1980

The Effect Of The Language Of Instruction On The Reading Achievement Of Limited English Speakers In Secondary Schools

William Anselmo Melendez

University of the Pacific

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THE EFFECT OF THE LANGUAGE OF INSTRUCTION
ON THE READING ACHIEVEMENT OF LIMITED
ENGLISH SPEAKERS IN SECONDARY SCHOOLS

A Dissertation
Presented to the
Faculty of the Graduate School
University of the Pacific

In Partial Fulfillment of the
Requirements of the Degree
Doctor of Education

by
William Anselmo Meléndez
Winter, 1980
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Dated March 24, 1980
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Additionally, to bilingual educators who gave of their time in order to improve the state of the art, and to the linguistically distinct students whose mother tongue is Spanish.
THE EFFECT OF THE LANGUAGE OF INSTRUCTION
ON THE READING ACHIEVEMENT OF LIMITED
ENGLISH SPEAKERS IN SECONDARY SCHOOLS

Abstract of the Dissertation

Purpose: The purpose of this study was to determine the effect that the language of instruction has on the reading ability of limited English speaking students at the secondary school.

Procedure: Reading test scores from several secondary school districts in California were subjected to statistical analyses to ascertain the effect that the language of instruction had on the reading ability of secondary students with a linguistically distinct background, namely, a Spanish mother tongue. Two dependent variables were used, English and Spanish reading test scores. The independent variable, reading instructional treatment, conducted in English, Spanish, or bilingually. The data was analyzed by ANCOVA and the post-hoc comparison of test means, Scheffe.

Conclusion: This study suggests mother tongue reading instruction of limited English speaking secondary students promotes literacy in the first language and has a positive effect on the reading ability in the second language. The improved literacy in the mother tongue promotes English language reading skills.

Recommendations: An improvement in the state of the art in bilingual, bicultural education is essential if this educational alternative is to become a viable phase of general education. Research designs that are compatible to the population to be studied should be explored and utilized. The assessment instruments that ascertain the student's language proficiency and basic skills achievement should be used as effective guides in selecting a course of studies that serves the educational interest of the student and his/her family. Administrators should utilize practices that aggressively recruit bilingual, bicultural, biliterate teachers. Site administrators, bilingual coordinators and bilingual staff should seek methods and techniques that promote and enable them to implement services to the linguistically distinct students that provide equal status to the mother tongue while the student learns the second language. A sequential non-graded language development program in both languages that incorporate an open entry/exit curriculum to foster an opening up of the traditional curriculum to any students in the secondary school should be developed and implemented by the staff working with the students.
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Chapter 1

INTRODUCTION

Limited and non-English speaking students have been "de-educated" of their language and culture in order to make them acceptable to receive an education in this country. Although the Spanish language has been in use here for centuries, each new Spanish-speaking generation must be "de-educated" of its mother tongue before formal education has generally been allowed to begin. A conflict of cultures in the schools of the Southwest has taken place, where the teacher is the conqueror and the linguistically-distinct student is the conquered. Through this forced acculturation process, Spanish speaking students have systematically rejected their families and themselves. With the eradication of the Spanish language and culture, the student is prepared to become a part of the dominant society.

Failure is a common bond that cements most of the culturally-distinct minorities in our country. A decade ago the Mexican American student in the Southwest was a

negative statistic in the sense that nearly one million Spanish speaking students did not complete the eighth grade.³ Ninety percent failed to graduate from high school.⁴ The first nation-wide effort to trace educational achievement of the Hispanic population indicates that they are consistently below their contemporaries in the rest of the nation in reading, science, mathematics, social studies, and career education.⁵

The founders of our country predicated their beliefs on the premise that the strength of the Republic rested upon a citizenry that was well educated. Their revolution was to provide freedom, equality, and justice. Today, education is being called upon to aid the American people in a renewed search for these ideals. Although education was to stress "Unum," it has begun to give way to the forces of "Pluribus," a political concept intended to further strengthen the Republic.⁶


The goals of education have not changed drastically in the past sixty years. According to a recent report from the National Education Association, the Seven Cardinal Principles enumerated at the turn of the century by the Commission on the Reorganization of Secondary Education are valid today. In addition, there is a growing awareness that the student's mother tongue is the key to literacy.

The Linguistically Distinct Student

Teaching the linguistically distinct student in a language that is not understood by him or her traumatizes, demoralizes, and degrades them during the learning experience. Not only is the vehicle of instruction incomprehensible, but an additional burden is placed on the students since they must repudiate a cultural identity when "English only" rules are imposed. This pervasive condition places the student in a disadvantaged position which becomes increasingly pronounced during the educational years. Factors such as these reinforce the failure syndrome and many students leave school at an early age. The dropout then becomes a statistical reference who had been an underachiever, low performer, and poor reader.


9 Phillip D. Ortega, "The Education of Mexican
Thonis, however, sees the Spanish speaker as someone who possesses strengths that benefit instruction. She suggests that this ethnically distinct child is generally cooperative, considerate and capable, with an interest in helping others. This student enjoys classroom activities that promote success, and is able to set aside personal need in deference to the needs of others. Thonis also implies that this student responds to attention and affection, and that his/her reserved nature is often miscalculated by the uninitiated teacher.¹⁰

Thonis also suggests that reading programs that were designed for native English speakers are totally unsuited to the reading needs of the native speaker of Spanish, who has a different sound and symbol system which interferes with a second language.¹¹ The grinding corrosive effect of repeated failure and frustration has made reading an unsatisfactory experience for students whose literacy needs can best be met by instruction in the dominant language of the student. The period of infancy, in which thousands of hours of sound saturation, language models, and opportunities for imitation, provides the child with a linguistic system that

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¹¹ Ibid.
has been internalized, and which should be used educationally. Like the speaker of English, the Spanish speaker has had to deal with oral language in the initial stages of development. During the educational progression the student requires instruction in writing and reading skills. Thonis suggests that for the Spanish speaker the task of learning to read and write Spanish can be a most satisfying and productive endeavor, since the initial phase of communication skills, the oral language, has been thoroughly internalized. It is now a matter of adding a new dimension, the written representation of the spoken language. Instead of having to deal simultaneously with two or three unknowns, i.e., English speech, print and attendant referents, the student has only to memorize the visual symbols of the Spanish writing system and associate them with the auditory symbols of oral Spanish. An added advantage to the Spanish speaker that is not available to the speaker of English is that there is a regular and consistent relationship between the written and spoken Spanish. The speech-print correlation, though not perfect, is dependable enough to create a sense of self-confidence in the student and belief in his own feelings of competence as a reader.\footnote{Ibid.}

Despite the conflicting data that exist on the optimum age for second language learning, there is reason to believe that a student experiences more interference
between language systems if the second is added before the first is completely developed. The role of the first language or mother tongue, sometimes referred to as the vernacular, is considered to be the irreplaceable instrument of education. Dr. Frank L. Stoval has pointed out that teaching in a language that is not the mother tongue produces confusion in the development of concepts, retards learning and can be the cause of difficulty for expressing oneself for the rest of one's life. Dr. Michael West contends that the non-use of the vernacular will bring about emotional instability, excessive negative behavior, artistic sterility and a diminuation of the creative power. Sir Henry Newbolt suggests that until the student has acquired a certain command of the mother tongue, no other language development is even possible. The noted Puerto Rican writer, Don Miguel Meléndez Muñoz, equally concerned about education in the mother tongue, states that teaching should be transmitted in the mother tongue and the study in the second language introduced only after the student has acquired a fundamental awareness of the mother tongue.

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15 Ibid. 16 Ibid. 17 Ibid., p. 90. 18 Ibid. p. 93.
The findings of a study conducted in the Highlands of Chiapas, Mexico, indicated that students who first learned to read in their mother tongue, before receiving instruction in a second language, read with greater comprehension in the second language, than those who received all reading instruction in the second language.\textsuperscript{19}

Other educators promote the use of the mother tongue because as well as lessening scholastic retardation, it strengthens the bond that exists between the home and the school. This minimizes the alienation of the family and linguistic community from the school community, which is the usual price for rejecting the mother tongue and subsequent assimilation into the dominant linguistic group. Developing strong literacy in the students' first language becomes a strong asset for them in adult life.\textsuperscript{20}

Bilingual educational programs foster the use of the mother tongue while language development in the second language is provided. These programs not only provide subject matter and concepts in the mother tongue and second language, but they develop student confidence, self-assurance and a positive identity with cultural heritage.\textsuperscript{21}


\textsuperscript{21}Curtis Harvey, "General Descriptions of Bilingual
Although the literature suggests that the mother tongue is essential to the educational and emotional development of limited English speaking students, the reality of a secondary education is that students must also dominate the English language if the secondary curriculum is to be open to them. In the state of California out of 200,832 teachers, there are approximately 2,500 certificated bilingual teachers, 1.25% of the total teacher population. Given this information, it seems reasonable to consider the notion that students taught in the mother tongue will improve their chances in a comprehensive high school. Finally, research also indicates that there is a positive transfer of basic skills, that are developed in the mother tongue, to the language of the host culture.

Statement of the Problem

There continues to be a disproportionate number of limited English speaking students whose reading achievement


23 Gustavo Gettner, Director, Bilingual Section of the Commission of Teacher Preparation and Licensing, personal communication, June 21, 1978.

scores are below the second quartile when measured by standardized, norm-referenced tests; and, in spite of current literature which suggests that bilingual approaches to instruction are more effective, limited English speaking students are generally taught in English without the support and reinforcement of their mother tongue. It seems clear that research specific to the needs of limited English speaking students in the area of reading is important if an impact is to be made on the achievement levels reflected by these students.

**Purpose of the Study**

The purpose of this study is to ascertain whether the use of the mother tongue, as a vehicle of instruction, is a more effective instructional technique to teach reading to limited English speaking students at the secondary level than is instruction in the language of the host culture.

**Procedures**

The students included in this study were classified by school personnel as limited English speakers if they met one of the following criteria. First, the students were classified as limited or non-English speakers during the October, 1977, census in which the San Diego Observation Assessment Instrument or any other instrument sanctioned by the State Department of Education was employed. Second, the students had a home language other than English and had obtained grade equivalents in norm referenced tests that
placed them two or more years behind the norming population in reading or language tests. Third, the students were classified as limited or non-English speakers by other tests such as Basic Oral Language Test (BOLT), the Language Assessment Scales (LAS), the Basic Inventory of Natural Language (FINL), the Language Assessment Battery (LAB), or the Inter-American Series of the Guidance Testing Associates.

Districts were selected from a list of secondary schools that offered bilingual instruction and who indicated a willingness to participate in the study. Reading, literacy classes, or content area reading classes taught in English, Spanish, or bilingually in grades seven through ten were included in this study.

Research Considerations

Assumptions. Through the statistical analysis of the reading test scores in English and Spanish, this study indicated the effect that the language used as a vehicle of instruction had on the reading ability of linguistically distinct students. There is the assumption that the identification process selected limited English speaking students and that reading test score data were objectively and accurately measuring the students' reading ability.

Limitations. Several variables which could confound the results of this study, but which may be minimized by student random assignment are teacher expertise, language bias, and attendance. If the teacher has the least or greatest
expertise in instructional delivery, it might bias the research results. If the student or parent were biased towards the language of instruction, the results might alter the test results. Attendance might also influence the test results.

Definitions

bilingual education -- The utilization of two languages as a vehicle of instruction.\(^{25}\)

language of the host culture -- The predominant language of a country whose language and/or culture differs from that of the immigrant, migrant, non or limited speaker.

linguistically distinct student -- A non-pejorative phrase to identify a student who speaks a language other than English that will be used to categorize the LES/NES students.

limited English speaker -- (LES) A student whose mother tongue is other than English and who is demonstrably behind English speaking peers in English language skills.\(^ {26}\) (An inclusive phrase for the non-English speaker.) (NES)\(^ {27}\)

maintenance program -- An instructional program which uses two languages, the students' mother tongue and the language of the host culture. Both languages are


\(^{26}\)U.S., Federal Register, (Friday, June 11, 1976), Vol. 41, No. 114, 23862.

\(^{27}\)Ibid.
valued equally as mediums of instruction throughout the students' educational life. 28

**mother tongue** -- The students' first language, the dominant language, the language of the home, the vernacular, the native language. 29

**transitional program** -- An instructional program which uses two languages, the students' mother tongue and the language of the host culture. The mother tongue is progressively phased out as the other language is acquired. 30

**Overview**

This study makes a contribution to curriculum and administrative practices in the secondary schools. In curriculum, the viability of bilingual education, with the attendant mother tongue as a vehicle of instruction, would be more readily accepted as an instructional strategy. Administratively, the master schedule reflects the diverse linguistic abilities of the differentiated staff that best meets the needs of a linguistically distinct student body. The generation of time lines for testing in two languages alerts the staff of the importance that other professionals place on language ability levels, whether they are in English or Spanish, for proper course placement. Establishing administrative guidelines so that a process for the selection of suitable materials, that reflects the community being served, is scrupulously followed. Additionally, this

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30 Cordasco, op. cit., o. 134.
study provides administrators with data that enables them to commit financial resources to bilingual education. This commitment provides other administrators and their staffs with greater acceptance for programs dealing with bilingual, linguistically distinct students.

In Chapter 1 the framework and background of the study was presented. In Chapter 2 the relevant literature is presented. Chapter 3 deals with the procedures of the study. The findings of this study are analyzed and presented in Chapter 4, Chapter 5, the final chapter, concludes this dissertation with a general summary, findings and conclusions as well as recommendations.
Chapter 2

REVIEW OF THE LITERATURE

In this chapter the literature on the relationship between the language of instruction and educational achievement will be examined. This literature involves several distinct areas. First, language has always been a significant issue in the politics of education partially because it is related to the broader question of cultural pluralism. Second, the program emphasis given the mother tongue instruction will be reviewed. Third, since there is some evidence to indicate that instruction in the mother tongue is superior to second language instruction, the role of the mother tongue and its relationship to reading, second language acquisition and attendant psychological aspects will be examined.

Politics of Language

Languages other than English have been used in the schools of the United States of America since the Colonial period to the present day. Immigrant groups brought their culture and language to the New World. As a result, bilingual, bicultural education has been an American tradition.
As we shall see, language has been a major stumbling block to the aspirations of immigrant groups who did not subscribe to the melting pot concept or instruction in the second language. These practices were foisted on the new arrivals under the guise of quick Americanization. As the new arrivals came with their different languages and customs, other citizens looked upon them with fear and suspicion.

The periods of world conflict gave impetus to these fears and apprehensions. Isolation renewed Americanization feelings and strengthened nationalism. Speakers of other languages were encouraged to discard their mother tongues and adopt English to attain the American dream.

This dream was seen by others in a different manner. The dream meant an America composed of different linguistic groups whose customs and culture would embellish the American fabric. The differences among people would reinforce the warp and woof of our country as it moved toward acceptance and full partnership of the linguistically distinct in guiding the country's future.

Cultural pluralism became the antithesis of the melting pot. Cultural pluralism could mean that the differences which existed in the population could be used to enhance educational opportunities that had been unequal to those who spoke a language other than English. Access to educational opportunities could mean that the attributes of the student population could be utilized in providing quality educational experiences.
Colonial Period to World War I

Non-English schooling during this period was the rule rather than the exception. Immigrant groups that settled the East and Midwest often established schools that used their respective mother tongues. Instruction in a language other than English was common throughout Pennsylvania, Maryland, Virginia and the Carolinas. English was taught as an academic subject while the student's mother tongue was used as the medium of instruction for all other subjects.¹

In the West, Spanish missionaries established religious schools which used the Indian's mother tongue and Spanish for instruction. Bilingual instruction continued to flourish in the Southwest right up to the period of annexation by the United States. The languages besides Spanish most frequently used in the classrooms were German, Norwegian or other Scandanavian languages, Dutch, Polish and French. German was used in a number of documents by the early Congress to make the acts of the Continental Congress more accessible to the large German population. French was used to print federal laws pertaining to the Louisiana territory.²

Citizens in the Midwest continued to support bilingual education in the public schools during the latter part of the 19th century. Bilingual, bicultural education provided a vitality to the educational process. Citizens


²Ibid.
persuaded the Ohio legislature to enact laws that required school boards to teach German. A St. Louis superintendent defended the use of German in schools. He stated that removal of the substance of the character, language or culture weakened the personality of the student. However, conflicting forces were at work during this period.

The melting pot theory and Americanization were two such opposing forces. The melting pot, a concept conceived by Crevecoeur, which suggested that society do away with ethic mores and values, was gaining momentum in public education. Through Americanization, immigrants would be welcome under the condition that they renounce their own culture and language and embrace Nordic American culture. While the Eastern United States was accepting these new dicta, other regions were oblivious to them.

The Southwest accorded the Spanish speaking the rights and privileges of citizenship under the Treaty of Guadalupe Hidalgo. The Cherokee Nation continued its high literacy rate through bilingual, bicultural instruction. Public funds converted a private Spanish institution in Florida into a semi-public, partially bilingual school. New Mexico passed a school law which recognized Spanish language elementary schools. At the turn of the century Roberts

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5Keller, op. cit., p. 1.
called attention to the failure of the system that had been employed to give Spanish speaking students of the Southwest an adequate knowledge of English. He cited other countries that had studied the problem of bilingualism and found that the mother tongue should be used as a medium of instruction. 6

On the one hand, as parts of the country expanded the use of languages other than English, the English language was incorporated in geographic areas where English was not the dominant language. Hawaii, Puerto Rico and the Philippines were directed to use English in the schools at the turn of the century. 7 As we drew closer to World War I the fear of Americans towards "hyphenates" contributed to the Americanization viewpoint. Americanization meant conformity to standards deemed American by the dominant forces in the nation. 8 Although German immigrants established German-English schools during 1870-1917 in Cincinnati, Indianapolis, and Hoboken, political tensions of World War I ended this respected American educational tradition. 9


World War I to the Present

At the outset of this period isolationism and nationalism were promoted and encouraged by English-only rules, while racist myths and stereotypes were generated. Against an ethnocentric backdrop, educators such as Cubberley denigrated people from southern and eastern Europe. The immigrant groups supported private schools to perpetuate their ethnic heritage. Legislation and court rulings provided pre-eminence to the use of English instruction. The Philippines were instructed to continue English language instruction after being granted independence by the United States. Puerto Rico was pressured into accepting English as the sole medium of instruction. There were only isolated situations in which an overt oppressive state policy aimed at the elimination of non-English languages was evident. However, influential individuals and groups exerted unofficial moral pressure upon language minority groups who used languages other than English. It was considered un-American to speak languages other than English.

After World War II, a resurgence of ethnic identity and interest in languages other than English changed American views. The military saw the need for communication in other languages. The federal government endorsed foreign languages


in the elementary schools and expansion of the nation's foreign language resources. The influx of Cubans into Florida promoted the use of Spanish as a vehicle for instruction in that state.\textsuperscript{13} Brown v. Board of Education promoted equal educational opportunity\textsuperscript{14} which led regulatory agencies, such as HEW, to promulgate the following:

School systems are responsible for assuming that students of a particular race, color, or national origin are not denied opportunity to obtain the education generally obtained by other students in the system.\textsuperscript{15}

HEW went on further to state:

Where inability to speak and understand the English language excludes national origin minority group children from effective participation in the educational program offered by a school district, the district must take affirmative steps to rectify the language deficiency in order to open its instructional program to these students.\textsuperscript{16}

States which had established an English only language policy were effectively foreclosing linguistically distinct students from equal educational opportunities. An education policy shift occurred during the late 1960's. New policies provided official recognition that cultural or linguistic differences existed in the United States. Local, state and federal policies encouraged the use of other languages in

\textsuperscript{13}Keller, op. cit., p. 2.
\textsuperscript{15}HEW Reg., 33 CFR Sec. 4955 (1954).
\textsuperscript{16}HEW Reg., 35 CFR Sec. 11595 (1965).
the classroom. 17 The California state legislature modified the education code which previously prohibited schools from using different languages as instructional vehicles in other than foreign language classes. 18 The federal government, through the Bilingual Education Act, ESEA Title VII, 1968, gave further impetus to bilingual education. Lau v. Nichols, 1974, along with several key U.S. Supreme Court cases, Keyes v. Denver Unified School District #1, Aspira v. Board of Education of the City of New York, and Serna v. Portales New Mexico School District, 19 provided legal sanction to this concept. Recognition that languages other than English had a place in American educational practices had been sustained. Most recently, at the federal level, President Jimmy Carter established a commission to promote the study of foreign languages and to make recommendations to stem their declining enrollments in educational institutions. 20

Unfortunately, the current perspective in the United States towards bilingual, bicultural education whether


18California Education Code, Chap. 3, Sec. 71 (1967).


transitional or maintenance, is one of anti-bilingual sentiment. Only a small percentage of our schools have responded to the needs of the linguistic minority students.21 During Senate hearings in preparation for the 1974 Bilingual-Bicultural Education Act, Senator Montoya from New Mexico stressed that in a democracy like ours, with a multicultural population, we should be making every effort to encourage bilingualism for all our children in all our schools, not only in private or expensive schools. The opportunity to learn to read, write, and speak in two languages is available to many students in Europe and other nations of the world.22

Senator Ted Kennedy acknowledged that as the fifth largest Spanish-speaking country in the world, the United States should not design educational programs to destroy the mother tongue and culture of the Hispanic population.23 The 1974 Bilingual-Bicultural Education Act set a standard for relative learning availability. Under this standard, a transitional approach, the mother tongue would be used until the individual student could progress as well as an English speaking peer in regular classes.24 Some communities grudgingly provided bilingual, bicultural education.25


22Ibid., pp. 46-48. 23Ibid., p. 61. 24Ibid., p. 163.

Additionally, boards of education rejected bilingual, bicultural educational federal monies despite community, teacher and administrative support.  

Some educators believe that pedagogical program considerations determine the goals in bilingual, bicultural education, but no less significant are social and political forces. Gaarder identified a fundamental distinction between voluntary bilingualism, developed in individuals, and obligatory bilingualism, which is a collective or group phenomenon. In the former, the person becomes bilingual of his own free will or that of his parents. In the latter, the group becomes bilingual out of a necessity to eat or survive.

Obligatory bilingualism, synonymous with assimilation, is prevalent in the United States of America, France, Spain and South America, except Paraguay. Gaarder expounded that the basic rationale for bilingual, bicultural education should be the fundamental human right for all people to rear and educate their children in their own image and language.

Gaarder's statements to the Special Subcommittee on Bilingual Education emphasized five major reasons why bilingual education should be supported. The first three dealt with the students' primary education. The other two applied to the


28 Ibid.
adult in terms of the potential career advantage as well as the conservation of a national resource.29

Fishman also considered language as a human resource, a resource vitally linked to the national resources of our great country, as important as any economic, mineral or agricultural resource. He posited that diverse languages should be treasured, cultivated, and offered in our schools. His contention was that a vibrant liberal democracy cannot continue to expand if we do not safeguard that which is deep within our bosom. Preserving the different language heritage of the people of a great country strengthens our way of living.30

This resource, the mother tongue of the linguistically-distinct student, was considered important in the implementation of federal and state mandates as well as for the enhancement of cultural pluralism. The State Board of Education provided direction to the State of California Department of Education with its policy on services to limited-English-speaking students. The policy stated that, as the student was taught English that he/she should also be taught other subjects in a language understandable to him/her and one that built upon the student's mother tongue and


culture. This policy was consistent with the Lau v. Nichols decision of the United States Supreme Court. As for cultural pluralism, Gonzalez claimed that the loss of the ethnic culture and customs of its diverse populace weakened the pluralistic character of the United States of America. Bacon asserted:

What consists of many and divided parts, is greater than that which consists of few parts, and is more entire; for all things considered by parts seem greater: wherefore both plurality of parts hath a shew of Magnitude; and the same Plurality works more strongly, if it be presented unto us without order; for it induceth a resemblance of Infinity, and hinders Comprehension.

Prado believed that bilingual education was a comprehensive educational approach that reflected a philosophy of cultural pluralism. This approach placed emphasis on maintenance of the student's mother tongue. Dolce stated that current education must be directed toward respecting and preserving or

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nourishing cultural differences in the school setting. Cultural pluralism was predicated by acceptance of the students' language, non-acceptance as intolerance, while the exclusive use of English as destructive to the students' ego and self-image.

This historical overview of the politics of language indicated its significance to education in general and the education of Hispanics in particular. Where there have been large concentrations of Hispanics, as in the Southwest, the history of education and language policy have been dominated by discrimination, segregation, exclusion and neglect. Under this backdrop, the intent to pursue a course of cultural pluralism gave the appearance of a modified form of Americanization. Program type or program emphasis has determined the education available to Hispanic students.

Program Emphasis and Mother Tongue Instruction

The kind of emphasis provided to the mother tongue

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has determined the focus of the program. Transitional programs have generally emphasized English while the maintenance types emphasized bilinguality. Legislation and judicial action have provided legal sanction to the concept of bilingual, bicultural education. It is through the program implementation that the vestige of Americanization becomes noticeable.

The Transitional v. Maintenance Approach

A predominant type of bilingual educational programming in the United States is the transitional-compensatory type where the student is provided instruction in the mother tongue until he or she has a grasp of the English language, at which time the student is expected to receive future instruction in English. This educational approach was contrary to the views of scholars; transitional-compensatory programs have few philosophical advocates. Additionally, there is a growing suspicion that such programs are doing more harm to native language mastery and to native community involvement than the good that might be done in academic achievement or English mastery.

A dichotomy exists at a time when researchers are contributing data that supports the 1953 UNESCO dictum which emphasized the mother tongue as the key to second language acquisition and academic achievement. The emphasis of the

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40 Fernandez, op. cit., p. 12.
41 Fishman, op. cit., p. 9. 42 Ibid., pp. 4-6.
Title VII Bilingual Education Act, from its inception a transitional program, is the teaching of English and not bilingualism, although bilingual education should provide equal emphasis in the mother tongue and the learning of English.43 Closely associated with the program emphasis controversy is a report written by the American Institute for Research that was to evaluate ESEA Title VII programs.

The AIR Report

An evaluation of the impact of ESEA Title VII Spanish/English Bilingual Education programs was conducted by the American Institute for Research (AIR). The four main objectives of the reported study were the following. First, it was to determine the impact of bilingual education on students in cognitive and affective domains in Spanish/English bilingual projects funded under ESEA Title VII. Second, it was to identify the educational practices which resulted in greater gains in student achievement. Third, it was to describe the educational processes operating in these projects, and fourth it was to determine per-student costs associated with each project.44 This report shaped public opinion at a time that was considered inopportune. The


state of the art for bilingual education was in its infancy and the Bilingual Education Act for 1978 was being heard in committee.\footnote{Ibid.}

The AIR report is not without its critics. Gray said that on the basis of this report, one is unable to decide to what extent the inadequacies of bilingual education are an artifact of measurement error, evidence of inherent limitation in production possibilities, a result of implementation problems, the result of slippage between treatment and goals, or the product of premature assessment.\footnote{Ibid.}

Cardenas wrote that the study was poorly conceived and poorly implemented.\footnote{Jose A. Cardenas, "AIR Evaluation of Bilingual Education," San Francisco, California: Development Associates, Inc., 1977. (Mimeographed.)} IDRA (Intercultural Development Research Association) conducted an analysis of the study and identified major discrepancies.\footnote{"Preliminary Report, IDRA Responses to the AIR Evaluation of the Impact of ESEA Title VII Spanish/English Bilingual Education Program." San Antonio, Texas: Intercultural Development Research Association, 1977. (Mimeographed.)} Chess and Associates presented a critical analysis which indicated serious problems with the definition of key terms, interpretation of results and overall evaluation design.\footnote{Edward J. Etherson, "Critique of the AIR Report on Bilingual Education." Paper presented at the California Association for Bilingual Education, Anaheim, California, 1978.} Cervantes suggested that there were political motivations tied to the Watergate
scandal and President Nixon when the evaluation contract was awarded to the American Institute for Research. He implied that the report had little or nothing to do with bilingual education in the state of California since only a limited number of sites were reviewed. Moreover, he cited flaws that were sufficient to render the AIR conclusions questionable for bilingual programs nationwide.\textsuperscript{50}

The differences between transitional and maintenance programs were not the major focus of the AIR report. The report alleged that, of the programs investigated, many were maintenance type programs when in fact the Bilingual Education Act of the previous years called for transitional programs. The Bilingual Education Act of 1978 continued a transitional program format.\textsuperscript{51}

The AIR report received wide coverage in the media. Newspapers, magazines and the broadcast networks published the aspect that was considered by some a supplanting of the English language with Spanish. The strong public reaction against the AIR finding that many Title VII programs were viewed by project directors as being maintenance programs is clear evidence about how the public felt on this issue.\textsuperscript{52}


\textsuperscript{51}The Bilingual Education Act: Public Law 95-561 Education Amendments of 1978 Title VII. Rosslyn, Virginia: National Clearinghouse for Bilingual Education, 1979, p. 3.

\textsuperscript{52}John C. Molina and Louis J. Sherpa, "A Call to
The public view was not necessarily shared by educators, scholars or researchers. From a social science perspective, Fishman suggested that American bilingual education move in more maintenance-oriented and enrichment-oriented directions since transitional-compensatory bilingual education was scheduled to self-destruct in the not too distant future.53

If the public cannot accept the universality of the mother tongue in bilingual, bicultural programs, evidence that supports its viability as an instructional alternative must be sought. The AIR report on transitional v. maintenance programs reactivated a language chauvinism which had confirmed beforehand.54 The transitional v. maintenance v. enrichment controversy should not be overlooked or set aside by the bilingual educator since the mother tongue in program goals and objectives must be linked to one of these approaches for program implementation and student achievement.

Mother Tongue Research:
Predecessor to Student Achievement

Much of our knowledge in school and throughout life is gained through reading, with a great part of the schools'

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curriculum dependent on reading. As previously cited, the linguistically distinct student has not prospered as well in reading as his English dominant peer. The culturally different student has posed a puzzling problem to the teacher because of a different mother tongue and sets of values which may conflict with school academic requirements.\textsuperscript{55} Additionally, the language of reading and reading readiness are considered an important preparation for any reading experience at any reading level.\textsuperscript{56} A review of the reading act might provide some clues for the teaching of the non English speaking or limited English speaking students.

The Reading Act

Historically, the methods of teaching reading have been described as synthetic, analytical and eclectic with today's methods generally falling under the latter category.\textsuperscript{57} Reading has also been defined as decoding the print into spoken language, understanding the printed language and the expansion into upper levels of language through written language.\textsuperscript{58} Other authors, notably Spache, rather than


\textsuperscript{56}Paul C. Burns and Betty D. Roe, Teaching Reading in Today's Elementary Schools, (Chicago: Rand McNally College Publishing Company, 1976), pp. 75-76.


\textsuperscript{58}Charles Child Walcutt, Joan Lamport and Glenn McCracken, Teaching Reading, (New York, New York: Macmillan
define the reading act listed the components of reading.\textsuperscript{59} It was also noted that the task of reading could be more easily accomplished if the language read closely resembled the language the student heard and spoke.\textsuperscript{60} The reading process was additionally described as one which began with the child's acquisition of language and with the experiences that this language symbolized.

The relationship between a speaker's knowledge of his language and his ability to read it was explained by Weber. She indicated that the tasks of learning a language and reading should be separated for students whose language lacks a correspondence between the language spoken and that which is to be read.\textsuperscript{61} It was suggested that the effects of instructions in a weaker tongue would be educationally deleterious. Several authors and researchers have suggested that the mother tongue was the most effective

\begin{itemize}
\item \textsuperscript{60} Ibid., pp. 14-16.
\end{itemize}
language to use to teach reading\textsuperscript{63, 64, 65, 66} to the linguistically distinct students.

**Instruction in the Mother Tongue**

The failure of the Hispanic students in an all English instructional setting, as previously documented, has led to alternative instructional modes. Educators and researchers are suggesting that an instructional mode that will provide greater benefits to these students is instruction in the mother tongue. As an example, the teaching of reading in the mother tongue allows the students to learn the task of reading and not a compound task, the learning of English as a second language in addition to reading.\textsuperscript{67}

Students learning to read in their mother tongue have already learned most of the grammatical rules governing


\textsuperscript{64}Donald E. Critchlow, "Teaching All Children to Read," *Reading and the Spanish Speaking Child*, ed., Donald Critchlow, (Texas State Council of the International Reading Association, 1975), p. 10.


the use of their language. Knowledge of these rules, though subconscious, aids in decoding words and in reconstructing meaning. Modiano suggested that the road to reading success in the second language was best paved by a strong reading foundation in the mother tongue. She further emphasized that teachers should continue to employ the old adage: "Teach each child from where he is." Translated into bilingual pedagogical language it means that educators should utilize the student's mother tongue as a vehicle for formal instruction.

In a research study conducted in the Highlands of Chiapas, Mexico by Modiano, Indian students who were taught reading in their mother tongue while a control group was taught to read first in their mother tongue read with greater comprehension in the second language than the students who received all reading instruction in the national language. Gudschinsky noted that monolingual speakers of minority languages learned the second language when it was used as an instructional vehicle if they were first taught to read and write in the mother tongue. Gudschinsky's studies of Peruvian, Mexican and Vietnamese bilingual programs described

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68 Ibid., p. 52.


a high degree of success when the mother tongue conditioned the pupils to early successes. Success in early school experiences lead students to expect and obtain success in the transition to another language. She posited that utilization of the pupil's oral fluency in the mother tongue, in learning the skills of reading and writing, promoted literacy in the primary language. Conscious control of the mother tongue was shown to be valuable in second language acquisition.71

A Finnish study conducted in Sweden and reported by Paulston provided support for instruction in the mother tongue. This study concluded that nurturing of the mother tongue is essential to the education of students who do not speak the language of the host culture.72 Paulston found clear evidence that development in the mother tongue facilitated second language learning. She noted that there were serious implications that without such development neither language would be learned well, resulting in "semilingualism."73

Paulston identified a significant factor in Ramos' study concerning learning transfer. She suggested that the transfer of reading skills from language to language would be


73Ibid., p. 93
helpful in programs dealing with school dropouts. Possible dropouts should be taught to read in the mother tongue since language could be learned without instruction, but reading could not.\textsuperscript{74} Paulston reviewed dissertations that used standardized language arts achievement tests. These tests showed that bilingually instructed pupils mostly of Hispanic background, scored as well as or higher than the group receiving instruction only in the English language. They also scored higher in the Spanish language.\textsuperscript{75}

Although early experiments suggested that reading habits in one language should be thoroughly developed before other habits were introduced, little scientific data existed at the time.\textsuperscript{76} Christian suggested that an ideal pattern for second language literacy would indefinitely build upon mother tongue literacy as literacy in the second language was developed.\textsuperscript{77} Continuing to build upon the mother tongue as the second language was being learned might be equated as a maintenance type of bilingual, bicultural program. A recurring problem for the teacher has been determining the appropriate mastery level in the student's mother tongue before the second language is introduced.

\textsuperscript{74}Ibid., p. 107. \textsuperscript{75}Ibid., p. 115.
The Second Language and the Mother Tongue

The appropriate timing for the introduction of the second language is critical and crucial to continued literacy and educational development of the linguistically distinct student. Effective bridging of the gap between the first and second language means that consideration might be given to the sequence of language development in the mother tongue. Oral language development in the mother tongue is essential to literacy. Once literacy is developed in the mother tongue then an intensive program in oral language development in the second language should follow.78 Provision for skills transfer from one language to the other is possible with cognitive growth and access to knowledge through the stronger language. For students with general or specific learning disabilities, the priority should be communication or oral language mastery, not English literacy.79 Success in second language acquisition is predicated by a strengthened mother tongue whose foundation is built on an oral control which ultimately promotes reading and writing in the mother tongue.80 Other researchers have indicated that acquisition of second language skills in English follow the same order of


79 Ibid.

acquisition as that used while learning the mother tongue. 81,82

School district language arts sequencing and program development in both languages are important aspects in the total planning of the bilingual curriculum. Johnson suggested that English reading should be delayed until the student is taught to read the variety of language the student speaks. 83 The school's language arts program in the national language was identified as a major weakness that undermined the educational achievement of minority children. 84 Some educators have recognized the importance of a well articulated language arts program in both languages from kindergarten to the twelfth grade. 85

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The findings of studies on the mother tongue and the second language in the Philippines are not as clear as Modiano's and Gudschinsky's. Ramos, et al, drew a conclusion from the Iliola I experiment that the Filipino student taught in the mother tongue from the outset of his/her education, became literate in both the first and second languages. Students in the control group who were taught the second language from the beginning did not equal the experimental group's second language literacy. Another experiment reported by Ramos in Rizal disputed the Iliola I findings. Ramos concluded from these studies that a complementary action existed between the mother tongue and the second language. When one language complemented another, transfer of training between languages took place.

Some educators agree that it is important to first teach the student to recognize the sounds of the mother tongue on paper. The student then transcribes them and learns to read these sounds while receiving oral training in the second language. Once the students have mastered literacy in their mother tongue they are more receptive to learning to read and write in the second language.

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87 Ibid., p. 112.  
88 Ibid., p. 63.
An earlier study conducted in Puerto Rico corroborated these findings. The study suggested that it was beneficial for students to have a basic foundation in their mother tongue before an attempt was made to teach them English. Butler supported this viewpoint and reiterated that the mother tongue should not be neglected by any class of students. There is a growing awareness in the United States that many non-English speaking students were not best served by immersion in monolingual-English education.

The literature has suggested that once the sequence of literacy in the mother tongue is accomplished it becomes the prelude to the development of strategies for second language acquisition. However, during the process of cognitive development the affective domain may also play an important role in the overall language development of the linguistically distinct students.

Language and the Affective Domain

Learning one's mother tongue is accomplished after years of practice. Generally, the child who has learned a


language has developed an internal representation of a system of rules that determine how sentences are to be formed, used and understood.93 Mother tongue usage becomes obvious and important as a vehicle for complex thinking. Allowing the student to use and develop the language best known promotes self-worth and validates his/her language and culture. A student faced with a task of expressing new ideas and thought through a second language that has not been fully acquired and developed, might never learn to express himself/herself well.94

Learning to read and write is closely linked to the spoken language. Literacy cannot be isolated from the mastery of language as a whole. Learning the mother tongue is not learning the sounds of words or structures; it is learning how to mean.95 Development in the language of greatest familiarity is necessary for expanded horizons.96 Rejection of this language promotes conflict within the familial structure as well as physical and psychological

Different social groups reflect language attitudes about other languages that were classified by Simon as language chauvinism. They consider their language to be better than other languages. Language is an historical product. Consequently no one language is better, more logical or more beautiful than any other. Valuing the student's language while he learns a second language promotes a positive self-concept, a major goal of education.\(^9\)\(^8\) Since language is central to learning, and intellectual ability seems to have little to do with ability to learn a language, a successful bilingual educational program must also be bicultural, with no ethnocentrism from either language or culture.\(^9\)\(^9\) Bilingual programs operate on the premise that the bilingual student can learn, thereby negating previously held expectations that were based on the supposed learning disability of the bilingual student.\(^10\)\(^0\) It has been reported


\(^10\)\(^0\)Carlos M. Rodriguez, "The Bilingual School: An
that the very respect accorded by educators to the student's mother tongue has paved the way for second language literacy and learning. Educators have suggested that the students could be maintained at the proper grade level with mother tongue instruction while English was learned. This theoretically avoided the psychological trauma of language isolation and the sacrifice of academic progress as factors in the affective domain.

Aspects that continued to surface in the literature suggested that achievement of the linguistically different students was controlled by several factors besides the mother tongue and the second language. A review of these aspects is presented in a condensed fashion by other researchers.

Other Aspects to Consider

The varied educational experiences provided by school districts are determined by factors beyond the students' control. The personnel hired, classroom environment, program quality, number of years as a program participant, pupil/teacher ratio are but a few of these factors.


In a survey on the use of vernacular languages Engle reported that there was neither a clear direction nor a mutual, consistent pattern emerging in the studies reviewed. Notable among the studies surveyed were Modiano, 1968; St. Lambert Experiment, 1972; Iliolo I and Rizal, 1967 and Uganda, 1971.103 Engle reported eight basic generalizations that were inherent in the studies surveyed which may have implications for this study.

First, teaching second language literacy without oral language training was not likely to succeed. Second, bilingual programs did not have a deleterious effect on the student's mother tongue development. Third, although there may be an initial slower rate of progress, program effectiveness increased with the number of years that it was in operation. Fourth, the ethnicity of the teacher and training apparently had some effect on learning. Fifth, instruction in the mother tongue during earlier school years was apparently more effective. Sixth, success in language instruction was predicated on a complex fabric that differed with each situation. Seventh, the Hawthorne effect altered results when it was not taken into consideration. Finally, some studies observed a transfer from one language to another in the absence of any teaching in the second language.104


104 Ibid., pp. 18-19.
The placing of the linguistically distinct student in the proper course or section must be considered in program planning. An inability to accurately diagnose an aptitude correctly improperly placed some students in lower ability groups.¹⁰⁵ No single assessment of student language performance should be considered as an adequate measure of competence.¹⁰⁶

Several researchers documented the following factors. One is the teacher's ethnicity. Students did not learn to read from dominant group teachers.¹⁰⁷ A second factor dealt with language learning. Language need not be learned in a formal manner. Better language learning took place when a creative construction of new language was promoted as a medium of instruction.¹⁰⁸ Another factor was the positive outcome attributed to bilingual instruction.¹⁰⁹ Consistent


¹⁰⁹ Jose Olesini, "The Effect of Bilingual Instruction
negative outcomes associated with linguistics inadequacy, in the context of American education, are ample justification for the learning alternative of instruction in two languages. When the similarities and differences of the two languages were identified, as in a bilingual program, interference between the two languages was minimized.

Qualitative thoughts on bilinguality, previously thought of as negative and counterproductive, are changing. Research studies of bilingual programs in Santa Fe, New Mexico indicated a student increase in English language capability, with matched or surpassed scores on national norms in reading and mathematics. Bilingual students have performed better on verbal and non-verbal I.Q. tests, a reversal of previous findings. Qualitative thoughts and reversals notwithstanding, a basic goal of education has been met by

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112 Philip Miller and Mariano Romero, Longitudinal Study Title VII Bilingual Program Santa Fe Public Schools, Santa Fe, New Mexico, Monograph of the National Dissemination and Assessment Center, (Los Angeles: California State University, Los Angeles, June, 1978), pp. 9-13.

bilingual educational programming, namely, that a purported negative self-image of the bilingual student had been counteracted. 114

Educational institutions responding to meet the needs of the linguistically distinct students have subscribed to varying goals. The California Master Plan for Bilingual, Bicultural Education described a process to achieve one of these goals. The process is to utilize the student's mother tongue as the principal source of instruction while systematically and sequentially teaching him or her the language of the host culture. 115 Using the mother tongue as the principal source of instruction avoids what research had increasingly revealed, a deprivation, coupled with cultural and linguistic rootlessness, a crisis of identity and social estrangement. 116

Summary

In this chapter the literature and research related to this study were reviewed and reported. Language as a significant political issue with its broader implication of


cultural pluralism was discussed. Although languages other than English had been in use by certain groups since the Colonial period, the period of noticeable English prominence came at the turn of the twentieth century. During this period the melting pot concept, the Americanization of immigrants, isolationism and nationalism were prevalent. As American educational thought expanded to geographic areas where English was not the indigenous language, English language chauvinism prevailed. It was not until after the second World War that broader segments of the American population became interested in other languages or ethnic identity. During the 1960's official recognition that linguistic and cultural differences existed was promoted by legislative and judicial actions.

The educational program emphasis, in relation to mother tongue instruction, was documented. Educators, researchers and scholars favored maintenance or enrichment bilingual, bicultural educational programs while the public view, promulgated through legislative action, produced a transitional program emphasis. The controversy over the timeliness of the AIR report on ESEA Title VII program evaluation was presented. The broad spectrum of critique, from varied sources, ranged from accusations that the report was politically motivated, with ties to Nixon's reelection campaign fund, to poor research design. Numerous studies were cited that provided favorable educational reasons for the utilization of the mother tongue in the development of
sequential language arts programming while the second language was being learned.

Bilingual, bicultural education was an educational alternative promoted by documented failure of our schools with regards to linguistic minorities. High drop-out rates, low basic skills scores on achievement tests and attendant psychological trauma promoted instructional change. Pertinent research on instruction in the mother tongue indicated affective and cognitive benefits for the linguistically distinct students. Notable among the research efforts that supported this contention were several studies. Modiano (1968, 1973) noted that students in Chiapas, Mexico read the national language with greater comprehension when the initial reading instruction was in the mother tongue. Gudschinsky (1971) described how an initial success from mother tongue instruction promoted subsequent success in a second language. Ramos (1967) reported two studies in the Philippines. The first study indicated that literacy in two languages was possible when instruction was initiated in the mother tongue. The second study disputed the original findings but Ramos concluded that there were complimentary actions taking place between the mother tongue and the second language.

Paulston (1977) reported that a Swedish study suggested that Finnish migrant students whose mother tongue was well developed before introduction into a second language learned the second language with greater facility. She noted that without the mother tongue foundation neither language
would be well learned, resulting in semilingualism. Her review of Ramos' work identified a positive learning transfer in reading.

A study conducted in Puerto Rico by Columbia University in 1925 was supportive of mother tongue instruction since it provided a strong foundation for second language acquisition. Olesini (1971) reported that bilingual education provided positive outcomes. Other studies by Thonis (1977), Ramirez (1974), Engle (1975) and Burt and Dulay (1975) provided supportive evidence for strengthened mother tongue instruction as the predecessor to second language learning.

In Chapter 3 the procedures used to conduct this study will be explained. Chapter 4 will analyze the data while Chapter 5 provides a summary of the research effort with recommendations for secondary school bilingual, bicultural programs.
Chapter 3
PROCEDURES OF THE STUDY

In this chapter the procedures used to conduct the study are presented. The chapter is divided into four parts: the Population, Data collected, Research Design and Summary.

The Population

In order to select a sample population for this study, twenty-five letters were sent to school districts in the state of California which were providing bilingual education as part of their instructional program. The names of these districts were secured from a directory published by the Bilingual-Bicultural Education Section of the California State Department of Education. The directory identified those school districts which received funding under AB 2284 and ESEA Title VII.

The school districts were selected on the basis of three questions. The first question was whether reading, literacy skills, content area reading, and/or language arts was taught in Spanish, the student's first language. Second, whether the school district had gathered pre-post test scores in English and Spanish for the school years 1977-1978,
and/or 1978-1979. Third, whether the school district wanted to participate in the study and would supply the needed data. Of the fifteen school districts that responded, only five met the three point criteria. The most difficult criterion to meet was the second. School districts either had pre-post test scores in English or in Spanish, but not in both languages. A sample letter appears in Appendix B.

School Districts

In Table 1 district enrollment information, percentage of Hispanics, percentage of limited and non English speaking students are presented for the five districts. The Southern California school district, District A, is situated near an urban center. It provided remedial reading instruction in Spanish reading to the Spanish speaker at the junior and senior high level. The reading program included a spectrum of student reading from non-literate junior and senior high school to those reading at the fifth grade level. The reading course was designed to introduce the Spanish speakers to reading and writing in their mother tongue. Classroom instruction covered the areas of readiness, phonics, structural analysis, comprehension, sight vocabulary and writing. Vocabulary and critical reading and writing skills were stressed. Instruction was in small groups or on a one-to-one

1Norman Gold, consultant with the California State Education Department of Office of Bilingual-Bicultural Education at Sacramento, California. Personal communication of April 7, 1979.
ratio in order to deal with individual differences. A ratio of one adult to ten students was maintained wherever possible. A comparable course in English reading was provided in other schools in the district that did not offer reading instruction in Spanish.

Table 1
Enrollment Data Reported to California State Department of Education

<table>
<thead>
<tr>
<th>District</th>
<th>District Enrollment</th>
<th>Percent of Hispanics</th>
<th>Percent of Limited English Speakers</th>
<th>Percent of Non-English Speakers</th>
</tr>
</thead>
<tbody>
<tr>
<td>&quot;A&quot;</td>
<td>23,651</td>
<td>34.2</td>
<td>5.3</td>
<td>1.5</td>
</tr>
<tr>
<td>&quot;B&quot;</td>
<td>9,336</td>
<td>31.0</td>
<td>2.8</td>
<td>1.4</td>
</tr>
<tr>
<td>&quot;C&quot;</td>
<td>2,313</td>
<td>63.2</td>
<td>6.9</td>
<td>3.5</td>
</tr>
<tr>
<td>&quot;D&quot;</td>
<td>2,092</td>
<td>7.3</td>
<td>11.2</td>
<td>0.0</td>
</tr>
<tr>
<td>&quot;E&quot;</td>
<td>26,335</td>
<td>29.6</td>
<td>4.9</td>
<td>1.1</td>
</tr>
</tbody>
</table>

One of the central California districts, District B, is a trading center on the central coast with agriculture and business as major contributors to the community economy. A reading course is offered to junior and senior high school students whose pre-test scores on a standardized test place them below the first or second quartile for their respective grade level. The students may select bilingual reading or regular reading in the junior high school and high school. Instruction in either reading course is provided by a teacher.
and an instructional aide. A ratio of one adult to eleven students was maintained whenever possible.

The third district, District C, is the most rural of the five school districts. Its location is in the central valley of central California. Agriculture and light manufacturing are the major contributors to this area's economy. A reading course in Spanish is offered to non-English and limited English speaking students in grades 7 and 8. A remedial reading course is offered to the non English speaker who may also be a non reader. A developmental reading course is offered to the limited English speaking student. The adult to student ratio is maintained between 10 or 12 to 1.

The fourth district, District D, is located in a large urban area in Central California. The district's high school has a student population who consistently perform below district and national norms for standardized tests. The influx of students whose dominant language is not English was considered a contributing factor to the decline in test scores. Students who are non English speakers are enrolled in English-as-a-Second Language. Students who spoke English as a second language were enrolled in remedial English classes. Content area reading courses were taught bilingually in social studies and science. The ninth graders took social studies and the tenth graders took science.

The fifth district, District E, is similar to District B. It is a trading center in the central California valley. Agriculture and business are an integral part of the
economic community. Limited English speaking students are enrolled in bilingual classes and English-as-a-Second Language. The bilingual classes were content area courses of the secondary school curriculum. A two semester course, Spanish for the Spanish speakers, was designed for native speakers of Spanish. It emphasized grammatical structure of the language as well as reading and writing skills.

The Students

The students in this study were classified as Hispanic by school district personnel after the parent or guardian completed an ethnic/racial survey which identified the student in this category. An Hispanic as defined on Form R-30 of the California State Educational Department, is a Mexican, Puerto Rican, Cuban, Central or South American, or other Spanish Culture or origin, regardless of race.

Additionally, these students were classified as limited English speaking if they met one of the following criteria. First, the students were classified by trained district personnel as non or limited English speakers during the October, 1977, census in which the San Diego Observation Assessment Instrument (SDOAI) was employed. Second, the students had a home language other than English as determined by parents or guardians on a Home Language Survey, and had obtained grade equivalents in a norm-referenced test that placed them two or more years behind the norming population in reading tests. Third, the students had been classified as
limited or non English speakers by other tests such as the Basic Oral Language Test (BOLT), the Language Assessment Scales (LAS), the Basic Inventory of Natural Language (BINL), or a test selected by the district to meet Lau requirements.

The grade levels of the students in this study were from the seventh through the tenth grade in the selected secondary schools. These students were enrolled in a reading course, a content area reading course, or a language arts course, whose fundamental function was the teaching of reading to limited English speaking students. The classes used Spanish as the language of instruction, English as the language of instruction or a combination of both languages.

Data Collected

The data collected came from pupils' reading test scores in English and/or Spanish. Each district in this study selected its own student evaluation instrument. There was no control over which tests were to be employed to assess student progress. In Table 2, the assessment instrument used by each of the school districts is presented.

Each assessment instrument generated raw scores which were converted to percentile ranks according to the technical manuals for each tests. This score transformation was used to facilitate comparisons of scores among the different instruments. A linear transformation procedure was used to assure similarity to the original raw
The relationship of percentiles, standard deviations and a standard-score scale with a mean of 100 and standard deviation of 15 is presented in Table 3.

### Table 2
Assessment Instruments Used by Districts

<table>
<thead>
<tr>
<th>District</th>
<th>Assessment Instruments</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>CTBS</td>
</tr>
<tr>
<td></td>
<td>E S</td>
</tr>
<tr>
<td>A</td>
<td>X X</td>
</tr>
<tr>
<td>B</td>
<td>X X X</td>
</tr>
<tr>
<td>C</td>
<td>X X X X</td>
</tr>
<tr>
<td>D</td>
<td>X X</td>
</tr>
<tr>
<td>E</td>
<td>X X X X</td>
</tr>
</tbody>
</table>

**Key**
- CTBS - Comprehensive Test of Basic Skills
- LAB - Language Assessment Battery
- INTER - Inter-American
- SDRT - Stanford Diagnostic Reading Test
- MAT - Metropolitan Achievement Test
- NEL - The Nelson Reading Test
- E - English Version
- S - Spanish Version

---


Table 3

Approximate Standard Score Equivalents of Percentiles in a Normal Distribution (Standard score scale with mean of 100 and standard deviation of 15)

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>99 135</td>
<td>74 110</td>
<td>49 100</td>
<td>24 89</td>
</tr>
<tr>
<td>98 131</td>
<td>73 109</td>
<td>48 99</td>
<td>23 89</td>
</tr>
<tr>
<td>97 128</td>
<td>72 109</td>
<td>47 99</td>
<td>22 88</td>
</tr>
<tr>
<td>96 126</td>
<td>71 108</td>
<td>46 98</td>
<td>21 88</td>
</tr>
<tr>
<td>95 124</td>
<td>70 108</td>
<td>45 98</td>
<td>20 87</td>
</tr>
<tr>
<td>94 123</td>
<td>69 107</td>
<td>44 98</td>
<td>19 87</td>
</tr>
<tr>
<td>93 122</td>
<td>68 107</td>
<td>43 97</td>
<td>18 86</td>
</tr>
<tr>
<td>92 121</td>
<td>67 107</td>
<td>42 97</td>
<td>17 86</td>
</tr>
<tr>
<td>91 120</td>
<td>66 106</td>
<td>41 97</td>
<td>16 85*</td>
</tr>
<tr>
<td>90 119</td>
<td>65 105</td>
<td>40 96</td>
<td>15 84</td>
</tr>
<tr>
<td>89 118</td>
<td>64 105</td>
<td>39 96</td>
<td>14 84</td>
</tr>
<tr>
<td>88 118</td>
<td>63 105</td>
<td>38 95</td>
<td>13 83</td>
</tr>
<tr>
<td>87 117</td>
<td>62 105</td>
<td>37 95</td>
<td>12 82</td>
</tr>
<tr>
<td>86 116</td>
<td>61 104</td>
<td>36 95</td>
<td>11 82</td>
</tr>
<tr>
<td>85 116</td>
<td>60 104</td>
<td>35 94</td>
<td>10 81</td>
</tr>
<tr>
<td>84 115*</td>
<td>59 103</td>
<td>34 94</td>
<td>9 80</td>
</tr>
<tr>
<td>83 114</td>
<td>58 103</td>
<td>33 93</td>
<td>8 79</td>
</tr>
<tr>
<td>82 114</td>
<td>57 103</td>
<td>32 93</td>
<td>7 78</td>
</tr>
<tr>
<td>81 113</td>
<td>56 102</td>
<td>31 93</td>
<td>6 77</td>
</tr>
<tr>
<td>80 113</td>
<td>55 102</td>
<td>30 92</td>
<td>5 76</td>
</tr>
<tr>
<td>79 112</td>
<td>54 102</td>
<td>29 92</td>
<td>4 74</td>
</tr>
<tr>
<td>78 112</td>
<td>53 101</td>
<td>28 91</td>
<td>3 72</td>
</tr>
<tr>
<td>77 111</td>
<td>52 101</td>
<td>27 91</td>
<td>2 69</td>
</tr>
<tr>
<td>76 111</td>
<td>51 100</td>
<td>26 90</td>
<td>1 65</td>
</tr>
<tr>
<td>75 110</td>
<td>50 100</td>
<td>25 90</td>
<td>1 65</td>
</tr>
</tbody>
</table>

*84th %ile is S.D. above the mean; 16th %ile is S.D. below the mean.
Table 3 (Continued)

<table>
<thead>
<tr>
<th>Standard Deviations</th>
<th>2.1%</th>
<th>13.6%</th>
<th>34.1%</th>
<th>34.1%</th>
<th>Mean</th>
<th>13.6%</th>
<th>2.1%</th>
</tr>
</thead>
<tbody>
<tr>
<td>A Standard Score Scale</td>
<td>55</td>
<td>70</td>
<td>85</td>
<td>100</td>
<td>115</td>
<td>130</td>
<td>145</td>
</tr>
<tr>
<td>Percentiles</td>
<td>0.1</td>
<td>2.3</td>
<td>15.9</td>
<td>50</td>
<td>84.1</td>
<td>97.7</td>
<td>99.9</td>
</tr>
</tbody>
</table>

Instrumentation

The tests used to assess reading ability are considered to be reliable and valid. The reliability or validity was established by independent reviews or the author's statistical analysis. A short description of each test follows.

Language Assessment Battery (LAB III). This test was developed by the Office of Educational Evaluation of the Board of Education of the City of New York. Its development was under the supervision of Dr. Anthony J. Polemeni, Director, Office of Educational Evaluation. The test assesses reading, writing, listening comprehension and speaking in English and Spanish of children in kindergarten through grade twelve. The reading test, as defined by the author, is the recognition of morphological and syntactical
structures and comprehension of English and Spanish in grapheme form. The Language Assessment Battery is composed of three levels: Level I, grades K-2; Level II, grades 3-6; Level III, grades 7-12. Of the four subtests in Level III, shown in Table 4, test 1, 2 and 3 are group administered and test 4 is individually administered.

In Table 5, statistical information about the Language Assessment Battery is presented. The reliability coefficients, as reported in the technical manual of the Language Assessment Battery, are displayed. Two types of reliability are reported in this table. One is split-half estimates based on odd-even scores corrected for attenuation by the Spearman-Brown Prophecy formula (rII), and internal consistency based on Kuder-Richardson formulas 20 and 21 (rKR20, rKR21). The table also shows the Means, Standard Deviations, and Standard Errors of Measurement.5

Table 4
Language Assessment Battery Level III, Subtests, Items, and Time Administration

<table>
<thead>
<tr>
<th>Subtests</th>
<th>Items</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Test 1 Listening</td>
<td>30</td>
<td>approximately 8 minutes</td>
</tr>
<tr>
<td>Test 2 Reading</td>
<td>28</td>
<td>approximately 20 minutes</td>
</tr>
<tr>
<td>Test 3 Writing</td>
<td>20</td>
<td>approximately 8 minutes</td>
</tr>
<tr>
<td>Test 4 Speaking</td>
<td>14</td>
<td>approximately 5 minutes</td>
</tr>
<tr>
<td>Total</td>
<td>92</td>
<td>approximately 41 minutes</td>
</tr>
</tbody>
</table>

Table 5
Language Assessment Battery, Level III,
Reliability Coefficients, Mean, Standard Deviation,
and Standard Errors of Measurement

English - Level III - Reading

<table>
<thead>
<tr>
<th>Grade</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
<th>11</th>
<th>12</th>
</tr>
</thead>
<tbody>
<tr>
<td>( r_{KR20} )</td>
<td>.86</td>
<td>.86</td>
<td>.83</td>
<td>.87</td>
<td>.86</td>
<td>.82</td>
</tr>
<tr>
<td>( r_{KR21} )</td>
<td>.83</td>
<td>.84</td>
<td>.81</td>
<td>.86</td>
<td>.85</td>
<td>.79</td>
</tr>
<tr>
<td>( r_{II} )</td>
<td>.87</td>
<td>.87</td>
<td>.85</td>
<td>.87</td>
<td>.88</td>
<td>.85</td>
</tr>
<tr>
<td>Mean</td>
<td>22.07</td>
<td>23.53</td>
<td>24.63</td>
<td>24.45</td>
<td>25.16</td>
<td>25.16</td>
</tr>
<tr>
<td>S.D.</td>
<td>4.90</td>
<td>4.42</td>
<td>3.68</td>
<td>4.24</td>
<td>3.73</td>
<td>3.27</td>
</tr>
<tr>
<td>S.E.M.</td>
<td>1.83</td>
<td>1.65</td>
<td>1.52</td>
<td>1.53</td>
<td>1.40</td>
<td>1.39</td>
</tr>
</tbody>
</table>

Spanish - Level III - Reading

<table>
<thead>
<tr>
<th>Grade</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
<th>11</th>
<th>12</th>
</tr>
</thead>
<tbody>
<tr>
<td>( r_{KR20} )</td>
<td>.91</td>
<td>.91</td>
<td>.91</td>
<td>.90</td>
<td>.88</td>
<td>.88</td>
</tr>
<tr>
<td>( r_{KR21} )</td>
<td>.91</td>
<td>.90</td>
<td>.90</td>
<td>.89</td>
<td>.88</td>
<td>.88</td>
</tr>
<tr>
<td>( r_{II} )</td>
<td>.92</td>
<td>.93</td>
<td>.92</td>
<td>.91</td>
<td>.89</td>
<td>.90</td>
</tr>
<tr>
<td>Mean</td>
<td>18.30</td>
<td>20.58</td>
<td>21.96</td>
<td>23.84</td>
<td>25.30</td>
<td>25.15</td>
</tr>
<tr>
<td>S.D.</td>
<td>7.07</td>
<td>6.51</td>
<td>6.05</td>
<td>5.04</td>
<td>4.01</td>
<td>4.11</td>
</tr>
<tr>
<td>S.E.M.</td>
<td>2.12</td>
<td>1.95</td>
<td>1.82</td>
<td>1.59</td>
<td>1.39</td>
<td>1.42</td>
</tr>
</tbody>
</table>
Comprehensive Test of Basic Skills (CTBS/S), (CTBS/T). This test was written by teachers of the appropriate grade level in cooperation with curriculum and testing specialists of the CTB/McGraw-Hill Publishing Company. It is designed to measure comprehension and application of concepts and principles in reading, language, mathematics, and reference skills. The subtests are in English. Although there are seven levels, only the latter two, Level 3 and Level 4 were used for grades 7-8 and 9-12, respectively. Two subtests, as indicated in Table 6, are group administered. The subtests were used to assess English reading ability. In Tables 7, 8 and 9, statistical information about Form S and Form T are presented. In Table 7 reading reliability coefficients are presented and in Tables 8 and 9 grade equivalent means, standard deviations, medians and the standard errors of mean are also presented for reading. An independent reviewer rated the KR20 within grades at .77-.92 with a median of .89 for this test.

CTBS - Prueba Comprensiva de Destrezas Basicas - Nivel 3, Forma S y Nivel 4, Forma S. (CTBS/CB-EX-3-S y CTBS/CB-EX-4-S). These tests are Spanish adaptations and translations of the CTBS Level A, Form S through Level 4

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Form S, complete battery. The adaptation and translation was under the direction of Manuel Vizcaino of the Norwalk-La Mirada Unified School District and Antonio de Porcel, Adaptation Design Model. These tests were used in limited distribution for testing and experimental purposes. No statistical information was available for these tests.

**CTBS Espanol - Level 3.** This test is a Spanish-language adaptation of the CTBS/S Reading and Mathematics tests that were developed in the Norwalk-La Mirada Unified School District. In Table 10, comparisons between CTBS/S and CTBS Espanol are presented. In Table 11, subtests, items and time administration are presented. Technical information

**Table 6**

**Comprehensive Test of Basic Skills**

Forms S and T, Level 3 and Level 4, English, Reading, Subtests, Items and Time Administration

<table>
<thead>
<tr>
<th>Subtests</th>
<th>Items</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Test 1 - Reading Vocabulary</td>
<td>40</td>
<td>approximately 17 minutes</td>
</tr>
<tr>
<td>Test 2 - Reading Comprehension</td>
<td>45</td>
<td>approximately 40 minutes</td>
</tr>
<tr>
<td>Total</td>
<td>85</td>
<td>approximately 57 minutes</td>
</tr>
</tbody>
</table>

---

### Table 7

Comprehensive Test of Basic Skills, Form S and T, Level 3 and Level 4, English Reading, Reliability Coefficients

<table>
<thead>
<tr>
<th>Test or Total</th>
<th>Level 3</th>
<th>Level 4</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Grade 6.7 7.7 8.7</td>
<td>Grade 8.7 9.7 10.7 11.7 12.7</td>
</tr>
<tr>
<td>CTBS/S</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Reading Vocabulary</td>
<td>.91 .93 .94</td>
<td>.90 .91 .92 .92 .92</td>
</tr>
<tr>
<td>Reading Comprehension</td>
<td>.91 .92 .93</td>
<td>.90 .91 .91 .91 .92</td>
</tr>
<tr>
<td>TOTAL READING</td>
<td>.95 .96 .96</td>
<td>.94 .95 .95 .95 .95</td>
</tr>
</tbody>
</table>

| CTBS/T                 |                |                |
| Reading Vocabulary     | .90 .92 .93    | .87 .89 .91 .92 .92 |
| Reading Comprehension  | .90 .92 .92    | .90 .91 .91 .91 .90 |
| TOTAL READING          | .95 .95 .96    | .93 .94 .95 .95 .95 |
Table 8

Comprehensive Test of Basic Skills, Form T,
English Reading, Grade Equivalent Means, Standard Deviations,
Medians and Standard Errors of Measurement

<table>
<thead>
<tr>
<th>LEVEL 3</th>
<th>NO. OF ITEMS</th>
<th>TEST OR TOTAL</th>
<th>GRADE 6.7</th>
<th>GRADE 7.7</th>
<th>GRADE 8.7</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Mean</td>
<td>SD</td>
<td>Median</td>
</tr>
<tr>
<td>Reading</td>
<td>Vocabulary</td>
<td>40</td>
<td>6.8 2.54</td>
<td>6.71</td>
<td>0.80</td>
</tr>
<tr>
<td>Reading</td>
<td>Comprehension</td>
<td>45</td>
<td>6.9 3.05</td>
<td>6.62</td>
<td>0.94</td>
</tr>
<tr>
<td>Total</td>
<td>Reading</td>
<td>85</td>
<td>6.9 2.71</td>
<td>6.67</td>
<td>0.61</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>LEVEL 4</th>
<th>NO. OF ITEMS</th>
<th>TEST OR TOTAL</th>
<th>GRADE 8.7</th>
<th>GRADE 9.7</th>
<th>GRADE 10.7</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Mean</td>
<td>SD</td>
<td>Median</td>
</tr>
<tr>
<td>Reading</td>
<td>Vocabulary</td>
<td>40</td>
<td>8.7 2.98</td>
<td>8.76</td>
<td>1.07</td>
</tr>
<tr>
<td>Reading</td>
<td>Comprehension</td>
<td>45</td>
<td>8.5 3.43</td>
<td>8.71</td>
<td>1.09</td>
</tr>
<tr>
<td>Total</td>
<td>Reading</td>
<td>85</td>
<td>8.6 3.05</td>
<td>8.69</td>
<td>0.78</td>
</tr>
</tbody>
</table>
Table 9
Comprehensive Test of Basic Skills, Form S,
English Reading, Grade Equivalent Means, Standard Deviations,
Medians and Standard Errors of Measurement

<table>
<thead>
<tr>
<th>LEVEL 3</th>
<th>NO. OF ITEMS</th>
<th>TEST OR TOTAL</th>
<th>GRADE 6.7</th>
<th>GRADE 7.7</th>
<th>GRADE 8.7</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean SD Median SEM</td>
<td>Mean SD Median SEM</td>
<td>Mean SD Median SEM</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Reading Vocabulary</td>
<td>40</td>
<td>6.8 2.54 6.69 .96</td>
<td>7.7 2.76 7.69 .76</td>
<td>8.6 2.88 8.71 .74</td>
<td></td>
</tr>
<tr>
<td>Reading Comprehension</td>
<td>45</td>
<td>6.9 3.06 6.62 .91</td>
<td>7.6 3.22 7.71 .90</td>
<td>8.4 3.29 8.70 .89</td>
<td></td>
</tr>
<tr>
<td>TOTAL READING</td>
<td>85</td>
<td>6.9 2.72 6.65 .59</td>
<td>7.7 2.89 7.68 .59</td>
<td>8.6 2.95 8.72 .58</td>
<td></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>LEVEL 4</th>
<th>NO. OF ITEMS</th>
<th>TEST OR TOTAL</th>
<th>GRADE 8.7</th>
<th>GRADE 9.7</th>
<th>GRADE 10.7</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean SD Median SEM</td>
<td>Mean SD Median SEM</td>
<td>Mean SD Median SEM</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Reading Vocabulary</td>
<td>40</td>
<td>8.6 2.98 8.72 .96</td>
<td>9.4 3.03 9.68 .90</td>
<td>10.4 2.89 10.69 .82</td>
<td></td>
</tr>
<tr>
<td>Reading Comprehension</td>
<td>45</td>
<td>8.5 3.42 8.73 1.11</td>
<td>9.1 3.46 9.59 1.05</td>
<td>10.2 3.25 10.73 .97</td>
<td></td>
</tr>
<tr>
<td>TOTAL READING</td>
<td>85</td>
<td>8.6 3.05 8.70 .74</td>
<td>9.3 3.08 9.68 .69</td>
<td>10.4 2.87 10.72 .63</td>
<td></td>
</tr>
</tbody>
</table>
in printed form was not available at this time. However, the following statistical information was available. In Table 11, means, standard deviations, reliability coefficients and standard errors of measurement are presented.9

Inter-American Tests. These tests were designed for use throughout the Western Hemisphere wherever a test in English or in Spanish may be desired. The test series includes Tests of General Ability and tests of reading at five levels extending from grade 1 through the high school, each in two forms in parallel English and Spanish editions. Test scores in English or Spanish, according to the publisher, are comparable one to the other. The Tests of Reading measure both Vocabulary and Comprehension. Comprehension is measured by two subtests: Speed of Comprehension and Level of Comprehension. Statistical tables presented by the publisher were originally designed to develop regional norms, and as such are illustrations rather than norms. Levels 3, 4 and 5 may be used for secondary students. In Table 13, subtests in the reading series, the number of items and the time necessary for group administration are indicated. In Table 14, reliability, mean scores and standard deviation for Forms CE, DE of Inter-American Tests of Reading, English Editions for Level 3 are indicated. In Table 15, reliability, mean

9Statement by Fredrick L. Finch, Senior Project Director, telephone conversation, CTB/McGraw-Hill, Monterey, California, February 9, 1979.
scores and standard deviations for Forms CE, DE of Inter-American Tests of Reading, Spanish Edition are indicated. An independent reviewer stated that great care was taken to secure parallelism in Spanish and English from the point of view of vocabulary, intrinsic difficulty of concepts, etc. The reviewer indicated that at the time, the test was superior to other tests currently available in the United States of America.

The Nelson Reading Test. This reading test has two forms, Form A and Form B. It provides educators with an opportunity to compare the achievement level of a pupil, class or school with national norms. The test also identifies students who are in need of additional work or special attention. It compares the student's level of reading achievement with his learning capacity. Two subtests measure vocabulary and reading comprehension. They were designed for use in grades three through nine. The test may be group administered. In Table 16, subtests, items and time administration are presented. In Table 17, reliability coefficients by grade, for each subtest and for the total are indicated. In Table 18, Pearson product-moment correlations computed are indicated as evidence of congruent validity between the

---


### Table 10

**Comparison Between CTBS/S and CTBS Espanol**

<table>
<thead>
<tr>
<th>Level</th>
<th>CTBS/S Grades</th>
<th>CTBS Espanol Grades</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>K.0 - 1.3</td>
<td>---</td>
</tr>
<tr>
<td>B</td>
<td>K.6 - 1.6</td>
<td>1</td>
</tr>
<tr>
<td>C</td>
<td>1.6 - 2.9</td>
<td>2</td>
</tr>
<tr>
<td>1</td>
<td>2.5 - 4.9</td>
<td>3 and 4</td>
</tr>
<tr>
<td>2</td>
<td>4.5 - 6.9</td>
<td>5 and 6</td>
</tr>
<tr>
<td>3</td>
<td>6.4 - 8.9</td>
<td>7 and 8</td>
</tr>
<tr>
<td>4</td>
<td>8.5 - 12.9</td>
<td>---</td>
</tr>
</tbody>
</table>

### Table 11

**CTBS Espanol, Level 3, Spanish Reading Subtests, Items, Time Administration**

<table>
<thead>
<tr>
<th>Subtests</th>
<th>Items</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prueba 1 Vocabulario de Lectura</td>
<td>40</td>
<td>approximately 17 minutes</td>
</tr>
<tr>
<td>Prueba 2 Comprension de Lectura</td>
<td>45</td>
<td>approximately 40 minutes</td>
</tr>
<tr>
<td>TOTAL</td>
<td>85</td>
<td>approximately 57 minutes</td>
</tr>
</tbody>
</table>
Table 12
CTBS Espanol, Level 3, Spanish Reading,
Means, Standard Deviations, Reliability Coefficients,
Standard Errors of Measurement

<table>
<thead>
<tr>
<th>CTBS Espanol, Level 3, Spanish Reading</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean</td>
</tr>
<tr>
<td>------</td>
</tr>
<tr>
<td>Reading Vocabulary</td>
</tr>
<tr>
<td>18.50</td>
</tr>
<tr>
<td>Reading Comprehension</td>
</tr>
<tr>
<td>18.50</td>
</tr>
<tr>
<td>Reading Vocabulary</td>
</tr>
<tr>
<td>21.80</td>
</tr>
<tr>
<td>Reading Comprehension</td>
</tr>
<tr>
<td>20.30</td>
</tr>
</tbody>
</table>

Table 13
Inter-American Reading Subtests, R-3-CE/DE, L-3-CEs/DEs,
English, Spanish; Subtests, Items and Time Administration

<table>
<thead>
<tr>
<th>Subtests</th>
<th>Items</th>
<th>Time (Exclusive of Directions)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Vocabulary</td>
<td>45</td>
<td>10 minutes</td>
</tr>
<tr>
<td>2. Speed of Comprehension</td>
<td>30</td>
<td>6 minutes</td>
</tr>
<tr>
<td>3. Level of Comprehension</td>
<td>50</td>
<td>25 minutes</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>125</strong></td>
<td><strong>41 minutes</strong></td>
</tr>
</tbody>
</table>
Table 14

Inter-American Tests of Reading, English Edition;
Reliability, Correlation of Forms CE and DE
Mean Scores and Standard Deviations

<table>
<thead>
<tr>
<th>Level</th>
<th>Part</th>
<th>r</th>
<th>Mean Scores</th>
<th>Standard Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>CE</td>
<td>DE</td>
<td>CE</td>
<td>DE</td>
</tr>
<tr>
<td>3</td>
<td>Vocab</td>
<td>.78</td>
<td>21</td>
<td>25</td>
</tr>
<tr>
<td></td>
<td>Speed</td>
<td>.83</td>
<td>13</td>
<td>15</td>
</tr>
<tr>
<td></td>
<td>Level</td>
<td>.87</td>
<td>26</td>
<td>28</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>.91</td>
<td>60</td>
<td>68</td>
</tr>
</tbody>
</table>

Table 15

Inter-American Tests of Reading, Spanish Edition;
Reliability, Correlation of Forms CE_s and DE_s
Mean Scores and Standard Deviations

<table>
<thead>
<tr>
<th>Level</th>
<th>Part</th>
<th>r</th>
<th>Mean Scores</th>
<th>Standard Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>CE_s</td>
<td>DE_s</td>
<td>CE_s</td>
<td>DE_s</td>
</tr>
<tr>
<td>3</td>
<td>Vocab</td>
<td>.69</td>
<td>12</td>
<td>16</td>
</tr>
<tr>
<td></td>
<td>Speed</td>
<td>.64</td>
<td>5</td>
<td>9</td>
</tr>
<tr>
<td></td>
<td>Level</td>
<td>.80</td>
<td>13</td>
<td>14</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>.87</td>
<td>31</td>
<td>39</td>
</tr>
</tbody>
</table>
**Table 16**

The Nelson Reading Test, Forms A and B Subtests, Items and Time Administration

<table>
<thead>
<tr>
<th>Subtests</th>
<th>Items</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Part One - Vocabulary</td>
<td>100</td>
<td>Approximately 10 minutes</td>
</tr>
<tr>
<td>Part Two - Paragraph</td>
<td>75</td>
<td>Approximately 20 minutes</td>
</tr>
<tr>
<td>Comprehension</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Total: 175 Approximately 30 minutes

**Table 17**

The Nelson Reading Test, Forms A and B Reliability Coefficients

<table>
<thead>
<tr>
<th>Grade</th>
<th>Vocab</th>
<th>Para</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>7</td>
<td>.84</td>
<td>.83</td>
<td>.88</td>
</tr>
<tr>
<td>8</td>
<td>.85</td>
<td>.88</td>
<td>.90</td>
</tr>
<tr>
<td>9</td>
<td>.86</td>
<td>.87</td>
<td>.92</td>
</tr>
</tbody>
</table>

**Table 18**

The Nelson Reading Test, Forms A and B Correlations with Subtests of the Iowa Tests of Basic Skills

<table>
<thead>
<tr>
<th>Grade</th>
<th>Nelson Subtest</th>
<th>ITBS Vocabulary</th>
<th>ITBS Paragraph</th>
</tr>
</thead>
<tbody>
<tr>
<td>8</td>
<td>Vocabulary</td>
<td>.88</td>
<td>---</td>
</tr>
<tr>
<td></td>
<td>Paragraph</td>
<td>---</td>
<td>.69</td>
</tr>
</tbody>
</table>
Table 19

The Nelson Reading Test, Forms A and B

Standard Errors of Measurement

<table>
<thead>
<tr>
<th>Grade</th>
<th>Raw Scores</th>
<th>Grade Equivalents</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Forms A</td>
<td>B</td>
</tr>
<tr>
<td>7</td>
<td>3.45</td>
<td>3.84</td>
</tr>
<tr>
<td>8</td>
<td>3.70</td>
<td>3.73</td>
</tr>
<tr>
<td>9</td>
<td>3.00</td>
<td>3.10</td>
</tr>
</tbody>
</table>

Nelson Reading Test vocabulary and paragraph comprehension scores and the Iowa Tests of Basic Skills vocabulary and paragraph scores. In Table 19, the standard error of measurement is reported in terms of raw scores and grade equivalents by grade for each form of the test and the combined forms. 12 An independent reviewer reported that the Nelson Reading Test was effective as a gross measure of reading achievement. The reviewer also stated that the test appeared to be reliable and when compared to other reading tests, it gave some evidence of validity. 13


Metropolitan Achievement Tests (Advanced). This test was designed to tell educators how much pupils have learned in important content and skill areas of the school curriculum. It is for grades 7.0 through 9.5. There are three forms of the tests: F, G and H. All forms are comparable in difficulty and content, are equally good measures of the respective subjects, and give comparable results. The two subtests that were used are Word Knowledge and Reading. In Table 20, subtests, items and time administration are presented. In Table 21, reliability data and standard errors of measurement are presented. An independent reviewer rated the reliability for each subtest between .79 - .96.

Table 20

Metropolitan Achievement Tests, Advanced,
Subtests, Items and Time Administration

<table>
<thead>
<tr>
<th>Subtests</th>
<th>Items</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Word Knowledge</td>
<td>50</td>
<td>Approximately 15 minutes</td>
</tr>
<tr>
<td>Reading</td>
<td>45</td>
<td>Approximately 25 minutes</td>
</tr>
<tr>
<td>Total</td>
<td>95</td>
<td>Approximately 40 minutes</td>
</tr>
</tbody>
</table>

15 Ibid., p. 18. 16 Buros, op. cit., p. 797-86.
Table 21
Metropolitan Achievement Tests, Advanced
Reliability Coefficients and Standard Errors of Measurement by Raw Score, Standard Score, Grade Equivalent

<table>
<thead>
<tr>
<th>Test</th>
<th>Rke</th>
<th>RH</th>
<th>Standard Errors of Measurement</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>RS</td>
<td>SS</td>
<td>CE</td>
</tr>
<tr>
<td>Word Knowledge</td>
<td>.93</td>
<td>.93</td>
<td>2.7</td>
</tr>
<tr>
<td></td>
<td>3.8</td>
<td>.5</td>
<td></td>
</tr>
<tr>
<td>Reading</td>
<td>.92</td>
<td>.93</td>
<td>2.5</td>
</tr>
<tr>
<td></td>
<td>4.2</td>
<td>.6</td>
<td></td>
</tr>
<tr>
<td>Total Reading</td>
<td>.96</td>
<td>.97</td>
<td>3.5</td>
</tr>
<tr>
<td></td>
<td>3.0</td>
<td>.4</td>
<td></td>
</tr>
</tbody>
</table>

Stanford Diagnostic Reading Test (Level II). This test was designed to be group administered for grade 4 to the middle of grade 8. The instrument identifies the fundamental skills of reading. Level II is considered to be valuable when used with poorly performing high school students. The test content and suggestions for use of the results are based on the general assumption that in order to improve pupil competence in a certain area, it is first necessary to find out what learning problems the students have and then try to eliminate these as efficiently as possible. The two subtests that were used are Reading Comprehension and Vocabulary. Table 22 indicates the time administration, exclusive of instructions, as well as the items used in the subtests. In Table 23 statistical information about this test, as reported in the technical manual, is reported. Reliability
Coefficients are corrected split-half (odd-even) estimates $r_{II}$, and Standard Errors of Measurements.\(^\text{17}\)

Table 22.
Stanford Diagnostic Reading Test, Level II
Subtests, Items and Time Administration

<table>
<thead>
<tr>
<th>Subtests</th>
<th>Items</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Test 1 Reading Comprehension</td>
<td>60</td>
<td>Approximately 30 minutes</td>
</tr>
<tr>
<td>Test 2 Vocabulary</td>
<td>40</td>
<td>Approximately 20 minutes</td>
</tr>
<tr>
<td>Totals</td>
<td>100</td>
<td>Approximately 50 minutes</td>
</tr>
</tbody>
</table>

Table 23.
Stanford Diagnostic Reading Test, Level II
Reliability Coefficients and Standard Errors of Measurement

<table>
<thead>
<tr>
<th>Test</th>
<th>Grade 7</th>
<th>Grade 8</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>r_{II}</td>
<td>SEM</td>
</tr>
<tr>
<td>Reading Comprehension</td>
<td>0.92</td>
<td>3.0</td>
</tr>
<tr>
<td>Vocabulary</td>
<td>0.87</td>
<td>2.2</td>
</tr>
</tbody>
</table>

Research Design

In order to examine the effect that the language of instruction had on the English reading achievement of limited English speaking secondary students, a research design was developed which consisted of one independent variable and two dependent variables. The independent variable, instructional treatment, consisted of Treatment 1, English instruction; Treatment 2, bilingual instruction; Treatment 3, Spanish instruction. The instructional treatment data was gathered from a classroom level questionnaire as reported by teachers. (See Appendix A.) The dependent variables were English and Spanish reading achievement pre-test and post-test scores which were used to assess reading ability in the English language and the Spanish language. In Figure 1, a graphic illustration of the research design is provided.

The Research Design

<table>
<thead>
<tr>
<th>English/Spanish Reading Ability of LES/NES</th>
<th>Instructional Treatment</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Treatment 1</td>
</tr>
<tr>
<td></td>
<td>English</td>
</tr>
<tr>
<td>7-8 Grade</td>
<td>71</td>
</tr>
<tr>
<td>9-10 Grade</td>
<td>23</td>
</tr>
</tbody>
</table>

Figure 1
A general hypothesis of this study was that the English reading achievement of limited English speaking students would be improved significantly when they received instruction in Spanish as reading skills were being taught and learned. Specifically, the null hypotheses were:

H1: There are no significant differences in English reading achievement among limited English speaking students taught reading in English, bilingually, or in Spanish.

H2: There are no significant differences in Spanish reading achievement among limited English speaking students taught reading in English, bilingually, or in Spanish.

H3: There are no significant differences in English reading achievement between male and female students taught reading in the three treatment groups.

H4: There are no significant differences in Spanish reading achievement between male and female students taught reading in the three treatment groups.

The analysis of covariance and the post-hoc multiple comparison test, Scheffé, were used in the statistical treatment. The ANCOVA was used to test the null hypotheses. The Scheffé was used to determine which of the treatment groups differed significantly from the other groups. Tables were provided to indicate under what conditions English or Spanish reading achievement was affected by the instructional treatment. The ANCOVA was tested at the 0.10 level of significance. The Scheffé was tested at the 0.05 level of significance.

**Summary**

In this chapter the procedures used to conduct the study were presented. The method used to select the sample
was explicated. The criteria for the sample were delineated. The method of data collection from different assessment instruments used to assess the students' reading ability were presented. The research design, data collected and statistical treatment were discussed.

In Chapter 4 the data will be analyzed. In Chapter 5 a summary of the research effort will be provided. Findings and conclusions with recommendations will be presented in the final chapter.
Chapter 4

ANALYSIS OF THE DATA

In this chapter, analyses of the data regarding the effect of the language of instruction on the English and Spanish reading achievement of limited English speakers in selected secondary schools are presented. The chapter is divided into four parts: introduction, demographic information, hypotheses and statistical analyses, and a summary.

Introduction

The secondary school curriculum generally provides reading instruction in English to the limited English speaking students. Some schools provide reading instruction in two languages, while others use the students' mother tongue as the initial vehicle of instruction to teach reading skills. In this study English and Spanish reading test scores were analyzed to determine the effect of the language of instruction on English and Spanish reading achievement. The three instructional treatments are described as follows.

In Treatment 1 a minimal amount of Spanish was used as the language of instruction; that is the teacher used the dominant language of the student for less than 25 percent of the instructional time. The teacher in Treatment 2 utilized Spanish for approximately 50 percent of the instructional
time, and in Treatment 3 the teacher used Spanish for 75 percent to 100 percent of the instructional time. Stated another way, the instructor in Treatment 1 used English as the primary language of instruction, while in Treatment 3 the teacher used the students' mother tongue as the primary instructional language. In Treatment 2 a bilingual instructional mode was used by the instructor. The mother tongue and English were used equally as the instructional vehicle.

The sample for this study was not randomly assigned to the three instructional treatments. The students either selected the instructional treatment or school personnel assigned them into the respective treatments. A limitation of a non-randomized research design is that there may have been significant differences between the treatment groups in the beginning, thus confounding the results. To ameliorate this problem, the analysis of covariance (ANCOVA) was used in the research design; that is, the subjects' pre-test mean scores were used as covariates with the post-test mean scores, which adjusts for any pre-treatment differences on the dependent variables. The adjusted post-test mean scores were also used with the Scheffé test for all possible comparisons among the treatment groups in the sample.

**Demographic Information**

The sample in this study was drawn from limited English speaking students who generated test score data on both English and Spanish reading achievement tests. The
total number of subjects was 240. District A provided 38 subjects. Districts B and C provided 94 and 45 subjects respectively. District D provided 16 subjects and District E provided 47 subjects. There were 94 subjects involved in Treatment 1. In Treatments 2 and 3 there were 51 subjects and 95 subjects respectively. There were 52 females and 42 males in Treatment 1. There were 22 females and 29 males in Treatment 2. There were 43 females and 52 males in Treatment 3 for a total of 117 females and 123 males for the total study. There were 48, 23, 6 and 17 subjects in grades 7, 8, 9 and 10 in Treatment 1. In Treatment 2 there were 18, 11, 15 and 7 subjects in grades 7 through 10. In Treatment 3 there were 47, 34, 11 and 3 in the respective grades. In Table 24 the numerical distribution of subjects by grade and sex in each of the school districts according to instructional treatment is presented.

**Hypotheses and Statistical Analyses**

To study the effect of the language of instruction on the reading ability of the linguistically distinct students who have been identified as limited English speaking students, tentative probable explanations are presented. These hypotheses were analyzed by statistical treatments that were compatible to the sample being studied. To test the statistical significance of these hypotheses, the ANCOVA and the Scheffé were utilized.

The general hypothesis of this study was that the
English reading achievement of limited English speaking students will be improved significantly when they receive reading instruction in Spanish as reading skills are being taught. From this general statement, four null hypotheses focusing on the limited English speaking students were derived. Each of these hypotheses and their respective findings are discussed.

$H_1$: There are no significant differences in English reading achievement among students taught reading in English (Treatment 1), those taught reading in a bilingual mode (Treatment 2), and those taught reading in Spanish (Treatment 3).

$H_2$: There are no significant differences in Spanish reading achievement among students taught reading in English (Treatment 1), those taught reading in a bilingual mode (Treatment 2), and those taught reading in Spanish (Treatment 3).

$H_3$: There are no significant differences in English reading achievement between male and female students taught reading in the three treatment groups.

$H_4$: There are no significant differences in Spanish reading achievement between male and female students taught reading in the three treatment groups.

The analysis of covariance (ANCOVA) combined prediction and the analysis of variance to identify and control the effect of initial differences in the test scores
Table 24
Student Distribution by District, Grade and Sex
According to Instructional Treatment

<table>
<thead>
<tr>
<th>Instructional Treatment</th>
<th>Treatment 1</th>
<th>Treatment 2</th>
<th>Treatment 3</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>English</td>
<td>Bilingual</td>
<td>Spanish</td>
<td></td>
</tr>
<tr>
<td>Grade</td>
<td>7 8 9 10</td>
<td>7 8 9 10</td>
<td>7 8 9 10</td>
<td></td>
</tr>
<tr>
<td>District A F M</td>
<td>-- -- -- 8</td>
<td>-- -- --</td>
<td>10 5 2 --</td>
<td>25 38</td>
</tr>
<tr>
<td></td>
<td>-- -- -- 2</td>
<td>-- -- --</td>
<td>8 2 1 --</td>
<td>13</td>
</tr>
<tr>
<td>District B F M</td>
<td>24 5 -- --</td>
<td>5 1 -- --</td>
<td>2 1 1 2</td>
<td>41 94</td>
</tr>
<tr>
<td></td>
<td>14 9 -- --</td>
<td>9 8 -- 1</td>
<td>4 -- 7 1</td>
<td>53</td>
</tr>
<tr>
<td>District C F M</td>
<td>3 4 -- --</td>
<td>-- -- --</td>
<td>4 8 -- --</td>
<td>19 45</td>
</tr>
<tr>
<td></td>
<td>4 5 -- --</td>
<td>-- -- --</td>
<td>8 9 -- --</td>
<td>26</td>
</tr>
<tr>
<td>District D F M</td>
<td>-- -- -- --</td>
<td>-- -- 7 2</td>
<td>-- -- --</td>
<td>9 16</td>
</tr>
<tr>
<td></td>
<td>-- -- -- --</td>
<td>-- -- 3 4</td>
<td>-- -- --</td>
<td>7 16</td>
</tr>
<tr>
<td>District E F M</td>
<td>-1 -- 2 5</td>
<td>1 2 4 --</td>
<td>3 5 -- --</td>
<td>23</td>
</tr>
<tr>
<td></td>
<td>2 -- 4 2</td>
<td>3 -- 1 --</td>
<td>8 4 -- --</td>
<td>47</td>
</tr>
<tr>
<td>Grade Totals</td>
<td>48 23 6 17</td>
<td>18 11 5 7</td>
<td>47 34 11 3</td>
<td></td>
</tr>
<tr>
<td>Sex by Grade F M</td>
<td>28 9 2 13</td>
<td>6 3 11 2</td>
<td>19 19 3 2</td>
<td></td>
</tr>
<tr>
<td></td>
<td>20 14 4 4</td>
<td>8 9 4 5</td>
<td>28 15 8 1</td>
<td></td>
</tr>
<tr>
<td>Sex Totals F M</td>
<td>52 42</td>
<td>22 29</td>
<td>43 52</td>
<td>117</td>
</tr>
<tr>
<td></td>
<td>123</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Treatment Totals</td>
<td>94</td>
<td>51</td>
<td>95 240</td>
<td></td>
</tr>
</tbody>
</table>


that may have existed and which could confound the results of the post-test means. The ANCOVA is a blending of regression and ANOVA. This analysis permitted statistical rather than experimental control of variables. The result was equivalent to matching the different treatment groups with respect to the pre-test scores. The treatment groups' pre-test mean scores were used as covariates with the post-test mean scores to adjust for any pre-treatment differences on the dependent variables. Coupling the Scheffé test with ANCOVA supplied a detailed analysis by selecting the treatment group whose test score means were statistically different.

**Testing the Hypotheses**

The hypotheses were subjected to the analysis of covariance since it fits a wide variety of research situations. The treatment groups' post-test means were subjected to the Scheffé procedure to select the treatment group means that indicated a statistical difference among the different treatment groups.

**Testing \( H_1 \):** An analysis of the post-test means for treatment groups suggested that there was statistical difference in English reading achievement among limited English speaking students taught reading in English (Treatment 1), those taught reading bilingually (Treatment 2), and those taught reading in Spanish (Treatment 3). Based upon this analysis \( H_1 \) was rejected. In Table 25 an analysis of covariance for English post-test means for treatment groups is
Table 25
Analysis of Covariance for English and Spanish Post-Test Means for Treatment Groups and Sex

<table>
<thead>
<tr>
<th>Test</th>
<th>Source</th>
<th>S.S.</th>
<th>D.F.</th>
<th>M.S.</th>
<th>F</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Tre</td>
<td>335.54</td>
<td>2</td>
<td>166.77</td>
<td>36.87</td>
<td>.00*</td>
</tr>
<tr>
<td></td>
<td>Sex</td>
<td>401.18</td>
<td>1</td>
<td>401.18</td>
<td>88.17</td>
<td>.00*</td>
</tr>
<tr>
<td>English</td>
<td>Tre/Sex</td>
<td>14.42</td>
<td>2</td>
<td>7.21</td>
<td>1.59</td>
<td>.21</td>
</tr>
<tr>
<td></td>
<td>Error</td>
<td>1060.15</td>
<td>233</td>
<td>4.55</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>29662.45</td>
<td>239</td>
<td>--</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td></td>
<td>Tre</td>
<td>2507.52</td>
<td>2</td>
<td>1253.76</td>
<td>406.20</td>
<td>.00*</td>
</tr>
<tr>
<td></td>
<td>Sex</td>
<td>1022.57</td>
<td>1</td>
<td>1022.57</td>
<td>331.31</td>
<td>.00*</td>
</tr>
<tr>
<td>Spanish</td>
<td>Tre/Sex</td>
<td>19.39</td>
<td>2</td>
<td>9.69</td>
<td>3.14</td>
<td>.05*</td>
</tr>
<tr>
<td></td>
<td>Error</td>
<td>719.17</td>
<td>233</td>
<td>3.08</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>41712.94</td>
<td>239</td>
<td>--</td>
<td>--</td>
<td>--</td>
</tr>
</tbody>
</table>

*Statistical significance at .10 level

Table 26
Post-Test Means in English and Spanish Reading Tests for Instructional Treatments

<table>
<thead>
<tr>
<th>Test</th>
<th>Treatment 1</th>
<th>Treatment 2</th>
<th>Treatment 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>English</td>
<td>82.30</td>
<td>82.81</td>
<td>83.29</td>
</tr>
<tr>
<td>Spanish</td>
<td>97.30</td>
<td>97.73</td>
<td>97.81</td>
</tr>
</tbody>
</table>

n=94    n=51    n=95
The English reading post-test means for each treatment group were subjected to the Scheffé test. Based upon this analysis the post-test means that were statistically different among the treatment groups were those means for the treatment group taught in Spanish (Treatment 3). In Table 26 the post-test means in English reading according to instructional treatments is presented. In Table 27 a summary of the F-distribution used in the Scheffé procedure for treatment groups for English reading tests is presented.

**Testing H2.** An analysis of the post-test means for treatment groups suggested that there was statistical difference in Spanish reading achievement among limited English speaking students taught reading in English (Treatment 1), those taught reading bilingually (Treatment 2), and those taught reading in Spanish (Treatment 3). Based upon this analysis H₂ was rejected. In Table 25 an analysis of covariance for Spanish post-test means for treatment groups is presented.

The Spanish reading post-test means for each treatment group were subjected to the Scheffé test. Based upon this analysis the post-test means that were statistically different among the treatment groups were those means for the treatment group taught in Spanish (Treatment 3). In Table 26 the post-test means in Spanish reading according to instructional
for treatment groups for Spanish reading tests is presented.

Table 27
A Summary of the Scheffé F-Distribution for Treatment Groups for English and Spanish Reading Tests

<table>
<thead>
<tr>
<th>Test</th>
<th>Treatment 1</th>
<th>Treatment 2</th>
<th>Treatment 3</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>English</td>
<td>1</td>
<td>0.94</td>
<td>5.08*</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>--</td>
<td>0.84</td>
</tr>
<tr>
<td>Spanish</td>
<td>1</td>
<td>0.99</td>
<td>1.99**</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>--</td>
<td>0.03</td>
</tr>
</tbody>
</table>

*Statistical significance at 0.05 level
**Statistical significance at 0.10 level

Testing H3. An analysis of the post-test means according to sex suggested that there was a significant difference in English reading achievement between male and female students who were in the treatment groups. Based upon this analysis H3 was rejected. In Table 25 an analysis of covariance for English post-test means and sex is presented. An analysis of the English test scores in Table 28 indicated that the female means were higher than those received by male subjects.

Testing H4. An analysis of the post-test means according to sex suggested that there was a significant difference in Spanish reading achievement between male and female students who were in the treatment groups. Based
upon this analysis $H_4$ was rejected. In Table 25 an analysis of covariance for Spanish post-test means and sex is presented. An analysis of the test scores indicated that the female means were higher than those received by male subjects. In Table 28 post-test means in Spanish reading test by sex are presented.

| Table 28 |
|---|---|---|---|
| Post-Test Means in English and Spanish Reading Tests by Sex |
| Female | Male |
| English | 82.88 | 82.73 |
| Spanish | 97.78 | 97.40 |
| $n=117$ | $n=123$ |

**Summary**

In this chapter English and Spanish reading post-test means were analyzed to determine the effect of language on the reading ability of limited English speaking students in English instruction, bilingual instruction and Spanish instruction. In Treatment 1 English was used as the instructional language. In Treatment 2 a bilingual mode of instruction was used and Treatment 3 used Spanish as the language of instruction.
Four hypotheses were tested by ANCOVA. The Scheffé procedure was used to compare the post-test means of the three treatment groups to ascertain which group produced significantly different reading achievement test score means in English and in Spanish among limited English speaking secondary students.

In an analysis of the data with ANCOVA, as it pertained to the first and second hypotheses, the computations suggested that there were significantly different reading achievement post-test means in both English reading and Spanish reading. A rejection of H₁ and H₂ was based upon the data produced by the analysis of covariance.* Subjects who received reading instruction in Spanish (Treatment 3), acquired significantly different test score means in English and Spanish reading achievement than those subjects in the other two treatment groups, namely English or bilingual instruction treatment groups. The Scheffé procedure identified the Spanish treatment group's Spanish and English reading test scores as significantly different from the other treatment groups.

When sex was considered, the English post-test means suggested that female subjects received significantly higher test score means than male subjects. These data suggested that H₃ should be rejected. Additionally, the Spanish post-test means suggested that female subjects had acquired significantly higher test score means than male subjects, thus rejecting H₄.

* The treatment groups' post-test scores were also subjected to the Scheffé test.
In Chapter 5 a summary of the research effort will be provided. Findings and conclusions will also be provided. Recommendations for secondary bilingual and bicultural educational programs will be provided.
Chapter 5

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

This study has attempted to indicate what effect the language of instruction in three treatment groups had on the reading achievement of the linguistically distinct pupils who have been identified as limited English speaking students in five secondary school districts. The English reading achievement test scores of these pupils were subjected to statistical analyses which suggested that students who were taught reading skills in their mother tongue received significantly higher English reading scores than those who were taught in English or in a bilingual mode. Similar analyses were conducted on the Spanish test scores. These data suggested that pupils who were taught reading skills in their mother tongue received higher Spanish test scores than those in the other treatment groups. These results were also found to be statistically significant for the Spanish treatment group. When sex was considered, the data suggested that the higher Spanish and English reading test scores were significantly different for female pupils.

In this chapter a summary of the study is presented. This chapter also includes conclusions of the study as well as recommendations which may contribute to the general improvement of bilingual education reading programs for the linguistically distinct students in secondary schools.
Summary

The strength of this country is dependent upon a citizenry that is well educated. This assumption is based on the belief that individuals must be able to make decisions to benefit themselves and the Republic. The linguistically distinct students, whose numbers in our schools are estimated to be above ten million, have not been adequately educated. They consistently score below their English speaking contemporaries on achievement tests in reading, science, mathematics, social studies and career education. Their mother tongue, which to them is an asset, has been considered a liability in most educational environments. This condition has placed these students in an educationally disadvantaged position throughout their school years. As they have been passed from grade to grade the situation has worsened to a point where the drop-out rate has become a national concern and an educational disgrace.

It is clear that there are a disproportionate number of linguistically distinct students whose English reading test scores are below the norm on standardized achievement tests. The question then arises whether instruction in their mother tongue can be effectively used to teach them reading in English. The literature has suggested that the inclusion of the mother tongue in a reading program provided a necessary foundation for reading improvement in the second language.
The mother tongue of different linguistic groups has been used for educational purposes in this country since its founding. However, throughout our history there has always been a prevalent feeling among certain segments of the population that English should be the only language used in education. The melting pot concept and Americanization have fostered "English only" rules. Despite this emphasis, linguistic minorities have continued to maintain their mother tongues.

The literature suggested that a basic foundation in the mother tongue was essential for the second language acquisition of the linguistically distinct students. A study conducted in Puerto Rico in 1925 corroborated this finding. Additional studies by Modiano in Mexico, Ramos in the Philippine Islands, Gudschinsky in Latin America, Mexico, Vietnam, Skutnabb-Kangas and Tuokoma in Europe, and Paulston in the United States, suggested that the road to literacy in the second language should be paved by the use of a strengthened mother tongue. Legislative and judicial action provided an impetus to the use of the mother tongue in bilingual programs. Legislation resulted in programs which emphasized the use of the mother tongue in initial program developments as the students learned English. Once the students mastered English they were to be mainstreamed. Programs of this nature, classified as transitional, have had few philosophical advocates. There is a growing suspicion among researchers, scholars and educators that transitional
programs have done more harm than good. Social scientists have suggested that bilingual programs should move from maintenance to enrichment oriented directions, since transitional programs would eventually self-destruct. A controversial evaluation of ESEA Title VII Spanish/English bilingual programs provided minimal direction for program improvement at a time that would have benefited programs in their infancy.

Research of instruction in the students' mother tongue produced various suggestions for the bilingual practitioner. The most salient of these is that early literacy training with ongoing development in the mother tongue should be accompanied by literacy training in the second language. Success in the second language is assured with continued mother tongue reinforcement after a strong foundation has been established in the mother tongue during the initial stage of literacy development. This point of view is shared by scholars, researchers and bilingual educators. It is not shared by the lay public nor by those educators who want to mainstream the linguistically distinct students as soon as possible so as to get them over the malady of having a mother tongue different from English. This position is held to, despite research efforts which support the concept of initial mother tongue literacy, with continual development of the mother tongue, as the best prerequisite for second language learning.

The research suggested that reading in the mother
tongue allowed the student to learn the task of reading rather than a compound task, i.e., the learning of another language in addition to the act of reading. Knowledge of the mother tongue, with its subconscious control of grammatical nuances, aided in the decoding of words and improved reading comprehension in the second language. Monolingual speakers of minority languages have learned a second language, that is to be used later on as an instructional vehicle, if they were first taught to read and write in the mother tongue. Reading in the mother tongue allowed for the complete utilization of students' oral language development. There is congruence between the language spoken and the language in print form. It was suggested that the effects of instruction in the weaker language would not only be educationally deleterious, but psychologically and emotionally detrimental.

The selection of the sample in this study was made from secondary schools that provided bilingual education to limited and non-English speaking students as part of their curriculum. The districts selected met three criteria. The first criterion was that a reading or language arts course was either taught bilingually or in the students' mother tongue. A second criterion was that the schools had collected pre- and post-achievement test scores in English and Spanish during the 1977-78 and/or 1978-79 school years. The final criterion was the willingness of the school district to participate in this study by supplying the necessary test score data.
The research design utilized the language of instruction in reading as the independent variable. English/Spanish reading achievement test scores were used as the dependent variable. The initial hypothesis was that the English reading achievement of the sample would be improved significantly when instruction was provided in Spanish language arts, Spanish content area reading or a Spanish reading course. A secondary hypothesis was that Spanish reading achievement of the sample would be improved significantly when instruction was provided in a language arts, content area reading or reading course that used Spanish as the vehicle of instruction.

The analysis of covariance (ANCOVA) was employed to test the hypotheses. The region of rejection was at the 0.10 level. The ANCOVA was used to ameliorate the problem of a non-randomized sample which may have had significant differences in pre-test scores. A post-hoc Scheffé procedure indicated which treatment group pairs statistically differed, one from the other. The region of rejection was at the 0.05 level and at the 0.10 level.

The initial hypothesis was upheld. English reading achievement test scores were significantly different for the limited or non-English sample when instruction was provided in Spanish language arts, Spanish reading or content area reading. The secondary hypothesis was also upheld. There were significant differences between treatment group test scores in Spanish reading achievement when the data was
analyzed by the Scheffé procedure. Although the ANCOVA suggested that there were differences among the treatment groups when Spanish reading test scores were analyzed, these differences were very small. It was also suggested upon analysis of the test scores that females did score significantly higher in English and Spanish reading tests than the males in the sample.

Conclusions

A large percentage of the linguistically distinct student population have failed in the all English curriculum of the comprehensive secondary school. Their failure may be due to the fact that the attributes of the mother tongue were not fostered nor enhanced in the learning process. These students entered the schools with skills that were cast aside for a preferred language. Language chauvinism of this type has had a deleterious effect on the education of language minorities in our country.

A society that places greater value on one language over another, when it could support both, oppresses a segment of its population. A bridge to the understanding of another culture is destroyed when one language seeks to be supreme over other languages. This becomes a destruction of a national resource. Conservation of all resources is vitally important to the economic, emotional and psychological well being of this nation. We can ill afford to stifle the contributions of any segment of our population solely on the
basis of the language they speak.

The linguistically distinct pupils' language is an important factor in their education. Utilization of the mother tongue to teach the task of reading would promote reading readiness, an important preparation for the reading experience at any grade level. The mother tongues' use in early reading experiences allows for decoding of the printed word that closely resembles the spoken or heard word. This allows the students to learn reading and not the compound task of learning a second language and reading. Additionally, the grammatical rules governing the use of the language having been already internalized before the reading task is begun, would promote the decoding of words as well as determining the meaning of words.

This study suggested that linguistically distinct students who were taught reading in their mother tongue did significantly better in English reading achievement tests than those students taught reading in English. Submerging these students in the language of the host culture did not seem to improve their English reading achievement at the secondary level. The salient point of this research is that instruction in the mother tongue, of the linguistically distinct students at the secondary level, is essential for their continued progress in the total spectrum of the secondary school curriculum. The effective acquisition of English reading skills, a basic goal of bilingual, bicultural education is readily acquired when a strong foundation in the
mother tongue has been laid.

The inability or unwillingness of secondary school districts to provide instruction in the mother tongue is a total disregard of the right to an equal educational opportunity. Ethnocentrism and language chauvinism do not allow for a rational educational approach. The lack of direction from boards of education or the lack of knowledge about educational research surrounding advances in bilingual, bicultural education among teachers, administrators or counselors are not valid excuses to prevent students from learning.

The additional controversy surrounding program type has shrouded the advantages of the enrichment approach which promotes a bilingual, bicultural, biliterate education for the linguistically distinct students and their monolingual English counterpart. A responsive implementation policy by school districts to provide these services to both student groups is essential to their growth and development.

This study has suggested that the mother tongue is an effective means of improving English reading skills of the linguistically distinct students in the secondary schools. The application of this concept in the secondary school curriculum will allow for the continued educational progress of a population that has had a long history of disenfranchisement from appropriate educational experiences. An inability to establish a broad and comprehensive language policy in the secondary schools is tantamount to a continuation of oppressive educational practices that are permitting
semilingualism which does not allow for full participation in the life of our country for all of its people.

**Recommendations**

The conclusions of this study identified the weakness of an educational system that denigrates the mother tongue of the linguistically distinct pupils in their education. It has been concluded that the mother tongue is a primary source of strength that the pupils bring to the learning process. A potential effect of the neglect to the mother tongue is illiteracy or semilingualism, neither of which we can afford, in the mother tongue or second language.

The significance of the mother tongue in the program types, curricular and administrative practices and research recommendations should provide an understanding of the role that bilingual, bicultural education performs as an integral part of general education.

Rapid development in the mother tongue for the students who may be below grade level is essential to their educational successes. When the mother tongue serves as the foundation for learning other avenues will be open to the linguistically different student. Providing them with skills in the mother tongue allows for conceptual development in their primary language as they acquire initial language skills in English. Success in the mother tongue leads to success in the second language through the transfer of skills from one language to the other.
Program Type

The type of reading or language arts program used to provide services to the linguistically distinct students at the secondary level should encompass developmental aspects in the mother tongue. Bringing the students up to a minimal proficiency level in the mother tongue, commensurate with their peers in the host culture, should provide the necessary foundation in the mother tongue before the stress of learning to read in the second language takes place.

As the students attain grade level reading competency in their mother tongue, aural-oral training in English should be at a point where English literacy skills in a bilingual, bicultural program should lead to biliteracy. Providing equal status to the languages should promote a greater bond between the languages. Continued strengthening and broadening of the skills in the mother tongue and the second language are the foundation upon which a culturally pluralistic society is built.

This study has suggested that the utilization of the mother tongue in reading instruction forms a strong foundation for second language acquisition and is an indispensable and equal partner in language development of the bilingual, bicultural, biliterate person. Educational improvement also requires that attention be given to complementary curricular and administrative practices.

Curricular Practices

The curriculum to which the linguistically distinct...
students are subjected to should take into account their level of language development in the mother tongue. If the students are below grade level in their mother tongue the concentration in Spanish should be on the development of aural/oral skills with sound/symbol correlation using a self-expressive approach to reading, metodo onomatopeico, metodo alfabetico, metodo fonetico or metodo global. For the English component, the linguistic based reading method with a heavy concentration on aural/oral skills with sound/symbol correlation should be used. Any pre-reading should be done with visual support.

If the students are at grade level in their mother tongue the Spanish reading instruction should utilize el metodo global o el metodo eclectico with a developmental reading procedure in student high interest areas. There should be an emphasis on conceptual development with a contrastive analysis between the two languages. The English component should use the linguistic method, language experience or an eclectic approach that emphasizes reading comprehension skills and capitalizes on transfer training.

**Administrative Practices**

If the mother tongue is to be an indispensable part of the educational programs for linguistically distinct students it is incumbent upon school district personnel to recruit and select teachers who are bilingual, bicultural and biliterate. Administrative support for bilingual,
bicultural programs requires financial resources for program implementation, experimentation and evaluation. Appropriate curricular materials and the instrumentation to assess the students' strengths and weaknesses in the mother tongue and the second language are necessary for educational growth.

Since the mother tongue is the gateway to educational opportunities, administrators, in conjunction with program personnel, should provide for the assessment of the students' language proficiency in both languages. This measurement should be coupled with an assessment of their aptitudes in basic skills areas in the language best understood by the students. An open entry/exit curriculum in the basic skills areas in the mother tongue would promote rapid advancement to a level that is commensurate with the pupils' age group. Having attained this level of competency in the mother tongue will enable the students to profit from bilingual instruction. Increasing the bilingual abilities should enable broader participation in the English curriculum of the comprehensive high school.

These prudent services are predicated on an aggressive administrative hiring plan so that adequately trained bilingual, bicultural and biliterate personnel are available to offer the courses necessary for graduation. Bilingual, bicultural, biliterate teachers are the backbone of an instructional program for the linguistically distinct pupils.
Future Research

A research design to test hypotheses for curriculum improvement should be compatible with the population to be studied. For example, the ANCOVA in this study took into consideration pre-test differences that may have existed. Experimentation with lesser known or used research designs that are more responsive to the characteristics of the sample may provide more meaningful data which in turn could be used more effectively in explaining the processes of bilingual, bicultural education.

Since testing plays such an important role in research, the attitude of the students and practitioners towards the assessment program should be considered in data analysis. The importance of testing as a positive force in growth measurement to improve the state of the art of bilingual, bicultural teaching must be understood by the pupil, parent, teacher, counselor, administrator and community. The pupils' oral language should also be tested in order to ascertain a relative language proficiency between the mother tongue and the language of the host culture. Additionally, the test taking ability of the students should be determined before achievement tests are given to them.

To improve upon this research effort the same teacher should teach reading to the student sample in the three treatment modes. Several school districts should be involved in this effort. Similar reading programs should be employed and the same assessment instrument should be used to
ascertain student growth. Periodic meetings among teachers should be held to provide time to discuss problems, mutual implementation and programmatic concerns in order to provide a realistic program to meet the changing needs of the linguistically distinct pupils in the secondary school.
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Testing Technical Reviews


SECONDARY SCHOOL CLASSROOM LEVEL QUESTIONNAIRE IN BILINGUAL EDUCATION FOR READING OR LANGUAGE ARTS

DIRECTIONS: Complete this questionnaire ONLY if you have normative test data, e.g., CTBS--English Reading or Language scores for your class.

Place a check ( ) in the appropriate space for those statements that are TRUE and applicable to your class.

Fill out one questionnaire and test score sheet for each class.

The students are taught language arts or reading or content area reading in a language other than English

| The language other than English used is        | Spanish | 2 ( ) |
|                                               | Pilipino | 3 ( ) |
|                                               | Chinese  | 4 ( ) |
| Other                                          | 5 ( )    |

My students have been classified as

| limited English speakers                     | 6 ( )    |
| fluent English speakers                      | 7 ( )    |
| non English speakers                         | 8 ( )    |

The subject area that I teach, in the language other than English, is

| Content Area Reading | Language Arts | Reading | 9 ( ) |
| Content Area Reading | Language Arts | Reading | 10 ( ) |

The grade level for this class is

| non-graded junior high | non-graded senior high |
| seventh | eighth | ninth | tenth | eleventh | twelfth |
| 12 ( ) | 13 ( ) | 14 ( ) | 15 ( ) | 16 ( ) | 17 ( ) | 18 ( ) | 19 ( ) |

The class period(s) spent in the subject area is (are)

| one period | two periods | three periods | more than three |
| 20 ( ) | 21 ( ) | 22 ( ) | 23 ( ) |

I spend the following percentage of time, in the language other than English, when I teach

| 0% | 25% - 50% | 75% - 100% |
| 24 ( ) | 25 ( ) | 26 ( ) |

I am interested in the results of this research

Please send me a summary of the finished study.

Last name __________________________ First name __________________________ School __________________________ Period __________________________

Address __________________________ City __________________________ Zip __________________________ School District __________________________

Telephone __________________________

APPENDIX A
March 16, 1978

SAMPLE SAMPLE

Dear XXXXX XXXXX

Based upon the premise that language in general, and reading in particular, are at the very core of learning and success for secondary school students, I am conducting a research project which will assist in identifying the effect that the language of instruction has on the reading achievement of the linguistically distinct student at the secondary level schools.

The basic premise of my research project is that when these students are taught reading in their first language they will demonstrate as much or more growth in reading achievement in English as those primarily taught in English. Upon request I would be happy to provide a bibliography which supports this premise.

I need your help in this important task.

Do you have classes in your district that teach reading, literacy skills, content area reading, and/or language arts in the students' first language? ☐ ☐

Do you have reading or language pre-post test scores in English for these students? ☐ ☐

Are you willing to participate in this study? (See the reverse for list of tasks required.) ☐ ☐

Please return this questionnaire in the self-addressed, stamped envelope provided.

Sincerely,

William A. Melendez
ESEA Title VII Coordinator

APPENDIX B

WAM: kg