the teachers in an effort to gain deeper insights into their classroom practices and obtain more information about their schools' foreign language programs.

Information obtained from the teachers regarding the amount of instructional time they devote to reinforcing other content skills generally supports the findings of the statistical analyses performed on student test scores. Teachers reported that of the amount of instructional time they do spend reinforcing other content skills, the proportion of this time was allocated on average as follows: English language arts (57%), mathematics (31%), geography (31%), and science (7%). It should be noted that this study did not attempt to examine the percentage of instructional time devoted to content skills for non-foreign language students.

The fact that a great deal of the average allocated time (57%) was devoted to building English language arts skills was reflected in foreign language students' significantly higher language scores during the second and third years of foreign language study compared to non-foreign language students.

The reported proportion of instructional time allocated to making connections to mathematics and social studies skills is 31%. Although the third-grade ITBS mathematics and social studies score favored foreign language students, by the fifth-grade, scores on these subtests favored non-foreign language students. In terms of the frequency of making connections to mathematics skills, teachers reported either never or occasionally reinforcing the following content standards as

indicated: *number relations* 39% (n=7), *measurement* 89% (n=16), and *patterns, relations and functions* 78% (n=14). With regard to reinforcing social studies content standard skills, the following percentages and numbers of teachers reported either never or occasionally reinforcing the indicated skills: *geography* 33% (n=6), *civics* 56% (n=10), *economics* 83% (n=15), and *history* 61% (n=11). On the whole, these figures reflect that limited emphasis was given to these curricular areas via foreign language instruction. This may help explain why the foreign language students did not maintain the initial advantage held over non-foreign language students in mathematics and social studies.

Teachers reported spending the least amount of instructional time (7%) reinforcing science skills. When examining the frequency of science skill reinforcement, the high percentages of teachers reporting never or occasionally reinforcing science skills may explain why foreign language students did not significantly outperform non-language students on the ITBS measures. Percentages and numbers of teachers reporting never or occasionally reinforcing the indicated science skills are as follows: *science as inquiry* 33% (n=6), *physical science* 94% (n=17), *life science* 94% (n=17), *earth and space science* 83% (n=15), and *science and the environment* 83% (n=15). This is perhaps reflected in students' third-grade ITBS science performance, which significantly favored the non-foreign language students. However, fourth-grade science LEAP 21 results significantly favored foreign language students. In addition, by the fifth-grade, the difference in ITBS science performance had dissipated, no longer significantly favoring the non-foreign language students.

Despite the limited time teachers spent reinforcing English language arts, mathematics, social studies, and science content standard skills, the foreign language students still significantly outperformed their non-language counterparts on the fourth-grade LEAP 21. Moreover, seventy-eight percent (n=14) of the teachers reported that they either never or occasionally collaborate with other faculty members in planning cross-curricular lessons. One could infer that the academic achievement of these students would have been even greater if their foreign language teachers had collaborated with English language arts, mathematics, science, and social studies content teachers on a regular basis and had devoted more instructional time to reinforcing skills in these curricular areas.

Implications for Educational Policy Makers and Elementary School Administrators

The present research found that elementary foreign language study does, in fact, improve students' skills in other academic areas. When examining student performance on the fourth-grade LEAP 21 test, foreign language students significantly outperformed their monolingual peers on every subtest. This high-stakes test plays an important role in the education of Louisiana students. Students who do not pass the English language arts and mathematics subtests of the fourth-grade LEAP 21 are required to repeat grade four if they are still unable to pass those subtests after taking part in summer remediation classes and retesting at the conclusion of summer school. The present study found that a greater percentage of foreign language students passed each LEAP 21 subtest than did non-foreign language students. Eight percent more foreign language students passed the English language arts subtest than did non-foreign language students. Similarly, 5% more

foreign language students passed the mathematics portion than did non-foreign language students. While science and social studies performance is not a gatekeeper to grade level promotion, it is noteworthy to relate that foreign language students' pass rates were higher than their non-language counterparts by 7% on the science subtest and by 4% on the social studies subtest.

Beyond affecting student grade promotion, student performance on the LEAP 21 factors into the Louisiana School Accountability Program. Elementary School Performance Scores are calculated for each school using students' LEAP 21 English language arts, mathematics, science, and social studies scores as well as students' composite ITBS scores in addition to factoring in school attendance. The weighting of these components is as follows: LEAP 21 performance (60%), ITBS performance (30%), and school attendance (10%). Schools that fail to meet their growth targets are placed into corrective action and receive support to assist them in improving their performance. On the other hand, schools that meet or exceed growth targets receive financial rewards and positive growth labels. The findings of the present research indicating that foreign language students academically outperformed non-foreign language students and were more successful at passing the LEAP 21 test, gives credence to the notion that school administrators should look to foreign language programs as a means of enhancing school performance scores.

With regard to performance on the language portion of the ITBS, the treatment group scored higher than the control group in the third-grade and did significantly so in grade five. Even when participants' prior standardized test scores

were used as covariates, the treatment group still outperformed its control group counterparts. Thus, in addition to contributing to LEAP 21 language performance, foreign language study contributes to ITBS language performance as well.

The findings of the present study support the notion that sustained foreign language study should be provided during multiple years. After one year of foreign language instruction, there was no significant difference in students' ITBS scores, with the exception of science, which favored the non-foreign language students. However, after being enrolled in foreign language study for multiple years, the foreign language students significantly outperformed their non-foreign language counterparts. These findings underscore the positive effect sustained foreign language study has on student academic achievement. Therefore, foreign language study should begin in the early grades and continue in an uninterrupted sequence throughout the elementary school years.

It should be noted that even when significant differences in LEAP 21 and ITBS performance between foreign language and non-foreign language student participants in the present study were not detected, the foreign language students have lost nothing academically and have gained the ability to understand and use French or Spanish. Beyond gaining second language acquisition, these students have benefited from learning about the cultures, perspectives, and ways of being of francophone and hispanophone peoples. Moreover, they have had an opportunity to examine their own beliefs and explore their own opinions from the perspective of knowing about other cultures.

Although the present research supports the view that foreign language instruction has a positive effect on academic achievement, 44% (n=8) of teachers indicated that they receive very little support or are supported somewhat by school administrators with regard to their foreign language programs. Teachers commented that they often incur the expense of purchasing classroom materials and supplies themselves, as the school has no budget for these items. Some teachers indicated that their school administrators view foreign language merely as a resource class. As such, it receives less support as compared to other subject areas. According to some of the teachers, one example of how foreign language study is given less distinction than other curricular areas is that it is not reported on students' report cards and interim reports. This sends a message to parents, teachers, and the students themselves that foreign language study does not require rigorous academic standards.

Perhaps the lack of support for foreign language programs on the part of school administrators is due in part to their lack of knowledge about the benefits of foreign language programs. Research on the effect of foreign language study on academic achievement can help broaden the knowledge base of school policy makers as well as educational administrators and assist them with making informed decisions regarding foreign language programs in elementary school systems. Moreover, as foreign language contributes to student achievement, and has been deemed a core content area according to the No Child Left Behind federal educational legislation, educational policy makers should strongly consider allocating sufficient funding to incorporate foreign languages into statewide

accountability programs along with English, mathematics, science and social studies content areas.

Information obtained through surveys and teacher interviews in carrying out the present research reveals that school administrators would do well to encourage and provide opportunities for foreign language teachers to meet with and regularly collaborate in cross-curricular lesson planning with other content teachers. The majority of teachers interviewed explained that they do not have structured time to engage in cross-curricular planning with other content area teachers. This makes it difficult for teachers to discern which skills they should reinforce in the foreign language classrooms so as to support their students' learning in other classes. Since the teachers interviewed as part of the present study indicated that they do make connections between their foreign language lessons and the reinforcement of content standard skills in other curricular areas, more support on the part of school administrators should be afforded to them in this endeavor. Increasing opportunities for foreign language teachers to plan lessons with other content teachers is an important element in aiding foreign language teachers to reinforce student academic skills.

In addition, professional development in-service provided for foreign language teachers should include the topic of content-based foreign language instruction to better enable foreign language teachers to incorporate content-based teaching into instructional practices.

Implications for Foreign Language Teachers

Given the responses obtained from the teacher survey and interviews, it is clear that teachers of student participants in the present study do, to varying degrees, make connections between their foreign language instruction and other content skills. The fruits of their labor were apparent in foreign language students' significant performance on each subject area of the fourth-grade LEAP 21 as compared to non-foreign language students. Had teachers spent more time cooperatively planning with other content teachers and connecting their foreign language lessons to targeted skills, it is quite likely that the foreign language students' LEAP 21 performance would have been even greater in these subject areas. By the same token, the quantitative results of the present study revealed that non-foreign language students significantly outperformed foreign language students on third-grade science and fifth-grade social studies measures. Thus, in order to enhance students' ITBS science and social studies performance, teachers should concentrate on targeting content skills in these areas through the medium of foreign language instruction.

Cooperative lesson planning on the part of foreign language and other content teachers should take place on a regular basis. Although cooperative planning time typically is not scheduled into the teachers' workday, tools such as surveys completed by other faculty members at the request of foreign language teachers could prove to be very useful in discerning skills content teachers feel their students need to revisit. A sample survey letter to this end is provided in Appendix G.

Beyond asking their colleagues to respond to surveys encouraging collaboration in lesson planning, foreign language teachers should look to their school administrators for assistance. It would be useful for foreign language teachers to request that time be set aside during regular faculty meetings for them to confer with other content teachers about drawing parallels between what students are learning in other classes and what they are learning in foreign language classes.

Foreign language teachers should also find ways to gain the support of parents, as 78% (n=14) of the teachers indicated that they are only somewhat supported or receive very little parental support for their foreign language programs. Parents could be provided with tips for being more involved in their children's language learning and encouraged to offer greater support in reinforcing foreign language study at home.

Becoming more knowledgeable about the content and format of the ITBS and LEAP 21 tests is a must for foreign language teachers. Information about these tests as well as downloadable LEAP 21 released test items and practice tests are available on-line at the Louisiana Department of Education's website at <http://www.doe.state.la.us>.

It is important that foreign language teachers seek out and take part in professional development opportunities that focus on content-based foreign language teaching and strive to integrate content-based foreign language teaching into their classroom practices. Moreover, foreign language teachers should inform other faculty members about content-based foreign language teaching and how concepts learned in other classes can be readily reinforced in the foreign language

classroom. One tool that will certainly facilitate content-based foreign language teaching and cooperative planning is the Louisiana Department of Education's development of Grade-level Expectations (GLEs) as mandated by the No Child Left Behind federal educational legislation. With the January 2004 release of the final draft of the Louisiana GLEs, which are directly linked to Louisiana content standards, teachers will have a clear picture of what students should know and be able to do at each grade-level from kindergarten through the twelfth-grade in the curricular areas of English language arts, mathematics, science, and social studies.

Finally, staying current and well informed about research exploring the effects of content-based foreign language instruction on academic achievement is an important exercise in foreign language teacher professional development.

Furthermore, foreign language teachers should seek opportunities to share the implications of such research with school administrators, faculty members, and parents of children enrolled in their schools.

Limitations of the Study

The present study suggests that Louisiana students participating in foreign language study beginning in the third-grade outperform their non-language peers in all LEAP 21 subtests. Although these results can not be officially generalized beyond this population, it is appropriate to state that the results on high-stakes tests in other states based on state content standards linked to national content standards might yield similar results.

The present research also found that Louisiana students participating in foreign language study beginning in the third-grade extending until at least the fifth-

grade outperformed their non-language peers on the language portion of the third and fifth-grade ITBS. Generalization to a national population or a population of students in other states may be questionable given possible differences between Louisiana students and other students. However, studies of similar foreign language programs using the ITBS as a dependent variable would be directly comparable to the results found here.

With regard to the survey completed by teachers of students in the present study, although 100% (n=16) of the teachers responded to the survey, this is a very small number and could be viewed as a limitation to the current research. Perhaps another issue may be that the teachers' survey responses were self-reported, thereby limiting the findings of the study. It is possible that participants may feel inhibited when they know they are being evaluated. As a result, they may not be completely truthful in responding. Nonetheless, self-report measures remain a commonly used means of gathering data with which to conduct educational research (Cohen and Manion, 1985). Direct observation by the researcher of the teachers' classroom instruction on a regular basis to discern how they reinforce other content skills in their foreign language classes would have been the optimal method of obtaining information. Unfortunately, this approach was not feasible.

Future Research Suggestions

The primary suggestion for future research is to build on the present study by replicating it in the future to examine the seventh and ninth-grade Iowa Tests of Educational Development (ITED) scores as well as the eighth-grade LEAP 21 scores of the students involved in the present study. This would allow for the

examination of an even greater longitudinally cumulative effect of foreign language study revealing whether the effects found in the present study are maintained. This design would necessitate that students comprising the treatment group of the present study continue their study of foreign language through and including the ninth-grade. Unfortunately, it is unlikely that all schools servicing these students have articulated foreign language programs commencing at the elementary level and continuing to middle/junior high school through the high school level.

Secondly, studies are clearly needed that explore the benefits of content-based instruction drawing upon action research examining how foreign language teachers can work with other content teachers to plan cross-curricular lessons that reinforce content skills in other curricular areas. Since the nature of foreign language instruction lends itself to the incorporation of not only English language arts, mathematics, social studies, and science content skills, but music and the arts as well, a closer look at how teachers make connections between their foreign language teaching and other content skills is warranted.

Finally, studies probing the attitudes of school administrators to determine their views of the contributions foreign language study makes to student achievement could be a useful means by which to explore administrators' desire to include foreign language programs in the instructional day, or their willingness to offer greater support to existing programs. Administrators unaware of the potential benefits foreign language study affords elementary students could be provided with an overview of the findings of research on this topic. This would assist them in

making informed decisions about the extent to which they include foreign languages in school curricula.

Conclusions

The primary goal of the present research was to investigate the relationship between elementary school foreign language study and academic achievement. A concurrent aim was to explore how foreign language teachers of students in the present study link their instruction to English language arts, mathematics, science, and social studies content skills.

Several important findings of this study emerged. First, and most strikingly, foreign language students significantly outperformed their non-foreign language peers on every test (English language arts, mathematics, science, and social studies) of the fourth-grade LEAP 21. At a time when school accountability programs are the driving force behind decisions made about school curriculum and about high-stakes outcomes such as grade level promotion, it is important to have a broader understanding of how foreign language study can contribute to student performance on state-developed standardized test measures.

Secondly, the present research suggested that regardless of the test, whether the fourth-grade criterion-referenced LEAP 21, or the fifth-grade norm-referenced ITBS, at each grade-level foreign language students significantly outperformed their non-language counterparts on tests of language achievement.

A third notable finding is that the foreign language students in the present study significantly outperformed their monolingual peers after sustained enrollment in the Louisiana Elementary Foreign Language Program. These findings underscore

the positive effect continued foreign language study has on academic achievement and helps substantiate the view that foreign language study should commence during the early elementary grades and continue in an uninterrupted sequence throughout the course of elementary study.

The findings of the present study go beyond supporting the 1984 Louisiana Board of Elementary and Secondary Education's (BESE) mandate to offer elementary foreign language study to children in grades four through eight. *A fortiori*, these findings promote the view that participation in foreign language study should be a required component of the elementary curriculum. Further, the present research supports the assertion that the BESE foreign language mandate extend to include the lower elementary grades as well. Finally, policies diminishing children's access to foreign language study should be reconsidered based on the findings of this and other studies indicating that foreign language study promotes academic achievement.

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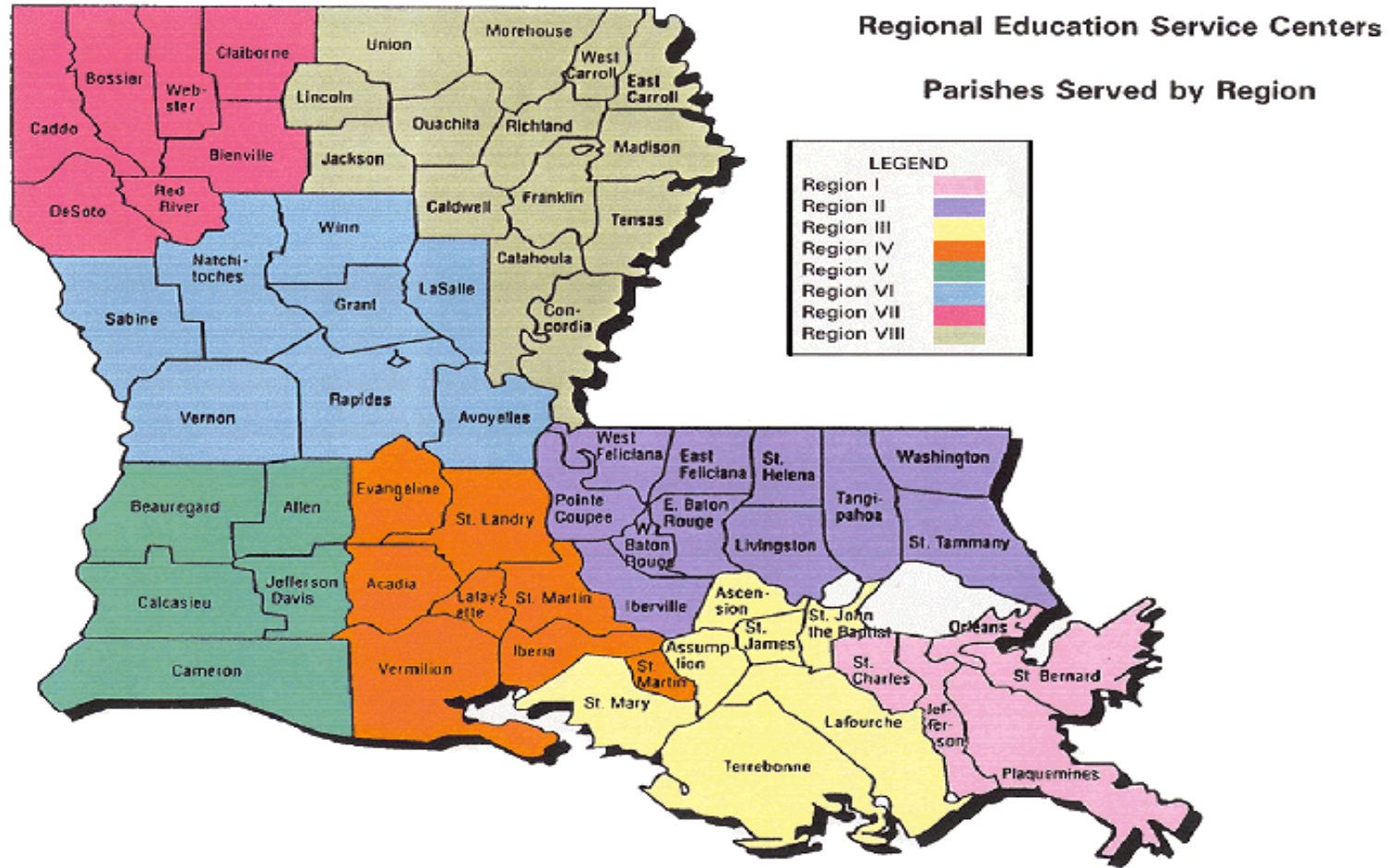
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APPENDIX A

**REGIONAL EDUCATION SERVICE CENTERS:
PARISHES SERVED BY REGION**

APPENDIX A



Louisiana Department of Education

APPENDIX B

FIRST TEACHER COVER LETTER

Carolyn Taylor-Ward
P.O. Box 83914
Baton Rouge, LA 70884
Tel: (225) 926-8708
E-mail: cjtward@aol.com

December 12, 2002

Dear *teacher's name*:

My name is Carolyn Taylor-Ward and I am a doctoral candidate at Louisiana State University in foreign language curriculum and instruction. I am writing to you to ask for your assistance with a research project I am involved in which examines the impact of elementary foreign language study on students' achievement on the Iowa and LEAP tests. I am concerned that in light of high stakes testing and tighter school accountability, foreign language programs are being put aside in favor of devoting more instructional minutes to the core content areas of math, English language arts, science and social studies. For this reason, I will be sending you a questionnaire in early January designed to help me determine how Louisiana elementary foreign language teachers connect their foreign language lessons to skills students need to master other academic content areas.

Your time and participation would be of tremendous value in carrying out this study. If you have any questions, or would like additional information, I can be reached through the contact information provided above.

Sincerely yours,

Carolyn Taylor-Ward

APPENDIX C

TEACHER SURVEY

Note: Please be assured that the confidentiality of the information provided herein will be carefully maintained.

1. Including the present academic year, for how many years has your foreign language program existed in your current school?

_____ years

2. Who was the 3rd grade foreign language teacher in your school during the 1999-2000 school year?

___ myself ___ someone other than myself

3. Who was the 4th grade foreign language teacher in your school during the 2000-01 school year?

___ myself ___ someone other than myself

4. Who was the 5th grade foreign language teacher in your school during the 2001-02 school year?

___ myself ___ someone other than myself

5. Indicate the highest degree you have earned, the year it was awarded, and the name of the educational institution that issued this degree: (*Bachelor; Master; Educational Specialist; Ph. D.)

*Degree	Year awarded	Institution
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6. List the countries and/or states in which you are certified to teach.

7. List the areas and grade levels in which you are certified to teach:

8. Indicate the total number of years you have been teaching foreign language.

_____ years

9. Indicate the number of foreign language instructional periods you teach daily.

_____ daily instructional periods

10. Indicate the number of daily minutes of foreign language instruction per instructional period.

_____ minutes per daily instructional period

11. In your opinion, to what extent does your school administration promote and support foreign language instruction in your school?

very little somewhat very much tremendously

12. In your opinion, to what extent do the parents of your students promote and support foreign language instruction in your school?

very little somewhat very much tremendously

13. What percentage of weekly instructional time do you spend linking foreign language learning to students' skill development in other content areas?

_____ %

14. Based on your response to question #13, indicate the percentage of instructional time spent reinforcing skills in other content areas. How much of this time is spent making connections to math, history, geography, and science?

_____ % math _____ % history _____ % geography _____ % science

15. To what extent do you collaborate with your colleagues in planning cross-curricular lessons that integrate the teaching of skills in other content areas in your foreign language classes?

never occasionally often very often

16. If you do collaborate with your colleagues in cross-curricular planning, what concepts and/or skills do you reinforce in your foreign language classroom instruction?

[Items 17-22 ask you to relate how often you reinforce certain *English Language Arts* content standard skills.]

17. How often do students in your foreign language classes **read, comprehend, and respond to a range of materials?**

never occasionally often very often

18. How often do students in your foreign language classes **write competently?**

never occasionally often very often

19. How often do students in your foreign language classes **use conventions of language?**

never occasionally often very often

20. How often do students in your foreign language classes **locate, select, and synthesize information**?

___ never ___ occasionally ___ often ___ very often

21. How often do students in your foreign language classes **read, analyze, and respond to literature**?

___ never ___ occasionally ___ often ___ very often

22. How often do students in your foreign language classes **apply reasoning and problem-solving skills**?

___ never ___ occasionally ___ often ___ very often

[Items 23- 25 ask you to relate how often you reinforce certain *Mathematics* content standard skills.]

23. How often do students in your foreign language classes work with **number and number relations**?

___ never ___ occasionally ___ often ___ very often

24. How often do students in your foreign language classes work with **measurement**?

___ never ___ occasionally ___ often ___ very often

25. How often do students in your foreign language classes work with **patterns, relations, and functions**?

___ never ___ occasionally ___ often ___ very often

[Items 26- 30 ask you to relate how often you reinforce certain *Science* content standard skills.]

26. How often do students in your foreign language classes learn about **science as inquiry**?

___ never ___ occasionally ___ often ___ very often

27. How often do students in your foreign language classes learn about **physical science**?

___ never ___ occasionally ___ often ___ very often

28. How often do students in your foreign language classes learn about **life science**?

___ never ___ occasionally ___ often ___ very often

29. How often do students in your foreign language classes learn about **earth and space science**?

___ never ___ occasionally ___ often ___ very often

30. How often do students in your foreign language classes learn about **science and the environment**?

___ never ___ occasionally ___ often ___ very often

[Items 30-34 ask you to relate how often you reinforce certain *Social Studies* content standard skills.]

31. How often do students in your foreign language classes learn about **geography: physical and cultural systems?**

___ never ___ occasionally ___ often ___ very often

32. How often do students in your foreign language classes learn about **civics: citizenship and government?**

___ never ___ occasionally ___ often ___ very often

33. How often do students in your foreign language classes learn about **economics: independence and decision making?**

___ never ___ occasionally ___ often ___ very often

34. How often do students in your foreign language classes learn about **history: time, continuity and change?**

___ never ___ occasionally ___ often ___ very often

35. If you reinforce your students' skills in other subject areas (math, history, geography, science, music, art etc.) through foreign language instruction in your classroom, please give one or two examples of how you accomplish this.

36. How is your school able to maintain its foreign language program despite the strong emphasis many school systems place on student performance in the core content academic areas?

37. If you feel that your school has a successful foreign language program, please indicate the factors that contribute to its success.

APPENDIX D

SECOND TEACHER COVER LETTER

Carolyn Taylor-Ward
P.O. Box 83914
Baton Rouge, LA 70884
Home telephone: (225) 926-8708
Cell phone: (225) 936-0567
E-mail: cjtward@aol.com

Name of Foreign Language Teacher
School Name
Address
City, LA Zip

January 3, 2003

Dear Ms./Mr. _____ :

I hope you enjoyed the holiday season and that your spring semester is off to a great start. As I mentioned before in the letter I sent you last month, I am working on a research project for my doctoral dissertation at Louisiana State University that looks at the impact of elementary foreign language study on students' achievement on the Iowa and LEAP tests. Specifically, I am examining how foreign language teachers, through their classroom instruction, reinforce skills students need to develop in other content areas such as math, English language arts, science and social studies.

I am asking you to fill out the enclosed questionnaire and mail it back to me when you can spare the time, hopefully before the end of January. I understand how hectic your schedule must be as you juggle all the demands of your teaching day. Please be assured that your input and insights will be of great benefit to me in completing my research project. In addition to the survey, I will need you to sign and return the consent form as required by Louisiana State University.

As a token of my appreciation, at the end of January, I will hold a drawing for those of you who complete and mail back the questionnaire. I ask that you fill out the enclosed entry form and indicate your preference of the store from which you would like to receive a gift certificate should your name be the one selected. Your odds of winning are pretty decent because there are only eighteen of you!

If you have any questions, or would like additional information, I can be reached through the contact information above. Thank you very much for your time and attention.

Sincerely yours,

Carolyn Taylor-Ward

APPENDIX E

THIRD TEACHER COVER LETTER

Carolyn Taylor-Ward
P.O. Box 83914
Baton Rouge, LA 70884
Tel: (225) 926-8708
E-mail: cjtward@aol.com

Name of Foreign Language Teacher
School Name
Address
City, LA Zip

February 6, 2003

Dear Ms./Mr. _____ :

I hope you are having a successful and rewarding semester. As I indicated in previous correspondences, I am working on a research project for my doctoral dissertation at Louisiana State University that investigates the effect of elementary foreign language study on students' achievement on the Iowa and LEAP tests. In particular, I am looking at how foreign language teachers, through their classroom instruction, enhance skills students need to develop in other content areas such as math, English language arts, science and social studies. I am also examining foreign language teachers' perceptions of effective foreign language teaching practices that can promote student achievement in other academic areas.

It is not too late to help with this project by filling out the enclosed questionnaire and mailing it back to me. I know that your daily teaching responsibilities leave you precious little spare time. Please be assured that your input and insights will be of tremendous benefit to me in completing this research project.

As a token of my appreciation, I will hold a drawing for those who complete and mail back the questionnaire. I ask that you fill out the enclosed entry form and indicate your preference of the store from which you would like to receive a gift certificate should your name be the one selected.

If you have any questions, or would like additional information, I can be reached through the contact information above. Thank you very much for your time and attention.

Sincerely yours,

Carolyn Taylor-Ward

APPENDIX F

CONSENT FORM

CONSENT FORM

I, _____, voluntarily agree to participate as one of a maximum of

eighteen participants in a qualitative component of a research project entitled, “The Effect of Elementary School Foreign Language Study on the Iowa Test of Basic Skills and the Louisiana Educational Assessment Program (LEAP) Test Scores”, which is being conducted by Carolyn Taylor-Ward. I understand that this data is being collected for Carolyn Taylor-Ward’s dissertation in partial fulfillment of the requirements for the degree of Doctor of Philosophy in the Department of Curriculum and Instruction at Louisiana State University. Ms. Taylor-Ward can be reached any time at (225) 936-0567 or by e-mail at cjtward@aol.com. Her supervising professor is Dr. Robert C. Lafayette, and he can be contacted during business hours at (225) 578-6867.

The purpose of this research is to examine the academic achievement among students who participate in the Louisiana elementary foreign language program. It investigates the role foreign language study plays in enhancing student achievement through the reinforcement of content area skills in which students take standardized tests.

I voluntarily agree to respond in writing to the questions in the enclosed survey regarding how I reinforce my foreign language students’ skills in other subject areas (math, history, geography, science, music, art etc.) through the medium of foreign language instruction, as well as factors contributing to the maintenance and success of my school’s foreign language program. In addition, should I be asked to provide further clarification, I will consider answering questions pertaining to factors contributing to the success of my foreign language program by briefly participating in either a phone or face-to-face interview with Carolyn Taylor-Ward. Face-to-face interviews would be conducted either at the teachers’ school or at a coffee shop at a location convenient to the teacher.

I am a foreign language teacher of student participants in the present study. I am an adult between the ages of 18-65. I understand that there are no risks to my health and well being if I agree to be a participant in this research. If at any time I cannot continue with the study, I am aware that I can contact Carolyn Taylor-Ward and withdraw. I also understand that I will not be financially compensated for my participation.

This study will allow school administrators, other educators, and educational policy makers to learn more about the benefits of foreign language study in the acquisition of basic skills achievement. I understand that all information in this research will be kept strictly confidential.

This 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 any questions about subjects’ rights or other concerns, I can contact the LSU Institutional Review Board at (225) 578-8692. I agree to participate in the study described above and acknowledge the researcher’s obligation to provide me with a copy of the consent form if signed by me.

Participant’s signature

Participant’s name (print)

Date

APPENDIX G

SAMPLE SURVEY LETTER

SAMPLE LETTER FROM FOREIGN LANGUAGE TEACHERS
TO OTHER CONTENT TEACHERS

Date _____

Dear _____,

I am asking for your help in determining whether there are particular content area skills you would like me to reinforce in my French/Spanish classes. The more exposure our students have to the concepts/skills on which they will be tested, the better prepared they will be to meet the challenges of the Iowa and LEAP tests. Research suggests that the study of foreign languages enhances students' cognitive development and performance in other academic areas. I invite you to talk with me about how what students are learning in French/Spanish class can reinforce skills they need to acquire in other academic subjects.

Please check the curricular area(s) you teach in which you feel reinforcement is most needed.

Math

Science

English Language Arts

Social Studies

Other (please specify) _____

Please indicate specific skills you would like your students to have extra practice with in French/Spanish class.

Would you be interested in collaborating with me to develop interdisciplinary lessons?

Yes

No

Please fill out this survey and return it to me by _____ (date) _____. Thank you for your assistance. I hope to hear back from you and would welcome the opportunity to work together.

Sincerely,

VITA

Carolyn Taylor-Ward was born to Joyce and Rayl Taylor in Olean, New York. After graduating from Portville Central School, she pursued a music degree in vocal performance at Susquehanna University. While completing a Bachelor of Art degree in French at the State University of New York at Fredonia, she was awarded a Fulbright Scholarship to study at the University of Grenoble in France and to teach English to French secondary students. After returning from France, she began a Master of Teaching Program at Indiana University where she was employed as an associate instructor of French. She moved to Louisiana to take a French teaching position in Livingston Parish and enrolled in a Master of Art program at Louisiana State University in the Department of Curriculum and Instruction, where she completed that degree in 1997. She then enrolled in the doctoral program in the same department. During her year of residency, she worked as a graduate assistant at the French Education Project with Holmes Interns and student teachers under the supervision of Dr. Denise Egéa-Kuehne.

Presently, Carolyn is employed at the Louisiana Department of Education as a Foreign Language Program Coordinator in the Division of Student Standards and Assessments.

Carolyn and her husband Roger have made their home in Baton Rouge. She will receive her Doctor of Philosophy degree from Louisiana State University on December 19, 2003.