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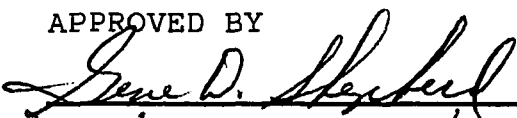
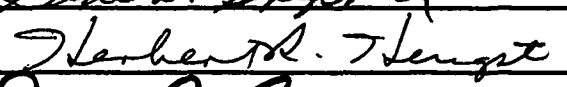
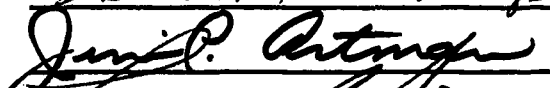
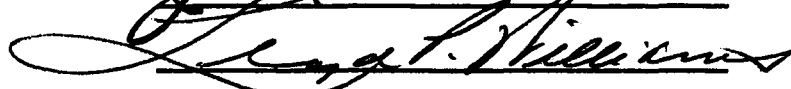
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AT THE SEVENTH-GRADE LEVEL

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SUBMITTED TO THE GRADUATE FACULTY
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BY
BERNEICE BEADLES MILLER
Norman, Oklahoma
1970

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APPROVED BY

DISSERTATION COMMITTEE

Dedicated to:

Our Mother, Mrs. Alice Beadles,
who instilled in each of her
children a belief in the
dignity of hard work
and the joy of
learning

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CHAPTER I

INTRODUCTION AND PROBLEM

Introduction

If five decades of literature concerning foreign language are a valid indicator (Birkmaier & Lange, 1969; Birkmaier, Ed., 1969), the reformation of foreign language instruction in the United States of America was one of the most important aspects of the changing curriculum (Allen, Glenn, & Otto, 1968; Trump & Miller, 1968, p. 104). Out of this reform era came the rebirth of the longer continuum of foreign language exposure considered vital to the mastery of a second language (Modern Language Association, 1956; Morgan, 1959, Hockett, 1963, Samuels, 1969). Listening comprehension, speaking, reading, and writing were identified as the basic communication skills of second language learning (Rivers, 1968; Starr, Thompson, & Walsh, 1960). Publishing companies produced materials sequenced to promote

maximum acquisition of the target language (Miller, 1969). Evaluation instruments were designed to test the basic communication skills in addition to language aptitude (Lado, 1964, pp. 158-170; Vallette, 1965; 1967; Austin, in Wilkens, Ed., 1969, pp. 164-66). After the passing of The National Defense Education Act of 1958, federal funds became available for use in the retraining of teachers, in making research grants, and in developing and supplying various media (Parker, 1961; Petrov, 1969; Poston, Andersson, King, Prince, & Saviano, 1969, pp. 335-383). Psychologists and linguists have offered an insight to the nature of language learning (Chomsky, 1968; Miller, 1964; Jakobovits & Miron, Eds., 1967). Mass media, especially instructional television, was widely used to provide foreign language instruction at the elementary level (National Center of School and College Television, 1967; Sousa, 1968, p. 332; Dodge, 1968, pp. 311-341). The Modern Language Association of America, the American Council on the Teaching of Foreign Languages, and affiliates provided the leadership throughout this reform era.

With such a formidable movement, problems with articulation of the foreign language program were and are a continuous concern of the local school system. As a curriculum evolves, it becomes necessary for school administrators to make decisions based on constant pressures for changes in curriculum. These decisions may or may not prove

to be in the best interest of a single discipline, but are considered beneficial to the total curriculum (Eye, Garrison, & Kuhn, 1969, pp. 24-27; Guerra, 1960, p. 272, Seine & Gelms, 1966, p. 86, Levenson, 1966, pp. 296-298, Levenson & Kendrick, 1967, pp. 400-411). But, as Fowler (1969) pointed out, "the progress we have made in the past several years would never have been realized had it not been for the far-sightedness and insight of countless administrators." Nevertheless, if valid judgments are to be reached about foreign language learning at the local level, they should be based on active investigations within the system in addition to relevant investigations conducted elsewhere. Foreign language educators should take the initiative in making such investigations. The present investigation, dealing with changing foreign languages at the seventh grade, stemmed from attempts of administrators to maintain a dual foreign language program and at the same time to articulate a changing elementary program.

Background of the Problem

In a large metropolitan school system, the seventh-grade dual foreign language program began in 1959 as a downward extension of an existing four-year multiple foreign language program. French, Spanish, and Latin were offered prior to 1959 as a trilingual exploratory course. In this course, the seventh-grade students were exposed to each of the three languages for a twelve-week period. At the

insistence of students and foreign language teachers the trilingual experimental course was discontinued in favor of a full academic year in a single language with the privilege of continuing that language throughout the six-year secondary school. The articulation problem, first experienced in the dissatisfaction of changing languages in the trilingual experimental class, was intensified as the ten-year foreign language continuum became a reality.

In 1958, the elementary school foreign language program was initiated as a six-week summer enrichment program. French, Spanish, and Russian were made available, via instructional television, to anyone who wished to avail himself of this opportunity to learn a foreign language. French was added to the elementary curriculum in September, 1958. Every elementary teacher in this public school system, kindergarten through sixth year, could elect to view the French telecast. Spanish was added to the elementary curriculum in September, 1959. All third year pupils were required to view either the French or the Spanish telecast. Fourth, fifth, and sixth year classes were encouraged to view either French or Spanish in preparation for the upward expansion of the foreign language program which was made possible by adding one grade level each successive year until a four-year sequential program was made available. During the academic year 1959-60, some 6,800 pupils were enrolled in French and 8,500 pupils enrolled in Spanish.

A team teaching approach was adopted. The television foreign language teachers adapted the Modern Language Association materials for television, presented the telecasts, wrote the teachers' guides, and made drill tapes which were supplied to all elementary schools. Elementary teachers conducted the classroom activities which preceded and followed each of the three weekly foreign language telecasts. In addition, the elementary teachers were urged to use foreign language incidentally throughout the school day. Several elementary teachers enrolled in college courses of French or Spanish in an effort to become proficient in their elected foreign language. The entire elementary curriculum, of which foreign languages were now a part, was supervised by a staff of elementary teacher consultants.

Articulation posed few problems during the first year of foreign language instruction in the elementary schools of this school system. However, beginning with the second year of foreign language instruction, articulation became a critical issue. Pupils were grouped and regrouped throughout the elementary school years according to their reading level of the English language, and not according to previous foreign language experience. In an effort to alleviate this problem of articulation, both French and Spanish were televised simultaneously but on different channels. Fourth, fifth, and sixth year teachers shifted their students just prior to and following each foreign

language telecast. Some students changed foreign languages instead of passing to another teacher for instruction. The elementary foreign language program made a change to Parlons Francois in 1960-61, and to two fifteen-minute telecasts per week in 1963-64 (Haynes, p. 21).

After a ten-year dual foreign language program in ninety elementary schools, the Elementary Foreign Language Committee decided that one foreign language, televised on three levels, was more feasible than the existing dual foreign language program. Not only would this modified program permit the continued exposure of all students to a foreign language, but also it would eliminate the mixing of foreign languages within the non-graded, self-contained classroom organization. Spanish, having the larger number of pupils enrolled, was selected to remain in the elementary curriculum. French was phased out.

Seventh grade foreign language teachers voiced anticipation that more problems of articulation were inevitable. They based their judgments on an educated parent populace, an assumption that a long uninterrupted sequence of study was desirable for mastery of a single foreign language, and on their observations that students tend to identify with the language to which they have been exposed.

Secondary school administrators realized their responsibility in the reorganization of the seventh grade dual foreign language program. The following memorandum

was reported by permission of its author, Olen C. Labor, Principal.

The purpose of this memo is to point out some problems in teaching foreign language in a junior high school, which have been created by the dropping of French at the elementary level.

1. Instructional Materials--It is very difficult to plan instructional materials for two languages (French and Spanish) to be explored by junior high school students in grades seven and eight, when enrollment in the French language is so unpredictable. The problem we encountered at Hoover this school year was keeping students enrolled in seventh grade French. Parents wanted their students in Spanish simply because they had some experience with the language last year in the elementary school. It was our desire to divide the students and teach one-half French and one-half Spanish. We requested textbooks to take care of this type of enrollment. Due to the constant explanations we had to make to justify the French, we decided to put French and Spanish on an elective basis. Our enrollment for the 1969 school year is forty-seven students in French. This compares with approximately two hundred sixteen in seventh grade French for the 1968-69 school year. The main reason given for taking Spanish was that the student could make a higher grade in the subject because of his previous experience. Incidentally, the two hundred sixteen students who had French in the seventh grade are continuing study of this language in the eighth grade. They were given an opportunity to change if they wished.

2. Staff--It is becoming increasingly difficult to predict staff needs in French from year to year because of the declining enrollment. Our staff needs are determined at approximately the same time we are tabulating subject enrollments. When you have students changing out of French into Spanish as we have had, it makes staff assignments very difficult.

3. Meeting Educational Needs--One serious problem involved in this whole program is the fact that we are depriving students of an opportunity to explore more than one language.

I understand that in some professional fields in which a language is required in college preparation, Spanish is the least recognized of the languages. This means that we are not meeting one of our major educational objectives.

This report from the "grass roots" is intended to inform you of problems affecting schools due to some type of curriculum organization. If you desire, I would like to discuss further these problems with you. In the meantime, I hope this report will help you in re-evaluating the foreign language program in our school system.

Aside from the administrative problem of the reorganization of the foreign language program, some major counseling considerations were: Should pupils be encouraged to continue a single foreign language or should they foster the selection of a different foreign language upon entrance in the seventh grade? If students began a second foreign language at the seventh grade level, would this language tend to negate the first foreign language? Would the first foreign language interfere with the learning of the second foreign language? Or, since both French and Spanish are Romance languages, would exposure to Spanish at the elementary level have a transfer effect or facilitate the learning of French at the seventh grade level? If students are encouraged to begin a second foreign language, upon what empirical evidence can this judgment be made? The present investigation was designed to systematically collect and analyze data which might form a basis for decisions about foreign language in this school system.

Review of the Literature

The major theoretical concepts of foreign language learning have followed the historical pattern of change which is characteristic of most disciplines. Halpin (1966) described the pattern of change as:

A tendency for new movements or emphasis to arise in revolt against the orthodoxies of a given period. These new movements later tend to crystalize into the orthodoxies of the next period, and fresh counter-movements arise in turn. The final position reached is usually one on middle ground between the original orthodoxy and the first reaction against it (p. 84).

In an explanation of his thesis about ways of knowing, Halpin rationalized that all human knowledge is partial, yet "each purveyor of knowledge in academe claims that his brand of knowledge is more spectacular and more dependable" (p. 283). Reviews (Dunkel, 1948; Carroll & Richards, 1952; Kaulfers, 1955; Birkmaier, 1958, 1960; Pimsleur, Mosberg, & Morrison, 1962; Carroll, 1963, 1966; Donoghue, 1965, 1969) and comprehensive bibliographies (Birkmaier & Lange, 1969; ACTFL, 1968, 1969; Mildenberger & Liao, 1968; Mildenberger & Satlin, 1969; Mildenberger & Wood, 1969) indicate that advocates of change in foreign language learning have based their theories on tenacity, authority, reason, and systematic investigations. Foreign language learning moved in a cycle from emphasis on the fundamental skills in Latin for all disciplines into acquisition of grammar rules and translations of the eighteenth and nineteenth centuries, and resulted in stress on

the four fundamental skills in several languages. Foreign language educators presently search for a middle ground on which to base an interdisciplinary approach to foreign languages.

Dunkel (1963, p. 203-211) reviewed the value of historical studies and directed his attention to the epoch spanning 1511 to 1611. Dunkel attributed the accomplishments of this classical era to the great minds of Erasmus, Vives, St. Ignatius, Luther, Ratke, Colet, Coderius, Sturm, Ascham, Melancton, Milton, and Comenius. The forces for change were "the Renaissance, the rise of nationalism, the Reformation and Counter-Reformation, and the invention of printing." During this period, language teaching and language learning reached an apex. Latin was taught as a living language. Reading, writing, speaking, and understanding were the fundamental Latin skills to be mastered by every school boy. Emerging vernaculars were regarded as crude and ephemeral and did not pose the problem of changing languages in the school setting. Chomsky (1968) considered the seventeenth century as "the century of genius" which fostered speculation concerning the nature of human language and the mind. Dunkel and Chomsky suggested that "classical issues may provide direction for contemporary research and study" (p. 5).

Early in the twentieth century, foreign language educators continued to place emphasis on skill in reading.

translation, and structural analysis. Listening comprehension and speaking were less valued skills. Research pertinent to this period of foreign language learning was primarily concerned with predicting foreign language achievement in relation to intelligence, language aptitude, and teachers' grades in English. Skill in listening comprehension was not isolated for research treatment.

One of the early investigations, Glover (1917), was designed to study two hundred subjects who had elected French or German in grades seven and eight. The subjects were selected at random and represented all races and levels of prosperity. The direct method of foreign language learning was used throughout the experiment. The results of the study indicate a very high correlation between grades in foreign language and English and lesser correlations with history and arithmetic. Glover concluded, "the average between rank in English and the mean rank of all subjects is likely to be a better guess at the pupil's future success in foreign language than the rank in English alone" (p. 685).

Kaulfers (1929) collected end-semester marks in English and Spanish for 109 beginning Spanish students at the junior high school level. Results from correlations indicated that the teachers' estimates of pupil achievement in English were more accurate measures of probable success in foreign languages than intelligence quotients, end of semester marks in general language, and standardized foreign

language aptitude tests. Kaulfers concluded that there was no need of incurring the expense in time, effort, and money in the purchase and administration of prognostic tests. As a better indicator of success in foreign language learning, he recommended a triad of general intelligence, language interest, and habits of application. Again in 1929, Kaulfers found intelligence a significant factor in Spanish language achievement as determined by teachers' grades. The research included a compilation of the mean grade point average of some 1,007 junior and senior high school students, both male and female, with varying degrees of intelligence, interests, and backgrounds. Again in 1931, Kaulfers conducted another investigation which also resulted in correlation between foreign language achievement and intelligence. However, Kaulfers continued to theorize that factors other than intelligence influenced the degree of success in foreign language learning.

Van Wittich (1962) proposed to find an easily accessible predictor of success in foreign language study at the junior high school level. Van Wittich designed the investigation to include 230 ninth-grade students of Latin, German, French, and Spanish. Intelligence scores for the subjects ranged from 89 to 139. Correlations were obtained between foreign language marks and grade point averages in English, mathematics, foreign language, and total grade point average. The conclusions indicated that total grade

point average was the best single predictor of foreign language success. English grade point average was the second best single predictor. Intelligence scores were the poorest single predictor of foreign language success. Van Wittich confirmed the results of previous research "that success in foreign language study is the result of capacity and motivation as reflected by achievement" (p. 211).

Kangas (1965) investigated 269 beginning seventh-grade students who had elected either French, Spanish, or German. The study was designed to ascertain the relationship between achievement in basic language skills, intelligence, and the final foreign language grade. The results indicated that achievement in basic language skills had a much higher correlation with final grades in foreign language than did intelligence.

At Purdue University, Chastain (1969) investigated possible predictors of success in beginning Spanish classes which were conducted according to the audio-lingual habit theory or the cognitive code-learning theory of language acquisition. Chastain designed his study to ascertain "if it was possible to distinguish between students' abilities and their success under these two methodologies" (p. 28). The students were alternately assigned to the classes and statistical tests indicated a random sample had been obtained. A large per cent of the subjects had studied Spanish in high school. Chastain found a wide difference in correlations

between the audio-lingual cognitive code groups. His findings identified aptitude, verbal and mathematic ability, and previous grades as the valid predictors of success in the cognitive code-learning classes. Only high school rank and ability in mathematics were significantly correlated with foreign language achievement in the audio-lingual classes. With the exception of aptitude, which was the weakest factor, Chastain found that achievement was predicted by the same data which would be used as success predictors for other areas of the curriculum (p. 38).

Pimsleur, Sundland, and McIntyre (1966) designed a study to investigate under-achievement of junior and senior high school students of Latin, Spanish, French, and German. The language aptitude battery of tests were better predictors of foreign language success than grades in English or intelligence scores. The investigators suggested that if specialized testing was not feasible, the total grade-point average should be used as an indicator of success in foreign language learning.

In 1968, Pimsleur advised that aptitude tests would give information regarding each student's probable success in foreign language learning and audio-lingual ability. Pimsleur suggested that auditory ability may be the factor which accounts for success in audio-lingual skills, and that aptitude tests should measure motivation, auditory ability, and verbal intelligence.

Bartley (1969) compared the aptitude and attitude factors of 171 eighth-grade students of foreign language who had elected to continue or to drop out of foreign language study at the end of a three-year period. Bartley found the aptitude and attitude of the 98 students who had dropped out of foreign language study to be significantly lower than the remaining 73 students who had chosen to continue foreign language in the ninth grade. Since most of the students would continue their education at the university level, Bartley considered the dropout rate a serious implication.

Leutenegger and Mueller (1964) discussed weighted emphasis on auditory discrimination brought about by the audio-lingual approach to foreign language learning. They hypothesized that students deficient in ability to hear and maintain sensitivity to differences in pitch, loudness, time, timbre, rhythm, and tonal memory would have difficulty in learning languages. In addition to measuring the auditory factors and sex differences, Leutenegger and Mueller studied various intelligence and aptitude factors as the feasible predictors of ease or difficulty in mastering French. Their subjects, 31 males and 17 females, were comparable to the top quarter of national four-year college freshmen. Leutenegger and Mueller found the highest correlations with language laboratory scores were the English Effectiveness total score and the linguistic score of the American College Examination. Although pitch had the highest correlation of the auditory

variables, all were found to have lower correlations with the laboratory scores than the English Effectiveness total score and the American College Examination linguistic score. A possible sex factor was observed on the Seashore Measures of Musical Talents. The investigators concluded that "the feasibility of predicting French language acquisitions appeared to be supported" (p. 146).

Leutenegger, Mueller, and Wershow (1965) expanded the previously cited investigation made by Leutenegger and Mueller. In addition to auditory factors, sex differences, intelligence, aptitude, and improvement of scores on the Seashore Auditory tests, the investigators studied dropout causative factors and differences between these variables for 460 students of French and Spanish at the University of Florida. The investigators found that the students of French scored higher on nine of the fifteen variables examined. Intelligence was a significant factor for both languages only when sex difference was not considered. The investigators failed to find predictors of success common to both languages or common to both sexes. They concluded that "non-intellectual factors," namely those concerning the personality of the student, motivation, and characteristics of the teacher, must be considered if success in foreign language learning was to be maximized (p. 31).

Sprague (1967) designed a study to contrast the audio-lingual, traditional, and eclectic approaches to

teaching Spanish to tenth-grade students in relation to language aptitude, achievement, intelligence, and powers of critical thinking. He found that language aptitude had a significant effect upon speaking. Achievement in listening, speaking, reading, and writing was more apparent among students in the audio-lingual and eclectic groups. Sprague also found that boys tended to be superior to girls in critical thinking but girls had greater language aptitude than boys. He theorized that the teacher probably remains the chief determinant in how well the student learns to communicate in foreign language. Even though student motivation, ability to recognize differentiated language sounds, and sensitivity to grammatical structure were not investigated, Sprague believed they were important factors in language learning.

Lambert (1968) reviewed a series of investigations which had been carried out at McGill University. One study was designed for English speaking students who were studying French in a Montreal high school. These students were tested for language aptitude, verbal intelligence, motivation, and attitude toward French people. Lambert found "aptitude and intelligence formed one factor that was statistically independent of a second comprising indices of motivation, type of orientation toward languages, and social attitudes toward French-Canadians" (p. 9). Lambert further indicated that knowing a student's aptitude did not help to predict his attitude or motivation. Lambert supported the reasoning

that "intelligence and linguistic aptitude are relatively stable predictors of success." He also found that attitude toward another language group varied with social class and with geographic location.

In the second phase of the investigation Lambert was concerned with language learning aptitude, motivation, and attitude of Franco-American students whose native tongue was French. Lambert discovered that if the student viewed himself as both American and French, he would learn English and French equally well. If, however, the student identified himself with only one group, he would learn the language of his adopted group at the expense of the other. For American students, Lambert found achievement in foreign language was incidental to preparing the way for the future. In conclusion Lambert theorized, "intelligence coupled with a value placed on achievement are major determiners of success in most school work, including the study of language" (p. 13).

The main purpose of the investigation by Politzer and Weiss (1969) was to ascertain whether or not achievement in auditory discrimination, pronunciation in echo response, and vocabulary recall varies significantly as a function of age. The investigators chose their subjects from grades one, three, five, seven, and nine. An auditory discrimination test was recorded on tape by a bilingual speaker of French and English. This test was administered to a maximum of thirty participating students in a regular classroom setting.

The pronunciation and recall tests were administered on an individual basis. Politzer and Weiss found that in certain essential language learning tasks, such as acquisition of pronunciation and retention of vocabulary, achievement was increased with maturation (p. 84). The investigators also found that a younger child's ability to acquire two or more languages without interference from each other "is in fact a direct result of a comparative inability to transfer from the mother tongue." As the ability to transfer and identify in terms of a native language increases, the ability to learn the foreign language without interference from the mother tongue decreases" (p. 84). The final implication of Politzer and Weiss was that the element of language learning ability which decreased with maturation was perhaps the ability to learn thoroughly, not the ability to learn quickly.

Research pertinent to continuing the same foreign language was conducted by Oneto (1968). He investigated some 1,496 students of French and Spanish in grades ten, eleven, and twelve. The investigation was designed to compare students who had elementary school foreign language exposure with those students who began the study of French or Spanish in high school. Oneto concluded that pupils who had continuous study of a single foreign language from grade three through high school scored significantly better in reading, writing, speaking, and understanding that language than did their peers who began language study in high school.

Oneto also found that students elected to continue the same foreign language studied in the elementary school. Other languages decreased in enrollment. He found little evidence that the study of one language helped in learning a second foreign language. He theorized it might be possible that those who are very successful in learning one language might have developed confidence and a degree of language aptitude necessary to succeed in the learning of other languages. Oneto comprehensively reviewed the history of the elementary foreign language program (p. 38-123).

Another investigation dealing with the effects of foreign language study in the elementary school upon success in the same foreign language in high school was conducted by Vocolo (1967). He compared ninth-grade students of French. Thirty-one students who had continuous experience in grades five through eight were compared to thirty-one students who had one year of previous French experience. At the end of the ninth grade, those students who had continuous experience with French in grades five through nine scored significantly higher on posttest scores in listening, speaking, and writing than the group who had completed only two years of French.

Brega and Newell (1965) compared two groups of eleventh-grade students. One group had been introduced to French in grade three. The other group began the study of French in grade seven. The investigators used the Modern Language Association French Examination to measure listening,

speaking, reading, and writing skills of both groups. Brega and Newell found that the students who had been exposed to French in grades three through eleven performed significantly better on all four skills than did those students who began French in grade seven. The investigators concluded that an elementary foreign language program that "is administrated and staffed by language specialists has a long-term effect on the achievement of students in that program" (p. 410). Brega and Newell also suggested that students from this type program performed on a higher level of achievement over and above differences in intelligence and instructors (p. 411).

Foreign language educators have considered mastery of a single foreign language as a desirable prerequisite to second foreign language acquisition. A thorough search of the literature revealed few investigations which might shed some light on the effects of changing foreign languages at the seventh-grade level.

Holloran (1952) investigated 120 grammar school students who had been divided into high and low intelligence groups. Sixty pupils studied French for four consecutive years. The remaining sixty pupils were exposed to Esperanto for an academic year before introduction to the three year study of French. In the low intelligence group, Holloran found that those students who had initially studied Esperanto performed better than those students who had studied French for four years. However, in the high intelligence group,

those students who had studied only French for four years performed better than those who had initially studied one year of Esperanto and three years of French.

Ryan (1961) investigated varying amounts of German language experience in the elementary school in relation to achievement in high school German I, Spanish I, and Latin I. The variables subjected to analysis were mental maturity, teachers' grades in varying languages, achievement tests, and an oral comprehension test in German. Ryan found that the German students who had previous experience with German in the elementary school achieved higher scores than those who had no previous language experience. Ryan concluded that "there appeared to be a perfect rank relationship between the degree of pupil success in the first year high school German classes and the number of years spent in the German FLES program" (p. 100-101). He did not find this relationship to be true where the foreign language was different from that studied in the elementary school. Ryan also found that prior experience in German "had a definite positive influence" on the choice of languages and years of continued study in that language at the high school level. Ryan did not report a positive transfer effect from German to Latin I or to Spanish I.

Theories and investigations relevant to changing foreign languages or to second foreign language learning were not in abundance. Houston (1967), in a comprehensive

review of language theories which were proposed by leading linguists and psychologists, stated "much of the existing theory is hastily compiled, based on scanty data or none at all, or conversely based on empirical observation with no unifying hypotheses and therefore no justification" (p. 167). Houston was of the opinion that the various problems which are encountered in the study of one foreign language are greatly increased when a second foreign language is added. New problems of interference arise between the first foreign language and the second foreign language. Houston observed that students who have mastered the first foreign language found the interference problem virtually insurmountable and resulted in having difficulty with both foreign languages. She also believed that the interference was more striking between related languages and considered this difficulty due to cognates or grammatical similarities between the languages. Houston did not regard the native language as a language but rather an intrinsic part of the learner's consciousness. She reemphasized that neither first nor second foreign languages were acquired in the same way as the native language.

Donoghue (1968) emphasized the difference in first and second language learning. She explained that the first, or native language, was usually spontaneous and unplanned. Foreign languages acquired after the native language were generally the result of organized effort in a formal system parallel to, and explained in terms of the native language.

Houston, previously cited, advised usage of the first foreign language, rather than the native language, to facilitate the learning of a second foreign language.

Jakobovits (1969) viewed transfer as "perhaps the single most important concept in the theory and practice in education" (p. 55). He explained the principle of transfer as referring to the hypothesis that learning one task will affect the subsequent learning of a second task. Jakobovits showed concern about extrapolation of knowledge and stated, "whatever specific knowledge there is on transfer concerns tasks and settings that are largely irrelevant to crucially important educational concerns, and the amount of specific and reliable knowledge on the latter is practically non-existent" (p. 57). However, he suggested that conditions of teaching and transfer effect appeared to be quite important in second language learning.

Rivers (1964, p. 164-193) traced some of the current modern language theories to their origin in earlier theories and experimental research. She reviewed both the audio-lingual habit theory and the cognitive code-learning theory. Rivers believed that the ultimate aim of either of these theories of learning was transfer of what had been learned in a particular situation, with specific utterances, to other situations. Rivers advised that:

Transfer must not be assumed to be automatic, any more than we can presume that a child "learns" because he is taught . . . after small amounts of learning early in the life of the individual,

every instance of learning is a function of the already existent learned organization of the subject; that is, all learning is influenced by transfer (p. 125-130).

Rivers noted that the two major positions in psychological theory of positive transfer were postulated by Thorndike, who emphasized transfer of identical elements, and the Gestalt version, which emphasized transfer of perceived relationships between two situations which are otherwise quite different. Rivers was concerned with foreign language transfer from the classroom to real-life situations and of transfer from the native language to foreign language.

An examination of the literature revealed various theories and investigations pertinent to foreign language learning. Many of the investigations had been conducted at the early elementary or the university level. Previously cited research indicated that general academic performance, English grades, intelligence scores, and foreign language aptitude scores were reliable indicators of foreign language achievement. Sex differences, attitude toward the target language, and student motivation were influential factors in successful foreign language learning. Continuous progress in one foreign language was considered a better indicator of higher achievement than changing foreign languages or beginning a foreign language at the junior and senior high school levels. Both theories of transfer and the few investigations dealing with changing foreign languages indicated a need for further investigation of this problem.

Statement of the Problem

In order to investigate particular variables which may be relevant to foreign language listening comprehension at the seventh-grade level, the following primary and secondary problems were explored:

Primary problem. Is there a statistically significant difference in the means of scores on foreign language listening comprehension tests for those students who were assigned to continue Spanish or French as a first foreign language and those students who were assigned to begin Spanish or French as a second foreign language at the seventh-grade level?

Secondary problem. Is the California Short-Form Test of Mental Maturity a more valid predictor of achievement in foreign language listening comprehension in Spanish or French as measured by the Common Concepts Foreign Language Test than is the Modern Language Aptitude Test-Elementary, or verbal ability as measured by School and College Ability Tests?

Hypotheses

Based on the primary and secondary problems, the following hypotheses were formulated and tested:

Hypothesis 1. There is no statistically significant difference between means of posttest scores in foreign language listening comprehension tests for students who were assigned to continue Spanish as a first foreign language and

for those students who were assigned to continue French as a first foreign language.

Hypothesis 2. There is no statistically significant difference between the means of posttest scores of foreign language listening comprehension in French and Spanish for students who were assigned to begin French as a second foreign language and those students who were assigned to begin Spanish as a second foreign language. . .

Hypothesis 3. There is no statistically significant difference between the means of posttest scores of foreign language listening comprehension in Spanish for students who were assigned to begin Spanish as a second foreign language and those students who were assigned to continue Spanish as a first foreign language.

Hypothesis 4. There is no statistically significant difference between the means of posttest scores of foreign language listening comprehension in French for students who were assigned to begin French as a second foreign language and those students who were assigned to continue French as a first foreign language.

Hypothesis 5. There is no statistically significant difference between the means of pretest-posttest scores of foreign language listening comprehension in Spanish for students who were assigned to continue Spanish as a first foreign language.

Hypothesis 6. There is no statistically significant difference between the means of pretest-posttest scores of foreign language listening comprehension in French for students who were assigned to continue French as a first foreign language.

Hypothesis 7. There is no statistically significant difference between the means of pretest-posttest scores of foreign language listening comprehension in Spanish and French for those students assigned to begin French as a second foreign language.

Hypothesis 8. There is no statistically significant difference between the means of pretest-posttest scores of foreign language listening comprehension in French and Spanish for those students assigned to begin Spanish as a second foreign language.

Hypothesis 9. The California Short-Form Test of Mental Maturity is a more valid predictor of achievement in listening comprehension as measured by the Common Concepts Foreign Language Test for those students who continue French or Spanish as a first foreign language at the seventh-grade level than the Modern Language Aptitude Test-Elementary or the Verbal Ability section of the School and College Ability Tests.

Hypothesis 10. The California Short-Form Test of Mental Maturity is a more valid predictor of achievement in foreign language listening comprehension as measured by the

Common Concepts Foreign Language Test for those students who begin Spanish or French as a second foreign language at the seventh-grade level than the Modern Language Aptitude Test-Elementary or the Verbal Ability section of the School and College Ability Tests.

Operational Definitions

Listening comprehension is the subject's developed ability to associate meaning with sounds of illustrated sentences in the target foreign language as measured by the Common Concepts Foreign Language Test.

Developed verbal ability is the subject's ability to comprehend sentence understanding and word meanings as measured by the School and College Ability Tests Form 2.

Language aptitude is the subject's memory component, sensitivity to grammatical structure, learned capabilities of sound-symbol association, and hearing speech sounds as measured by the Modern Language Aptitude Test-Elementary.

Mental maturity is the subject's ability to apply both inductive and deductive reasoning on tests of logical reasoning, numerical reasoning, verbal concepts, and delayed recall as measured by the California Short-Form Test of Mental Maturity.

Limitations

The present investigation was restricted to those monolingual students whose first exposure to foreign language

was through this school system's televised foreign language series in grades four, five, and six. Skill in listening comprehension was treated in isolation of skill in speaking, reading, and writing.

CHAPTER II

METHOD AND PROCEDURE

Subjects

The subjects of the present investigation were enrolled in four junior high schools of a large metropolitan school system. The foreign language enrollment of the four junior high schools was representative of the total foreign language enrollment at the seventh-grade level. In one of the selected junior high schools, 91 per cent of the seventh-grade student body was enrolled in foreign languages. Four teachers of Spanish and four of French were assigned to conduct the foreign language classes. The second junior high school had just initiated a foreign language program for 31 per cent of the seventh-grade population. One teacher provided Spanish instruction to three groups. Fifty-three per cent of the seventh-grade population in the third selected junior high school was enrolled in French or Spanish. Two teachers of Spanish and one of French conducted the foreign language instructional groups in this junior high school. In the fourth selected junior high school, 13 per cent of the seventh-grade student body was enrolled in French or Spanish.

One teacher of French and one of Spanish were assigned to instruct these foreign language groups.

During the enrollment procedure, seventh-grade counselors divided all students into instructional groups according to sixth-grade teacher recommendation and standardized test scores of academic achievement and mental maturity. Those students who needed additional skill development in the English language were not assigned to foreign languages. The ability range of the 864 subjects who were selected for foreign language enrollment was from the fourth quartile through the first quartile of the achievement and mental maturity tests. Within the limits of teacher availability, the groups of foreign language students were assigned on an odd-even basis to study French or Spanish. As it resulted, 152 more students were assigned to Spanish than to French.

The certified teachers of French or Spanish conducted the classes in 55 minute periods for a total exposure of 275 minutes per week. Fundamental skills in listening comprehension, speaking, reading, and writing were developed concurrently, with major emphasis on listening comprehension and speaking. The learning rate of individual students and classes was emphasized in all foreign language groups. No attempt was made to equate the amount of material presented to the individual foreign language classes. The material presented was Learning Spanish the Modern Way, Book I (Brenes, Adey, Smith, McKinney, & Woodford, 1967) and Learning French

the Modern Way, Book I (Evans, Baldwin, & Kelley, 1967).

Accompanying tape recordings and film strips were provided in each junior high school. Films were available from the central film library.

Selection and Description of Instruments

A general criterion for the selection of audio-lingual-visual instruments employed in the present investigation was that of standardized tests which could be administered by recorded tape during the regular foreign language period and could be hand scored. Each standardized test was selected to gather specific data needed to test the stated hypotheses. The descriptive information which follows was found in the respective test manuals.

The Common Concepts Foreign Language Test (Banathy et al, 1966) was designed to measure listening comprehension in French, German, Spanish, and English at any grade level. This test consists of two alternate and comparable forms for each of the four languages. The test booklet contains twenty-four multi-colored scenes which are recombined in a series of four to form a multiple choice test of eighty items. The same test booklet is used for each of the four mentioned languages. The test manual contains distribution tables which list percentile ranks and standard scores that are based on data from 38 school systems in 17 states.

In addition to the information found in the test manual of the Common Concepts Foreign Language Test, a pilot

study had been conducted by the studio teacher in grades five and six. As a result of the pilot study, the studio teacher recommended the test as a valid measuring instrument for the televised foreign language program. A second pilot study was conducted at the seventh-grade level with 809 students. The means of scores were essentially the same in each of the pilot schools. None of the students from the pilot studies were involved in the present investigation.

The Modern Language Aptitude Test-Elementary (Carroll & Sapon, 1967) was designed to measure basic language aptitude which will give a probable estimate of success in foreign language study provided that sufficient motivation and interest in foreign language learning are present. The test is divided into four parts. Part one, Hidden Words measures the student's knowledge of English and ability to associate sounds and symbols. Part two, Matching Words measures the student's sensitivity to grammatical structure. Part three, Finding Rhymes attempts to measure the ability to hear speech sounds. Part four, Number Learning was designed to measure the memory component. The Modern Language Aptitude Test-Elementary contains 130 items and requires 61 minutes to administer. The student records his answers in the expendable test booklet.

The California Short-Form Test of Mental Maturity by Sullivan, Clark, & Tiegs (1965) was designed to provide information about the functional capabilities that are basic

to learning, problem-solving, and responding to new situations. The following test description was found on page six of the examiner's manual.

The California Short-Form Test of Mental Maturity, 1963 Revision (Level 2), consists of seven test units, each a different mental exercise. Tests 1 through 4 compose the Non-Language Section. In each of these four units a minimum of verbal material is presented and a particular aspect of the examinee's mental capacities is measured through items that require the recognition or logical analysis of abstract relationships. Tests 5 through 7, the Language Section, sample the ability to comprehend verbal and numerical concepts of various types, and test the extent and accuracy of recall. The Non-Language and Language Sections each contain sixty items. Allowed testing time is 42 minutes.

The California Short-Form Test of Mental Maturity was selected for the present investigation because it had been administered prior to seventh-grade foreign language experience, the scores were available in the central testing office, and provided a measure of mental abilities. The results of the test had been machine scored.

The School and College Ability Tests (Educational Testing Service, 1957) was designed to measure school-related verbal and quantitative abilities. The test consists of four parts. Parts I and III measure developed verbal ability. Parts II and IV measure developed ability in basic quantitative areas. The entire test allows 70 minutes of testing time to complete 110 items. This test was selected as a control variable because it measured developed verbal ability and would be administered annually to all seventh-grade

students in the school system. Also, the scores could be obtained from the central testing office upon presentation of the proper credentials.

Procedure

A mandatory procedure for conducting research in the participating school system is to submit a written proposal accompanied by a copy of the Prospectus to the research department. After due processing, written permission was granted to conduct the present investigation within the limitations of the submitted proposal.

The participating foreign language teachers were aware of the present investigation from the initiation. The six teachers of French and eight teachers of Spanish were very supportive throughout the investigation.

Testing Procedure

Between September 2 and 16, during the first two weeks of foreign language instruction in seventh-grade classes, Form 1 of the Common Concepts Foreign Language Test was administered to all students in attendance who had previous experience in French or Spanish. The test was administered to class size groups and during the foreign language period. A tape recorder, a commercially prepared tape in French or Spanish, test booklets, IBM 1230 answer sheets, and pencils were used in administering the test. The foreign language teachers were present and assisted in the test

administration. Make-up tests were not considered for the twenty-four students of Spanish and ten students of French who were absent on the test date. Answer sheets were hand scored and retained by the investigator. Class profiles of test scores were furnished to each foreign language teacher. A total school profile of foreign language test scores was prepared for the principals of each of the four junior high schools.

Between December 1 and 12, in the second quarter of the academic year, the guidance counselors administered the School and College Ability Tests to all seventh-grade students in the school system. Classroom teachers acted as proctors and assistants to the guidance counselors during the test procedure. The answer cards were processed in the research department by an IBM 1401 computer. A copy of the test results was sent to the central testing office.

As a precautionary measure, the participating school system does not permit reproduction of test data identifiable by student name. Therefore, the test results of both the School and College Ability Tests and the California Test of Mental Maturity were recorded for subjects according to an assigned student number.

In the third quarter of the academic year, the Modern Language Aptitude Test-Elementary was administered to the seventh-grade foreign language students. The test was administered by tape recording, in the regular foreign

language classes, and with the assistance of the foreign language teachers. The test booklets were hand scored and an individual item analysis profile was reported on each student's test booklet. A composite profile of scores was prepared for the respective teachers and returned to these teachers with the student test booklets. A complete profile of all aptitude scores was prepared for the individual school principals.

Form 2 of the Common Concepts Foreign Language Test, the posttest of this investigation, was administered to the respective classes of French and Spanish during the fourth quarter of the academic year. The test was administered by tape recording, in the regular foreign language classes, and with the assistance of the individual teachers. Testing order was carefully scheduled to prevent undesirable time lapse among classes within a school and among junior high schools. The answer sheets were hand scored. A test profile containing pretest, posttest, and foreign language aptitude scores, listed by component parts and total scores, was prepared and sent to the teachers of the specific foreign language classes. No teacher had access to scores of classes other than her own. However, an individual school profile of all foreign language classes was made available to the principal. All of the test data collected in the present investigation was recorded in a complete syllabus and presented to the Curriculum Director of the participating school system.

The essential data were compiled for 846 subjects. The distribution of subjects, tabulated according to the foreign language studies at the seventh-grade level, was recorded in Table 1.

Table 1
Distribution of Subjects

Seventh Grade Language	Male	Female	Total
Spanish continued	193	223	416
Spanish to French	97	118	215
French continued	58	90	148
French to Spanish	42	43	85

Selection of Samples

The final samples of subjects were selected by a table of random numbers and consisted of 320 students. An equal number of males and females were selected for each group of samples because the table of norms of the Modern Language Aptitude Test-Elementary lists higher scores for females than males. The subjects ranged from 11 years 10 months to 12 years 10 months of age. A review of the sample scores indicated that the four junior high schools were represented in each sample distribution. The sample distribution was recorded in Table 2.

Table 2
Distribution of Samples

Seventh Grade Language	Male	Female	Total
Spanish continued	40	40	80
Spanish to French	40	40	80
French continued	40	40	80
French to Spanish	40	40	80

Design

The design employed in the present investigation is an extension of Design 17.3 as described by Kerlinger (1964, pp. 308-309). The structure of this design uses randomization and a pretest-posttest procedure. The difference scores are computed and the significance of difference between the D scores are tested with the t or F tests. The Pearson product-moment correlation coefficient was used to test the magnitude and direction of the relationship between the variables. The .05 level of confidence was adopted for acceptance or rejection of the stated hypotheses. Throughout the present investigation, extreme caution was exercised in order to meet the requirements of the research design.

CHAPTER III

RESULTS

Introduction

The primary purpose of the present investigation was to systematically collect and analyze data relevant to students who continued the same foreign language they had begun in elementary school and those who had changed foreign languages at the seventh-grade level. A secondary purpose was to determine if there was a significant correlation between selected variables and foreign language achievement at the seventh-grade level.

Raw scores were obtained from the administration of three standardized tests, the Common Concepts Foreign Language Test, Forms 1 and 2, and the Modern Language Aptitude Test-Elementary. In addition, raw scores for the California Short-Form Test of Mental Maturity and the School and College Ability Tests were secured from the central testing office. The final selection of subjects consisted of 320 seventh-grade students enrolled in French or Spanish in four junior high schools of a large metropolitan school system. The Monroe EPIC 2000 and the IBM 1401 Data Processing Systems were used for all computations in the present investigation.

Testing the Hypotheses

Hypotheses one, two, three, and four were tested according to the procedure recommended by Weinberg and Schumaker (pp. 193-207). The formulas employed were:

$$s_d = \sqrt{\frac{s_1^2}{N_1} + \frac{s_2^2}{N_2}}$$

$$\underline{t} = \frac{\bar{X}_1 - \bar{X}_2}{s_d}$$

In the preliminary procedure of the investigation, the .05 level of significance was adopted. In addition, the .01 level of significance was reported. Each hypothesis was tested according to males, females, and total sample.

The first hypothesis stated that there was no statistically significant difference between means of posttest scores of foreign language listening comprehension in Spanish and French for those students who were assigned to continue Spanish as a first foreign language and for those students who were assigned to continue French as a first foreign language. The mean, standard deviation, and t value for the first hypothesis were recorded in Table 3.

The t value of -1.736 for the male students who continued French or Spanish was not statistically significant

at the .05 or the .01 levels of significance on posttest scores of foreign language listening comprehension in the respective languages. The male students of Spanish scored higher, but not significantly higher, than the male students of French. The null hypothesis of no statistically significant difference between the means of posttest scores of foreign language listening comprehension in French and Spanish for the male students of the respective languages was accepted.

Table 3

Mean, Standard Deviation, and t Value of Posttest Scores of Listening Comprehension in Spanish or French as a Continued Foreign Language

	Spanish		French		<u>t</u> Value
	Mean	S. D.	Mean	S. D.	
Male	39.23	10.02	35.75	7.75	-1.736
Female	40.35	8.06	37.53	1.28	-2.190*
Total	39.79	9.11	36.64	5.62	-2.632*

*Significant at the .05 level of significance.

A statistically significant difference at the .05 level, but not at the .01 level, was indicated by a t value of -2.190 for the female students who continued Spanish or French. The female students who continued Spanish scored significantly higher than the female students of French. The null hypothesis of no statistically significant difference

between means of posttest scores of foreign language listening comprehension in Spanish and French was rejected.

The t value of -2.632 was statistically significant at the .05 level of significance, but not at the .01 level, for the difference between means of the posttest scores in Spanish and French listening comprehension for the total sample of students who continued Spanish or French at the seventh-grade level. The students who continued Spanish scored significantly higher than those students who continued French. The null hypothesis of no statistically significant difference between the means on the posttest scores of foreign language listening comprehension in Spanish and French was rejected at the .05 level of significance.

The second hypothesis stated that there was no statistically significant difference between the means of posttest scores of foreign language listening comprehension in French or Spanish for students who were assigned to begin French as a second foreign language and those students who were chosen to begin Spanish as a second foreign language. The data computed for testing hypothesis two were recorded in Table 4.

The t value of 1.366 was not statistically significant at the .05 level of significance for male students who began Spanish or French as a second foreign language at the seventh-grade level. The male students who changed from French to Spanish scored slightly higher on posttest scores of Spanish

listening comprehension than the male students who changed from French to Spanish on posttest scores of French listening comprehension. For male students, the stated null hypothesis of no statistically significant difference between the means of posttest scores of listening comprehension in French or Spanish was rejected.

Table 4

Mean, Standard Deviation, and t Value of Posttest Scores of Listening Comprehension in Spanish or French as a Second Foreign Language

	Spanish to French Mean	French to Spanish S. D.	French to Spanish Mean	Spanish to French S. D.	<u>t</u> Value
Male	28.23	5.74	29.63	3.02	1.366
Female	28.83	8.67	35.33	7.82	3.521*
Total	28.93	5.20	32.08	7.77	3.019*

*Significant at the .05 level of significance.

A t value of 3.521 was statistically significant at the .05 and .01 levels of significance for the female students who began Spanish or French as a second foreign language at the seventh-grade level. The female students who changed from French to Spanish scored significantly higher on the posttest of listening comprehension in Spanish than those female students who changed from Spanish to French on the posttest scores of listening comprehension in French. The stated null hypothesis of no statistically significant difference between the means of posttest scores of foreign

language listening comprehension in French or Spanish was rejected.

In the total sample, those students who changed from French to Spanish scored significantly higher than those students who changed from Spanish to French at the seventh-grade level. The t value of 3.019 for difference between the means was statistically significant at the .05 and the .01 levels of significance. The null hypothesis of no statistically significant difference between the means on posttest scores of foreign language listening comprehension in French or Spanish for students who began French or Spanish as a second foreign language at the seventh-grade level was rejected.

Hypothesis three stated that there was no statistically significant difference between the means of posttest scores of foreign language listening comprehension in Spanish for students who were assigned to begin Spanish as a second foreign language and those students who were assigned to continue Spanish as a first foreign language. The mean, standard deviation, and t value computed for testing hypothesis three were recorded in Table 5.

The students who were assigned to continue Spanish as a first foreign language scored significantly higher on posttests of foreign language listening comprehension in Spanish than the students who were assigned to begin Spanish as a second foreign language at the seventh-grade level.

The t values of 5.803 for the males, 2.829 for the females, and 5.761 for the total sample were highly significant at the .05 and .01 levels of significance. The stated null hypothesis of no statistically significant difference between the means of posttest scores in foreign language listening comprehension in Spanish was rejected.

Table 5

Mean, Standard Deviation, and t Value of Posttest Scores of Listening Comprehension in Spanish as a First or Second Foreign Language

	French to Spanish		Spanish		<u>t</u> Value
	Mean	S. D.	Mean	S. D.	
Male	29.63	3.02	39.23	10.02	5.803*
Female	35.33	7.82	40.35	8.06	2.829*
Total	32.08	7.77	39.79	9.11	5.761*

*Significant at the .05 level of significance.

Hypothesis four stated that there was no statistically significant difference between the means of posttest scores of foreign language listening comprehension in French for students who were assigned to begin French as a second foreign language and those students who were assigned to continue French as a first foreign language. The computed data, the mean, standard deviation, and t value, pertaining to Hypothesis four were computed and recorded in Table 6.

Table 6

Mean, Standard Deviation, and t Value of Posttest
Scores of Listening Comprehension in French
as a First or Second Foreign Language

	Spanish to French Mean	S. D.	French Continued Mean	S. D.	<u>t</u> Value
Male	28.23	5.74	35.75	7.75	4.935*
Female	28.83	8.67	37.53	1.28	6.275*
Total	28.93	5.20	36.64	5.62	9.009*

*Significant at the .05 level of significance.

The obtained t values were statistically significant for the males, females, and total sample of students who began French as a second foreign language and those students who continued French at the seventh-grade level. The t value of 4.935 for the males, 6.275 for the females, and 9.009 for the total sample were statistically significant at the .05 and .01 levels of significance. The students who were assigned to continue French scored significantly higher than the students who were assigned to begin French as a second foreign language. The null hypothesis of no statistically significant difference between the means of posttest scores of foreign language listening comprehension in French for those students who began French as a second foreign language and those who continued French at the seventh-grade level was rejected.

Hypotheses five, six, seven, and eight were tested according to the procedure recommended by Ferguson (1966, p. 170). The formula employed was:

$$\underline{t} = \frac{\sum D}{\sqrt{\frac{N \sum D^2 - (\sum D)^2}{N - 1}}}$$

Hypothesis five stated that there was no statistically significant difference between the means of pretest-posttest scores of foreign language listening comprehension in Spanish for students who were assigned to continue Spanish as a first foreign language. The data relevant to hypothesis five were recorded in Table 7.

Table 7

Mean, Standard Deviation, and t Value of Pretest-Posttest Scores of Listening Comprehension in Spanish as a Continued Foreign Language

	Pretest Spanish Mean	S. D.	Posttest Spanish Mean	S. D.	<u>t</u> Value
Male	30.85	8.12	39.23	10.02	5.297*
Female	31.60	5.87	40.35	8.06	6.752*
Total	31.23	7.05	39.79	9.11	8.419*

*Significant at the .05 level of significance.

The computed t value of 5.297 was statistically significant at the .05 and .01 levels of significance for difference between means of pretest-posttest scores of foreign language listening comprehension in Spanish for male students who continued Spanish at the seventh-grade level. The male students scored significantly higher on the posttest than on the pretest of listening comprehension in Spanish. The null hypothesis of no statistically significant difference between the means of pretest-posttest scores of foreign language listening comprehension in Spanish was rejected.

The computed t value of 6.752 was statistically significant at the .05 and .01 levels of significance for difference between the means of pretest-posttest scores of foreign language listening comprehension in Spanish for female students who continued Spanish as a first foreign language at the seventh-grade level. The female students who continued Spanish scored significantly higher on the posttest than the pretest of foreign language listening comprehension in Spanish. The null hypothesis of no statistically significant difference between the means of pretest-posttest scores of foreign language listening comprehension in Spanish was rejected.

The computed t value of 8.419 was obtained from the difference between means of pretest-posttest scores of foreign language listening comprehension in Spanish for the total sample of students who continued Spanish at the seventh-grade

level. The t value was statistically significant at the .05 and .01 levels of confidence. The students who continued Spanish as a first foreign language scored significantly higher on the posttest of foreign language listening comprehension in Spanish. The null hypothesis of no statistically significant difference between the means of pretest-posttest scores of foreign language listening comprehension in Spanish was rejected.

Hypothesis six stated that there was no statistically significant difference between the means of pretest-posttest scores of foreign language listening comprehension in French for students who were assigned to continue French as a first foreign language. The mean, standard deviation, and t value pertaining to hypothesis six were recorded in Table 8.

Table 8

Mean, Standard Deviation, and t Value of Pretest-Posttest Scores of Listening Comprehension in French as a Continued Foreign Language

	Pretest French Mean	S. D.	Posttest French Mean	S. D.	t Value
Male	30.27	4.18	35.75	7.58	6.245*
Female	30.98	7.35	37.53	7.20	6.245*
Total	30.63	5.99	36.64	7.45	8.943*

*Significant at the .05 level of significance.

A significant t value of 6.245 was obtained from the difference between the means on pretest-posttest scores of foreign language listening comprehension in French for male students who continued French at the seventh-grade level. The male students who continued French as a first foreign language scored significantly higher on the posttest than on the pretest of listening comprehension in French. The null hypothesis of no statistically significant difference between the means of pretest-posttest scores of foreign language listening comprehension in French for male students who continued French at the seventh-grade level was rejected at the .05 level of significance.

The t value of 6.245 which was obtained from the difference between means on pretest-posttest scores of foreign language listening comprehension in French for female students who continued French at the seventh-grade level, was significant at the .05 and .01 levels of significance. The female students who continued French as a first foreign language scored significantly higher on the posttest than on the pretest of foreign language listening comprehension in French. For the total group, a t value of 8.943 was statistically significant at the .05 and .01 levels of significance. The null hypothesis of no statistically significant difference between the means of pretest-posttest scores of foreign language listening comprehension in French at the seventh-grade level was rejected.

Hypothesis seven stated that there was no statistically significant difference between the means of pretest-posttest and posttest-posttest scores of foreign language listening comprehension in Spanish and French for those students who began French as a second foreign language. The computed data concerning hypothesis seven were recorded in Tables 9 and 10.

Table 9

Mean, Standard Deviation, and t Value for the Spanish Pretest and French Posttest Scores of Listening Comprehension for French as a Second Foreign Language

	Pretest Spanish Mean	S. D.	Posttest French Mean	S. D.	t Value
Male	30.50	7.59	28.22	3.74	-2.141 *
Female	32.20	6.65	29.62	5.34	-0.620
Total	31.35	7.19	28.92	4.66	-1.957

*Significant at the .05 level of significance.

The male students who began French as a second foreign language at the seventh-grade level scored significantly lower on the French posttest than on the Spanish pretest of foreign language listening comprehension. An obtained t of -2.141 was statistically significant at the .05 level, but not at the .01 level of significance. The null hypothesis of no statistically significant difference between the means of pretest-posttest scores of foreign language

listening comprehension in French or Spanish for the male students who began the respective languages at the seventh-grade level was rejected.

For the female students who began French as a second foreign language, an obtained t value of -0.620 for the difference between the means on pretest scores in Spanish and posttest scores of foreign language listening comprehension in French was not significant at the $.05$ and $.01$ levels of significance. The female students scored lower, but not significantly lower, on the posttest of foreign language listening comprehension in French than on the pretest in Spanish. The stated null hypothesis of no statistically significant difference between the means of pretest-posttest scores for female students who began French as a second foreign language was accepted.

The obtained t value of -1.957 for the difference between means of pretest scores of foreign language listening comprehension in Spanish and the posttest scores of foreign language listening comprehension in French was not statistically significant at the $.05$ or $.01$ levels of significance. For the total sample, the null hypothesis of no statistically significant difference between the means of pretest-posttest scores of foreign language listening comprehension in Spanish and French for those students who began French as a second foreign language at the seventh-grade level was accepted.

A statistically significant t value of 2.680 obtained for the difference between means on posttest scores of foreign language listening comprehension in French, was statistically significant at the .05 but not at the .01 level of significance. The null hypothesis of no statistically significant difference between the means of posttest scores in foreign language listening comprehension in Spanish and French for the male students who began French as a second foreign language at the seventh-grade level was rejected.

Table 10

Mean, Standard Deviation, and t Value of Posttest Scores of Listening Comprehension in Spanish and French for French as a Second Foreign Language

	Posttest Spanish Mean	Posttest French Mean	S. D.	t Value
Male	32.08	28.22	3.74	-2.680*
Female	35.00	29.62	5.34	-4.116*
Total	33.54	28.92	4.66	-4.776*

*Significant at the .05 level of significance.

For the female students who began French as a second foreign language at the seventh-grade level, the t value of -4.116 was statistically significant at the .05 and .01 levels of significance. The female students scored significantly

higher on the posttest of foreign language listening comprehension in Spanish than on the posttest in French. The null hypothesis of no statistically significant difference between the posttest scores of foreign language listening comprehension in Spanish and French for female students who began French as a second foreign language at the seventh-grade level was rejected.

A statistically significant t value of -4.776 was obtained for the difference between means of posttest scores of foreign language listening comprehension in Spanish and French for the total sample of students who began French as a second foreign language at the seventh-grade level. The total sample of students scored higher on posttest scores of Spanish than on posttest scores of French listening comprehension. The null hypothesis of no statistically significant difference between the means of posttest scores of foreign language listening comprehension in Spanish and French for the students who began French as a second foreign language at the seventh-grade level was rejected.

Hypothesis eight stated that there was no statistically significant difference between the means of pretest-posttest scores of foreign language listening comprehension in French and Spanish for those students assigned to begin Spanish as a second foreign language. The computed data pertaining to hypothesis eight were recorded in Table 11.

Table 11

Mean, Standard Deviation, and t Value for the
French Pretest and Spanish Posttest Scores
of Listening Comprehension for French
as a Second Foreign Language

	Pretest French Mean	S. D.	Posttest Spanish Mean	S. D.	t Value
Male	28.33	2.22	28.83	6.14	0.483
Female	30.43	7.25	35.32	7.87	4.120*
Total	29.38	5.46	32.20	7.77	3.368*

*Significant at the .05 level of significance.

An obtained t value of 0.483 for difference between means on French pretest and Spanish posttest scores of foreign language listening comprehension, was not statistically significant at the .05 or .01 levels of significance. The stated null hypothesis of no statistically significant difference between the means of pretest-posttest scores of foreign language listening comprehension in French and Spanish for male students who began Spanish as a second foreign language at the seventh-grade level was rejected.

The female students who began Spanish as a second foreign language scored significantly higher on the posttest of foreign language listening comprehension in Spanish than on the pretest in French. The obtained t value was 4.120 for the difference between means on the pretest-posttest scores. The null hypothesis of no statistically significant

difference between pretest-posttest scores in foreign language listening comprehension in French and Spanish for female students who began Spanish as a second foreign language at the seventh-grade level was rejected.

The \underline{t} value of 3.368 was statistically significant at the .05 and .01 levels of significance for the difference between means on pretest-posttest scores of foreign language listening comprehension in French and Spanish for the total sample of students who began Spanish as a second foreign language at the seventh-grade level. The stated null hypothesis was rejected.

Hypotheses nine and ten were tested according to the procedure recommended by Downie and Heath (1965, pp. 85-87), Guilford (1965, pp. 97, 190-191), and interpreted from the table of critical values of \underline{t} listed by Siegel (1957, p. 248). The following formulas for computing the Pearson product-moment correlation coefficient from raw scores and the differences between coefficients of correlation were employed.

$$r_{xy} = \frac{N\sum XY - (\sum X)(\sum Y)}{\sqrt{[N\sum X^2 - (\sum X)^2][N\sum Y^2 - (\sum Y)^2]}}$$

$$t_{d_r} = (r_{12} - r_{13}) \sqrt{\frac{(N-3)(1+r_{23})}{2(1-r_{23}^2 - r_{12}^2 - r_{13}^2 + 2r_{23}r_{12}r_{13})}}$$

Hypothesis nine stated that the California Short-Form Test of Mental Maturity was a more valid predictor of achievement in foreign language listening comprehension as measured by the Common Concepts Foreign Language Test for those students who continued Spanish or French as a first foreign language at the seventh-grade level than the Modern Language Aptitude Test-Elementary or the Verbal Ability section of the School and College Ability Tests. The essential data for testing hypothesis nine were computed and recorded in Tables 12 through 19. The Pearson product-moment correlation coefficients were computed from raw scores by the 1401 Data Processing Systems.

Analysis of Data for Spanish as a Continued Foreign Language

The obtained correlation coefficients for students who continued Spanish at the seventh-grade level were recorded in Tables 12, 13, and 14. The matrices of inter-correlation among indices for Spanish as a continued foreign language were arranged according to male, female, and total sample.

Data analysis for male students who continued Spanish.

The highest positive correlation coefficient from pretest scores for the male students who continued Spanish at the seventh-grade level was an obtained r value of .572 between Form 1 of the Common Concepts Foreign Language Test (CCFLT-S1) of foreign language listening comprehension in Spanish and

the total score of the California Short-Form Test of Mental Maturity (CTMM). The obtained correlation coefficient of .572 was statistically significant at the .05 and .01 levels of significance and established a validity coefficient for CCFLT-S1 and CTMM for male students who continued Spanish at the seventh-grade level. A positive relationship between CCFLT-S1 and the Verbal Ability section of the School and College Ability Tests (V SCAT) was indicated by the obtained correlation coefficient of .496 and was statistically significant at the .05 level of significance for scores of the CCFLT-S1 and the Modern Language Aptitude Test-Elementary (EMLAT). A statistically significant r value of .428 indicated a positive relationship between CCFLT-S1 and posttest Form 2 of the Common Concepts Foreign Language Test (CCFLT-S2) in foreign language listening comprehension in Spanish. All of correlation coefficients for CCFLT-S1 and the predictor-tests, EMLAT, V SCAT, and CTMM, were statistically significant at the .05 level of significance except the r value of .273 for the CCFLT-S1 and EMLAT for the male students who continued Spanish at the seventh-grade level.

The highest correlation coefficient of .446 from the posttest scores and predictor-tests were statistically significant at the .05 and .01 levels of significance and was obtained from scores of the CCFLT-S2 and V SCAT. A positive relationship between CCFLT-S2 and EMLAT was indicated by the r value of .428 and was statistically significant at the .05

level of significance. An obtained r value of .353 was indicated for the relationship between CCFLT-S2 and CTMM and was statistically significant at the .05 level of significance. All of the correlation coefficients indicated a positive relationship between CCFLT-S2 and the predictor-test variables.

Table 12

Matrix of Intercorrelation Among Indices
for Spanish Continued
N = 40 Males

Variables	CCFLT _{S₁}	CCFLT _{S₂}	EMLAT	V SCAT	CTMM
CCFLT _{S₁}	----	.428**	.273	.496**	.572**
CCFLT _{S₂}	.428**	----	.428**	.446**	.353*
EMLAT	.273	.428**	----	.748**	.454**
V SCAT	.496**	.446**	.748**	----	.729**
CTMM	.572**	.353*	.454**	.729**	----

*Significant at .05 level of significance.

**Significant at .01 level of significance.

Data analysis for female students who continued Spanish. The highest positive correlation coefficient from pretest scores for the female students who continued Spanish at the seventh-grade level was an r value of .476 between CCFLT-S1 and CTMM. The obtained correlation coefficient of .476 was statistically significant at the .05 and .01 levels of significance and indicated a validity coefficient for

CCFLT-S1 and CTMM. A positive relationship was indicated between CCFLT-S1 and V SCAT by an obtained correlation coefficient of .377 and was statistically significant at the .05 level of significance. The validity coefficient of .318 indicated a positive relationship between CCFLT-S1 and EMLAT. The correlation coefficient was statistically significant at the .05 level of significance. The obtained correlation coefficient of .423 for CCFLT-S1 and CCFLT-S2 was significant at the .05 and .01 levels of significance. The CCFLT-S1 was positively and significantly correlated, at the .05 level of significance, with the predictor-test variables administered to female students who continued Spanish at the seventh-grade level.

Table 13

Matrix of Intercorrelation Among Indices
for Spanish Continued
N = 40 Females

Variables	CCFLT _{S₁}	CCFLT _{S₂}	EMLAT	V SCAT	CTMM
CCFLT _{S₁}	----	.423**	.318*	.377*	.476**
CCFLT _{S₂}	.423**	----	.352*	.413**	.555**
EMLAT	.318*	.352*	----	.534**	.407**
V SCAT	.377*	.413**	.534**	----	.580**
CTMM	.476*	.555**	.407**	.580**	----

*Significant at .05 level of significance.

**Significant at .01 level of significance.

The highest positive correlation coefficient from posttest scores for female students who continued Spanish at the seventh-grade level was a statistically significant r value of .577 between CCFLT-S2 and CTMM. The obtained validity coefficient was statistically significant at the .05 and .01 levels of significance. A high positive relationship between CCFLT-S2 and V SCAT was indicated by the obtained correlation coefficient of .413 and was statistically significant at the .05 and .01 levels of significance. A positive and statistically significant relationship was established between CCFLT-S2 and EMLAT by the obtained correlation coefficient of .352 for female students who continued Spanish at the seventh-grade level. The r value of .352 was statistically significant at the .05 level of significance. All of the predictor-tests were positively related to CCFLT-S2 and were statistically significant at the .05 level of significance.

Data analysis for the total sample of students who continued Spanish. The highest positive relationship between the pretest CCFLT-S1 and the predictor-tests for the total sample of students who continued Spanish was indicated by the obtained correlation coefficient of .520 for CCFLT-S1 and CTMM. The obtained validity coefficient was statistically significant at the .05 and .01 levels of significance. A positive relationship was indicated by a coefficient of .439 for CCFLT-S1 and V SCAT. The obtained r value .439 was

statistically significant at the .05 and .01 levels of significance. The obtained correlation coefficient of .285 indicated a positive relationship between CCFLT-S1 and EMLAT for the total sample of students who continued Spanish. The r value of .285 was significant at the .05 and .01 levels of significance.

Table 14

Matrix of Intercorrelation Among Indices
for Spanish Continued
N = 80 Total Sample

Variables	CCFLT _{S₁}	CCFLT _{S₂}	EMLAT	V SCAT	CTMM
CCFLT _{S₁}	----	.427**	.285**	.439**	.520**
CCFLT _{S₂}	.427**	----	.399**	.423**	.434**
EMLAT	.285**	.399**	----	.606**	.383**
V SCAT	.439**	.423**	.606**	----	.659**
CTMM	.520**	.434**	.383**	.659**	----

*Significant at .05 level of significance.

**Significant at .01 level of significance.

The highest positive relationship between the post-test scores for the total sample of students who continued Spanish at the seventh-grade level and the predictor-tests was a correlation coefficient of .434 obtained for CCFLT-S2 and CTMM. The obtained validity coefficient was statistically significant at the .05 and .01 levels of significance. A positive relationship was indicated by a correlation

coefficient of .423 between CCFLT-S2 and V SCAT. The validity of .423 was statistically significant at the .05 and .01 levels of significance. An obtained r value of .399 was statistically significant at the .05 and .01 levels of significance and indicated a positive relationship between CCFLT-S2 and EMLAT. All of the predictor-tests were positively correlated with the pretest and posttest forms of CCFLT in Spanish for the total sample of students who continued Spanish at the seventh-grade level. All of the correlation coefficients were statistically significant at the .05 and .01 levels of significance.

A review of the correlation coefficients obtained from raw scores of tests of achievement in foreign language listening comprehension, as measured by the CCFLT and the predictor-tests EMLAT, V SCAT, and CTMM indicated that the CTMM had a higher positive relationship with CCFLT than EMLAT or V SCAT for students who continued Spanish at the seventh-grade level. The higher validity coefficients were obtained for five of the six possible correlations between CTMM and CCFLT.

The t test developed by Hotelling and reported in Guilford (pp. 190-191) was used to compute the data required for testing the hypothesis that the CTMM was a more reliable predictor of achievement of foreign language listening comprehension in Spanish as measured by the CCFLT than were the EMLAT or V SCAT when administered to students who continued

Spanish at the seventh-grade level. The acceptance or rejection of the hypothesis was based on the 5 percent point and a one-tail test which required a t value of 1.68 for $N = 40$ and a 1.67 for $N = 80$ (Siegel, p. 248). The t values of intercorrelations pertaining to the Spanish portion of hypothesis nine were recorded in Table 15.

Table 15

t Values for Intercorrelations of the Pearson Product-Moment Correlation Coefficients for Spanish as a Continued Foreign Language

Measuring Instruments	Male	Female	Total
CTMM, EMLAT, and CCFLT _{S₂}	-.4919	1.3803	.3268
CTMM, V SCAT, and CCFLT _{S₂}	-.8533	1.1406	.1337
EMLAT, V SCAT, and CCFLT _{S₂}	-.1688	- .4283	-.2749

None of the t values for the intercorrelations of the Pearson product-moment correlation coefficients for male, female, and total sample of students who continued Spanish at the seventh-grade level were statistically significant at the 5 percent point. The true difference in the correlations of CTMM, EMLAT, and V SCAT was not significant. Therefore, as related to the hypothesis statement that the predictor-test CTMM was a more valid predictor of achievement in foreign language listening comprehension in Spanish, hypothesis nine was not acceptable for students who continued Spanish at the seventh-grade level.

Analysis of Data for French as a Continued Foreign Language

The obtained correlation coefficients for students who continued French at the seventh-grade level were recorded in Tables 16, 17, and 18. The matrices of intercorrelation among indices for Spanish as a continued foreign language were arranged according to male, female, and total sample.

Data analysis for male students who continued French.

The highest correlation coefficient from pretest scores for the male students who continued French at the seventh-grade level was an obtained r value of .487 between CCFLT-F1 and V SCAT. The established validity coefficient of .487 was statistically significant at the .05 and .01 levels of significance. A correlation coefficient of .395 indicated a positive and statistically significant relationship at the .05 and .01 levels of significance between CCFLT-F1 and CTMM. The obtained r value of .389 was statistically significant at the .05 level of significance.

The highest correlation obtained from posttest scores and predictor-tests for male students who continued French at the seventh-grade level, was between CCFLT-F2 and CTMM. The validity coefficient of .407 was statistically significant at the .05 and .01 levels of significance. A positive relationship was indicated by an obtained r value of .405 for CCFLT-F2 and EMLAT. The obtained r value of .405 was statistically significant at the .05 and .01 levels of significance. A

correlation coefficient of .308 indicated a positive and statistically significant relationship, at the .05 level of significance, between CCFLT-F2 and V SCAT. For the male students who continued French at the seventh-grade level, all of the correlation coefficients from pretest, posttests, and predictor-tests were positively related and statistically significant at the .05 level of significance.

Table 16

Matrix of Intercorrelation Among Indices
for French Continued
N = 40 Males

Variables	CCFLT _{F₁}	CCFLT _{F₂}	EMLAT	V SCAT	CTMM
CCFLT _{F₁}	----	.601**	.395**	.487**	.389*
CCFLT _{F₂}	.601**	----	.405**	.308*	.407**
EMLAT	.395**	.405**	----	.650**	.604**
V SCAT	.487**	.308*	.650**	----	.578**
CTMM	.389*	.407**	.604**	.578**	----

*Significant at the .05 level of significance.

**Significant at the .01 level of significance.

Data analysis for female students who continued French. The correlation coefficients from pretest scores and predictor-tests, obtained for female students who continued French at the seventh-grade level, were positively related but not statistically significant at the .05 level of significance. The highest correlation coefficient of .210 was

obtained between CCFLT-F1 and V SCAT. The positive relationship was .195 for CCFLT-F1 and CTMM. A slight positive relationship of .044 was obtained for CCFLT-F1 and EMLAT for female students who continued French.

Table 17

Matrix of Intercorrelation Among Indices
for French Continued
N = 40 Females

Variables	CCFLT _{F₁}	CCFLT _{F₂}	EMLAT	V SCAT	CTMM
CCFLT _{F₁}	----	.705**	.044	.210	.195
CCFLT _{F₂}	.705**	----	.407**	.455**	.367*
EMLAT	.044	.407**	----	.347*	.416**
V SCAT	.210	.455**	.347*	----	.643*
CTMM	.195	.367*	.416**	.643**	----

*Significant at the .05 level of significance.

**Significant at the .01 level of significance.

The highest correlation coefficient from posttest scores and the predictor-tests, for female students who continued French at the seventh-grade level, was obtained for CCFLT-F2 and V SCAT. The obtained validity coefficient of .455 indicated a positive relationship between CCFLT-F2 and V SCAT. The obtained r value of .455 was statistically significant at the .05 and .01 levels of significance. A positive relationship was indicated by a validity coefficient of .407 for CCFLT-F2 and EMLAT. The r value of .407 was

statistically significant at the .05 and .01 levels of significance. The obtained validity coefficient of .367 for CCFLT-F2 and CTMM was statistically significant at the .05 level of significance and indicated a positive relationship. The CCFLT-F2 and all of the predictor-tests were positively related and statistically significant at the .05 level of significance.

Data analysis for the total sample of students who continued French. The highest correlation coefficient from pretest scores and the predictor-tests, for the total sample of students who continued French at the seventh-grade level, was indicated by a correlation coefficient of .328 for CCFLT-F1 and V SCAT. The obtained validity coefficient of .328 was statistically significant at the .05 level of significance. A correlation coefficient of .274 for CCFLT-F1 and CTMM and the r value of .223 for CCFLT-F1 and EMLAT were not statistically significant at the .05 level. The correlation coefficient for CCFLT-F1 and CCFLT-F2 of .649 was positively related and statistically significant at the .05 and .01 levels of significance for those students who continued French at the seventh-grade level.

The highest correlation coefficient from posttest scores and the predictor-tests for the total sample of students who continued French at the seventh-grade level, was an r value of .415 and indicated a positive relationship between CCFLT-F2 and EMLAT. The validity coefficient of .415

was statistically significant at the .05 and .01 levels of significance. The correlation coefficient of .381 was obtained for CCFLT-F2 and V SCAT and was statistically significant at the .05 and .01 levels of significance. The obtained r value of .381 indicated a positive relationship between CCFLT-F2 and V SCAT. The obtained r value of .380 indicated a positive relationship between CCFLT-F2 and CTMM and was statistically significant at the .05 and .01 levels of significance. Positive and statistically significant relationships were indicated by all of the correlation coefficients obtained from the posttest scores and the predictor-tests for the total sample of students who continued French at the seventh-grade level.

Table 18

Matrix of Intercorrelation Among Indices
for French Continued
N = 80 Total Sample

Variables	CCFLT _{F₁}	CCFLT _{F₂}	EMLAT	V SCAT	CTMM
CCFLT _{F₁}	----	.649**	.223*	.328**	.274*
CCFLT _{F₂}	.649**	----	.415**	.381**	.380**
EMLAT	.223*	.415**	----	.505**	.481**
V SCAT	.328**	.381**	.505**	----	.607**
CTMM	.274*	.380**	.481**	.607**	----

*Significant at .05 level of significance.

**Significant at .01 level of significance.

A review of the correlation coefficients obtained from raw scores of tests of achievement in foreign language listening comprehension in French, as measured by CCFLT, and the predictor-tests EMLAT, V SCAT, and CTMM, indicated that the V SCAT had a higher positive relationship with CCFLT than EMLAT or CTMM for students who continued French at the seventh-grade level. The higher validity coefficients of V SCAT were obtained for four of the six possible correlations. Only one validity coefficient, that of CCFLT-F2 and CTMM for male students, indicated a higher r value for the predictor-test CTMM.

The obtained product-moment correlation coefficients were subjected to the selected t test in order to determine if the higher r values represented a genuinely higher correlation than the lower r values of the respective predictor-tests. The t values of the correlation coefficients for CCFLT-F2, EMLAT, V SCAT, and CTMM for students who continued French at the seventh-grade level were recorded in Table 19.

As related to the hypothesis statement for the predictor-test CTMM, none of the t values of the intercorrelations for the Pearson product-moment correlation coefficients were statistically significant at the 5 percent point. The true difference in the correlations for CTMM, EMLAT, and V SCAT was not significant. Hypothesis nine, which stated that the California Short-Form Test of Mental Maturity was a more valid predictor of achievement in foreign language

listening comprehension as measured by the Common Concepts Foreign Language Test for those students who continued Spanish or French as a second foreign language at the seventh-grade level than the Modern Language Aptitude Test-Elementary or the Verbal Ability section of the School and College Ability Tests was rejected.

Table 19

t Values of Intercorrelations for the Pearson Product-Moment Correlation Coefficients for French as a Continued Foreign Language

Measuring Instruments	Male	Female	Total
CTMM, EMLAT, and CCFLT _{F₂}	.0822	-.2588	-.3411
CTMM, V SCAT, and CCFLT _{F₂}	.7203	-.7221	-.0120
EMLAT, V SCAT, and CCFLT _{F₂}	.7764	-.3006	.3378

Hypothesis ten stated that the California Short-Form Test of Mental Maturity was a more valid predictor of achievement in foreign language listening comprehension as measured by the Common Concepts Foreign Language Test for those students who began French or Spanish as a second foreign language at the seventh-grade level than the Modern Language Aptitude Test-Elementary or the Verbal Ability section of the School and College Ability Tests. The essential data for testing hypothesis ten were recorded in Tables 20 through 27. The Pearson product-moment correlation coefficients were computed from raw scores by the IBM 1401 Data Processing Systems.

Analysis of Data for French as a Second Foreign Language

The obtained correlation coefficients for students who were changed from Spanish to French at the beginning of the seventh-grade level were recorded in Table 20. The matrices of intercorrelation among indices for French as a second foreign language were arranged according to male, female and total sample.

Data analysis for male students who began French as a second foreign language. The highest positive correlation coefficient from pretest scores and predictor-tests for the male students was an obtained r value of .459 for CCFLT-S1 and EMLAT. The r value was statistically significant at the .05 and .01 levels of significance. The r value of .459 established a validity coefficient between CCFLT-S1 and EMLAT for the male students who began French as a second foreign language. The correlation coefficient of .275 for CCFLT-S1 and V SCAT indicated a positive relationship but was not statistically significant at the .05 level of significance. A trace positive relationship was indicated by a validity coefficient of .144 for CCFLT-S1 and CTMM. The obtained r value of .144 for CCFLT-S1 and CTMM was not significant at the .05 level of significance for the male students who began French as a second foreign language at the seventh-grade level.

Table 20

Matrix of Intercorrelation Among Indices for
French as a Second Foreign Language
N = 40 Males

Variables	CCFLT _{S₁}	CCFLT _{S₂}	CCFLT _{F₂}	EMLAT	V SCAT	CTMM
CCFLT _{S₁}	----	.362*	.215	.459**	.275	.144
CCFLT _{S₂}	.362*	----	.013	.514**	.471**	.365*
CCFLT _{F₂}	.215	.013	----	.258	.051	-.185
EMLAT	.459**	.514	.258	----	.530**	.330*
V SCAT	.275	.471**	.051	.530**	----	.466*
CTMM	.144	.365	-.185	.330*	.466**	----

*Significant at the .05 level of significance.

**Significant at the .01 level of significance.

A high positive relationship between EMLAT and the posttest CCFLT-S2 was established by a validity coefficient of .514 for male students who began French at the seventh-grade level. The obtained r value of .514 was statistically significant at the .05 and .01 levels of significance. A high positive relationship was indicated by an obtained correlation coefficient of .471 and was statistically significant at the .05 and .01 levels of significance. A validity coefficient of .365 for CCFLT-S2 and CTMM indicated a positive relationship between the two variables and was statistically significant at the .05 level of significance. A trace relationship was obtained for CCFLT-S2 and CCFLT-F2. The obtained

r of .013 was not statistically significant at the .05 level of significance.

The validity coefficients obtained for the posttest scores in French and the predictor-tests, for the male students who were changed from Spanish to French at the seventh-grade level, were not statistically significant at the .05 level of significance. The highest correlation obtained from posttest scores in French was the validity coefficient of .358 between CCFLT-F2 and EMLAT. A trace positive relationship between CCFLT-F2 and V SCAT was indicated by the obtained r value of .051. The trace negative correlation coefficient of $-.185$ between CCFLT-F2 and CTMM indicated that as the scores increased on the CTMM they decreased on the CCFLT-F2. CCFLT correlated higher with EMLAT than with the other predictor-tests for the male students who began French as a second foreign language at the seventh-grade level.

Data analysis for female students who began French as a second foreign language. The highest positive relationship from pretest scores for female students who were changed from Spanish to French as a second foreign language at the seventh-grade level, was obtained for CCFLT-S1 and V SCAT. The obtained validity coefficient was .465 and was statistically significant at the .05 and .01 levels of significance. The correlation coefficient of .356 for CCFLT-S1 and CTMM indicated a positive and statistically significant relationship at the .05 level of significance. An obtained r value

of .259 for CCFLT-S1 and EMLAT indicated a positive relationship between the two variables, but was not statistically significant at the .05 level of significance for the female students who began French as a second foreign language at the seventh-grade level.

Table 21

Matrix of Intercorrelation Among Indices for
French as a Second Foreign Language
N = 40 Females

Variables	CCFLT _{S₁}	CCFLT _{S₂}	CCFLT _{F₂}	EMLAT	V SCAT	CTMM
CCFLT _{S₁}	----	.635**	.531**	.259	.465**	.356*
CCFLT _{S₂}	.635**	----	.475**	.285	.530**	.338*
CCFLT _{F₂}	.531**	.475**	----	.297	.392*	.256
EMLAT	.259	.285	.297	----	.195	.171
V SCAT	.465**	.530**	.392	.195	----	.481**
CTMM	.356*	.338*	.256	.171	.481**	----

*Significant at the .05 level of significance.

**Significant at the .01 level of significance.

The highest positive correlation from posttest scores and the predictor-tests for female students who began French as a second foreign language at the seventh-grade level was .530 for CCFLT-S2 and V SCAT. The r value of .530 was statistically significant at the .05 and .01 levels of significance. The obtained r value of .338 for CCFLT-S2 and CTMM was positively related and statistically significant at the

.05 level of significance. The positive correlation coefficient of .285 for CCFLT-S2 and EMLAT was not statistically significant at the .05 level of significance for the female students who began French as a second foreign language at the seventh-grade level.

The highest positive relationship for CCFLT-F2 and the predictor-tests was an obtained r value of .392 for CCFLT-S2 and V SCAT and was significant at the .05 level of significance. A positive relationship was indicated for CCFLT-F2 and EMLAT by the r value of .297 but was not statistically significant at the .05 level of significance. A positive relationship was indicated by an r value of .256 for CCFLT-F2 and CTMM and was significant at the .05 level of significance. For the female students who began French as a second foreign language at the seventh-grade level, V SCAT correlated higher with CCFLT than did EMLAT or CTMM.

Data analysis for the total sample of students who began French as a second foreign language. The highest positive correlation from pretest scores and predictor-tests for the total sample of students who began French as a second foreign language at the seventh-grade level was an obtained r value of .373 for CCFLT-S1 and V SCAT. The r value of .373 was statistically significant at the .05 level of significance. The correlation coefficient of .371 for CCFLT-S1 and EMLAT was statistically significant at the .05 level of significance and indicated a positive relationship between the two variables.

A positive relationship was indicated by the validity coefficient of .256 for CCFLT-S1 and CTMM. The r value of .256 was not statistically significant at the .05 level of significance for total sample of students who began French as a second foreign language at the seventh-grade level.

Table 22

Matrix of Intercorrelation Among Indices for
French as a Second Foreign Language
N = 80 Total Sample

Variables	CCFLT _{S₁}	CCFLT _{S₂}	CCFLT _{F₂}	EMLAT	V SCAT	CTMM
CCFLT _{S₁}	----	.519**	.400**	.371**	.373**	.256*
CCFLT _{S₂}	.519**	----	.268*	.452**	.494**	.353**
CCFLT _{F₂}	.400**	.268*	----	.280*	.223*	.038
EMLAT	.371**	.452**	.280*	----	.395**	.271*
V SCAT	.373**	.494**	.223*	.395**	----	.473**
CTMM	.256*	.353**	.038	.271*	.473**	----

*Significant at .05 level of significance.

**Significant at .01 level of significance.

The highest correlation coefficient from posttest scores of Spanish for the total sample of students who changed from Spanish to French at the seventh-grade level was obtained for CCFLT-S2 and the predictor-tests was a validity coefficient of .494 for CCFLT-S2 and V SCAT. The validity coefficient was statistically significant at the .05 and .01 levels of significance. A positive relationship was indicated by

the validity coefficient of .452 obtained for CCFLT-S2 and EMLAT and was statistically significant at the .05 and .01 levels of significance. A positive relationship was indicated by a validity coefficient of .353 for CCFLT-S2 and CTMM. The r value of .353 was statistically significant at the .05 level of significance for the total sample of students who began French as a second foreign language at the seventh-grade level.

The highest positive relationship obtained from post-test scores in French and the predictor-tests for the total sample of students who began French as a second foreign language at the seventh-grade level was an obtained r value of .280 between CCFLT-F2 and EMLAT. The r value was statistically significant at the .05 level of significance. The obtained r value of .223 for CCFLT-F2 and V SCAT was positively related and statistically significant at the .05 level of significance. The trace validity coefficient of .038 for CCFLT-F2 and CTMM was not statistically significant at the .05 level of significance. The V SCAT had a higher correlation with CCFLT than did EMLAT or CTMM for the total sample of students who began French as a second foreign language at the seventh-grade level.

A review of the correlation coefficients obtained from raw scores of tests of achievement in Spanish and French as measured by CCFLT and the predictor-tests EMLAT, V SCAT and CTMM indicated that V SCAT had a higher positive relationship

with CCFLT than EMLAT and CTMM when administered to students who began French as a second foreign language at the seventh-grade level. The higher validity coefficients for CTMM were obtained for five of the possible nine correlations.

The obtained product-moment correlation coefficients were subjected to the selected t test in order to determine if the higher r values represented a genuinely higher correlation than the lower r values of the predictor-test CTMM. The t values of the correlation coefficients for CCFLT-F₂, EMLAT, V SCAT, and CTMM were recorded in Table 23.

Table 23

t Values of Intercorrelations for the Pearson Product-Moment Correlation Coefficients for French as a Second Foreign Language

Measuring Instruments	Male	Female	Total
CTMM, EMLAT, and CCFLT _{F₂}	-2.5216	-.2088	-1.8390
CTMM, V SCAT, and CCFLT _{F₂}	-1.4303	-.8852	-1.6273
EMLAT, V SCAT, and CCFLT _{F₂}	1.3497	-.5094	.4842

As related to the hypothesis statement for the predictor-test CTMM, none of the t values of the intercorrelations of the Pearson product-moment correlation coefficients were statistically significant at the 5 percent point. The true difference between the correlations for CTMM, EMLAT, and V SCAT was not significant for the students who began French as a second foreign language at the seventh-grade level.

Therefore hypothesis ten, which stated that the CTMM was a more valid predictor of achievement in foreign language listening comprehension in French, was not acceptable for students who began French as a second foreign language at the seventh-grade level.

Analysis of Data for Spanish as a Second Foreign Language

The obtained correlation coefficients for students who changed from French to Spanish at the beginning of the seventh-grade level were recorded in Table 24. The matrices of intercorrelation among indices for Spanish as a second foreign language were arranged according to male, female, and total sample.

Data analysis for male students who began French as a second foreign language. The highest positive correlation coefficient from pretests for the male students who began Spanish as a second foreign language was an obtained r value of .140 between CCFLT-F1 and CTMM. The obtained r value of .140 was not statistically significant at the .05 level of significance. A trace positive relationship was indicated by a validity coefficient of .059 for CCFLT-F1 and EMLAT. A very slight trace positive relationship was indicated by a validity coefficient of .017 for CCFLT-F1 and V SCAT. For the male students who began Spanish as a second foreign language, the CTMM had the highest correlation coefficient. However, none of the validity coefficients for CCFLT-F1 and

the predictor-tests were statistically significant at the .05 level of significance as obtained for male students who began Spanish as a second foreign language at the seventh-grade level.

Table 24

Matrix of Intercorrelation Among Indices for
Spanish as a Second Foreign Language
N = 40 Males

Variables	CCFLT _{F₁}	CCFLT _{S₂}	EMLAT	V SCAT	CTMM
CCFLT _{F₁}	----	.311*	.059	.017	.140
CCFLT _{S₂}	.311*	----	.398**	.154	.143
EMLAT	.059	.398**	----	.480**	.496**
V SCAT	.017	.154	.480**	----	.471**
CTMM	.140	.143	.496**	.471**	----

*Significant at the .05 level of significance.

**Significant at the .01 level of significance.

The highest positive correlation coefficient from posttest scores for male students who began Spanish as a second foreign language at the seventh-grade level was obtained for CCFLT-S2 and EMLAT. The positive r value of .398 was statistically significant at the .05 and .01 levels of significance. A trace relationship was indicated by a positive r value of .154 for CCFLT-S2 and V SCAT. A slight trace relationship was indicated by a positive r value of .143 for CCFLT-S2 and CTMM. The obtained validity coefficients were

not statistically significant at the .05 level of significance for the male students who began Spanish as a second foreign language at the seventh-grade level.

Data analysis for female students who began Spanish as a second foreign language. The highest positive correlation coefficient from pretest scores for the female students who were changed from French to Spanish at the seventh-grade level, was an obtained r value of .501 between CCFLT-F1 and V SCAT. The validity coefficient of .501 for CCFLT-F1 and V SCAT was significant at the .05 and .01 levels of significance. A positive correlation was indicated by an obtained r value of .463 between CCFLT-F1 and CTMM and was significant at the .05 and .01 levels of significance. A positive relationship was indicated by a validity coefficient of .404 for CCFLT-F1 and EMLAT and was statistically significant at the .05 and .01 levels of significance for the female students who began Spanish as a second foreign language at the seventh-grade level.

The highest positive correlation coefficient obtained from posttest scores and predictor-tests for female students who began Spanish as a second foreign language at the seventh-grade level was an obtained r value of .489 between CCFLT-S2 and EMLAT. The validity coefficient of .489 was statistically significant at the .05 and .01 levels of significance. A positive relationship was indicated by a correlation coefficient of .319 between CCFLT-S2 and V SCAT and was statistically

significant at the .05 level of significance. A positive relationship was indicated by an obtained r value of .221 for CCFLT-S2 and CTMM. The validity coefficient of .221 was not statistically significant at the .05 level of significance for the female students who began Spanish as a second foreign language at the seventh-grade level.

Table 25

Matrix of Intercorrelation Among Indices for
Spanish as a Second Foreign Language
N = 40 Females

Variables	CCFLT _{F₁}	CCFLT _{S₂}	EMLAT	V SCAT	CTMM
CCFLT _{F₁}	----	.525**	.404**	.501**	.463**
CCFLT _{S₂}	.525**	----	.489**	.319*	.221
EMLAT	.404**	.489**	----	.681**	.434**
V SCAT	.501**	.319*	.681**	----	.645**
CTMM	.463**	.221	.434**	.645**	----

*Significant at .05 level of significance.

**Significant at .01 level of significance.

Data analysis for the total sample of students who began Spanish as a second foreign language. For the total sample of students who began Spanish as a second foreign language at the seventh-grade level, the highest positive correlation coefficient of .385 was obtained for CCFLT-S1 and V SCAT and was statistically significant at the .05 and .01 levels of significance. A positive relationship was

established by an r value of .356 for CCFLT-F1 and CTMM was established and was statistically significant at the .05 and .01 levels of significance. The validity coefficient of .340 for CCFLT-F1 and EMLAT was positively related and statistically significant at the .05 and .01 levels of significance for the total sample of students who began Spanish as a second foreign language at the seventh-grade level.

Table 26

Matrix of Intercorrelation Among Indices for
Spanish as a Second Foreign Language
N = 80 Total Sample

Variables	CCFLT _{F₁}	CCFLT _{S₂}	EMLAT	V SCAT	CTMM
CCFLT _{F₁}	----	.483**	.340**	.385**	.356**
CCFLT _{S₂}	.483**	----	.488**	.286**	.175
EMLAT	.340**	.488**	----	.610**	.451**
V SCAT	.385**	.286**	.610**	----	.566**
CTMM	.356**	.175	.451**	.566**	----

*Significant at .05 level of significance.

**Significant at .01 level of significance.

The highest positive correlation coefficient from posttest scores and the predictor-tests for the total sample of students who began Spanish as a second foreign language at the seventh-grade level was an obtained r value of .488 between CCFLT-S2 and EMLAT. The r value was significant at the .05 and .01 levels of significance. A positive

relationship was indicated by an obtained r value of .286 between CCFLT-S2 and V SCAT and was statistically significant at the .05 and .01 levels of confidence. A trace positive relationship was indicated by a validity coefficient of .175 for CCFLT-S2 and CTMM. The r value of .175 was not statistically significant at the .05 level of significance for the total sample of students who began Spanish as a second foreign language at the seventh-grade level.

A review of the correlation coefficients obtained from raw scores of tests of achievement in foreign language listening comprehension in French and Spanish, as measured by the CCFLT, and the predictor-tests EMLAT, V SCAT, and CTMM indicated that EMLAT had a higher positive relationship with CCFLT than did V SCAT and CTMM for students who began Spanish as a second foreign language at the seventh-grade level. The higher validity coefficients of EMLAT were obtained for three of the possible six correlations.

The obtained product-moment correlation coefficients were subjected to the selected t test in order to determine if the higher r values of EMLAT represented a genuinely higher correlation than the lower r values of CTMM and V SCAT. The t values of intercorrelations for CCFLT-S2, EMLAT, V SCAT, and CTMM for the students who began Spanish as a second foreign language at the seventh-grade level were recorded in Table 27.

Table 27

t Values of Intercorrelations for the Pearson Product-Moment Correlation Coefficients for Spanish as a Second Foreign Language

Measuring Instruments	Male	Female	Total
CTMM, EMLAT, and CCFLT _{S₂}	-1.6864	-1.7544	-3.0059
CTMM, V SCAT, and CCFLT _{S₂}	- .0678	- .7405	-1.0903
EMLAT, V SCAT, and CCFLT _{S₂}	1.5836	1.4889	2.2487

As related to the hypothesis statement for the predictor-test CTMM, none of the t values were statistically significant at the 5 percent point. Hypothesis ten which stated that the California Short-Form Test of Mental Maturity was a more valid predictor of achievement in foreign language listening comprehension as measured by the Common Concepts Foreign Language Test for those students who began French or Spanish as a second foreign language at the seventh-grade level than the Modern Language Aptitude Test-Elementary or the Verbal Ability section of the School and College Ability Tests was rejected.

CHAPTER IV

SUMMARY AND CONCLUSIONS

Introduction

The foreign language program of a large metropolitan school system was expanded in 1958 to introduce French and Spanish, via television, to all elementary students enrolled in grades three through six. This dual foreign language program was maintained in the elementary schools through the 1966-67 academic year. Beginning in 1967-68, French was scheduled to be phased out of the elementary curriculum. As a result of this curriculum reorganization in the elementary schools, a readjustment became imminent at the seventh-grade level. The present investigation was based on a need to obtain and review empirical data relevant to the seventh-grade foreign language program.

The primary purpose of this investigation was to systematically collect and analyze data pertaining to continuing Spanish and French as a first foreign language or the beginning of Spanish and French as a second foreign language at the seventh-grade level. The Common Concepts Foreign Language Test of listening comprehension in Spanish and French was selected as the measure of achievement in the

respective languages. A secondary purpose was to compare the predictive validity of the California Short-Form Test of Mental Maturity with the predictive validity of the Modern Language Aptitude Test-Elementary and that of the Verbal Ability section of the School and College Ability Tests as related to achievement in foreign language listening comprehension in Spanish or French.

The present investigation, conducted during the 1968-69 academic year, was limited to listening comprehension although other foreign language skills were introduced at the seventh-grade level. A pretest-posttest design was employed to collect essential data for 864 students who were enrolled in Spanish or French as a continuation of a first foreign language or enrolled in Spanish or French as a second foreign language beginning at the seventh-grade level. The students were attending four junior high schools which were representative of all the junior high schools in the participating school system. The tests of foreign language aptitude and achievement were administered during the regular foreign language class periods and were hand scored. The scores of the California Short-Form Test of Mental Maturity and of the School and College Ability Tests were obtained from the Central Testing office. The four final samples were selected at random and each consisted of 40 male and 40 female students. The stated null and statistical hypotheses were tested by subjecting raw data to the appropriate statistical

tests for male, female and total sample of subjects. Although reported by male, female and total sample, the hypotheses were accepted or rejected at the .05 level of significance or the 5 percent point for the total sample of subjects.

Summary

The stated hypotheses and the statistical analyses of the collected data indicated the following results:

Hypothesis one stated that there was no statistically significant difference between means of posttest scores of foreign language listening comprehension in Spanish and French for those students who were chosen to continue Spanish as a first foreign language or for those students who were chosen to continue French as a first foreign language at the seventh-grade level. There was no statistically significant difference between the means of posttest scores in foreign language listening comprehension in the respective languages for male students who continued Spanish or French as a first foreign language. The female and total sample of students who continued Spanish as a first foreign language scored significantly higher on the posttest than the female and total sample of students who continued French as a first foreign language at the seventh-grade level. Hypothesis one was rejected.

Hypothesis two stated that there was no statistically significant difference between the means of posttest scores of foreign language listening comprehension in French or Spanish for students who were assigned to begin French as a

second foreign language and those students who were assigned to begin Spanish as a second foreign language at the seventh-grade. There was no statistically significant difference between the means of posttest scores for male students who began French or Spanish as a second foreign language at the seventh-grade level. The female and total sample of students who began Spanish as a second foreign language scored significantly higher on posttest scores than the female and total sample of students who began French as a second foreign language at the seventh-grade level. Hypothesis two was rejected.

Hypothesis three stated that there was no statistically significant difference between the means of posttest scores of foreign language listening comprehension in Spanish for students who were assigned to begin Spanish as a second foreign language and those students who were assigned to continue Spanish as a first foreign language. The male, female and total sample of students who continued Spanish as a first foreign language scored significantly higher on posttest scores of foreign language listening comprehension in Spanish than the male, female and total sample of students who began Spanish as a second foreign language at the seventh-grade level. Hypothesis three was rejected.

Hypothesis four stated that there was no statistically significant difference between the means of posttest scores of foreign language listening comprehension in French for students who were assigned to begin French as a second

foreign language and those students who were assigned to continue French as a first foreign language at the seventh-grade level. The male, female, and total sample of students who continued French as a first foreign language scored significantly higher on posttest scores of foreign language listening comprehension in French than the male, female, and total sample of students who began French as a second foreign language at the seventh-grade level. Hypothesis four was rejected.

Hypothesis five stated that there was no statistically significant difference between the means of pretest-posttest scores of foreign language listening comprehension in Spanish for students who were assigned to continue Spanish as a first foreign language. The male, female, and total sample of students assigned to continue Spanish at the seventh-grade level scored significantly higher on the posttest than on the pretest of foreign language listening comprehension in Spanish. Hypothesis five was rejected.

Hypothesis six stated that there was no statistically significant difference between the means of pretest-posttest scores of foreign language listening comprehension in French for students who were assigned to continue French as a first foreign language. The male, female, and total sample of students scored significantly higher on the posttest than on the pretest of foreign language listening comprehension in French. Hypothesis six was rejected.

Hypothesis seven stated that there was no statistically significant difference between the means of pretest-posttest and posttest-posttest scores of foreign language listening comprehension in Spanish and French for those students who began French as a second foreign language. The male students who began French as a second foreign language at the seventh-grade level scored significantly lower on the posttest in French listening comprehension than on the pretest in Spanish listening comprehension. The female and total sample of students who began French as a second foreign language at the seventh-grade level scored lower, but not significantly lower on posttests of foreign language listening comprehension in French than on the pretest of Spanish listening comprehension. Hypothesis seven as related to pretest Spanish and posttest French for students who began French was rejected. However, the male, female, and total sample of students who began French as a second foreign language scored significantly higher on the posttest in Spanish than on the pretest of foreign language listening comprehension in Spanish. Hypothesis seven as related to pretest-posttest scores in Spanish for students who began French as a second foreign language at the seventh-grade level was rejected.

Hypothesis eight stated that there was no statistically significant difference between the means of pretest-posttest scores of foreign language listening comprehension in French and Spanish for those students assigned to begin

Spanish as a second foreign language. The male students who began Spanish as a second foreign language at the seventh-grade level did not score significantly higher on the posttest in Spanish than on the pretest in French. The female and total sample of students scored significantly higher on the posttest scores of foreign language listening comprehension in Spanish than on the pretest of foreign language listening comprehension in French. Hypothesis eight was rejected.

Hypothesis nine stated that the California Short-Form Test of Mental Maturity was a more valid predictor of achievement in foreign language listening comprehension as measured by the Common Concepts Foreign Language Test for those students who continued French or Spanish as a first foreign language at the seventh-grade level than the Modern Language Aptitude Test-Elementary or the Verbal Ability section of the School and College Ability Tests. None of the t values for the intercorrelations of the Pearson product-moment correlation coefficients for male, female, and total samples of students who continued Spanish or French at the seventh-grade level were statistically significant at the 5 percent point. Hypothesis nine was rejected.

Hypothesis ten stated that the California Short-Form Test of Mental Maturity was a more valid predictor of achievement in foreign language listening comprehension as measured by the Common Concepts Foreign Language Test for

those students who began French or Spanish as a second foreign language at the seventh-grade level than the Modern Language Aptitude Test-Elementary or the Verbal Ability section of the School and College Ability Tests. None of the t values of the intercorrelations of the Pearson product-moment correlation coefficients were statistically significant at the 5 percent point for the male, female, and total samples of students who began French or Spanish as a second foreign language at the seventh-grade level. Hypothesis ten was rejected.

Conclusions

As related to the foreign language program in this school system and according to the results of the present investigation, the following conclusions were suggested:

1. The students who continued Spanish as a first foreign language at the seventh-grade made progress in the Spanish language as determined by the difference between pretest and posttest scores.
2. The students who continued French as a first foreign language at the seventh-grade level made progress in the French language as determined by the difference in pretest and posttest scores.
3. The students who changed from Spanish to French as a second foreign language acquired skill in the French language, but not as much skill as those students who continued French as a first foreign language. However, these

students of French as a second foreign language maintained and increased their skill in the Spanish language during the seventh-grade level study of the French language.

4. The students who began Spanish as a second foreign language acquired skill in the Spanish language, but not as much skill as those students who continued Spanish as a first foreign language at the seventh-grade level.

5. The California Short-Form Test of Mental Maturity did not prove to be a more valid predictor of achievement in foreign language listening comprehension at the seventh-grade level than the Modern Language Aptitude Test-Elementary or the Verbal Ability section of School and College Ability Tests.

Recommendations

An investigation of the attitudinal factors involved in continuing a first foreign language or beginning a second foreign language as related to achievement in foreign languages should be conducted. A second investigation which seemed warranted was an evaluation of the attrition rate for those students who continued the study of either French or Spanish as a second foreign language at the seventh-grade level and continued in the respective second foreign language beyond the seventh grade.

REFERENCES

REFERENCES

- Allen, E. D., Glenn, Leona M., & Otto, D. The changing curriculum: modern foreign languages. Washington, D.C.: Association for Supervision and Curriculum Development, 1968.
- Andersson, T. Foreign languages in the elementary school: a struggle against mediocrity. Austin, Texas: The University of Texas Press, 1969.
- Andersson, T. From NDEA to EPDA: can we improve? Hispania, 1969, 52:3, 357-361.
- Andersson, T. Advisory and Liaison Committee of the Modern Language Association. Foreign languages in the elementary school: first and second statements of policy. In Donald D. Walsh (Ed.), A handbook for teachers of Spanish and Portuguese. Lexington, Massachusetts: D. C. Heath, 1969. Pp. 139-142.
- Asher, J. J., & Garcia, R. The optimal age to learn a foreign language. Modern Language Journal, 1969, 53:5, 334-341.
- Austin, N. W. Some recent developments in standardized foreign language tests. In G. W. Wilkins, Jr. (Ed.), Dimension: Languages '69. Atlanta, Georgia: Southern Conference on Language Teaching, 1969.
- Banathy, Bela H., Zintz, M. V., Sadnovitch, J. M., Popham, W. J., Krichbaum, Rena., Gannon, F. B., Hempel, V., & Mueller, K. A. Common concepts foreign language test. Monterey, California: California Test Bureau, a division of McGraw-Hill, 1966.
- Bartley, Diana E. A pilot study of aptitude and attitude factors in language dropout. California Journal of Educational Research, 1969, 20:2, 48-55.
- Birkmaier, Emma M. Foreign languages. Review of Educational Research, 1958, 28:2, 127-139.

- Birkmaier, Emma M. Modern languages. In C. Harris (Ed.) Encyclopedia of educational research. New York: Macmillan, 1960. Pp. 861-888.
- Birkmaier, Emma M. (Ed.) Britannica review of foreign language education. Chicago: Encyclopaedia Britannica, 1968.
- Birkmaier, Emma M., & Lange, D. L. A selective bibliography on the teaching of foreign languages, 1920-1966. Foreign Language Annals, 1968, 1:4, 318-353.
- Brega, Evelyn, & Newell, J. M. High school performance of FLES and Non-FLES students. French Review, 1965, 39:12, 408-411.
- Brenes, E., Adey, Margaret, Smith, G. W., McKinney, J. E., Woodford, P. E. Learning Spanish in the modern way, Level I. Manchester, Missouri: McGraw-Hill, 1967.
- Carroll, J. B., & Richards, S. E. Instruction in foreign languages. Review of Educational Research, 1952, 22, 116-135.
- Carroll, J. B., & Sapon, S. M. Modern language aptitude test-elementary. New York: The psychological corporation, 1967.
- Chastain, K. Prediction of success in audio-lingual and cognitive classes. Language learning, 1969, 19:1 & 2, 27-39.
- Chomsky, N. Language and mind. New York: Harcourt, Brace, & World, 1968.
- Dodge, J. W. Machine-aided language learning. In Emma M. Birkmaier (Ed.), The Britannica review of foreign language education. Chicago: Encyclopaedia Britannica, 1968. Pp. 311-341.
- Donoghue, Mildred R. How second-language learning differs from first-language learning. Hispania, 1968, 51:3, 480-481.
- Donoghue, Mildred R. Foreign languages in the elementary school: effects and instructional arrangements according to research. ERIC focus reports on the teaching of foreign languages, no. 3. New York: MLA/ACTFL Materials Center, 1969.

- Downie, N. M., & Heath, R. W. Basic statistical methods. (2nd. ed.). New York: Harper & Row, 1965.
- Dunkel, H. B. Second-language learning. Boston: Ginn, 1948.
- Dunkel, H. B. Language teaching in an old key. Modern Language Journal, 1963, 47:5, 203-210.
- Educational Testing Service. School and college ability tests. Princeton, New Jersey: Educational Testing Service, 1957.
- Evans, J. A., Baldwin, Marie, & Kelly, L. Learning French the modern way, Level I. Manchester, Missouri: McGraw-Hill, 1967.
- Eye, G. G., Garrison, M. B., & Kuhn, J. A. Instructional technology and administrative decisions. Educational Technology, 1969, 9:12, 24-27.
- Ferguson, G. A. Statistical analysis in psychology and education. New York: McGraw-Hill, 1966.
- Fowler, R. W. The foreign language teacher in the classroom. In G. W. Wilkins, Jr. (Ed.), Dimension: Languages '69, 1969. Pp. 64-73.
- Glover, M. Success in English as a criterion of future success in elementary foreign language. School and Society, 1917, 5:128, 683-685.
- Guerra, M. H. The problems facing FLES: Modern Language Journal, 1960, 46:6, 272-274.
- Guilford, J. P. Fundamental statistics in psychology and education. New York: McGraw-Hill, 1965.
- Halpin, A. W. Theory and research in administration. London: Macmillan, 1966.
- Harmon, John T. (Ed.). 1967 ACTFL bibliography. Foreign Language Annals, 1967, 1:1, 80-90; 1:2, 178-181; 1968, 1:3, 270-280; 1:4, 371-387.
- Haynes, Vivien V. French by T. V. Oklahoma Teacher, 1963, 44:9, 20-21.
- Holloran, J. H. A four year experiment in Esperanto as an introduction to French. Brit. Journal of Educational Psychology, 1952, 22, 200-204.

- Houston, Susan H. The acquisition and operation of language. Unpublished doctoral dissertation, Indiana University, 1967.
- Jakobovits, L. A. Second language learning and transfer theory: a theoretical assessment. Language Learning, 1969, 19:1 & 2, 55-86.
- Jakobovits, L. A., & Miron, M. S. (Eds.). Readings in the psychology of language. London: Prentice-Hall, 1967.
- Kangas, R. D. Factors relating to success in 7th grade foreign language study. Modern Language Journal, 1965, 49:2, 97-98.
- Kaulfers, W. V. Effect of the I. Q. on the grades of one thousand students of foreign languages. School and Society, 1929, 30:762, 163-164.
- Kaulfers, W. V. Value of English marks in predicting foreign language achievement. School Review, 1929, 37, 541-546.
- Kaulfers, W. V. Intelligence factor in foreign language achievement. School Review, 1931, 39, 542-548.
- Kaulfers, W. V. Foreign languages. Review of Educational Research, 1955, 25, 154-169.
- Kerlinger, F. N. Foundations of behavioral research. New York: Holt, Rinehart & Winston, 1964.
- King, C. L. A decade of NDEA institutes. Hispania, 1969, 52:3, 361-368.
- Lado, R. Language Teaching. New York: McGraw-Hill, 1964.
- Lado, R. Language testing: the construction and use of foreign language tests. New York: McGraw-Hill, 1964.
- Lambert, W. E. Motivation and language learning: Psychological Aspects. In S. Newell (Ed.), Dimension: Languages '68. Spartanburg, S. C.: Southern Conference on Language Teaching, 1968. Pp. 6-14.
- Lange, D. L. (Ed.). 1968 ACTFL annual bibliography. Foreign Language Annals, 1969, 2:4, 483-530.
- Leutenegger, R. R., & Mueller, T. H. Auditory factors and the acquisition of French language mastery. Modern Language Journal, 1964, 48:3, 141, 146.

- Leutenegger, R. R., Mueller, T. H., & Wershow, I. R. Auditory factors in foreign language acquisition. Modern Language Journal, 1965, 49:1, 22-31.
- Levenson, S. Articulating FLES programs: a plan of action! Hispania, 1966, 49:2, 296-298.
- Levenson, S., & Kendrick, W. (Eds.). Readings in foreign languages for the elementary school. Waltham, Massachusetts: Blaisdell, 1967.
- Mead, R. G., Jr. Selected bibliography. In D. D. Walsh, (Ed.), A handbook for teachers of Spanish and Portuguese, Lexington, Massachusetts: D. C. Heath, 1969. Pp. 326-333.
- Mildenberger, Andrea S., & Liao, Allen Juan-Heng. ERIC documents on the teaching of foreign languages: list number 1. Foreign Language Annals, 1968, 2:2, 222-247.
- Mildenberger, Andrea S., & Satlin, S. ERIC documents on the teaching of foreign languages: list number 2. Foreign Language Annals, 1969, 2:3, 361-368.
- Mildenberger, Andrea S., & Wood, Carol. ERIC documents on the teaching of foreign languages: list number 3. Foreign Language Annals, 1969, 3:1, 113-127.
- Miller, G. A. Language and communication. New York: McGraw-Hill, 1961.
- Miller, Helen B. An annotated bibliography of integrated FLES teaching materials. Bloomington, Indiana: Indiana University, 1969.
- Morgan, B. Q. The need for longer sequences in foreign language training. Foreign Language Discussion Pamphlet No. IV. New York: Modern Language Association, 1960.
- National Center for School and College Television. Television in foreign language education. NSCT News Supplement Number 7. Bloomington, Indiana: National Center for School and College Television, 1967.
- Newmark, G. Foreign Languages in elementary schools and implications for teacher education. The Journal of Teacher Education, 1963, 24:4, 449-455.

- Oneto, A. J., Jr. The effect on foreign language skill development in the elementary grades. Unpublished doctoral dissertation, Kent State University, 1968.
- Ornstein, J. New frontiers in language learning. Modern Language Journal, 1962, 42:3, 110-115.
- Ornstein, J. The foreign language program in our grade schools. Woman's Day, 1966, 29:56, 86-88.
- Parker, W. R. The national interest in foreign languages. (3rd ed.) Department of State Publication 7324. Washington: U.S. Government Printing Office, 1961.
- Petrov, J. A. Completed research studies, and instructional materials for language development under the National Defense Education Act of 1958 Title VI, Section 602. U.S. Department of Health, Education, and Welfare, Washington, D.C., 1969.
- Pimsleur, P. Aptitude testing. Language learning, 1968, 18, 73-77.
- Pimsleur, P., Mosberg, L., & Morrison, A. L. Student factors in F L learning. Modern Language Journal, 1962, 46:4, 160-170.
- Pimsleur, P., Sundland, D. M., & McIntyre, Ruth D. Underachievement in foreign language learning. New York: Modern Language Association of America, 1966.
- Politzer, R. L., & Weiss, L. Developmental aspects of auditory discrimination, echo response and recall. Modern Language Journal, 1969, 53:2, 75-85.
- Poston, L., Jr. Ten years of NDEA language institutes (1959-68), four perspectives and a memorial to the architect: William Riley Parker (1906-68). Hispania, 1969, 52:3, 355-356.
- Prince, J. R. An institute director looks back. Hispania, 1969, 52:3, 368-375.
- Rivers, Wilga M. The psychologist and the foreign language teacher. Chicago: University of Chicago Press, 1964.
- Rivers, Wilga M. Teaching foreign-language skills. Chicago: University of Chicago Press, 1968.

- Ryan, H. M. The effects of foreign language study in the elementary school (FLES) on first year achievement in a second language. Unpublished doctoral dissertation, Pennsylvania State University, 1961.
- Samuels, S. J. Psychological and educational consideration in early language learning. In F. A. Paquette (Ed.), New dimensions in the teaching of FLES. New York: American Council on the Teaching of Foreign Languages, 1969. Pp. 9-18.
- Savaiano, E. Wichita State University's involvement in the NDEA institute program. Hispania, 1969, 52:3, 375-383.
- Scherer, G. A. The sine qua nons in FLES. The German Quarterly, 1964, 37:4, 506-515.
- Seine, V., & Glems, J. Four keys to foreign language. Journal of Secondary Education, 1966, 41:2, 86-88.
- Siegel, S. Nonparametric statistics for the behavioral sciences. New York: McGraw-Hill, 1956.
- Solomon, Ellen. A generation of prognosis testing. Modern Language Journal, 1954, 38, 299-303.
- Sousa, T. F. Foreign language currents: Television in foreign language education. Hispania, 1968, 51:2, 332-335.
- Starr, W. H., Thompson, Mary P., & Walsh, D. D. (Eds.), Modern foreign languages and the academically talented student. New York: National Education Association and Modern Language Association of America, 1960.
- Sullivan, Elizabeth T., Clark, W. W., & Tiega, E. W. California short-form test of mental maturity. Monterey, California: California Test Bureau, a division of McGraw-Hill, 1964.
- Trump, J. L., & Miller, D. F. Secondary school curriculum improvement proposals and procedures. Boston: Allyn and Bacon, 1968.
- Valette, Rebecca M. Oral objective testing in the classroom. German Quarterly, 1965, 38:2, 179-187.
- Valette, Rebecca M. Modern language testing. New York: Harcourt, Brace, & World, 1967.

- Valette, Rebecca M. Testing and motivation. In S. Newell (Ed.). Spartanburg, S. C.: Southern Conference on Language Teaching, 1968. Pp. 65-69.
- Valette, Rebecca M. Testing. In Emma M. Birkmaier (Ed.), Britannica review of foreign language education. Chicago: Encyclopaedia Britannica, 1968. Pp. 343-374.
- Vocolo, J. M. The effect of foreign language study in the elementary school upon achievement in the same foreign language in the high school. Modern Language Journal, 1967, 51, 463-469.
- Von Wittich, Barbara. Prediction of success in foreign language study. Modern Language Journal, 1962, 46:5, 208-212.
- Weinberg, G. H., & Schumaker, J. A. Statistics and intuitive approach. Belmont, California: Wadsworth, 1965, 193-207.

APPENDIX

Table 28

Students of Spanish Assigned to Continue Spanish
at the Seventh-Grade Level (Male)

Student No.	Pretest Spanish	Posttest Spanish	Total EMLAT	Verbal SCAT	Total SCAT	Verbal CTMM	Total CTMM
001	54	55	125	58	104	52	100
002	44	46	122	54	94	51	94
003	43	43	104	42	65	47	85
004	41	52	124	57	98	48	86
005	41	44	122	47	85	45	95
006	41	37	115	42	83	43	99
007	40	32	123	54	85	47	93
008	39	43	116	55	93	53	95
009	37	50	112	45	67	40	87
010	35	52	126	56	101	54	96
011	35	47	122	56	101	49	97
012	35	29	123	54	95	55	104

Table 28--Continued

Student No.	Pretest Spanish	Posttest Spanish	Total EMLAT	Verbal SCAT	Total SCAT	Verbal CTMM	Total CTMM
013	34	50	101	45	78	52	102
014	34	44	101	42	70	47	93
015	33	51	112	56	99	53	97
016	32	49	124	50	88	55	95
018	31	61	123	47	79	41	88
019	31	20	75	20	39	22	66
020	30	42	127	52	98	48	95
021	30	31	112	38	63	34	81
022	29	43	74	32	58	41	80
023	29	29	110	52	91	47	97
024	28	41	119	38	74	38	74

Table 28--Continued

Student No.	Pretest Spanish	Posttest Spanish	Total EMLAT	Verbal SCAT	Total SCAT	Verbal CTMM	Total CTMM
025	28	39	122	52	91	51	90
026	28	28	106	36	63	40	74
027	27	41	123	54	95	48	99
028	27	35	116	42	61	24	47
029	26	47	122	40	69	39	74
030	25	38	109	51	71	38	73
031	24	53	115	31	64	29	66
032	24	41	118	44	79	41	82
033	24	31	88	36	66	30	77
034	24	26	95	29	48	27	65
035	23	41	104	44	76	28	77
036	23	41	110	43	63	44	75

Table 28--Continued

Student No.	Pretest Spanish	Posttest Spanish	Total EMLAT	Verbal SCAT	Total SCAT	Verbal CTMM	Total CTMM
037	23	24	82	27	45	35	65
038	20	24	115	40	61	38	78
039	19	21	119	46	87	44	88
040	11	34	112	37	68	34	74

Pretest Spanish: Form 1 of the Common Concepts Foreign Language Test

Posttest Spanish: Form 2 of the Common Concepts Foreign Language Test

Total EMLAT: Total score of the Modern Language Aptitude Test-Elementary

Verbal SCAT: Verbal section of the School and College Ability Tests

Total SCAT: Total score of the School and College Ability Tests

Verbal CTMM: Verbal section of the California Short-Form Test of Mental Maturity

Total CTMM: Total score of the California Short-Form Test of Mental Maturity

Table 29

Students of Spanish Assigned to Continue Spanish
at the Seventh-Grade Level (Female)

Student No.	Pretest Spanish	Posttest Spanish	Total EMLAT	Verbal SCAT	Total SCAT	Verbal CTMM	Total CTMM
041	45	47	124	54	100	52	103
042	41	34	122	53	84	42	71
043	40	54	121	43	75	50	92
044	40	37	114	43	78	52	96
045	38	56	122	52	87	49	95
046	38	55	124	48	94	52	101
047	38	45	122	46	81	49	95
048	38	33	123	53	96	53	91
049	37	51	116	42	78	45	96
050	37	45	128	57	100	48	100
051	37	30	118	34	57	36	66
052	36	49	125	44	76	46	95

Table 29--Continued

Student No.	Pretest Spanish	Posttest Spanish	Total EMLAT	Verbal SCAT	Total SCAT	Verbal CTMM	Total CTMM
053	35	46	116	58	103	53	96
054	35	45	120	43	81	44	82
055	35	44	112	29	55	27	55
056	34	40	116	34	56	37	78
057	34	33	116	42	69	47	92
058	33	44	121	41	79	44	88
059	31	46	126	58	100	48	87
060	31	27	114	33	56	22	64
061	30	46	125	55	93	48	91
062	30	38	98	41	76	41	89
063	29	45	119	52	96	54	104
064	29	44	121	48	78	26	68

Table 29--Continued

Student No.	Pretest Spanish	Posttest Spanish	Total EMLAT	Verbal SCAT	Total SCAT	Verbal CTMM	Total CTMM
065	29	32	101	32	53	33	80
066	28	45	126	49	74	48	86
067	28	40	126	36	81	40	86
068	28	34	122	44	71	47	95
069	28	33	114	48	71	31	64
070	27	51	113	43	79	31	73
071	26	44	110	42	69	41	75
072	26	30	120	37	59	38	74
073	26	24	119	39	57	34	70
074	25	37	103	28	52	30	71
075	24	44	118	38	74	43	83
076	24	38	123	30	54	39	78

Table 29--Continued

Student No.	Pretest Spanish	Posttest Spanish	Total EMLAT	Verbal SCAT	Total SCAT	Verbal CTMM	Total CTMM
077	24	36	119	49	86	46	85
078	24	35	120	48	68	41	75
079	24	29	110	43	73	40	70
080	22	28	110	28	47	31	64

Pretest Spanish: Spanish Form 1 of the Common Concepts Foreign Language Test

Posttest Spanish: Spanish Form 2 of the Common Concepts Foreign Language Test

Total EMLAT: Total score of the Modern Language Aptitude Test-Elementary

Verbal SCAT: Verbal section of the School and College Ability Tests

Total SCAT: Total score of the School and College Ability Tests

Verbal CTMM: Verbal section of the California Short-Form Test of Mental Maturity

Total CTMM: Total score of the California Short-Form Test of Mental Maturity

Table 30

Students of French Assigned to Continue French
at the Seventh-Grade Level (Male)

Student No.	Pretest French	Posttest French	Total EMLAT	Verbal SCAT	Total SCAT	Verbal CTMM	Total CTMM
001	24	37	82	32	50	33	75
002	42	39	117	49	89	54	102
003	26	29	100	45	71	25	60
004	29	24	103	32	58	34	72
005	32	33	115	48	81	38	67
006	30	39	124	52	97	48	93
007	26	30	94	35	68	38	69
008	26	35	113	43	66	47	86
009	28	33	122	52	97	51	99
010	26	31	120	49	81	49	89
011	26	33	117	50	86	44	85
012	30	33	107	38	64	35	82

Table 30--Continued

Student No.	Pretest French	Posttest French	Total EMLAT	Verbal SCAT	Total SCAT	Verbal CTMM	Total CTMM
013	25	34	116	47	81	47	90
014	28	33	116	42	85	40	92
015	34	29	114	46	75	43	81
016	26	35	114	51	83	43	83
017	29	29	113	46	84	35	80
018	28	19	113	47	82	40	83
019	44	58	124	54	100	52	94
020	24	26	104	40	57	40	78
021	23	39	112	43	62	44	75
022	34	39	117	45	84	54	101
023	42	43	122	57	101	50	98
024	49	52	116	51	85	47	84

Table 30--Continued

Student No.	Pretest French	Posttest French	Total EMLAT	Verbal SCAT	Total SCAT	Verbal CTMM	Total CTMM
025	34	27	104	53	78	42	78
026	33	49	112	37	70	43	85
027	36	40	121	46	71	44	86
028	29	33	111	47	71	48	85
029	27	34	121	44	94	44	84
030	28	35	122	47	80	48	92
031	30	35	118	46	80	41	89
032	30	30	106	43	78	40	78
033	27	27	97	41	65	33	84
034	29	35	122	43	85	39	86
035	31	46	121	40	73	41	72
036	27	38	110	36	63	29	75

Table 30--Continued

Student No.	Pretest French	Posttest French	Total EMLAT	Verbal SCAT	Total SCAT	Verbal CTMM	Total CTMM
037	32	48	118	52	96	53	102
038	34	44	110	48	77	44	88
039	30	44	116	56	94	53	97
040	23	33	100	32	56	43	76

Pretest French: French Form 1 of the Common Concepts Foreign Language Test

Posttest French: French Form 2 of the Common Concepts Foreign Language Test

Total EMLAT: Total score of the Modern Language Aptitude Test-Elementary

Verbal SCAT: Verbal section of the School and College Ability Tests

Total SCAT: Total score of the School and College Ability Tests

Verbal CTMM: Verbal section of the California Short-Form Test of Mental Maturity

Total CTMM: Total score of the California Short-Form Test of Mental Maturity

Table 31

Students of French Assigned to Continue French
at the Seventh-Grade Level (Female)

Student No.	Pretest French	Posttest French	Total EMLAT	Verbal SCAT	Total SCAT	Verbal CTMM	Total CTMM
041	26	31	106	38	54	49	89
042	34	38	123	47	93	44	88
043	26	27	105	39	68	43	81
044	29	36	112	46	74	38	80
045	24	38	124	54	92	50	93
046	34	38	118	55	90	48	94
047	30	27	112	39	60	35	72
048	26	37	109	32	50	40	70
049	25	30	119	41	70	43	70
050	24	28	119	37	62	43	70
051	23	28	118	42	74	38	80
052	28	29	106	41	67	38	62

Table 31--Continued

Student No.	Pretest French	Posttest French	Total EMLAT	Verbal SCAT	Total SCAT	Verbal CTMM	Total CTMM
053	23	34	125	34	51	39	72
054	24	31	121	39	64	47	86
055	27	32	119	34	57	26	67
056	35	34	115	47	78	39	81
057	30	29	104	44	71	33	70
058	48	50	111	50	82	41	83
059	25	34	125	55	78	50	88
060	35	39	113	55	80	53	93
061	24	36	122	57	91	51	87
062	25	32	114	46	83	44	84
063	31	39	126	52	91	50	95
064	31	33	115	53	88	46	89

Table 31--Continued

Student No.	Pretest French	Posttest French	Total EMLAT	Verbal SCAT	Total SCAT	Verbal CTMM	Total CTMM
065	24	35	122	44	80	41	85
066	32	35	114	42	69	40	85
067	30	39	114	45	79	39	77
068	35	36	123	44	84	47	95
069	43	46	118	47	84	50	94
070	44	50	123	44	75	46	88
071	49	45	118	41	75	38	80
072	27	46	120	48	84	45	87
073	37	52	125	50	91	47	84
074	37	38	125	47	75	51	104
075	23	41	124	48	85	44	77
076	32	48	122	54	96	51	96

Table 31--Continued

Student No.	Pretest French	Posttest French	Total EMLAT	Verbal SCAT	Total SCAT	Verbal CTMM	Total CTMM
077	25	37	122	46	78	48	90
078	32	46	122	55	85	52	91
079	30	42	116	49	87	49	93
080	53	55	122	48	86	35	75

Pretest French: French Form 1 of the Common Concepts Foreign Language Test

Posttest French: French Form 2 of the Common Concepts Foreign Language Test

Total EMLAT: Total score of the Modern Language Aptitude Test-Elementary

Verbal SCAT: Verbal section of the School and College Ability Tests

Total SCAT: Total score of the School and College Ability Tests

Verbal CTMM: Verbal section of the California Short-Form Test of Mental Maturity

Total CTMM: Total score of the California Short-Form Test of Mental Maturity

Table 32

Students of Spanish Assigned to Begin French at
the Seventh-Grade Level (Male)

Student No.	Pretest Spanish	Posttest Spanish	Posttest French	Total EMLAT	Verbal SCAT	Total SCAT	Verbal CTMM	Total CTMM
001	46	30	33	116	43	74	37	68
002	45	32	36	122	55	81	49	93
003	44	51	37	129	54	88	49	89
004	38	41	26	127	50	94	50	101
005	38	33	31	113	39	56	44	85
006	35	26	25	111	41	79	40	81
007	34	43	26	119	52	88	45	79
008	34	33	29	122	51	95	42	78
009	34	31	30	107	31	44	36	71
010	33	37	17	121	45	66	44	95
011	33	27	23	115	47	84	49	102
012	32	37	27	124	51	87	50	96

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Table 32--Continued

Student No.	Pretest Spanish	Posttest Spanish	Posttest French	Total EMLAT	Verbal SCAT	Total SCAT	Verbal CTMM	Total CTMM
013	32	33	22	117	46	74	46	79
014	32	31	27	114	35	66	37	84
015	31	43	23	126	50	90	44	82
016	30	40	25	113	50	77	42	80
017	30	37	31	114	38	73	42	93
018	30	31	31	117	57	97	53	91
019	30	28	24	101	44	64	46	77
020	30	23	35	119	36	66	27	58
021	30	27	29	121	48	83	44	97
022	29	44	36	117	49	85	47	83
023	29	35	22	96	36	63	33	70
024	29	35	35	112	34	59	21	63

Table 32--Continued

Student No.	Pretest Spanish	Posttest Spanish	Posttest French	Total EMLAT	Verbal SCAT	Total SCAT	Verbal CTMM	Total CTMM
025	29	26	30	90	33	57	35	73
026	29	22	32	110	34	63	43	87
027	28	40	24	116	52	85	50	94
028	28	29	27	105	40	68	42	89
029	27	34	33	107	50	77	43	87
030	27	27	24	82	45	80	42	90
031	27	15	22	99	41	71	31	60
032	26	28	29	109	44	81	35	79
033	26	27	32	119	45	71	38	78
034	25	36	24	113	48	84	54	93
035	25	27	36	113	47	77	44	69
036	24	35	27	119	41	76	45	88

Table 32--Continued

Student No.	Pretest Spanish	Posttest Spanish	Posttest French	Total EMLAT	Verbal SCAT	Total SCAT	Verbal CTMM	Total CTMM
037	24	30	20	98	34	64	36	75
038	24	25	33	114	41	74	42	89
039	23	30	26	103	39	67	42	90
040	20	24	30	105	44	74	33	70

Pretest Spanish: Spanish Form 1 of the Common Concepts Foreign Language Test

Posttest Spanish: Spanish Form 2 of the Common Concepts Foreign Language Test

Posttest French: French Form 2 of the Common Concepts Foreign Language Test

Total EMLAT: Total score of the Modern Language Aptitude Test-Elementary

Verbal SCAT: Verbal section of the School and College Ability Tests

Total SCAT: Total score of the School and College Ability Tests

Verbal CTMM: Verbal section of the California Short-Form Test of Mental Maturity

Total CTMM: Total score of the California Short-Form Test of Mental Maturity

Table 33

Students of Spanish Assigned to Begin French at
the Seventh-Grade Level (Female)

Student No.	Pretest Spanish	Posttest Spanish	Posttest French	Total EMLAT	Verbal SCAT	Total SCAT	Verbal CTMM	Total CTMM
041	45	48	33	123	54	89	48	94
042	44	50	27	120	48	81	51	93
043	42	45	39	122	50	87	45	89
044	42	41	33	117	43	81	47	89
045	41	49	36	117	48	85	53	99
046	41	42	34	117	45	74	41	83
047	40	40	33	125	46	86	43	82
048	39	39	29	123	52	83	51	94
049	39	28	32	114	50	86	45	88
050	37	40	35	125	54	88	50	95
051	37	39	37	113	50	72	42	80
052	37	36	31	120	39	77	19	54

Table 33--Continued

Student No.	Pretest Spanish	Posttest Spanish	Posttest French	Total EMLAT	Verbal SCAT	Total SCAT	Verbal CTMM	Total CTMM
053	37	34	29	114	52	92	47	97
054	35	32	26	118	44	80	37	85
055	35	35	31	122	50	85	47	102
056	34	34	30	119	35	64	38	78
057	33	38	31	120	45	68	39	61
058	33	34	32	128	41	68	46	87
059	33	33	27	106	52	88	50	90
060	32	38	38	115	45	79	41	84
061	32	22	29	112	41	76	38	77
062	31	43	27	117	51	79	51	92
063	31	31	38	125	45	77	46	90
064	30	32	27	114	49	77	44	72

Table 33--Continued

Student No.	Pretest Spanish	Posttest Spanish	Posttest French	Total EMLAT	Verbal SCAT	Total SCAT	Verbal CTMM	Total CTMM
065	30	31	26	106	37	69	34	74
066	29	35	24	108	27	53	38	82
067	29	28	25	113	46	84	35	80
068	29	21	37	116	40	72	41	79
069	28	34	20	113	45	74	40	86
070	26	37	30	118	45	84	44	87
071	26	32	37	118	40	68	40	83
072	26	27	22	116	29	55	31	68
073	26	24	21	121	36	61	43	86
074	25	41	28	116	47	85	43	92
075	23	43	34	117	50	84	37	73
076	23	32	19	123	44	77	31	74

Table 33--Continued

Student No.	Pretest Spanish	Posttest Spanish	Posttest French	Total EMLAT	Verbal SCAT	Total SCAT	Verbal CTMM	Total CTMM
077	23	25	29	118	38	65	41	85
078	22	28	25	103	42	87	35	81
079	22	28	21	116	42	57	27	69
080	21	31	23	121	41	61	39	82

Pretest Spanish: Spanish Form 1 of the Common Concepts Foreign Language Test

Posttest Spanish: Spanish Form 2 of the Common Concepts Foreign Language Test

Posttest French: Form 2 of the Common Concepts Foreign Language Test

Total EMLAT: Total score of the Modern Language Aptitude Test-Elementary

Verbal SCAT: Verbal section of the School and College Ability Tests

Total SCAT: Total score of the School and College Ability Test

Verbal CTMM: Verbal section of the California Short-Form Test of Mental Maturity

Total CTMM: Total score of the California Short-Form Test of Mental Maturity

Table 34

Students of French Assigned to Begin Spanish at
the Seventh-Grade Level (Male)

Student No.	Pretest French	Posttest Spanish	Total EMLAT	Verbal SCAT	Total SCAT	Verbal CTMM	Total CTMM
001	26	27	110	43	66	38	71
002	25	28	111	39	74	42	87
003	29	35	119	57	99	52	98
004	26	21	115	45	88	45	93
005	31	33	110	47	84	46	84
006	28	31	113	51	86	53	107
007	28	32	100	33	48	32	52
008	27	17	110	50	84	51	88
009	28	27	110	55	85	49	77
010	24	25	113	47	70	41	69
011	28	32	110	51	78	50	81
012	25	28	110	38	60	39	77

Table 34--Continued

Student No.	Pretest French	Posttest Spanish	Total EMLAT	Verbal SCAT	Total SCAT	Verbal CTMM	Total CTMM
013	27	28	104	31	57	38	91
014	27	25	114	43	82	52	93
015	30	30	113	39	77	44	85
016	28	29	101	47	70	48	79
017	29	28	98	42	80	43	85
018	27	28	103	41	71	42	79
019	31	49	118	42	80	41	78
020	31	39	108	41	80	42	87
021	33	24	89	30	64	42	79
022	28	38	117	41	67	45	80
023	28	29	107	27	56	38	71
024	25	20	86	47	62	41	78

Table 34--Continued

Student No.	Pretest French	Posttest Spanish	Total EMLAT	Verbal SCAT	Total SCAT	Verbal CTMM	Total CTMM
025	26	29	106	40	75	43	88
026	28	27	102	48	70	46	76
027	31	29	123	57	101	50	96
028	28	36	112	48	61	51	107
029	31	23	122	47	83	45	82
030	30	18	111	37	69	38	80
031	27	25	114	43	82	52	93
032	26	28	113	39	70	40	77
033	31	24	91	28	37	26	68
034	30	33	102	38	58	35	71
035	28	21	100	36	56	36	84
036	32	32	116	45	70	47	85

Table 34--Continued

Student No.	Pretest French	Posttest Spanish	Total EMLAT	Verbal SCAT	Total SCAT	Verbal CTMM	Total CTMM
037	31	30	116	42	67	50	102
038	29	24	89	43	78	23	65
039	31	40	127	56	99	54	98
040	25	31	115	37	61	34	73

Pretest French: French Form 1 of the Common Concepts Foreign Language Test

Posttest Spanish: Spanish Form 2 of the Common Concepts Foreign Language Test

Total EMLAT: Total score of the Modern Language Aptitude Test-Elementary

Verbal SCAT: Verbal section of the School and College Ability Tests

Total SCAT: Total score of the School and College Ability Tests

Verbal CTMM: Verbal section of the California Short-Form Test of Mental Maturity

Total CTMM: Total score of the California Short-Form Test of Mental Maturity

Table 35

Students of French Assigned to Begin Spanish at
the Seventh-Grade Level (Female)

Student No.	Pretest French	Posttest Spanish	Total EMLAT	Verbal SCAT	Total SCAT	Verbal CTMM	Total CTMM
041	48	38	119	47	81	47	93
042	47	48	123	57	92	46	93
043	42	45	127	54	88	43	84
044	35	40	101	51	74	40	83
045	35	32	120	44	71	38	79
046	32	36	106	45	74	50	93
047	32	28	113	40	86	41	86
048	31	47	124	43	76	45	85
049	28	52	124	45	77	49	100
050	35	33	123	55	99	53	96
051	36	30	119	51	90	48	86
052	26	20	103	36	55	49	98

Table 35--Continued

Student No.	Pretest French	Posttest Spanish	Total EMLAT	Verbal SCAT	Total SCAT	Verbal CTMM	Total CTMM
053	25	39	123	48	84	40	83
054	25	26	123	48	75	44	85
055	24	37	101	35	52	36	69
056	24	32	111	42	71	39	76
057	24	32	114	33	55	34	63
058	27	29	66	19	36	34	68
059	46	45	121	52	94	54	102
060	35	42	118	54	99	51	97
061	25	33	125	58	103	53	103
062	34	38	118	57	82	39	82
063	23	36	101	33	57	35	73
064	23	18	93	46	83	36	75

Table 35--Continued

Student No.	Pretest French	Posttest Spanish	Total EMLAT	Verbal SCAT	Total SCAT	Verbal CTMM	Total CTMM
065	30	51	122	39	63	44	75
066	23	39	123	48	84	40	83
067	28	36	105	41	64	35	72
068	28	32	119	48	82	45	94
069	27	36	99	39	67	35	73
070	35	42	118	54	99	51	97
071	21	27	103	35	63	41	82
072	24	33	114	43	62	29	51
073	20	26	103	44	75	41	78
074	46	45	121	52	94	54	102
075	34	38	118	57	82	39	82
076	25	34	106	32	55	25	58

Table 35--Continued

Student No.	Pretest French	Posttest Spanish	Total EMLAT	Verbal SCAT	Total SCAT	Verbal CTMM	Total CTMM
077	27	29	118	57	97	56	108
078	30	30	118	34	69	32	67
079	30	37	113	44	85	33	67
080	27	22	103	41	77	41	79

Pretest French: French Form 1 of the Common Concepts Foreign Language Test

Posttest Spanish: Spanish Form 2 of the Common Concepts Foreign Language Test

Total EMLAT: Total score of the Modern Language Aptitude Test-Elementary

Verbal SCAT: Verbal section of the School and College Ability Tests

Total SCAT: Total score of the School and College Ability Tests

Verbal CTMM: Verbal section of the California Short-Form Test of Mental Maturity

Total CTMM: Total score of the California Short-Form Test of Mental Maturity