

A STUDY OF THE EFFECTS OF FREQUENCY OF LANGUAGE LABORATORY
EXPERIENCE AND OPPORTUNITY FOR INDEPENDENT STUDY ON
ACHIEVEMENT IN FIRST-YEAR SPANISH

by

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CHAPTER I

INTRODUCTION

In recent years the use of electronic equipment for foreign language instruction has increased tremendously. Although language teachers have long employed the use of recordings and tapes for language instruction, the trend toward the installation and utilization of electronic recording equipment in a separate room, whereby all students in a given language class may have access to the equipment simultaneously, has been evidenced only recently. Hutchinson (1961, p. 3; 1964, p. 3) reports that the number of language laboratories in secondary schools increased from none in 1947 to over six thousand in 1964. Hutchinson adds that the rapid increase in the development of the language laboratory, since its beginnings in the Army program of World War II, had been stimulated by the National Defense Education Act of 1958, which provides matching funds, research support, and teacher training.

A most significant factor giving impetus to more widespread usage of language laboratories has been a changing view of the nature of language instruction. A publication of the U. S. Office of Education (Hayes, 1963, p. 15) points out that traditional language instruction in the United States was dedicated largely to the teaching of reading, approached through a study of grammar. This approach, with only minor variations, was extensive translation. However, recent years have witnessed a shift of emphasis in language teaching and learning. Understanding and speaking a foreign language are now regarded first as essential primary objectives, then as sound bases for systematically acquiring the important reading and writing skills. Recent insights in language learning theory have reaffirmed the observation that understanding and speaking are to a large extent matters of habit (Brooks, 1960, p. 47).

It is generally recognized that one effective means of acquiring habits is through repetitive practice. Hence, practice is essential to the development of the skills necessary to understand and speak a foreign language. Hayes (1963, p. 16) states:

A competent teacher, who makes the best possible use of classroom time, and has access to good materials, can, indeed, successfully provide the kind of practice required. But it is difficult, often exhausting, for a live teacher to provide, throughout countless repetitions, the consistently authentic model and the carefully sequenced progression of drills which efficient practice requires. To provide this practice is the fundamental role of the language laboratory.

Importance of Additional Research

For the past several years there has been a flood of articles and books in educational literature that have given considerable impetus to the trend of establishing language laboratories in secondary schools. However, most of the recommendations made in the past by advocates of the language laboratory are not based upon the results of research, but rather upon opinion and supposition.

At present, only limited confidence can be placed in the findings of most language laboratory research studies. Most of these studies are inadequate from the standpoint of sound experimental design, objective measurement of achievement, and control of relevant variables. Carroll (1963, p. 1080) states:

There have been few experimental studies addressed to the questions of (1) exactly how much and in what ways the tape recorder (often incorporated into a language laboratory) may contribute to a course of

instruction, and (2) the degree to which the tape recorder may be expected to take over some of the functions of the instructor. Most of the studies available are poorly controlled or otherwise deficient from the standpoint of valid research methodology, even though they concern what may well be interesting and imaginative teaching techniques.

Hutchinson (1961, p. 10) corroborates the view that additional research is needed:

Research on these and other aspects of language learning equipment is imperative. Many of these problems are intricately involved with the complexities of the psychology of learning (especially the peculiar problems of language learning), psychoacoustics, and electronics. Research projects on some of these problems are already underway, but more will be needed, especially a highly controlled kind of research with properly planned experimental design.

Hutchinson (1964, p. 3-4) adds:

Every new teaching tool undergoes a probationary period in which educators experiment with it to discover its potentialities, to define the objectives it can help them to achieve, and to find the most productive methods of using it. For most schools the language laboratory is still in this early period: we have barely scratched the surface of its potentiality, and we cannot yet make a definitive evaluation of its effectiveness.

At present it appears that language teachers who incorporate the use of a language laboratory into their instructional programs must go through a period of trial and error experimentation to determine which procedures and techniques are most effective. It is evident that

time, energy, and talent are wasted through excessive dependence on this trial and error process. For this reason it is imperative that additional research should be conducted in order to identify those variables and conditions that are relevant to more effective use of language laboratories.

Statement of the Problem

The purpose of this study was to investigate the influence of two variables, (1) the number and length of language laboratory experiences and (2) the opportunity for independent study, on Spanish I achievement. The two variables were considered singly and in combination.

More specifically, the purposes of this study were as follows: (1) to determine whether students who were following an instructional schedule which provided 20-minute language laboratory sessions daily would differ significantly in their responses to the items on a standardized Spanish achievement test from students who were following an instructional schedule which provided for 50-minute language laboratory sessions twice per week; (2) to determine whether students who were given an opportunity for independent study during the language laboratory session

would differ significantly in their responses to the items on a standardized Spanish achievement test from students who were not given an opportunity for independent study during the language laboratory sessions; and (3) to determine whether students who were following an instructional schedule which provided for a given combination of the two variables under study (the number and length of laboratory sessions and the opportunity for independent study) would differ significantly in their responses to the items on a standardized Spanish achievement test from students who were following an instructional schedule which provided for all other combinations of the two variables.

Hypotheses To Be Tested

As a matter of convention the hypotheses were stated in null form.

- I. The groups of subjects having two 50-minute language laboratory sessions per week and groups having 20-minute sessions daily do not differ with respect to Spanish I achievement as measured by a standardized test. They do not differ in achievement of (a) listening skills and (b) speaking skills.
- II. The groups of subjects having opportunity for inde-

pendent study and groups having no such opportunity do not differ with respect to Spanish I achievement as measured by a standardized test. They do not differ in achievement of (a) listening skills and (b) speaking skills.

- III. There is no difference in Spanish I achievement between groups classified on combinations of the two experimental variables as follows: (1) two 50-minute laboratory sessions per week and opportunity for independent study, (2) two 50-minute laboratory sessions per week with no opportunity for independent study, (3) daily 20-minute laboratory sessions and opportunity for independent study, and (4) daily 20-minute laboratory sessions with no opportunity for independent study. The four groups of subjects classified in this manner do not differ in achievement of (a) listening skills and (b) speaking skills.

Scope and Limitations

This study proposed to compare scores on a standardized Spanish achievement test of four groups of subjects in an attempt to investigate and determine the influence of two

variables, the number and length of language experiences and the opportunity for independent study, on Spanish I achievement. These variables were investigated only within the specifications set forth in Chapter III, Methods and Procedures. Although the need is great, no attempt was made to investigate other variables, such as use of visual aids or feedback procedures.

This study was limited to those students who voluntarily enrolled for first-year Spanish at A. G. Parrish High School, Selma, Alabama, for the school year 1964-65. The findings of this study may be applicable to other students only to the extent that the conditions under which this study was conducted are similar to such student groups.

While it is recognized that the nature of language learning requires an extended instructional period, it was beyond the scope of this study to conduct the instructional period longer than eighteen weeks, the first semester of the school year 1964-65.

This study was concerned only with two (listening and speaking) of the four dimensions of achievement as measured by the MLA Cooperative Foreign Language Test: Spanish, Form LA.

Definition of Terms

For the purpose of clarifying the meaning of certain terms in the study, the following definitions are given:

A "language laboratory" is a special room in which student positions are equipped with individual booths, each containing a magnetic tape recorder, earphones, and a microphone. The basic functions of this equipment are to enable each student to listen to a consistently authentic voice, to repeat what he hears, and to record his responses for review, comparison, and correction. An integral part of the laboratory equipment is the master console, which permits the teacher to transmit one or more lessons from its center location to all or some of the student positions. The master console provides facilities for the instructor to listen to students and to communicate with them selectively as groups or as individuals.

A "laboratory session" is the period of time allotted for a particular group of students to use the electronic equipment contained in a language laboratory.

"Listen-speak practice" is a series of exercises in which the learner listens to and repeats models--usually utterances from everyday conversation material or basic sentence patterns--which are recorded on tape. This

includes exercises in which the learner is asked to make changes in the structure of the pattern he is practicing and exercises in which the learner receives a stimulus, reacts verbally to it with a new utterance, hears the correct answer for comparison, and repeats the correct answer (Holton et al., 1961, p. 240-243).

"Listen-speak-record practice" is a series of exercises which includes all the activities stated under listen-speak practice. In addition, the learner records the interchange between the master tape and his own responses. When the student later replays his tape, he can compare his responses to the "correct ones."

"Independent study" is a term which means that the student has access to all of the taped lessons. He may select a past lesson to review or a future lesson to practice. The student has complete control of the booth recorder. He can go over an entire master tape as a whole, or he may pick out certain parts and review as much and as often as he feels he requires. The student can record the interchange between the master tape and his own responses and replay for comparison.

"Spanish I achievement" refers to the scores made on the MLA Cooperative Foreign Language Test: Spanish,

Form LA. This test attempts to measure high school students' proficiencies in listening to, speaking, reading, and writing Spanish. However, reading and writing skills were not considered in this study.

The "null hypothesis" is an assumption that there is either no difference between measurements or that there is no correlation between variables.

A "significant difference" is a term which suggests the improbability that an obtained difference between two derived numerical values arose by random sampling, but that a true difference exists. Although the decision as to what constitutes improbability requires consideration, statisticians usually accept as significant any difference which could have arisen from random sampling no more frequently than five times in one hundred (five per cent, or .05, level), or as highly significant, no more than one time in one hundred (one per cent, or .01, level).

Organization of the Study

In April of 1964, permission was obtained from the superintendent of education of the Selma Public School System, Selma, Alabama, to conduct this study. A general outline of the study was presented to a meeting of the

superintendent, the supervisor for the system, the principal of Albert G. Parrish High School Senior Division, the principal of the junior division, and the guidance counselor. The results of this meeting were as follows:

1. The grade level of the students to be included in the investigation was determined.
2. The projected number of students for the population of the study was estimated.
3. The mechanical fitness of the language laboratory equipment was assured.
4. The procedure for reporting student progress to parents during the instructional phase was determined.
5. A tentative schedule for pre-testing the population was devised to minimize interruption of the instructional program.
6. The student files would be accessible to gather data on the students in the population.
7. A tentative date was set to schedule students into classes for instruction after the groups had been determined by random selection.
8. The length of the instructional phase of the study was determined.

Data from the student files were gathered on each of the students to be included in the population for this study between May 7 and May 14, 1964; the language aptitude tests were administered on May 14, 1964; and all scheduling was completed between June 4 and June 18, 1964. The instructional phase of this study was begun on September 7, 1964, and was terminated on January 15, 1965. The achievement tests were administered on January 18 and January 19, 1965.

CHAPTER II

REVIEW OF RELATED LITERATURE

The review of the related literature was conducted in four areas. The literature was searched for research and opinion concerning (1) the use of the language laboratory in foreign language instruction in the secondary school; (2) the influence of intelligence, language aptitude, age, and sex on foreign language learning; (3) the number and length of language laboratory sessions most conducive to effective language learning; and (4) individualization of instruction using the language laboratory. The following review will be presented according to these four areas.

The Use of the Language Laboratory in Foreign Language Instruction in the Secondary School

The use of mechanical equipment as an aid in foreign language teaching dates back to the first classroom adoption of the phonograph around 1900. Clarke (1918, p. 116) states

that "by that time Edison's talking machine of 1877 had probably been perfected sufficiently to make its use as an adjunct to the talking teacher practicable." One of the first recorded evaluations of the phonograph in language teaching was made in 1918. Clarke reports that after twelve years of utilizing the phonograph in language instruction he believed that the cylinder and disc records greatly aided his students in the achievement of pronunciation.

In the 1920's foreign language departments in a few universities assembled in a room apart from the recitation classroom a complex of recording and listening equipment, phonographs, dictaphones, and the like (Waltz, 1930; 1931). The language departments set up hours and regulations for student use of the equipment and called its operation a "phonetics laboratory." The primary objective for the use of this equipment was to enhance students' ability to translate. The reason the term "language laboratory" replaced "phonetics laboratory" probably lies in the fact that the beginning of the language laboratory movement was a new start rather than a direct expansion of the limited phonetics tradition.

According to Angiollo (1947) and Hyneman (1945) the

language laboratory and its spread were a postwar development, fostered by a climate of experimentation which was stimulated by the Army language teaching program during World War II. Hyneman reports that two of the reasons for the success of the Army language program were an unlimited budget for the purchase of electronic recording equipment to be used for language instruction and the singleness of aim, which was fluency in everyday, practical expressions.

Ebelke (1948) reports that soon after World War II laboratories were installed at a number of colleges and universities which made regular individual practice with automatic tutors possible. These institutions helped to establish the value of the language laboratory in instruction primarily involving listening and speaking rather than grammar-decoding.

The use of such equipment was still further advanced by the introduction of the magnetic-tape recorder, which made experimentation with locally made recordings relatively simple (Frank, 1951, p. 616-619). The adaptation of the dual-channel recorder to language learning allowed the student to have complete and independent control of his program. The student could now record his voice in the pauses, divorce himself from the console, and replay the

recording without erasing the master voice on the upper track (Johnson & Seerley, 1958, p. 6; Hayes, 1963, p. 1).

The passage of the National Defense Education Act of 1958, which provides funds for the acquisition of laboratory and/or other special equipment needed in the teaching of foreign languages, research support, teacher training, and summer institutes, did much to encourage the installation of language laboratories in public secondary schools throughout the United States (Hocking & Merchant, 1959; Hutchinson, 1961).

As previously stated in Chapter I, Hutchinson (1964, p. 3) reports that the number of language laboratories in the American secondary schools increased from none in 1947 to over six thousand in 1964. This rapid expansion in the use of language laboratories in the secondary schools was the result of a change in attitudes toward the nature of language learning and a shift in the primary objectives for language study.

Nelson Brooks (1960, p. 46) summarizes current thinking concerning the nature of second language learning as follows:

Language is a highly complicated activity, and it is wholly learned. It involves both neural and

muscular tissue, and it has psychological, interpersonal, and cultural aspects that are indispensable to its acquisition and use. We may now consider what dominates the perspective when learning moves into the classroom and turns its attention to a second language. The single paramount fact about language learning is that it concerns, not problem solving, but the formation and performance of habits.

The role of the language laboratory and its relationship to current language learning theory are easily determined from the literature. Desberg (1961, p. 172-174) states that the real problem in learning a foreign language is the imposition of a second set of habits upon, and in conflict with, the first set of habits. He says that learning a second language is more an athletic event than anything else and a great deal of practice is required before it becomes automatic. He also remarks that approximately 1000 contact hours with the second language is necessary to achieve professional competency; consequently, language laboratories are the only means by which students can receive an approximation of the contact hours needed.

Brutnober (1960, p. 79-84) corroborates the view that thousands of contact hours are required for mastery of a language. He points out that children as they are learning their native language have thousands of hours of listening practice without other distractions. Brutnober

adds that language laboratories are justified only for programs that aim to teach a language through a spoken form.

Hocking and Merchant (1959) state that the major purpose of the language laboratory is to multiply the aural-oral practice of the pupils, and that speaking and listening abilities must be the objectives if the laboratory is used for language instruction.

In support of the same thesis, Huebener (1960, p. 212-213) comments that the chief objective is for the student to achieve the ability to speak and understand the second language, and that the language laboratory provides the systematic audio-lingual practice needed to accomplish this objective.

In his description of the instructional program at the Army Language School at Monterey, California, Mueller (1962, p. 48-50) states that instruction is based on the fact that language is a set of habits which the student must master and control without conscious reference to the mechanics of grammar. He points out that to speak effectively, the students must acquire the habits through a considerable amount of oral practice until complete motor skill in manipulating the language is reached; hence, the

laboratory is necessary to provide this practice.

Kirch (1963, p. 260) summarizes what he considers to be the role of the language laboratory:

The language laboratory is effective for memorizing and drills, as well as for testing material already introduced in the classroom situation. It is excellent for developing listening comprehension and command of the structural and lexical aspects of the foreign language. Phonetic practice for beginners should be carried on in the laboratory only when monitored by the teacher. Laboratory and classwork must be carefully integrated. Although it can contribute to the development of all the skills: listening, speaking, reading, and writing, as well as to understanding of the foreign civilization and culture, its greatest contribution is to the development of the audio-lingual skills in beginning courses.

It is evident from the literature that the role of the language laboratory is to provide authentic, consistent, untiring models of speech for imitation and drill. It is also evident that use of the language laboratory is considered to be more beneficial to language learning if the primary objectives are mastery of listening and speaking skills.

Much of the research that has been conducted relative to language laboratories has been concerned with examining the differences in learning achievement between students taught with the language laboratory and students following more traditional language learning methods.

Although the results of these studies are somewhat equivocal, some of the studies indirectly support the claim that use of the laboratory produces greater achievement in the audio-lingual skills.

Studies by Brushwood and Polmantier (1953), Lorge (1964), Maynes (1962), Moore (1962), and Steiner (1963) have attempted to compare the effectiveness of the language laboratory with traditional means of teaching second languages. The results of these studies indicate that students using the language laboratory as an integral part of the learning process show superior achievement in language fluency, intonation, and listening comprehension, and do as well as, or better than, control groups in the achievement of vocabulary, grammatical structure, and reading comprehension.

On the other hand, Allen (1960) reports a study conducted at Ohio State University in an attempt to determine the effects of the language laboratory upon language learning. Two groups were matched on scores on an English vocabulary test, a spelling test, a language aptitude test, and standardized Spanish achievement tests. Eighty percent of the time the two groups were taught in the same way. Twenty percent of the time (one day out of five) the

experimental group used the language laboratory and the control group continued regular class work. On the basis of the post-tests that were administered one year after the study began, those students who spent twenty percent of their time listening to and speaking the language achieved significantly higher scores in reading, vocabulary, and grammar. The two groups did not statistically differ in the degree of achievement of oral skills. Allen concludes:

The oral skill, however, involves psychomotor activities, as contrasted to intellectual activities. Their development depends on frequent and intensive practice. In one year's time the pupils could learn theory, grammatical patterns, and the sounds of the language, but they could not learn to perform at near-native quality. It may be that the laboratory group would have surpassed the non-laboratory group in the spoken language if it had spent one or two more periods a week in the laboratory. This points the way to further experimentation in the laboratory (p. 358).

In his review of Allen's (1960) study, Carroll (1963) found no reason to doubt the utility of the language laboratory. He points out that this study provides evidence of the need to improve instruction in the laboratory and indicates that there are many aspects of foreign language learning that do need further research.

There are educators who hold that the usefulness of the language laboratory has already been established beyond

a doubt. Hutchinson (1964, p. 11) states:

Many researchers question the need for further documentation of the usefulness of the language laboratory, as compared to the no-language-laboratory. Certain well-established principles underlying the learning or motor skills support the basic idea of the language laboratory.

It appears now that future research on language laboratories will be concerned primarily with the investigation of those variables within the language laboratory which may affect the quality of second language learning, rather than with the attempt to prove whether or not laboratory experience is useful.

The Influence of Intelligence, Language
Aptitude, Age, and Sex on Foreign
Language Learning

Prior to extensive acceptance of proficiency in audio-lingual skills as primary objectives of foreign language learning, intelligence appeared to be a very significant factor in predicting whether or not a student would be successful in the study of a foreign language. A review of the research conducted in the 1930's revealed a few studies that indicated that there was a positive relationship between intelligence and success, as measured by grades, in foreign language courses.

In one study, Tallent (1938) correlated course

grades with intelligence. Using the records of a random sample of 184 college students, Tallent correlated German grades with intelligence as measured by the Terman Group Test of Mental Ability. A statistically significant correlation of .211 was obtained. In another study, Larsen, Wittenborn, and Giesecke (1942) found a correlation of .368 between the achievement scores on the Cooperative German Test and the Otis Quick-Scoring Mental Ability Test for 85 college students in first semester German.

Spoerl (1939) found that sex differences exist in the relationship of intelligence to foreign language achievement. Using a group of 38 college students enrolled in advanced German courses, Spoerl correlated intelligence as measured by the Henmon-Nelson Test of Mental Abilities with grades in German for males and females separately. A non-significant correlation of .123 was obtained for males but a significant correlation of .629 was obtained for females. Investigating these results further, Spoerl selected a larger sample and ran the same correlations. The results support the former results and he concludes that there are definite sex differences as to the importance of intelligence as a factor in foreign language achievement.

As the audio-lingual approach to the study of languages gained in acceptance, intelligence decreased in importance as a predictor of success in language study. The audio-lingual approach is one which follows a listening-speaking-reading-writing sequence in which the student approaches the language not through a series of rules to be acquired intellectually, but through practice on grammatical patterns which have been prepared according to linguistic principles (Sheppard, 1961).

In his survey of second language learning, Dunkel (1948) reports that evidence indicated that intelligence was not a major factor in determining success or failure in elementary language learning. However, he also pointed out that a closer analysis of the criterion of performance might disclose that certain aspects of intelligence were important.

After reviewing studies of the prediction of success in intensive language courses, Carroll (1962, p. 89) reports:

Facility in learning to speak and understand a foreign language is a fairly specialized talent (or group of talents), . . . relatively independent of those traits ordinarily included under "intelligence."

Von Wittich (1962) conducted a study to find an easily accessible predictor of success in foreign language study at the junior high level. The findings of this investigation were that total grade point average was a better predictor of achievement in foreign language than was intelligence. Von Wittich concludes:

The foregoing analysis disclosed that IQ was the factor showing the lowest correlation with both prediction variables and criterion. This means that intelligence per se does not guarantee scholastic success and thus should not be used by itself for predicting achievement (p. 211).

Carroll and Sapon (1959) discuss the relationship between intelligence and foreign language success:

Within very broad limits, of course, IQ or "intelligence" is a correlate of foreign language success, but it is much less related to foreign language success than it is to many other types of school courses. Generally, foreign language teachers have been disappointed in the attempt to use intelligence test scores as predictors of foreign language success. One possible reason for the low validity of intelligence measures in this application is the fact that intelligence is actually very complex. Most of the commonly employed intelligence tests measure a number of abilities simultaneously--verbal ability, reasoning ability, memory ability, and others. While a few of these abilities may be relevant to foreign language success, most are not and their net effect is to depress the correlation of intelligence with foreign language success. One of the purposes of the research leading to the MLAT was the investigation of which factors of ability should be included in a language prognosis test and which could be safely omitted.

In their discussion of student factors in foreign language learning, Pimsleur, Mosberg, and Morrison (1962, p. 160) state:

The literature on intelligence as a factor in foreign language learning achievement is fairly extensive. Most of the studies are in general agreement about the existence of a positive relationship.

There appears to be sufficient evidence in the literature to support the contention that intelligence is a variable influencing achievement of foreign language learning, no matter how small that influence may be.

Carroll and Sapon have done extensive research in recent years in the investigation of language aptitude. In Carroll's (1959) discussion of the results on validity of the Modern Language Aptitude Test (MLAT) that he and Sapon had constructed, he points out that the test was used to predict course grades in numerous foreign language courses in high school and in college, both of the intensive variety stressing audio-lingual skills and of the more traditional variety stressing reading and translation. Twenty-eight validity coefficients presented for high school courses ranged from .25 to .78 and had a median of .545; 25 coefficients presented for college courses ranged from .13 to .69 with a median of .44 (Carroll & Sapon,

1959). This indicates that language aptitude is indeed a variable relevant to success in foreign language study.

Evidence was presented that the MLAT was superior in predictive power to intelligence tests. Carroll and Sapon (1959) point out that in conducting the research on the MLAT, it was necessary several times to compare the validity of the MLAT with intelligence tests. They state that the comparisons nearly always favored the MLAT and conclude:

That the MLAT measures a rather special collection of abilities, probably many of them not being represented at all in the typical intelligence test. Some institutions may find that both intelligence and MLAT score should be considered in connection with the selection, placement, or guidance of individuals with respect to foreign language training (p. 22).

Popular opinion regarding age as a relevant variable affecting success in foreign language study contends that it is increasingly difficult to learn a foreign language as a person grows older. In support of this opinion several authors have suggested that the elementary school provided the optimum age range for foreign language study. Larew (1961, p. 205) states:

Psychologists and linguists seem to agree that early childhood is the time for second language learning. Educators and foreign language teachers

tend to feel that there is insufficient research to indicate conclusively what is the "best age." . . . when articulation is a major factor in selecting an age group, best results seem to be obtained with seven year old primary students.

Another indication of the best level being that of the elementary group is provided by Keesee (1962), who states:

The type of learning characteristic of a given age group also helps determine the choice of method. Before the age of ten, for example, language learning is predominantly imitative and is most often a by-product of the child's activity. Learning a second, like the first, is not so much a subject of study as it is a way of doing interesting things. Hearing and speaking the foreign language, which are incidental to the situation, afford direct experience and enjoyment in communicating something of importance in the situation (p. 1).

The foregoing evidence suggests that the starting of foreign language study at elementary school age is based on the theory that learning readiness is the determining psychological criterion. It can not be denied that psychological factors are important in determining which general age group should be exposed to particular learning experiences. The credibility of the psychological evidence is given support by physiological evidence. Anderson (1953) cites the eminent neurologist and brain surgeon, Dr. Wilder Penfield, Director of the Montreal Neurological Institute:

The brain of man is distinguished from the brain of other mammals by its possession of elaborate mechanisms for the function of speech. There are four separate areas of the human cerebral cortex devoted to vocalization. In the dominant hemisphere there are three or four areas that are specialized for the formulation of speech and the acquisition of language. There is an age when the child has a remarkable capacity to utilize these areas for the learning of a language, a time when several languages can be learned simultaneously as easily as one language. Later with the appearance of capacity for reason and abstract thinking, this early ability is largely lost.

One who is mindful of the changing physiology of the human brain might marvel at educational curricula. Why should foreign languages (dead or alive) make their appearance long after a boy or girl has lost full capacity for language learning? Why should the efficient methods so long employed at the mother's knee be replaced by the technique of grammar and syntax at a time when the mechanisms of the brain employed in learning speech are relatively inflexible and senescent (Penfield, 1953).

Carroll (1962) reports a study conducted with adults to determine the effects of age on language learning. He found a slight negative correlation between age and success in learning a foreign language for a group of adults with a mean age of 34. Carroll adds, however, that many older people in the sample were quite successful in learning and that he considers measured aptitude a much more important variable than age. In a later review Carroll (1963, p. 1091) states:

The evidence seems clear that the earlier the child is introduced to a foreign language, the better his

pronunciation will be, other things being equal; it is probable that facility in acquiring good pronunciation without special instruction is a decreasing function of age and levels off at about the age of puberty.

No data on the relation between sex and second language learning have been systematically collected and examined for this purpose (Carroll, 1963). However, data assembled in the manual for the Modern Language Aptitude Test (Carroll & Sapon, 1959) show that girls tend to get higher scores on the MLAT, on the average, and also tend to get higher grades in language study.

The Number and Length of Language Laboratory
Sessions Most Conducive to Effective
Language Learning

Education literature is filled with opinions and recommendations regarding the most appropriate number and length of language laboratory sessions. The following are some representative remarks:

The average high school student can use a lab profitably for 20-25 minutes at most (Sch. Mgt., 1963, p. 85).

Twenty minutes of active daily use of language laboratories is the ideal (H. Points, 1962, p. 70).

The student should have a laboratory period at least twice a week, more often if possible. Part of the time already allotted for class periods may be spent

in the laboratory with noticeable gain. The laboratory period need not be very long (Brooks, 1960, p. 151).

Good laboratory work is tiring and experience has shown that 30 minutes of total electronic work in one session is quite a lot (Holton et al., 1961, p. 208).

Through experience it has been found that most students should not work more than 30 minutes each session with recording (Johnston & Seerley, 1958, p. 24).

The length of laboratory sessions may vary considerably according to the needs of the school, but one should consider the fact that a daily session of 20 to 30 minutes is more likely to produce effective results in audiolingual proficiency than the same amount of time concentrated into one or two sessions per week (Hutchinson, 1961, p. 42).

. . . equipment should be provided to allow at least twenty minutes use per class day per student (Hayes, 1963, p. 20).

A language laboratory should afford regularly scheduled work to each student. This schedule should allow fifteen to thirty minutes of daily practice (Kone, 1960, p. 149).

The extent to which these opinions have been subjected to objective examination is unknown. None of the references quoted above employed research findings to substantiate its recommendations. There is, however, one recent study that was concerned with the effects of varying the length of laboratory experience. Lorge (1964) reports a study conducted to determine the relative effects of two

kinds of laboratory equipment, each used in each of two time patterns, in comparison with one another and with a control group using no electronic devices. The two time patterns used were 20 minutes daily and one period a week. The results of this study showed that the specific time variations affected learning more than the specific equipment variations since both daily groups performed better than either once-a-week group. Thus, the findings of this study support the contention that short, daily laboratory sessions are more conducive to language learning than are longer, less frequent laboratory sessions.

Individualization of Instruction Using the Language Laboratory

The thesis that use of the language laboratory provides for individual differences and enables individual students to learn at their own rate is evidenced in the literature. The following are representative remarks:

The language lab democratically permits pupils to advance in their studies at their own pace according to their varied talents (Kone, 1960, p. 13).

. . . individualization calls for employing independent study a great deal of the time in order to permit students to learn at their own pace. Some of the innovations, such as programmed instruction and language laboratories, lend themselves to individual pacing (Heathers, 1963, p. 9).

The language laboratory can provide for individual differences (Hutchinson, 1961, p. 43).

Laboratory practice helps take care of individual differences in learning rates (Johnston & Seerley, 1958, p. 54).

Certain language laboratory facilities can provide for differences in learning rates (Hayes, 1963, p. 16).

Although these quotations appear to be speculative in nature, they do focus attention upon an area that should be of concern to language instructors, i.e., individual rates of learning. There is a lack of research in this area of language learning. Consequently, there is little objective evidence to support the view that independent use of the language laboratory which allows a student to proceed at his own pace significantly affects achievement of foreign language learning. It is evident that further research is needed to investigate this question.

Summary

The establishment of laboratories where students could go to gain additional contact with the language under study can be traced to the early 1920's. The language laboratory as we know it today was largely developed after World War II.

Current use of language laboratories differs from

use of the first laboratories, just as objectives for contemporary foreign language learning differ from the objectives of the past. The traditional theory of foreign language learning held that language was an intellectual process to be learned through a study of grammatical rules. The objective of second language study was reading and translation, and the equipment contained in the early laboratories was used to enhance those skills. Current theory, however, holds that second language learning involves psychomotor activities much more than intellectual activities and concerns the formation and performance of habits rather than problem solving. The primary objective of language learning today is achievement of the ability to speak and understand the target language, and the role of the language laboratory is to provide authentic, consistent, untiring models of speech to achieve that end.

Research indicates that intelligence is a variable influencing achievement of foreign language learning. Most of the studies are in general agreement about the existence of a positive relationship, but evidence indicates that intelligence should not be used by itself in predicting second language achievement.

Evidence is presented in the literature that

confirms language aptitude as a variable relevant to success in foreign language study and indicates that language aptitude is superior in predictive power to intelligence tests.

Popular opinion holds that the younger a person the easier it is for him to learn a second language. Research seems to indicate that facility in acquiring good pronunciation is a decreasing function of age and levels off at about the age of puberty.

No data on the relation between sex and second language learning have been systematically collected and examined for this purpose. One source reveals that girls tend to make better grades in language courses than do boys.

Evidence from the literature indicates that short, daily laboratory sessions are more conducive to language learning than are longer, less frequent sessions. However, this contention is supported by only one research study.

It is suggested in the literature that use of the language laboratory provides for individual differences and enables each student to proceed at his own pace. It would appear that this contention is true; however, there is no objective evidence to support the view that use of the

language laboratory which allows a student to proceed at his own rate significantly affects achievement of foreign language learning.

CHAPTER III

METHODS AND PROCEDURES

As previously stated the purposes of this study were as follows: (1) to determine whether students who were following an instructional schedule which provided 20-minute language laboratory sessions daily would differ significantly in their responses to the items on a standardized Spanish achievement test from students who were following an instructional schedule which provided for 50-minute laboratory sessions twice a week; (2) to determine whether students who were given an opportunity for independent study during the language laboratory session would differ significantly in their responses to items on a standardized Spanish achievement test from students who were not given opportunity for independent study during the laboratory session; and (3) to determine whether students who were following an instructional schedule which provided for a given combination of the two variables (the number and length of laboratory sessions and the opportunity

for independent study) would differ significantly in their responses to items on a standardized Spanish achievement test from students who were following schedules which provided for all other combinations of the two variables under study.

A review of relevant literature, described in Chapter II, revealed a lack of adequate research in the use of the language laboratory for language learning. From this review it was evident that there are many opinions and recommendations to be found in educational literature that are purported to be relevant for effective use of the language laboratory. The extent to which these opinions have been subjected to objective examination is unknown. Few research studies of this nature have been published.

The purpose of this chapter is to delineate the methods and procedures which were necessary for the realization of the objectives of this study.

The Population

The population for this study was comprised of students in the ninth, tenth, and eleventh grades who voluntarily enrolled in Spanish I for the school year 1964-65 at Albert G. Parrish High School, Selma, Alabama.

The composition of this population appears to be typical for secondary schools offering 1, 2, 3, or 4 years of foreign language study commencing in the ninth grade. It was felt that the purposes of this study would best be served by selecting a typical population actually engaged in the study of Spanish, rather than confecting a population solely for the purposes of experimentation.

Those students who had previously studied Spanish, or who had lived or traveled for more than one week in a Spanish-speaking country were not included in the population.

The population consisted of 78 students, 46 boys and 32 girls. There were 16 students from the ninth grade, 38 from the tenth grade, and 24 from the eleventh.

As previously stated in the review of research in Chapter II, general mental ability and language aptitude are considered to be relevant variables affecting foreign language achievement. It was necessary, therefore, to obtain quantitative measures of the two variables for each of the students included in the population. The measures obtained were later tested to determine whether groups of students selected for further study differed significantly with respect to intelligence test performance, or with

respect to language aptitude test performance.

In May, 1964, when registration was completed for the school year 1964-65, scores on the California Short-Form Test of Mental Maturity were obtained for each of the 78 students included in the population for this study. These tests had been administered by the guidance counselor at Parrish High School as a routine part of the guidance services offered there. The scores on this test were obtained from the student files.

On May 14, 1964, the Modern Language Aptitude Test was administered to each of the 78 students included in the population. The test was administered to three groups of students, each group containing approximately 26 students. The administration of the test was standardized following the procedures recommended and outlined in the manual for the test (Carroll & Sapon, 1959).

Table I in Appendix B shows the sex, grade levels, ages, IQ's derived from the total scores on the California Short-Form Test of Mental Maturity, and scores on the Modern Language Aptitude Test for each of the 78 students in the population.

Selecting the Sample and Assigning Groups

The sample for this study consisted of 60 students randomly selected from the population. Each of the 78 students in the population was assigned a two-digit number. A table of random numbers (Edwards, 1963b, p. 472) was employed to select the 60 students to be included in the sample.

Each of the 60 students were then randomly assigned to one of four instructional groups containing 15 students each. The groups are designated hereafter as group SL-NIS, group SL-IS, group LL-NIS, and group LL-IS. Each of the groups followed an instructional schedule based on a combination of the two variables under study. Since a more detailed discussion of each group's instructional schedule is presented later, it is sufficient to say at this point that SL-NIS stands for "short lab sessions with no opportunity for independent study," SL-IS stands for "short lab sessions with opportunity for independent study," LL-NIS stands for "long lab sessions with no opportunity for independent study," and LL-IS stands for "long lab sessions with opportunity for independent study."

Tables II, III, IV, and V in Appendix B show the distribution of sex, ages, IQ's derived from the California

Short-Form Test of Mental Maturity and the scores on the Modern Language Aptitude Test for the four experimental groups.

To assure that the four groups did not significantly differ with respect to intelligence test performance and language aptitude test performance, statistical tests of significance were employed.

Although the relevance of sex and age as variables affecting language achievement appears to be equivocal, both variables were controlled in this study to preclude their having any effect.

The analysis of variance technique was used to test comparability of the four groups with respect to age, intelligence test performance, and language aptitude test performance.

Table 1 shows a summary of the analysis of variance for Group SL-NIS, Group SL-IS, Group LL-NIS, and Group LL-IS relative to chronological age. An F ratio of 1.39 was obtained, but it did not reach the level of significance. There was not a statistically significant difference in the chronological ages of the four groups.

TABLE 1
ANALYSIS OF VARIANCE OF CHRONOLOGICAL AGES
OF THE FOUR GROUPS

Source of Variation	Sums of Squares	Degrees of Freedom	Mean Square	F	p
Between Groups	334.20	3	111.40	1.39	> .05
Within Groups	4,486.73	56	80.12		
Total	4,820.93	59			

Table 2 shows a summary of the analysis of variance of the IQ's derived from the total scores of the intelligence test used in the study. The F ratio of .27 was obviously not significant.

TABLE 2
ANALYSIS OF VARIANCE OF IQ'S OF THE FOUR GROUPS

Source of Variance	Sums of Squares	Degrees of Freedom	Mean Square	F	p
Between Groups	71.13	3	23.71	.27	> .05
Within Groups	4,898.80	56	87.48		
Total	4,969.93	59			

Table 3 shows an F ratio of 1.26, which was not statistically significant. There was no statistically significant difference in the language aptitude test performance among Groups SL-NIS, SL-IS, LL-NIS, and LL-IS.

TABLE 3
ANALYSIS OF VARIANCE OF LANGUAGE APTITUDE
TEST SCORES OF THE FOUR GROUPS

Source of Variation	Sums of Squares	Degrees of Freedom	Mean Square	F	p
Between Groups	825.65	3	275.22	1.26	>.05
Within Groups	15,500.53	56	276.80		
Total	16,326.18	59			

Chi square was used to determine whether Group SL-NIS, Group SL-IS, Group LL-NIS, and Group LL-IS differed significantly with respect to sex. Table 4 shows that a χ^2 of 1.112 was obtained. For 3 degrees of freedom, the χ^2 of 1.112 was not statistically significant. The four experimental groups did not significantly differ with respect to sex.

As a result of the four tests of significance reported above, it was concluded that Group SL-NIS, Group

Group SL-IS, Group LL-NIS, and Group LL-IS were comparable with respect to sex, chronological age, intelligence test performance, and language aptitude test performance.

TABLE 4

TESTING THE SIGNIFICANCE OF DIFFERENCE OF SEX
BY χ^2 FOR THE FOUR EXPERIMENTAL GROUPS

Sex	Group SL-IS	Group SL-NIS	Group LL-IS	Group LL-NIS	Total
MALE	10	10	8	8	36
FEMALE	5	5	7	7	24
TOTAL	15	15	15	15	60

O	E	O-E	(O-E) ²	$\frac{(O-E)^2}{E}$
10	9	1	1	.111
10	9	-1	1	.111
8	9	1	1	.111
8	9	-1	1	.111
5	6	-1	1	.167
5	6	1	1	.167
7	6	-1	1	.167
7	6	1	1	.167

$\chi^2 =$	1.112	p > .05
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The Instructional Phase

An instructional schedule was randomly assigned to each of the four groups in the sample for a period of eighteen weeks. Group SL-NIS followed a schedule which was designed to provide daily 20-minute laboratory sessions and daily 25-minute classroom sessions. The time allocated for the laboratory session was spent either in listening to the conversations between native speakers, in Listen-Speak practice or in Listen-Speak-Record practice. There was no provision made for independent study in the laboratory session for Group SL-NIS. The laboratory session was controlled so that all students in Group SL-NIS practiced the same exercise simultaneously.

The instructional schedule which Group SL-IS followed allowed daily 20-minute laboratory sessions and daily 25-minute classroom sessions. In the language laboratory the students in Group SL-IS spent 12 minutes either in listening to the conversations of the native speakers, in listen-speak practice, or in listen-speak-record practice and spent 8 minutes in independent study. During the 8-minute period of time allocated for independent study, each of the students in Group SL-IS was given an opportunity to (1) review a lesson previously

practiced, (2) to practice again the lesson for the day, or (3) to select the next lesson in the sequence to practice. During this exercise each student worked at his or her own rate of speed.

Group LL-NIS attended two 50-minute laboratory sessions per week on Tuesday and Thursday and three 42-minute classroom sessions on Monday, Wednesday, and Friday of each week. No provisions were made during the laboratory session for students in Group LL-NIS to practice at their own rate of speed. The exercises for the laboratory sessions were listening to conversations by native speakers, listen-speak practice and listen-speak-record practice.

Group LL-IS went to the laboratory for 50-minute sessions on Tuesday and Thursday of each week and attended 42-minute classroom sessions on Monday, Wednesday, and Friday of each week of the instructional period. Of each laboratory session, 30 minutes was devoted to listening to conversations by native speakers, listen-speak practice, and listen-speak-record practice; and 20 minutes was devoted to independent study.

The same instructor conducted both classroom and laboratory sessions for the four groups of students under

study. This instructor had had four years experience teaching Spanish, having taught three of these years using a language laboratory.

All four groups of students in the sample used Entender y Hablar (LaGrone, McHenry, & O'Connor, 1961a) as the textbook for the classroom sessions. This book presents a progressive sequence of basic dialogues, questions and answers, pattern practices, and conversations in the Spanish language. The language instructor meticulously followed the teaching procedures outlined in the teacher's edition of Entender y Hablar (LaGrone, McHenry, & O'Connor, 1961b). The activities and exercises in the classroom sessions were conducted as identically as possible for all four groups. At the end of each week during the instructional period, Groups SL-NIS and SL-IS had spent the same amount of time on the same exercises in the classroom sessions as had Groups LL-NIS and LL-IS.

In the laboratory sessions commercial tape recordings accompanying Entender y Hablar were used to give students an opportunity to practice the material introduced in the classroom sessions by the instructor. All four groups of students were given identical instruction (1) in the operation of the electronic equipment contained in the

language laboratory and (2) in the relationship between audio-lingual practice of the recorded material and the development of sound language habits. The use of laboratory assistants to operate the master console freed the language instructor to monitor the student positions and to make corrections when necessary in pronunciation, intonation, and errors in grammar.

During the laboratory sessions for Groups SL-IS and LL-IS while the students were engaged in independent study, the language instructor monitored each student, made corrections, and passed judgment on whether or not the student had attained sufficient mastery of an exercise to warrant his proceeding to the next exercise.

To combat monotony, boredom, and lack of interest in the laboratory sessions, the language instructor varied the exercises, kept the exercises short, and occasionally played a short Spanish song between exercises. This procedure was not followed during the period of time the Groups SL-IS and LL-IS were engaged in independent study.

To preclude the motivational effect of grades on achievement in Spanish in this study, grades were withheld for the eighteen week instructional period. Each of the students in the four groups was required to keep a general

account of his perception of his progress and to share this information with his or her parent at each normal reporting period for the high school.

Testing Instruments Used

To accomplish the purposes of this investigation it was necessary to assess certain abilities and aptitudes of the students in the sample. It thus became necessary to select an appropriate intelligence test, language aptitude test, and Spanish achievement test.

Copies of the tests are to be found in Appendix A.

Intelligence Test

In the selection of an appropriate group intelligence tests, five criteria were employed:

1. Range. The test should be adequate to assess the general intelligence, or capacity, of students enrolled in grades nine through eleven.
2. Recent edition. The test should be recent enough in publication or revision to preclude its containing material more appropriately related to past generations.
3. Practicality. The test should be practical relative to cost, length of time required for

administration, and complexity of scoring.

4. Validity. Scores on the test should be comparable with those obtained on intelligence tests which are widely accepted and employed.
5. Reliability. The test must be consistent in the measurement of whatever it measures.

After reviewing several group intelligence tests reviewed in the Fifth Mental Measurements Yearbook (Buros, 1959), the California Short-Form Test of Mental Maturity: S-Form, 1957 edition was selected for use in this study. The junior high level test (grades 7, 8, 9) was selected for the ninth grade students and the advanced level test (grades 10 - adult) was selected for the tenth and eleventh grade students.

The decision to use the California Short-Form Test of Mental Maturity was influenced not only by the fact that the test adequately met the five criteria but also by the fact that the tests had already been administered to all but 10 of the students in the population as a regular part of the guidance services at Parrish High School. The scores for these tests were available in the student files of the guidance department.

The California Short-Form Test of Mental Maturity (advanced level) was administered to the ten students who had been absent at the initial testing. The test was administered and hand-scored by the guidance counselor at Parrish High School. It requires approximately fifty minutes to administer this test. It was necessary, therefore, to interrupt the daily schedule of the ten students on May 12, 1964, so that the testing could be completed.

The intelligence test used is an abridgement of the earlier California Test of Mental Maturity. The fuller version has been in use for over twenty years. It is reported (Buros, 1959, p. 434) "that the experience and the mass of data thus accumulated have been freely utilized in progressively improving the shortened series. The outcome is one of the best sets of group tests at present available."

The S-Form of this test consists of seven subtests which sample four main areas of mental activity; spacial relations, logical reasoning, numerical reasoning, and verbal concepts. The test yields non-language, language, and total scores. The test may be either hand-scored or machine-scored.

The validity coefficients (Buros, 1959, p. 434)

consist of observed and corrected correlations with the Stanford-Binet and WISC, and with group intelligence tests. They vary widely, averaging about .75.

In a review of the entire series of tests, it is reported (Buros, 1959, p. 434) that "with the Kuder-Richardson formula 21 the reliability of the total scores varies between .87 and .89 at most grade levels, but at the secondary stage it is appreciably higher."

Language Aptitude Test

In the selection of an appropriate language aptitude test the conventional criteria of objectivity, practicality, validity, and reliability were employed. The instrument which was selected in view of these criteria was the Modern Language Aptitude Test (MLAT).

The MLAT was designed chiefly to provide an indication of an individual's probable degree of success in learning a foreign language. There are five subtests. The traits measured by the five part scores are described by Carroll and Sapon (1959, p. 3) as follows:

Part I. Number learning. This seems to measure one aspect of the memory component of foreign language aptitude, but the part also has a fairly large specific variance, which one might guess to be a special "auditory alertness" factor which would play a role

in auditory comprehension of a foreign language.

Part II. Phonetic script. This appears to measure what we have called "sound-symbol association ability," that is, the ability to learn correspondences between speech sounds and orthographic symbols. It may also measure a sort of memory for speech sounds, and it tends to correlate highly with the ability to mimic speech sounds and sound combinations in foreign languages.

Part III. Spelling clues. Scores on this part depend to some extent on the student's English vocabulary. This subtest also measures the same kind of sound-symbol association ability as measured by Part II, but to a lesser extent. It is highly speeded.

Part IV. Words in sentences. This part is thought to measure sensitivity to grammatical structure, and may be expected to have particular relevance to the student's ability to handle the grammatical aspects of a foreign language.

Part V. Paired associates. This part measures the rote memory aspect of the learning of foreign languages.

The complete test, which takes approximately sixty to seventy minutes to administer, requires the use of a pre-recorded magnetic tape. For this reason the MLAT was administered in the language laboratory. The test can be objectively scored by hand or by use of an IBM test-scoring machine. The tests that were administered in this investigation were hand-scored.

The predictive validity of the MLAT appears to be satisfactory. Carroll and Sapon (1959, p. 12) report that the MLAT was given to students from the same high school at the start of their training in Spanish. At the

conclusion of training, the test scores were compared with the actual performance as measured by instructors' grades and ratings. The validity coefficients for the ninth grade level were .56 for 30 boys and .53 for 27 girls; for the tenth grade level .58 for 29 boys and .53 for 29 girls; and for the eleventh grade level the coefficients were .78 for 38 boys and .73 for 32 girls.

The reliability coefficients (Carroll & Sapon, 1959, p. 17) for the MLAT are split-half correlations corrected by the Spearman-Brown formula. The coefficients reported below were computed on total test scores and were based on data obtained from three high schools.

At the ninth grade level, reliability coefficients of .90 and .91 were computed for 53 boys and 73 girls, respectively. A coefficient of .92 was found for both 116 boys and 144 girls at the tenth grade level. Likewise, an identical reliability coefficient of .94 was obtained for 159 boys and 189 girls at the eleventh grade level.

Spanish Achievement Test

In the selection of an appropriate Spanish achievement test, four criteria were employed:

1. Range. The test should be adequate to assess the

- listening and speaking achievement of students after the first eighteen weeks of instruction.
2. Objectivity. Ideally, the test should be designed to measure objectively listening and speaking achievement. Few Spanish achievement tests attempt to measure an individual's speaking skill at all, much less measure it objectively. A test which includes rating devices for speaking skills and which provides clear, descriptive directions for rating would be acceptable.
 3. Validity. The test should have content validity. That is, the test should include a representative sample of questions from the important facts, concepts, and other important learnings of the eighteen-week course.
 4. Reliability. There must be evidence that the test is consistent in the measurement of whatever it measures.

A review of seven Spanish achievement tests reviewed in the Fifth Mental Measurements Yearbook (Buros, 1959, p. 413-415) revealed that before 1959 there were no Spanish achievement tests that could survive the limitations imposed by the above criteria.

It was learned that a new set of Spanish achievement tests were being prepared under the provisions of the National Defense Education Act of 1958, Title VI, Language Development Program, as a cooperative project of the Modern Language Association of America, the Educational Testing Service, and the United States Office of Education, Department of Health, Education, and Welfare. These tests were completed and published in 1964.

After examination of the test in light of the four criteria, the MLA Cooperative Foreign Language Test: Spanish was selected as the criterion instrument for this study.

The MLA Cooperative Foreign Language Tests are a new series of tests of competence in five languages; French, German, Italian, Russian, and Spanish, designed for use in secondary schools and colleges. These tests provide separate measures of skills in listening, speaking, reading, and writing. Each test is available at two degrees of difficulty, L forms suitable for students up to two years of high school training and M forms suitable for students with three or four years of high school training, and there are two forms, A and B of each. The four forms were examined to determine which ones best met the criteria of

being an appropriate Spanish achievement test. The listening and speaking tests of Form IA were selected as the criterion measure.

The listening test of Form IA requires that each student listen to taped material and then answer 45 multiple-choice questions based on single utterances, short conversations between two speakers, passages of connected discourse read by a single person, telephone conversations, and dramatic scenes enacted by two to four speakers. The Spanish speakers whose voices appear on tape are natives of Latin American countries.

For the speaking test, each student receives his instructions from a master tape at an individual recording station. Each student responds by speaking into a recorder. The test presents both verbal and visual stimuli. The student repeats what he hears with proper pronunciation and intonation, reads aloud to demonstrate fluency, responds to spoken questions involving a picture stimulus, and describes pictures presented singly and in sequence.

The listening test is scored objectively by using the appropriate answer key. The tests employed in this investigation were hand-scored.

An evaluation form for rating each student's

performance on the speaking test is provided in each test booklet (see Appendix A). Directions for scoring include the actual "right" or "wrong" answers where applicable, plus rating techniques for other items. To give scorers guidance in applying the rating procedures, examples of correct student responses are presented on tape.

An estimate of the reliability of the listening test of Form LA was computed by the Kuder-Richardson formula 20. Based on the scores of 265 students, the reliability coefficient for the 45 item test was .902. An estimate of the reliability for the speaking test of Form LA was computed by an analysis of variance procedure, which is similar to the Kuder-Richardson method but takes into account the several score scales used with the test. Based on an analysis of 300 scores a reliability coefficient of .910 was obtained.¹

The greatest shortcoming of the MLA Cooperative Foreign Language Test: Spanish, Form LA, in terms of the above stated criteria, is to be found in the validity of the listening test. Of the 45 items contained in this test, items 27, 29, 30, 35, 43, 44, and 45 are constructed

¹Unpublished information furnished by the publisher.

to cover material to which the students in this study were not exposed. Several of the other items contained single words which were unfamiliar to the students in the sample. The listening test was, however, administered unaltered. In view of the fact that none of the students in the sample had had previous contact with Spanish nor previous instruction in Spanish, it was felt that this slight weakness did not warrant alteration nor rejection of this test.

Administering the Achievement Test

The listening and speaking tests of the MLA Cooperative Foreign Language Test: Spanish, Form LA were administered to the four groups of students on January 18, 1965. Since the time required for the administration of both tests was only 35 minutes, each of the four groups was tested in the language laboratory during the regular class period. One student was absent from the initial testing. The tests were administered to her on the following day, January 19, 1965.

The tests were administered unaltered following the standard procedure as prescribed in Directions for Administering and Scoring (1964, p. 5-6). The tests were hand-scored. Tables VI and VII in Appendix B show the scores on

the listening and speaking tests for Group SL-NIS, Group SL-IS, Group LL-NIS, and Group LL-IS.

Statistical Treatment of Data

As previously stated, the analysis of variance technique was applied to the chronological ages, to the scores on the intelligence test, and to the language aptitude tests scores of Group SL-NIS, Group SL-IS, Group LL-NIS, and Group LL-IS. A randomized groups design for analysis of variance outlined by Edwards (1963a, p. 118) was employed. This design was used to determine whether or not the four groups of students in the sample differed significantly with respect to chronological age, intelligence test performance, or language aptitude test performance.

In order to determine whether the assumption of homogeneity of variance among the four experimental groups on ages, IQ's derived from scores on the intelligence test, and on language aptitude test scores was tenable, three applications of Bartlett's test of homoscedasticity (Edwards, 1963a, p. 126) were made. The results were as follows:

CRITERION	χ^2	P
Chronological ages	5.59	>.05
Derived IQ's	3.168	>.05
Language Aptitude Test Scores	3.909	>.05

It was concluded from the three applications of Bartlett's test that the conditions necessary for the employment of the F test were met.

Chi square (Underwood, Duncan, Taylor, & Cotton, 1954, p. 204) was used to determine whether or not the four groups differed significantly with respect to sex.

After scores on the Spanish achievement test had been obtained, analysis of variance for a 2X2 factorial design (Edwards, 1963b, p. 341) was computed in order to determine whether there were significant main and interaction effects for the experimental variables, length of laboratory sessions and opportunity for independent study. Separate analyses were made on the two criteria, listening achievement and speaking achievement.

Hartley's Largest F Ratio Test, described by Walker and Lev (1953, p. 192) was used to test the homogeneity of variance among the four groups on listening achievement and

speaking achievement. The results of this test are found in Chapter IV.

Duncan's New Multiple Range Test (Edwards, 1963a, p. 136) was used to locate the significant differences between the means of the speaking test scores of the four groups. (See Table 8 in Chapter IV.)

In all tests of significance in this study the .05 level of significance was used; that is to say, the probability of rejecting any given null hypothesis when it should have not been rejected was no greater than .05.

The results of the statistical treatments of scores for listening achievement and for speaking achievement are to be discussed in Chapter IV.

The formulas for all of the statistical treatments used in this study are to be found in Appendix C.

CHAPTER IV

PRESENTATION AND ANALYSIS OF DATA

The previous chapters have dealt with the purposes, background, and procedures of the study. This chapter presents the findings relevant to the testing of the null hypotheses of the study.

The null hypotheses postulated in this study were designed to explore whether the four experimental groups differed with respect to achievement in listening skills and achievement in speaking skills. Separate analyses were made on the two criteria to determine whether there were significant main and interaction effects for the experimental variables, length of laboratory sessions and opportunity for independent study.

One of the conditions necessary for the employment of the F test is that the groups come from populations which are homogeneous with respect to variance on the criterion measure. Prior to computing the analysis of variance on the two criteria, a test of the hypothesis of

homogeneity of variance was conducted on the data on each criterion. The condition of homoscedasticity was met in both cases. With 4 and 14 degrees of freedom, the values and associated probabilities of Hartley's Largest F Ratio Test were the following:

CRITERION	F _{max}	p
Listening	2.425	>.05
Speaking	2.684	>.05

Since this condition was met, it was not necessary to transform the data on the two criteria.

Comparison of Groups in Achievement of Listening Skills

Analysis of variance was applied to the listening test scores of the four groups. Table 5 shows an F ratio of 2.597, which was not statistically significant. The null hypothesis that there was no significant difference in listening achievement among Group SL-NIS, Group SL-IS, Group LL-NIS, and Group LL-IS was accepted.

The fact that the four groups did not significantly differ on scores on the listening test precludes the possibility of there being a significant difference in the main

and interaction effects of the two experimental variables.

TABLE 5
ANALYSIS OF VARIANCE OF SCORES FOR LISTENING
ACHIEVEMENT FOR THE FOUR EXPERIMENTAL GROUPS

Source of Variation	Sum of Squares	Degrees of Freedom	Mean Square	F	p
Between Groups	157.133	3	52.378	2.597	>.05
Within Groups	1,129.600	56	20.171		
Total	1,286.733	59			

The non-significant F ratio obtained at this point in the analysis was sufficient to warrant acceptance of the other two postulated null hypotheses relative to the criterion of listening achievement:

- I. Groups of students having two 50-minute language laboratory sessions per week and groups having 20-minute sessions daily do not differ in achievement of listening skills.
- II. Groups of students having opportunity for independent study during the laboratory session do not differ in listening achievement from groups of students having no such opportunity.

Comparison of Groups in Achievement
of Speaking Skills

Analysis of variance was applied to the speaking achievement test scores for Groups SL-NIS, SL-IS, LL-NIS, and LL-IS. A significant difference appeared among the four groups. Table 6 shows an F ratio of 3.250 which was statistically significant beyond the .05 level of significance.

TABLE 6

ANALYSIS OF VARIANCE OF SCORES FOR SPEAKING
ACHIEVEMENT FOR THE FOUR EXPERIMENTAL GROUPS

Source of Variation	Sum of Squares	Degrees of Freedom	Mean Square	F	p
Between Groups	558.583	3	186.194	3.250	<.05
Within Groups	3,208.267	56	57.290		
Total	3,766.850	59			

The null hypothesis that there was no difference in speaking achievement among Group SL-NIS, Group SL-IS, Group LL-NIS, and Group LL-IS was rejected. The rejection of this null hypothesis indicated that there was a significant difference occurring either in the main or in the interaction effects of the two experimental variables. Hence, analyses were made of the effects of the length of laboratory sessions,

the effects of the opportunity for independent study, and the effects of the interaction of the two variables.

Analysis of the Effects of the Length of Laboratory Sessions

To test the null hypothesis that there was no statistically significant difference in speaking achievement between groups of students having two 50-minute language laboratory sessions per week and groups having 20-minute sessions daily, further applications of analysis of variance for a 2X2 factorial design were made. Table 7 shows an F ratio of .154 which is obviously not significant. The null hypothesis was accepted.

Analysis of the Effects of Opportunity for Independent Study

To test the null hypothesis that groups of students having opportunity for independent study during the language laboratory session and groups of students having no such opportunity do not differ with respect to speaking achievement, further analysis of variance was applied. Table 7 shows that the value of the F ratio for the main effect of opportunity for independent study was .065. This value of the F ratio was of insufficient magnitude to be considered significant; thus, the null hypothesis was accepted.

TABLE 7
 FURTHER ANALYSIS OF VARIANCE OF SCORES FOR SPEAKING ACHIEVEMENT
 FOR THE FOUR EXPERIMENTAL GROUPS

Source of Variation	Sum of Squares	Degrees of Freedom	Mean Square	F	p
Length of Laboratory Sessions	8.817	1	8.817	.154	>.05
Opportunity for Independent Study	3.750	1	3.750	.065	>.05
Interaction	546.016	1	546.016	9.531	<.01
Error	3,208.267	56	57.290		
Total	3,766.850	59			

Analysis of the Effects of the Interaction

Table 7 shows that the obtained F ratio of 9.531 for the interaction effect is significant beyond the .01 level of significance. The fact that the F ratio was significant indicated that the effectiveness of a particular length of a language laboratory session depended upon whether or not opportunity for independent study was provided during the laboratory session.

Since the F test does not indicate which length of laboratory session was most effective with which kind of opportunity for independent study, it was necessary to analyze the mean scores of the four groups. Duncan's New Multiple Range Test (Edwards, 1963a, p. 136) was employed to locate the significant differences between the means of the speaking test scores for the four experimental groups. Table 8 shows that at the .05 level of significance the mean score for Group SL-IS differed significantly from the mean score of Group LL-IS; and that the mean score for Group LL-NIS differed significantly from the mean score for Group LL-IS. Table 8 also shows that there was no significant difference among the mean scores of Groups SL-IS, LL-NIS, and SL-NIS.

TABLE 8

DUNCAN'S NEW MULTIPLE RANGE TEST APPLIED TO THE DIFFERENCES
 BETWEEN MEANS OF GROUP SL-NIS, GROUP SL-IS, GROUP LL-NIS,
 AND GROUP LL-IS FOR SPEAKING ACHIEVEMENT WHERE $\alpha = .05$

	GROUP LL-IS	GROUP SL-NIS	GROUP LL-NIS	GROUP SL-IS	Shortest Significant Ranges
Means	157.800	158.067	163.333	164.600	
LL-IS		.267	5.333	6.800	$R_2 = 5.04$
SL-NIS			5.266	3.533	$R_3 = 5.30$
LL-NIS				1.267	$R_4 = 5.47$

GROUP LL-IS GROUP SL-NIS GROUP LL-NIS GROUP SL-IS

Any two means not underscored by the same line are significantly different.

Any two means underscored by the same line are not significantly different.

Summary

In testing the null hypotheses for this study, it was found that there was no significant difference in listening achievement among Group SL-NID, Group SL-IS, Group LL-NIS, and Group LL-IS. The result of the non-significance of this comparison indicated that there was no significant difference in listening achievement (1) between groups of students having two 50-minute laboratory sessions per week (Group LL-NIS and Group LL-IS) and groups having 20-minute laboratory sessions daily (Group SL-NIS and Group SL-IS), and (2) between groups of students having opportunity for independent study during the laboratory session (Group SL-IS and Group LL-IS) and groups having no such opportunity (Group SL-NIS and Group LL-NIS).

There was a difference, significant beyond the .05 level of significance, in speaking achievement found among Groups SL-NIS, SL-IS, LL-NIS, and LL-IS. An analysis of the main effects of the two experimental variables revealed that there was no significant difference in speaking achievement (1) between groups of students having two 50-minute laboratory sessions (Groups LL-NIS and LL-IS) and groups having 20-minute sessions daily (Groups SL-NIS and SL-IS), and (2) between groups having opportunity for

independent study during the laboratory sessions (Groups SL-IS and LL-IS) and groups having no such opportunity (Groups SL-NIS and LL-NIS).

The interaction effect of the two experimental variables was found to be significant beyond the .05 level of significance. Further analysis revealed that at the .05 level of significance the mean scores on the speaking achievement test for both Group SL-IS and Group LL-NIS significantly differed from the mean score for Group LL-IS, and that differences among the mean scores of Groups SL-IS, LL-NIS, and SL-NIS were not statistically significant.

CHAPTER V

SUMMARY, LIMITATIONS, CONCLUSIONS, AND RECOMMENDATIONS

Summary of the Study

The problem of the study was to compare the responses of students grouped for instruction on combinations of two experimental variables (the length of language laboratory sessions and opportunity for independent study) on a Spanish achievement test measuring the achievement of listening and speaking skills. The two experimental variables were considered singly and in combination.

The ninth, tenth, and eleventh grades of Albert G. Parrish High School, Selma, Alabama, supplied the 60 students that comprised the sample for the study. Each of the 60 students was randomly assigned to one of four groups. The four groups were tested by various statistical techniques, explained in Chapter III, to assure that they were comparable with respect to sex, age, intelligence test performance, and language aptitude test performance.

Each of the four groups followed a different instructional schedule based on combinations of the two experimental variables. The instructional schedules were explained in Chapter III. After an instructional period of eighteen weeks, a Spanish achievement test was administered to each of the four groups.

The analysis of variance technique for a 2X2 factorial design was applied to the data obtained from the achievement test results. The statistical procedures were explained in Chapter III. The null hypotheses tested in the study were as follows:

- I. The groups of subjects having two 50-minute language laboratory sessions per week and groups having 20-minute sessions daily do not differ with respect to Spanish achievement as measured by a standardized test. They do not differ in achievement of (a) listening skills and (b) speaking skills.
- II. The groups of subjects having opportunity for independent study and groups having no such opportunity do not differ with respect to Spanish I achievement as measured by a standardized test. They do not differ in achievement of (a) listening skills and

(b) speaking skills.

III. There is no difference in Spanish I achievement between groups classified on combinations of the two experimental variables as follows: (1) two 50-minute laboratory sessions per week and opportunity for independent study, (2) two 50-minute laboratory sessions per week with no opportunity for independent study, (3) daily 20-minute laboratory sessions and opportunity for independent study, and (4) daily 20-minute laboratory sessions with no opportunity for independent study. The four groups of subjects classified in this manner do not differ in achievement of (a) listening skills and (b) speaking skills.

The results of testing these hypotheses were presented and summarized in Chapter IV.

Limitations in Drawing Conclusions

There are certain limitations of the study, relative to the conclusions presented in this chapter, which should be presented and considered here.

First, the instructional phase for the subjects in the study was the first 18 weeks of Spanish training. The

results found in the study, therefore, apply only to teaching situations in which the instructional period is approximately 18 weeks. The possibility exists that the results would have been different had the instructional period been either longer or shorter than 18 weeks.

Second, the teaching methods and procedures employed in the study were consistent with those recommended and prescribed by LaGrone, McHenry, and O'Connor (1961b). The results of the study might have been different had other teaching methods been used. Caution should be exercised in generalizing the results of the study to teaching situations other than those employing similar instructional procedures.

Third, subjects from three grade levels were represented in the sample. The conclusions, therefore, refer to the ninth, tenth, and eleventh grades in the secondary school.

Fourth, the subjects of the study were representative of one high school in one geographical area of Alabama. The conclusions might not be applicable to students other than those included in the population for the study.

Fifth, the measuring instruments and the procedures used in assembling and processing the data from which the

results of the study were derived are subject to a degree of error, as are all measuring instruments and statistical procedures. The conclusions, therefore, are not absolutes.

Conclusions of the Study

From the results of the findings reported in Chapter IV and subject to the stated limitations, the following conclusions appear to be appropriate:

1. Differences in the achievement of listening skills between groups of students having two 50-minute language laboratory sessions per week and groups having 20-minute laboratory sessions daily were not significant.

Analysis of variance revealed that there was no significant difference in the responses to the listening achievement test between students grouped as stated above.

2. Differences in the achievement of listening skills between groups of students having an opportunity for independent study during language laboratory sessions and groups having no such opportunity were not significant.

The statistical test of significance employed did not reveal a significant difference in achievement of

listening skills as a result of the variation of opportunity for independent study.

3. Groups of students classified on combinations of the two experimental variables, i.e., Group SL-IS, Group SL-NIS, Group LL-IS, and Group LL-NIS, did not significantly differ in achievement of listening skills.

Analysis of variance revealed that there was no statistically significant difference in achievement of listening skills among the four groups. The results of this test of significance indicated that there was no statistically significant interaction effect between the two experimental variables. Hence, the effectiveness of a particular length of language laboratory session did not depend on the way opportunity for independent study was varied.

4. There was no statistically significant difference in the achievement of speaking skills between groups of students having two 50-minute language laboratory sessions per week and groups having 20-minute laboratory sessions daily.

The statistical test which was employed revealed

that there was no significant difference in the responses to the speaking achievement test between students grouped as stated above.

5. No statistically significant difference was found in the achievement of speaking skills between groups of students having an opportunity for independent study during language laboratory sessions and groups having no such opportunity.

The employment of analysis of variance revealed that the variation of opportunity for independent study within language laboratory sessions did not produce a statistically significant difference in the achievement of speaking skills.

6. There was a statistically significant difference in the achievement of speaking skills among groups of students classified on combinations of the two experimental variables, i.e., Group SL-IS, Group SL-NIS, Group LL-IS, and Group LL-NIS.

Analysis of variance was applied to the speaking achievement scores for the four groups and an F ratio was obtained that was significant at the .05 level of significance. Further analysis revealed that the interaction

effect of the two experimental variables was significant at the .01 level of significance.

7. There was a tendency for the effectiveness of a particular length of language laboratory to depend upon whether or not opportunity for independent study was provided during the laboratory session.

A comparison of the mean scores of the four groups on the speaking achievement test revealed that at the .05 level of significance there was no statistically significant difference among the mean scores of Groups SL-IS, LL-NIS, and SL-NIS. This comparison also revealed that the mean scores of Group SL-IS and Group LL-NIS differed significantly at the .05 level of significance from the mean score of Group LL-IS. Hence, it appears that providing opportunity for independent study in the short, daily language laboratory arrangement provides greater achievement of speaking skills than providing no such opportunity, and opportunity for independent study has the opposite effect in the twice-a-week laboratory arrangement.

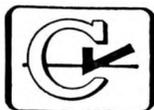
Recommendations for Future Research

The results and the limitations of this study suggest other investigations such as those below:

1. It would be desirable to conduct a similar study in which the instructional phase would be at least one year, preferably two or three years.
2. A similar study to compare differences in achievement of foreign language skills among groups of students classified by chronological age level.
3. A study to compare the effects of fatigue on the achievement of foreign language skills of students using the language laboratory daily with students using the language laboratory twice a week.

APPENDIX A

TESTING INSTRUMENTS USED IN THE INVESTIGATION



Junior High Level • GRADES 7-8-9 • 1957 S-Form

California Short-Form Test of Mental Maturity

Devised by

ELIZABETH T. SULLIVAN, WILLIS W. CLARK, AND ERNEST W. TIEGS



S-57

INSTRUCTIONS TO EXAMINEES:

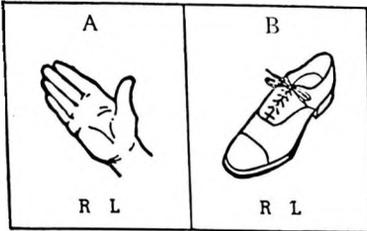
This is a test of mental maturity. In taking it you will show how well you understand relationships and what you do when you face new problems. No one is expected to do the whole test correctly, but you should answer as many items as you can. Work as fast as you can without making mistakes.

DO NOT WRITE OR MARK ON THIS TEST-BOOKLET UNLESS TOLD TO DO SO BY THE EXAMINER.

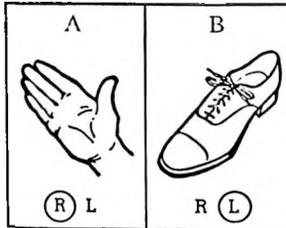
8th Printing

DIRECTIONS: Mark as you are told the letter, R, for each picture that shows a right; mark the letter, L, for each picture that shows a left.

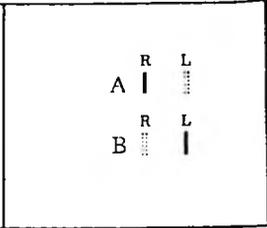
Samples A and B



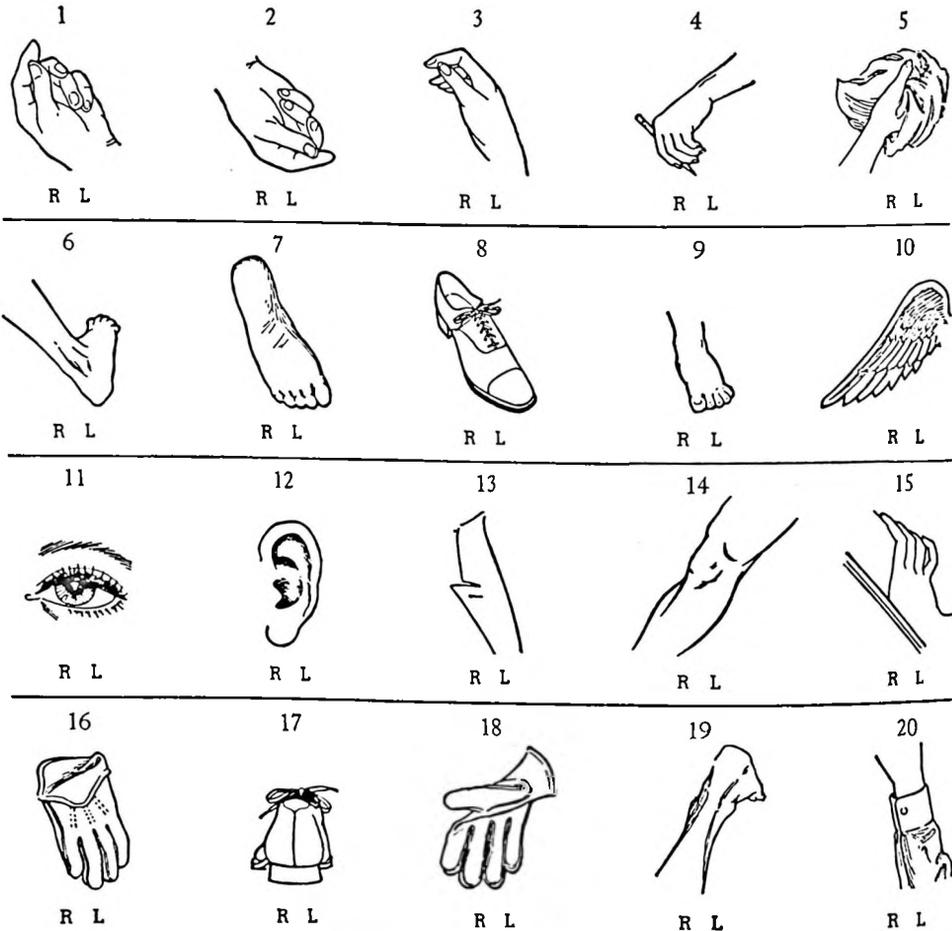
Correct Test Booklet Marks



Correct Answer Sheet Marks



TEST 1



STOP NOW WAIT FOR FURTHER INSTRUCTIONS

Test 1 Score
(number right).....

DIRECTIONS: In each row find the drawing that is a different view of the first drawing. Mark its number as you are told.

TEST 2

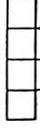
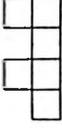
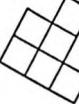
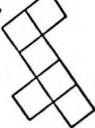
20





 1 2 3 4 — C

28





 1 2 3 4 — 28

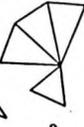
21

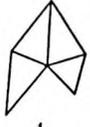




 1 2 3 4 — 21

29


 1 2 3 4 — 29

22





 1 2 3 4 — 22

30





 1 2 3 4 — 30

23





 1 2 3 4 — 23

31





 1 2 3 4 — 31

24





 1 2 3 4 — 24

32





 1 2 3 4 — 32

25





 1 2 3 4 — 25

33





 1 2 3 4 — 33

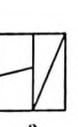
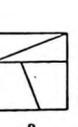
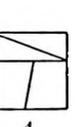
26





 1 2 3 4 — 26

34





 1 2 3 4 — 34

27





 1 2 3 4 — 27

35





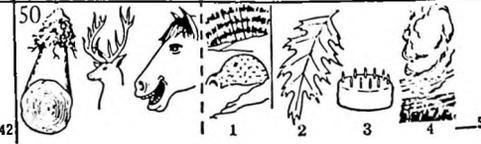
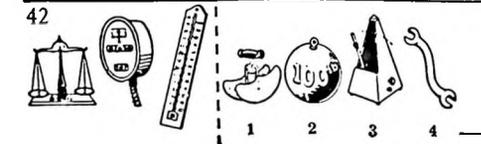
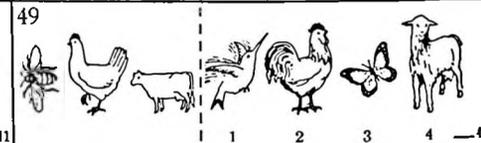
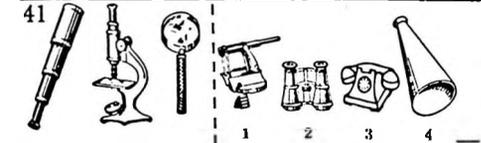
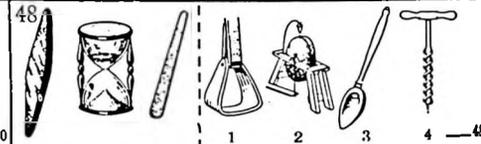
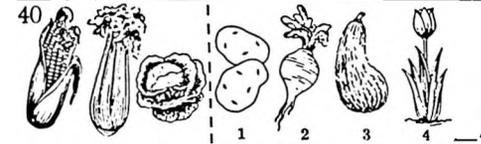
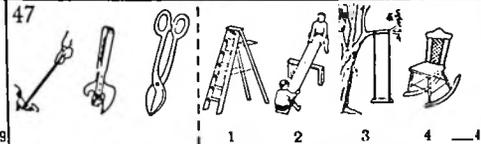
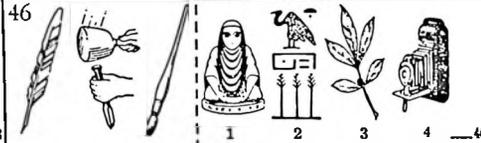
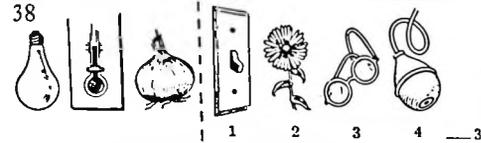
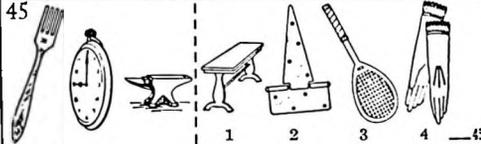
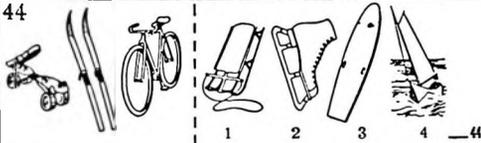
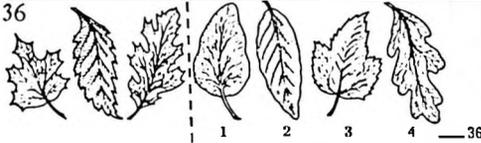
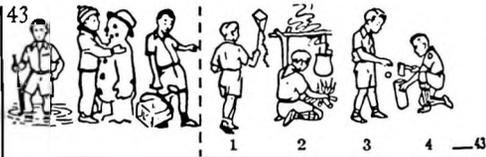
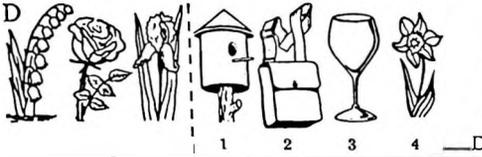
 1 2 3 4 — 35

STOP NOW WAIT FOR FURTHER INSTRUCTIONS

Test 2 Score (number right).....

DIRECTIONS: The first three pictures in each row are alike in some way. Decide how they are alike, and then find the one picture among the four to the right of the dotted line that is most like them and mark its number.

TEST 3



STOP

Test 3 Score
(number right)

DIRECTIONS: Read each group of statements below and the conclusions which follow. Then mark as you are told the number of each answer you have decided is correct.

TEST 4

- E.. All four-footed creatures are animals.
All horses are four-footed.
Therefore
¹ Creatures other than horses can walk
² All horses can walk
³ All horses are animals —E
511. Mr. X is an aviator.
Mr. X is scoutmaster for his home town.
Therefore
¹ Aviators make good scoutmasters
² One aviator is a scoutmaster
³ Scoutmasters make good aviators —51
512. Three boys are on a mountain trail.
Dick is farther up the trail than Dan.
Frank is farther up than Dick.
Which boy is in the middle position on the trail?
¹ Dick
² Dan
³ Frank —52
513. No human beings are exempt from accidents.
Automobile drivers are human beings.
Therefore
¹ No human being is dependable
² No automobile drivers are exempt from accidents
³ Few human beings make safe automobile drivers —53
54. If he remains with his friend he will suffer loss, and if he leaves his friend he will suffer loss.
But, he must remain with his friend or leave him.
Therefore
¹ He should remain with his friend
² It takes courage to leave a friend
³ He will suffer loss —54
55. All squares have four equal sides.
This figure does not have four equal sides.
Therefore
¹ It is a circle
² It is not a square
³ It is either a triangle or a rectangle —55
56. He is either foreign-born or a native.
But, he is not foreign-born.
Therefore
¹ He is a voter
² He is a native
³ He is a soldier —56
57. Pine Street is parallel to River Drive.
River Drive is parallel to Cypress Street.
Therefore
¹ Pine Street is east of River Drive
² Cypress Street crosses Pine Street
³ Pine Street is parallel to Cypress Street —57



TEST 4 (Continued)

58. Either your sister is more intelligent than you, or as intelligent, or less intelligent.

But, your sister is not more intelligent, nor is she less intelligent.
Therefore

- 1 Your sister is less intelligent than you
- 2 Your sister is as intelligent as you
- 3 Your sister is more intelligent than you _____58

59. Jim has a better batting average than Ed.

Ed has a better batting average than Bill.

Who has the best batting average?

- 1 Jim
- 2 Bill
- 3 Ed _____59

60. A weighs less than B.

B weighs less than C.

Therefore

- 1 B weighs more than C
- 2 A's weight equals B's and C's
- 3 A weighs less than C _____60

61. The box contains either gold or silver or crystal.

It does not contain silver.

Therefore

- 1 It contains crystal
- 2 It contains either gold or crystal
- 3 The conclusion is uncertain _____61

62. If he is to keep his place on the team he must avoid disputes with the captain and the coach.

But, he will neither avoid disputes with the captain, nor will he avoid disputes with the coach.

Therefore

- 1 He will not remain on the team
- 2 He will lose in popularity with the school
- 3 He may have a reasonable complaint _____62

63. If the claim is unjust, refusal to permit its discussion before the Student Council is unwise.

If the claim is just, refusal is inexcusable.

But, the claim is either unjust or it is just.

Therefore

- 1 The refusal is justified
- 2 The refusal is being discussed freely
- 3 The refusal is either unwise or inexcusable _____63

64. A's house is situated northeast of B's.

B's house is situated northeast of C's.

Therefore

- 1 A's house is situated nearest to C's
- 2 C's house is nearer to A's house than to B's
- 3 A's house is situated to the northeast of C's _____64

65. W is between X and Y.

X is between Y and Z.

Therefore

- 1 W is not between Y and Z
- 2 W is between X and Z
- 3 W is nearer to X than to Z _____65

STOP NOW WAIT FOR FURTHER INSTRUCTIONS

DIRECTIONS: In each row of numbers below, there is one that does not belong. Find the number that should be omitted from each row among the answer numbers on the right, and mark its letter as you are told. When you have finished as many as you can from 66 to 75, read the Directions in the middle of the page and proceed with rows 76 to 80.

TEST 5.

- | | | | | | | | | | | | | | | | | | |
|-------|----|----|----|----|----|----|----|----|----|------|------|------|------|------|------|------|-----|
| F. | 2 | 4 | 6 | 8 | 9 | 10 | 12 | 14 | | a 6 | b 9 | c 10 | d 12 | e 14 | —F | | |
| (66). | 14 | 12 | 10 | 8 | 7 | 6 | 4 | | | a 14 | b 12 | c 10 | d 8 | e 7 | —66 | | |
| (67). | 19 | 16 | 13 | 11 | 10 | 7 | 4 | | | a 13 | b 11 | c 10 | d 7 | e 4 | —67 | | |
| (68). | 1 | 5 | 9 | 13 | 15 | 17 | | | | a 15 | b 13 | c 9 | d 5 | e 1 | —68 | | |
| (69). | 4 | 5 | 7 | 8 | 10 | 11 | 12 | 13 | | a 7 | b 8 | c 11 | d 12 | e 13 | —69 | | |
| (70). | 2 | 4 | 5 | 7 | 8 | 9 | 10 | 11 | 13 | 14 | a 2 | b 4 | c 9 | d 10 | e 13 | —70 | |
| (71). | 0 | 7 | 14 | 19 | 24 | 27 | 29 | 30 | 31 | | a 29 | b 27 | c 24 | d 14 | e 0 | —71 | |
| (72). | 20 | 17 | 15 | 14 | 11 | 9 | 8 | 7 | 5 | 3 | 2 | a 17 | b 14 | c 9 | d 7 | e 5 | —72 |
| (73). | 21 | 20 | 18 | 15 | 14 | 12 | 10 | 9 | 8 | 6 | 3 | a 21 | b 10 | c 9 | d 8 | e 6 | —73 |
| (74). | 2 | 3 | 5 | 8 | 12 | 17 | 22 | 23 | 30 | | a 3 | b 8 | c 12 | d 17 | e 22 | —74 | |
| (75). | 20 | 18 | 19 | 17 | 18 | 16 | 17 | 14 | 15 | 16 | | a 20 | b 19 | c 17 | d 14 | e 16 | —75 |

DIRECTIONS: Go right on with the following until told to stop. In each row of numbers below, the numbers grow larger or smaller in a regular series of whole numbers. Decide what numbers are missing, find them among the answers on the right, and mark the letter of your choice for the correct answer.

- | | | | | | | | | | | | | | | | |
|-------|--|-------|-------|-------|-------|-------|----|--|--|--------------|--------------|--------------|--|--|------------|
| X. | 12 | ..... | 14 | 15 | ..... | ..... | 18 | | | a 13, 15, 16 | b 13, 15, 17 | c 13, 16, 17 | | | |
| | (In Sample X the correct answer is C, meaning 13, 16, 17.) | | | | | | | | | d 14, 16, 17 | e 15, 16, 18 | | | | <u>C</u> X |
| (76). | 1 | 4 | ..... | 10 | ..... | ..... | 19 | | | a 5, 11, 18 | b 7, 13, 16 | c 5, 13, 16 | | | —76 |
| | | | | | | | | | | d 7, 11, 18 | e 5, 16, 18 | | | | |
| (77). | 2 | ..... | 8 | ..... | 32 | ..... |  |  |  | a 7, 13, 33 | b 4, 16, 37 | c 3, 15, 48 | | | —77 |
| | | | | | | | | | | d 4, 16, 64 | e 6, 24, 64 | | | | |
| (78). | 44 | 37 | ..... | ..... | 16 | ..... | 2 | | | a 30, 22, 8 | b 31, 22, 9 | c 30, 23, 9 | | | —78 |
| | | | | | | | | | | d 30, 21, 9 | e 31, 23, 8 | | | | |
| (79). | 6 | ..... | 28 | ..... | 50 | ..... | 72 | | | a 16, 38, 60 | b 16, 39, 61 | c 17, 38, 60 | | | —79 |
| | | | | | | | | | | d 11, 39, 61 | e 17, 39, 61 | | | | |
| (80). | 83 | 70 | ..... | 44 | ..... | ..... | 5 | | | a 57, 31, 18 | b 53, 33, 23 | c 57, 33, 19 | | | —80 |
| | | | | | | | | | | d 53, 31, 18 | e 57, 33, 18 | | | | |

DIRECTIONS: Work these problems on a sheet of scratch paper. Mark as you are told the letter of each correct answer.

TEST 6.

- G. If you earned \$5.00 and spent \$3.00, how many dollars would you have left? a \$1.00
b \$2.00
c \$3.00
d \$5.00 —G
-
81. If a freight train travels at the rate of 20 miles an hour, how many miles will it travel in 4 hours? a 5
b 24
c 80
d 60 —81
-
82. How many pieces of candy can you buy for 15 cents at the rate of 4 for 5 cents? a 9
b 12
c 15
d 60 —82
-
83. On a road map each one-half inch represents 20 miles. How many miles are represented by 5 inches? a 10
b 20
c 100
d 200 —83
-
84. Large envelopes that sell for 3 cents each can be had for 30 cents a dozen. How much is saved when bought by the dozen? a 10¢
b 6¢
c 2½¢
d 9¢ —84
-
85. How many one-inch cubes can be placed in a box 5 inches long, 4 inches wide, and 3 inches high? a 12
b 23
c 60
d 100 —85
-
86. If you had 20 words in spelling and were marked 90%, how many words did you spell correctly? a 1
b 11
c 18
d 19 —86
-
87. How many 1½ cent stamps would you give in even exchange for 30 one-half cent stamps? a 10
b 15
c 20
d 45 —87

TEST 6 (Continued)

88. A ball team played 25 games and won 7 games more than it lost. How many games did it win? a 7
b 9
c 16
d 18 ____88

89. How many sheets of paper 7 inches by 10 inches can you cut from a sheet of paper 21 inches by 30 inches? a 3
b 6
c 9
d 34 ____89

90. At 10 cents a foot, what is the cost of enough molding to go around the ceiling of a room 15 feet wide by 16 feet long? a \$3.10
b \$6.20
c \$31.00
d \$24.00 ____90

91. $2\frac{1}{2}$ times what number equals 40? a 16
b 8
c 15
d 17 ____91

92. If a 5 inch cube of ice weighs $4\frac{1}{4}$ pounds, how many pounds will a 10 inch cube weigh? a $212\frac{1}{2}$
b $8\frac{1}{2}$
c 34
d 50 ____92

93. What is the number which if multiplied by 2 is 4 less than 3 times 6? a 6
b 7
c 14
d 8 ____93

94. Jim says his age is $\frac{1}{4}$ of his uncle's, and that their ages together total 40 years. How many years difference is there between Jim's and his uncle's age? a 10
b 20
c 24
d 30 ____94

95. A tank is fed by two pipes, one of which can fill it in 2 hours, and the other in 3 hours. A third pipe can empty it in 1 hour. If the tank is full and all three pipes are opened and operating to full capacity, how many hours will it take to empty the tank? a 2
b 4
c 5
d 6 ____95



Test 6 Score (number right).....

DIRECTIONS: Mark as you are told the number of the word that means the same or about the same as the first word.

TEST 7.

- H. blossom ¹ tree ² vine
³ flower ⁴ garden — H
96. strange ¹ real ² tell
³ certain ⁴ unknown — 96
97. reply ¹ news ² answer
³ note ⁴ open — 97
98. liberty ¹ benefit ² seize
³ freedom ⁴ aid — 98
99. assist ¹ consent ² help
³ agree ⁴ overlook — 99
100. admire ¹ defend ² protect
³ approve ⁴ agree — 100
101. aim ¹ offer ² apply
³ haste ⁴ end — 101
102. esteem ¹ reject ² estimate
³ exceed ⁴ respect — 102
103. acquire ¹ agree ² conduct
³ obtain ⁴ conflict — 103
104. counsel ¹ glory ² advice
³ generous ⁴ satisfy — 104
105. ample ¹ season ² plentiful
³ alive ⁴ autumn — 105
106. amaze ¹ agree ² betray
³ surprise ⁴ contrary — 106
107. oppress ¹ promise ² imitate
³ crowd ⁴ burden — 107
108. liberal ¹ lonely ² generous
³ learned ⁴ real — 108
109. predatory ¹ soft ² stationary
³ plundering ⁴ lasting — 109
110. obstinate ¹ saucy ² headstrong
³ satisfactory ⁴ obedient — 110
111. eternal ¹ worthy ² brief
³ endless ⁴ native — 111
112. fugitive ¹ fetter ² accident
³ saddle ⁴ runaway — 112
113. legend ¹ ancient ² legion
³ story ⁴ leisure — 113
114. entreat ¹ refuse ² plead
³ repair ⁴ reform — 114
115. notable ¹ terrible ² brilliant
³ severe ⁴ famous — 115
116. diminish ¹ obtain ² repeat
³ reduce ⁴ plentiful — 116
117. envious ¹ amiable ² jealous
³ boisterous ⁴ enormous — 117
118. prophecy ¹ suggestion ² task
³ substance ⁴ prediction — 118
119. corrode ¹ collect ² disintegrate
³ applaud ⁴ blame — 119
120. invariably ¹ probably ² seldom
³ always ⁴ motionless — 120
121. detect ¹ remove ² discover
³ overtake ⁴ apply — 121
122. reluctantly ¹ gladly ² instantly
³ certainly ⁴ unwillingly — 122
123. inefficient ¹ unruly ² prudent
³ incompetent ⁴ inevitable — 123
124. facetious ¹ active ² fragile
³ humorous ⁴ inventive — 124
125. ambiguous ¹ hard ² doubtful
³ responsible ⁴ confident — 125
126. utilize ¹ harmonize ² identify
³ use ⁴ invite — 126
127. dejected ¹ slow ² disheartened
³ weighty ⁴ destroyed — 127
128. dexterity ¹ safety ² advantage
³ affection ⁴ skill — 128
129. defer ¹ affirm ² delay
³ confer ⁴ ordain — 129
130. deride ¹ advance ² encourage
³ ennoble ⁴ ridicule — 130
131. concede ¹ overrule ² engage
³ allow ⁴ endeavor — 131
132. invoke ¹ hover ² imitate
³ ask ⁴ invest — 132
133. coerce ¹ varnish ² adverse
³ treasure ⁴ compel — 133
134. tarnish ¹ frighten ² blacken
³ lament ⁴ torment — 134
135. antecedent ¹ actual ² pretended
³ previous ⁴ genuine — 135
136. disparage ¹ divert ² discredit
³ deprive ⁴ divide — 136
137. impervious ¹ empty ² injurious
³ impenetrable ⁴ important — 137
138. deleterious ¹ harmful ² just
³ tardy ⁴ particular — 138
139. presage ¹ wisdom ² precedent
³ foretell ⁴ promote — 139
140. surfeit ¹ excess ² excel
³ survey ⁴ feature — 140
141. vertigo ¹ greenish ² truth
³ strength ⁴ giddiness — 141
142. quondam ¹ quota ² survivor
³ former ⁴ future — 142
143. mandible ¹ handcuff ² jaw
³ law ⁴ forceful — 143
144. odium ¹ favor ² blame
³ smell ⁴ poem — 144
145. chuff ¹ peeve ² churl
³ cliff ⁴ laugh — 145



Test 7 Score
 (number right)



California Short-Form Test of Mental Maturity Junior High Level - GRADES 7-8-9 - '57 S-Form

DEvised BY E. T. SULLIVAN, W. W. CLARK, AND E. W. TIEGS

See MANUAL for instructions.

Examinee's Score

Possible Score

Factor

Test

1. Sensing Right and Left 20

2. Manipulation of Areas 15

TOTAL (1 + 2) 35

3. Similarities 15

4. Inference 15

TOTAL (3 + 4) 30

5. Number Series 15

6. Numerical Quantity 15

TOTAL (5 + 6) 30

7. VERBAL CONCEPTS 50

TOTAL (7) 50

LANGUAGE DATA 80

MENTAL AGE 65

NON-LANGUAGE DATA

CHRONOLOGICAL AGE

Average Grade Placement Equivalent

INTELL. (M.A.) GRADE PLACEMENT

Yr.

Mental Age

Mo.

Grade or Occupation
Date of Test
Date of Birth

Middle

First

Last

School or Organization
Teacher or Examiner

City

Examinee's Age

Month Day Year

Month Day Year

SEX (Circle one)
M F

SUMMARY OF DATA

LAN-GUAGE DATA	NON-LANG. DATA	TOTAL DATA
		$\frac{L + NL}{2}$
SCORE		
M.A. divided by C.A. equals I.Q.*		
INTELL. (M.A.) (G. P.)		

LAN-GUAGE DATA	NON-LANG. DATA	TOTAL DATA
		$\frac{L + NL}{2}$
SCORE		
M.A. divided by C.A. equals I.Q.*		
INTELL. (M.A.) (G. P.)		

*Shift decimal two places to the right before recording.

For comparison and prediction, use I.Q. percentile norms in table entitled "I.Q.'s for Various Populations" in Part 4 of the Manual.

LANG. I.Q. NON-LANG. I.Q. TOTAL I.Q.

Normal Population

9th Grade

10th Grade

11th Grade

12th Grade

College Freshmen

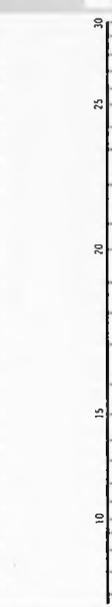
College Sophomores

College Graduates

Other

DIAGNOSTIC PROFILE (Chart Examinee's Scores Here)

Mental Age





Advanced • GRADES
10 to Adult • 1957 S-Form

California Short-Form Test of Mental Maturity

Devised by

ELIZABETH T. SULLIVAN, WILLIS W. CLARK, AND ERNEST W. TIEGS

INSTRUCTIONS TO EXAMINEES:

This is a test of mental maturity. In taking it you will show how well you understand relationships and what you do when you face new problems. No one is expected to do the whole test correctly, but you should answer as many items as you can. Work as fast as you can without making mistakes.

DO NOT WRITE OR MARK ON THIS TEST BOOKLET UNLESS TOLD TO DO SO BY THE EXAMINER.

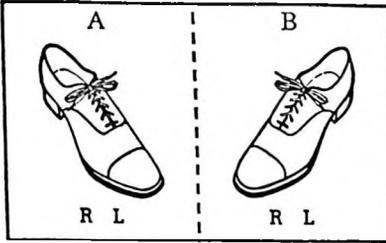
10th Printing

A

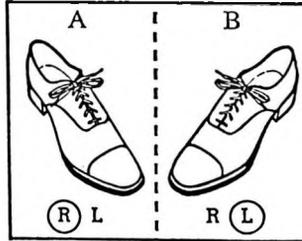
S-57

DIRECTIONS: Mark as you are told the letter, R, for each picture that shows a right, mark the letter, L, for each picture that shows a left.

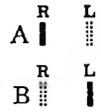
Samples A and B



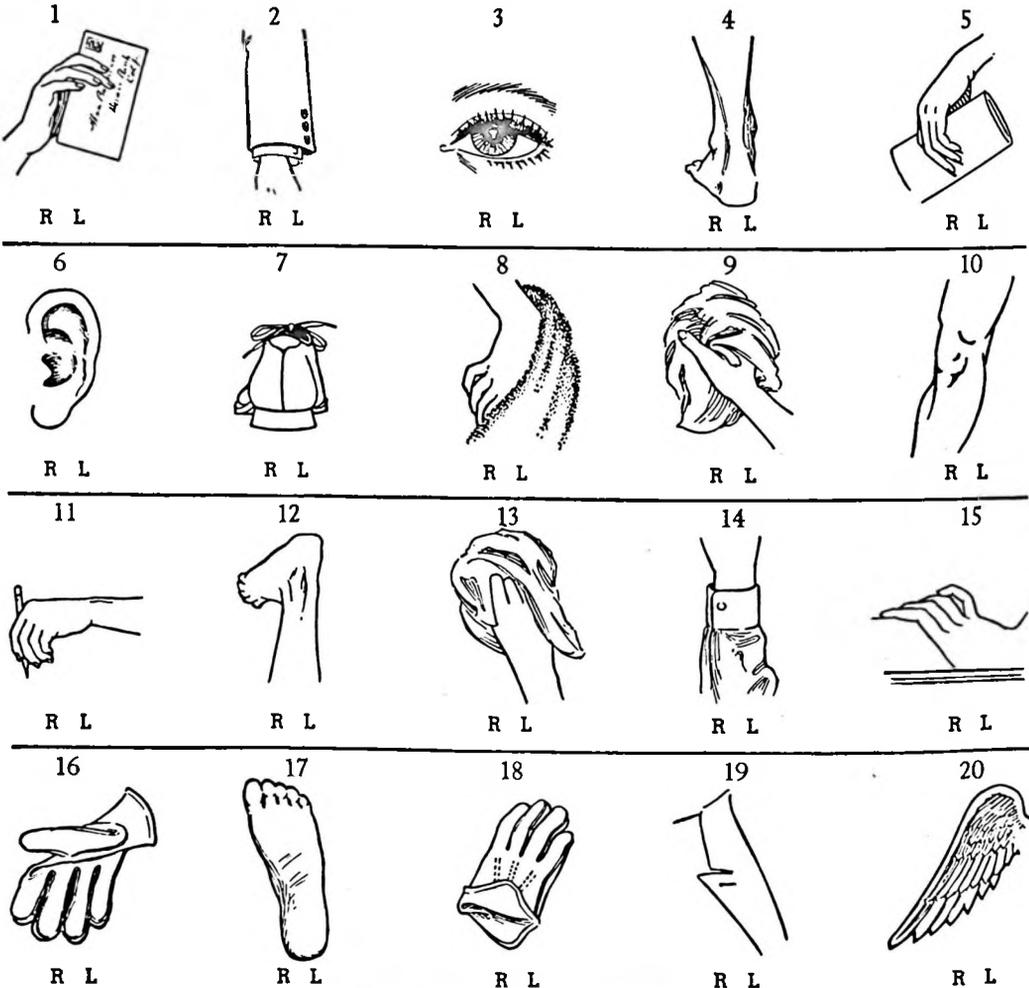
Correct Test Booklet Marks



Correct Answer Sheet Marks



TEST 1



DIRECTIONS: In each row find the drawing that is a different view of the first drawing. Mark its number as you are told.

TEST 2

CC







1 2 3 4 C

28

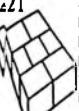






1 2 3 4 28

221







1 2 3 4 21

29

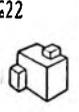






1 2 3 4 29

222







1 2 3 4 22

30







1 2 3 4 30

223







1 2 3 4 23

31







1 2 3 4 31

224







1 2 3 4 24

32







1 2 3 4 32

225







1 2 3 4 25

33







1 2 3 4 33

26







1 2 3 4 26

34







1 2 3 4 34

27







1 2 3 4 27

35







1 2 3 4 35

STOP NOW WAIT FOR FURTHER INSTRUCTIONS

Test 2 Score (number right)

DIRECTIONS: The first three pictures in each row are alike in some way. Decide how they are alike, and then find the one picture among the four to the right of the dotted line that is most like them and mark its number.

TEST 3

<p>D</p> <p>1 2 3 4 <u> </u>D</p>	<p>43</p> <p>1 2 3 4 <u> </u>43</p>
<p>36</p> <p>1 2 3 4 <u> </u>36</p>	<p>44</p> <p>1 2 3 4 <u> </u>44</p>
<p>37</p> <p>1 2 3 4 <u> </u>37</p>	<p>45</p> <p>1 2 3 4 <u> </u>45</p>
<p>38</p> <p>1 2 3 4 <u> </u>38</p>	<p>46</p> <p>1 2 3 4 <u> </u>46</p>
<p>39</p> <p>1 2 3 4 <u> </u>39</p>	<p>47</p> <p>1 2 3 4 <u> </u>47</p>
<p>40</p> <p>1 2 3 4 <u> </u>40</p>	<p>48</p> <p>1 2 3 4 <u> </u>48</p>
<p>41</p> <p>OSC TEUZ</p> <p>1 2 3 4 <u> </u>41</p>	<p>49</p> <p>1 2 3 4 <u> </u>49</p>
<p>42</p> <p>1 2 3 4 <u> </u>42</p>	<p>50</p> <p>1 2 3 4 <u> </u>50</p>

STOP

Test 3 Score
(number right).....

DIRECTIONS: Read each group of statements below and the conclusions which follow. Then mark as you are told the number of each answer you have decided is correct.

TEST 4

- E. All four-footed creatures are animals.
All horses are four-footed.
Therefore
- ¹ Creatures other than horses can walk
 - ² All horses can walk
 - ³ All horses are animals _____ E

51. Elm Street is parallel to Oak Street.
Oak Street is parallel to Palm Avenue.
Therefore
- ¹ Elm Street crosses Palm Avenue
 - ² Palm Avenue is longer than Elm Street
 - ³ Elm Street is parallel to Palm Avenue _____ 51

52. George Washington was a skillful general.
George Washington was President of the United States.
Therefore
- ¹ Skillful generals make good presidents
 - ² A President of the United States was a skillful general
 - ³ Good presidents make skillful generals _____ 52

53. If he steers toward the land he will be wrecked, and if he steers toward the open sea he will be wrecked.
But, he must steer either toward the land or toward the open sea.
Therefore
- ¹ He should head for the open sea
 - ² The coast is dangerous for ships
 - ³ He will be wrecked _____ 53

54. If the wind changes it will either grow warmer or it will storm.
The wind does not change.
Therefore
- ¹ It will probably grow warmer
 - ² The conclusion is uncertain
 - ³ It will not grow warmer nor will it storm _____ 54

55. X is younger than Y.
Y is younger than Z.
Therefore
- ¹ Y is younger than X
 - ² X is younger than Z
 - ³ Y has lived longer than Z _____ 55

56. All circles are round figures.
A certain figure is not round.
Therefore
- ¹ It is oval
 - ² It is either a square or a triangle
 - ³ It is not a circle _____ 56

57. A is situated to the east of B.
B is situated to the east of C.
Therefore
- ¹ C is situated close to A
 - ² A is situated to the east of C
 - ³ C is nearer to A than to B _____ 57



TEST 4 (Continued)

58. If he is to complete his high school course, he must avoid wasting his energy and his money.

But, he will not avoid wasting his energy, nor will he avoid wasting his money.

Therefore

1 He will not complete his high school course

2 He will be sorry some day

3 He should be criticized for not doing better _____58

59. If the students are in error, your refusal to listen to their side is unreasonable.

If they are not in error, your refusal is unjust.

But, the students are in error or they are not.

Therefore

1 Your refusal is justifiable

2 Your refusal is either unreasonable or it is unjust

3 Your refusal may be reconsidered later _____59

60. Three boys are up on a ladder. Tom is farther up the ladder than Paul.

Jim is farther up than Tom.

Which boy is in the middle position on the ladder?

1 Tom

2 Paul

3 Jim _____60

61. A is either B or C or D.

A is not B.

Therefore

1 A is C

2 A is either C or D

3 The conclusion is uncertain _____61

62. If he were loyal he would not speak unkindly of his family in earnest.

If he were wise he would not speak unkindly of them in jest.

He speaks unkindly either in earnest or in jest.

Therefore

1 He is either not loyal or not wise

2 He is unkind

3 The conclusion is uncertain _____62

63. If A is B, E is F; if C is D, G is H.

Either A is B or C is D.

Therefore

1 Either A is F or C is H

2 Either E is F or G is H

3 The conclusion is uncertain _____63

64. A is between B and C.

B is between C and D.

Therefore

1 A is not between C and D

2 A is between B and D

3 A is nearer to B than to D _____64

65. Five cities (P, Q, R, S, and T) are in the same state.

S is between P and Q. T is between P and S.

R is the same distance from P and T, and S is the same distance from P and Q.

Therefore

1 Q is nearer to T than to S

2 R is nearer to Q than to P

3 T is nearer to P than to Q _____65

STOP NOW WAIT FOR FURTHER INSTRUCTIONS

DIRECTIONS: Work these problems on a sheet of scratch paper. Mark as you are told the letter of each correct answer.

TEST 6

- G. If a man earned \$25.00 and spent \$10.00, how much money would he have left? a \$5.00
b \$15.00
c \$20.00
d \$10.00 —G
-
81. How many picture post cards can you buy for 15 cents at the rate of 3 for 5 cents? a 9
b 3
c 15
d 34 —81
-
82. How many feet of railroad track can be laid with 750 ties if 25 ties are needed for each 50 feet? a 1250
b 1500
c 325
d 30 —82
-
83. What number if multiplied by 3 is equal to 2 times 9? a 3
b 9
c 18
d 6 —83
-
84. A sample rug is 12 inches long and 9 inches wide. How long will a larger rug of the same proportions be if it is 36 inches wide? a 108 in.
b 48 in.
c 15 in.
d 36 in. —84
-
85. What is the number which if divided by 4 is equal to $\frac{1}{6}$ of 72? a 12
b 18
c 48
d 3 —85
-
86. A high school student borrowed \$75.00 for one year at 6% to start a chicken ranch. How many little chickens must he sell at 10 cents each to pay back the money he borrowed with interest? a 45
b 450
c 750
d 795 —86
-
87. A dealer allowed an old customer a discount of 10% on the marked price of bookcases. What is the marked price of a bookcase for which this customer paid him \$36.00? a \$40.00
b \$32.40
c \$3.60
d \$39.60 —87

TEST 6 (Continued)

888. A circular flower bed 7 feet in diameter is to be bordered by plants set one foot apart. What will be the cost of the plants at the rate of 2 for 15 cents? (Circumference of a circle is about $3\frac{1}{7}$ times the diameter.)

a 52¢
 b \$1.65
 c 70¢
 d \$1.57½ —88

889. A man placed four stepping stones one foot square in a row in a section of his garden so that there were equal spaces on all four sides of each of the stones. If the section was 3 feet wide, how long was it?

a 12 ft.
 b 3 ft.
 c 9 ft.
 d 8 ft. —89

90. Ben lives 1.5 miles east of the library. James lives 2.5 miles directly west of the library. On a scale of $\frac{1}{2}$ inch = 1 quarter mile, how many inches will represent the distance between the boys' houses?

a 8
 b 16
 c 6
 d 2 —90

91. What is the number which if added to 5 is 3 less than $\frac{1}{3}$ of $\frac{3}{5}$ of 60?

a $\frac{1}{2}$
 b 9
 c 4
 d 12 —91

92. A gallon of water weighs 8.4 pounds. A gallon of gasoline weighs 68 per cent as much as a gallon of water. A pilot flying the air mail carried 50 gallons. How many pounds did this gasoline weigh?

a 285
 b 285.6
 c 278.6
 d 380 —92

93. A coffee shop buys a blend of coffee composed of $\frac{2}{3}$ of Grade A at 60 cents a pound and $\frac{1}{3}$ of Grade B at 30 cents a pound. If they change the mixture, using $\frac{1}{3}$ of Grade A and $\frac{2}{3}$ of Grade B, how much will they save on every 10 pounds of coffee?

a 3¢
 b 10¢
 c 30¢
 d \$1.00 —93

94. A man's will provided that his estate of \$15,000.00 should be divided as follows: $\frac{2}{5}$ to his wife and $\frac{1}{5}$ each to three children, except that in the event any of the children were deceased, their share should be divided equally between the remaining children and the wife. Two children were killed in an automobile accident. How much did the remaining child receive from the estate?

a $\frac{1}{5}$
 b \$6000.00
 c \$4500.00
 d \$5000.00 —94

95. If a set of tires for one automobile costs one-half of what a set costs for another automobile; and if three sets of the cheaper tires last only as long as two sets of the more expensive kind, the total cost of the cheaper tires during a given period will average what fraction or per cent of the cost of the more expensive kind?

a $\frac{1}{3}$ or 33 $\frac{1}{3}$ %
 b $\frac{1}{2}$ or 50%
 c $\frac{3}{4}$ or 75%
 d $\frac{2}{3}$ or 37 $\frac{1}{2}$ %
 —95



Test 6 Score
 (number right).....

TEST 7

- H. blossom ¹ tree ² vine
³ flower ⁴ garden — H
96. inefficient ¹ avoidable ² able
³ incompetent ⁴ unruly — 96
97. confiscate ¹ assert ² seize
³ compile ⁴ comfort — 97
98. malign ¹ insure ² muffle
³ slander ⁴ invade — 98
99. whimsical ¹ accurate ² weighty
³ fashionable ⁴ fanciful — 99
100. avarice ¹ virtue ² prominence
³ greed ⁴ honor — 100
101. eradicate ¹ destroy ² vacate
³ use ⁴ solve — 101
102. impeachment ¹ prayer ² burial
³ resignation ⁴ accusation — 102
103. discordant ¹ clashing ² sad
³ unsteady ⁴ distinctive — 103
104. titanic ¹ reddish ² acid
³ large ⁴ ancient — 104
105. edict ¹ decree ² diction
³ sovereign ⁴ edition — 105
106. recumbent ¹ saving ² curved
³ reclining ⁴ cumbersome — 106
107. caprice ¹ action ² whim
³ capture ⁴ tact — 107
108. expedite ¹ expel ² dictate
³ delay ⁴ hasten — 108
109. loquacious ¹ talkative ² logical
³ legal ⁴ delicious — 109
110. idiosyncrasy ¹ ode ² peculiarity
³ office ⁴ imbecility — 110
111. perfidious ¹ treacherous ² glad
³ studious ⁴ responsible — 111
112. artifice ¹ artless ² hate
³ definition ⁴ device — 112
113. anomaly ¹ ceremony ² illness
³ irregularity ⁴ normal — 113
114. reciprocal ¹ charming ² mutual
³ agreeable ⁴ meditative — 114
115. travesty ¹ burlesque ² tragedy
³ meeting ⁴ hotel — 115
116. obtuse ¹ pointed ² reversible
³ blunt ⁴ objectionable — 116
117. abstemious ¹ stormy ² bright
³ mournful ⁴ temperate — 117
118. tangent ¹ blend ² agent
³ touching ⁴ sensing — 118
119. extraneous ¹ extra ² foreign
³ transparent ⁴ noisy — 119

120. erudite ¹ crude ² learned
³ rugged ⁴ polite — 120
121. ameliorate ¹ improve ² harden
³ dilute ⁴ decorate — 121
122. malapert ¹ sick ² lazy
³ slow ⁴ saucy — 122
123. opulence ¹ jewel ² generosity
³ wealth ⁴ honor — 123
124. urbanity ¹ loyalty ² refinement
³ weakness ⁴ barbarism — 124
125. propinquity ¹ nearness ² speed
³ diligence ⁴ propriety — 125
126. trajectory ¹ court ² project
³ area ⁴ curve — 126
127. corollary ¹ crown ² inference
³ enclosure ⁴ supersede — 127
128. ostensible ¹ actual ² available
³ genuine ⁴ pretended — 128
129. salient ¹ salty ² outstanding
³ merciful ⁴ agreeable — 129
130. probity ¹ uprightness ² weight
³ suspicion ⁴ interference — 130
131. acephalous ¹ false ² warlike
³ headless ⁴ sensible — 131
132. porphyry ¹ papyrus ² rock
³ cave ⁴ manuscript — 132
133. strident ¹ muscular ² shrill
³ battered ⁴ strong — 133
134. effete ¹ exhausted ² festive
³ fragile ⁴ plentiful — 134
135. tyro ¹ scold ² village
³ law ⁴ beginner — 135
136. perimeter ¹ measure ² sound
³ boundary ⁴ difficulty — 136
137. diurnal ¹ seasonal ² timely
³ occasional ⁴ daily — 137
138. obloquy ¹ disaster ² blame
³ pride ⁴ obligation — 138
139. eyot ¹ island ² lake
³ river ⁴ insect — 139
140. detritus ¹ fossil ² dextrous
³ fragment ⁴ poem — 140
141. palladium ¹ burden ² safeguard
³ title ⁴ residence — 141
142. quiddity ¹ oddity ² doubt
³ essence ⁴ presence — 142
143. ambient ¹ slow ² surrounding
³ surprising ⁴ well-wishing — 143
144. orrery ¹ book ² prophecy
³ apparatus ⁴ error — 144
145. syzygy ¹ separation ² choice
³ conjunction ⁴ nonsense — 145





California Short-Form Test of Mental Maturity Advanced GRADES 10 to ADULT '57 S-Form

DEvised BY E. T. SULLIVAN, W. W. CLARK, AND E. W. TIEGS

Grade or Occupation _____
SEX (Circle one)
M F

Date of Test _____
Month Day Year
Date of Birth _____
Month Day Year

Name _____
School or Organization _____
Teacher or Examiner _____
First Middle Last City State Examiner's Age

See MANUAL for instructions.

Examinee's Score

Possible Score

Factor

Test

SPATIAL RELATIONSHIPS

1. Sensing Right and Left 20

2. Manipulation of Areas 15

TOTAL (1 + 2) 35

LOGICAL REASONING

3. Similarities 15

4. Inference 15

TOTAL (3 + 4) 30

NUMERICAL REASONING

5. Number Series 15

6. Numerical Quantity 15

TOTAL (5 + 6) 30

VERBAL REASONING

7. VERBAL CONCEPTS 50

TOTAL (7) 50

LANGUAGE DATA

LANGUAGE DATA 80

MENTAL AGE

MENTAL AGE 65

NON-LANGUAGE DATA

NON-LANGUAGE DATA

CHRONOLOGICAL AGE

CHRONOLOGICAL AGE

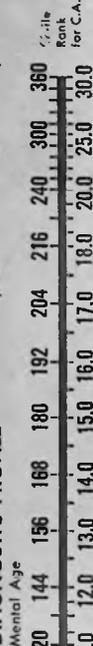
Average Grade Placement Equivalent

Average Grade Placement Equivalent

INTELL. (M. A.) GRADE PLACEMENT

INTELL. (M. A.) GRADE PLACEMENT

DIAGNOSTIC PROFILE (Chart Examinee's Scores Here)



Scale Rank for C.A.

SUMMARY OF DATA

SCORE	LANG. DATA	NON-LANG. DATA	TOTAL DATA
M.A. divided by C.A. equals I.Q.*	LANG. DATA	NON-LANG. DATA	TOTAL DATA
INTELL. (M.A.) G. P.	LANG. DATA	NON-LANG. DATA	TOTAL DATA

* Shift decimal two places to the right before recording.

For comparison and prediction, use I.Q. percentile norms in table entitled "I.Q.'s for Various Populations" in Part 4 of the Manual.

Normal Population	LANG. I.Q.	NON-LANG. I.Q.	TOTAL I.Q.
9th Grade			
10th Grade			
11th Grade			
12th Grade			
College Freshmen			
College Sophomores			
College Graduates			
Other			

Yr. Mental Age Mo. 120 144 156 168 180 192 204 216 240 300 360

MODERN LANGUAGE APTITUDE TEST

FORM A

JOHN B. CARROLL
HARVARD UNIVERSITY

and

STANLEY M. SAPON
THE OHIO STATE UNIVERSITY

DIRECTIONS

Do not write anything in this test booklet. All your answers are to be given on the separate ANSWER SHEET, and you will do the practice exercises for some tests on the separate PRACTICE EXERCISE SHEET.

On the separate ANSWER SHEET and on the PRACTICE EXERCISE SHEET, print your name and other requested information in the proper spaces.

Do not open this booklet until you are told to turn the page. You will need this booklet only for Parts III, IV, and V. Parts I and II utilize only the ANSWER SHEET and the PRACTICE EXERCISE SHEET.

Do not open this booklet until the signal to turn the page is given.



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Ψ Reg. U.S. Pat. Off.

PART III. SPELLING CLUES

Each item below has a group of words. The word at the top of the group is not spelled in the usual way. Instead, it is spelled approximately as it is pronounced. Your task is to recognize the disguised word from the spelling. In order to show that you recognize the disguised word, look for one of the five words beneath it that corresponds most nearly in meaning with the disguised word. When you find this word or phrase, make a mark in the appropriate space on your answer sheet (SIDE B, Part III, Spelling Clues). DO NOT WRITE IN THIS BOOKLET.

Here are some sample items:

S. luv

- A. carry
- B. exist
- C. affection
- D. wash
- E. spy

luv is a disguised spelling of love, which corresponds most nearly in meaning to affection, so C has been marked in Example S on the answer sheet.

T. ernst

- A. shelter
- B. sincere
- C. slanted
- D. free
- E. impatient

ernst is a disguised spelling of earnest, which corresponds most nearly in meaning to sincere, so B has been marked in Example T on the answer sheet.

NOW GO RIGHT AHEAD WITH THE TEST. WORK RAPIDLY!

1. mblm

- A. blame
- B. ambulance
- C. blemish
- D. symbol
- E. flower

4. nme

- A. sea-animal
- B. architectural decoration
- C. foe
- D. fruit
- E. numbness

7. kwam

- A. citrus fruit
- B. dwelling
- C. noble woman
- D. misgiving
- E. syrup

2. rgumnt

- A. regiment
- B. sticky substance
- C. regulation
- D. hill
- E. dispute

5. srtn

- A. foolish
- B. honest
- C. complaint
- D. sure
- E. fatal

8. ple

- A. gift
- B. meadow
- C. tree
- D. appeal
- E. circumstance

3. wnzkl

- A. musical
- B. capricious
- C. warlike
- D. lazy
- E. complicated

6. dekstrus

- A. skillful
- B. harmful
- C. medicinal
- D. prompt
- E. unusual

9. sidr

- A. neighbor
- B. shadow
- C. apple juice
- D. measurement
- E. similarity

GO ON TO THE NEXT PAGE.

PART III. SPELLING CLUES (Continued)

10. thnkfl
 A. thoughtful
 B. taxable
 C. repulsive
 D. innocent
 E. appreciative
11. knfrns
 A. funeral
 B. medicine
 C. kind of tree
 D. discussion meeting
 E. police officer
12. ndkat
 A. kind of fruit
 B. point out
 C. species of feline
 D. literary figure
 E. escape
3. frajl
 A. fresh
 B. amphibious
 C. breakable
 D. temporary
 E. surgical
4. snser
 A. respond
 B. honest
 C. worry
 D. body of water
 E. supporter
5. rtry
 A. place for storing food
 B. robust man
 C. blood vessel
 D. servant
 E. undivided whole
6. ampl
 A. container for liquids
 B. of large size or capacity
 C. uncomplicated
 D. dense undergrowth
 E. church steeple
17. fral
 A. awkward
 B. weak
 C. wild
 D. battle
 E. silly
18. egr
 A. colorful
 B. kind of food
 C. lawyer
 D. anxious
 E. beginning
19. dwt
 A. uncertainty
 B. wedding gift
 C. punctuation mark
 D. female child
 E. unpleasant
20. mbroidr
 A. involve
 B. relate
 C. roast
 D. sew
 E. argue
21. simbl
 A. encouragement
 B. sign
 C. easy
 D. taste
 E. vegetable
22. kurs
 A. swamp
 B. part of a circle
 C. stream
 D. race track
 E. oath
23. fikl
 A. desert plant
 B. changeable
 C. submerged
 D. obstacle
 E. factory
24. stranjr
 A. murderer
 B. more powerful
 C. celestial body
 D. unfamiliar person
 E. fortune teller
25. nektr
 A. waste material
 B. part of the body
 C. sweet liquid
 D. sharp weapon
 E. fur-bearing animal
26. harbr
 A. good worker
 B. leaf
 C. shady nook
 D. port
 E. clear soup
27. dtekt
 A. duplicate
 B. renew
 C. cure
 D. remove
 E. discover
28. kataklizm
 A. mountain lion
 B. disaster
 C. sheep
 D. chemical reagent
 E. population
29. blotd
 A. swollen
 B. struck
 C. cried out
 D. high shoes
 E. fortunate
30. magut
 A. supernatural
 B. manufactured
 C. insect larva
 D. scolded
 E. old companion

GO ON TO THE NEXT PAGE.

PART III. SPELLING CLUES (Continued)

31. potnt
A. sharp
B. powerful
C. distorted
D. slippery
E. prompt
32. kwibl
A. dry spell
B. switch
C. hurry
D. evade the issue
E. imitate
33. marshl
A. slow
B. snow-covered
C. military
D. sweet
E. heavy fog
34. roil
A. recall
B. insane
C. kingly
D. bad-smelling
E. frightened
35. tez
A. digits
B. hot
C. peasant
D. forget
E. irritate
36. sifr
A. obstacle
B. barbarian
C. polish
D. number
E. group of shrubs
37. vitl
referring to:
A. wine
B. vinegar
C. foam
D. life
E. women
38. wajz
A. shaking
B. pay
C. Indian rulers
D. plants
E. odors
39. babl
A. plaything
B. jewel
C. chatter
D. metal
E. boat
40. kmplikashn
A. framework
B. creation
C. sympathy
D. case for a gun
E. intricate involvement
41. barnkl
A. shelter for animals
B. marine animal
C. thick molasses
D. ornamental band
E. severe hardship
42. ntir
A. oral surgeon
B. part of an automobile
C. foreign
D. whole
E. emperor
43. rathfl
A. decorated
B. shapeless
C. angry
D. hearty
E. eatable
44. betl
A. make small
B. kind of furniture
C. skirmish
D. fair
E. insect
45. prty
A. feud
B. misery
C. quarrelsome
D. group of people
E. closet
46. shivr
A. cosmetic instrument
B. eyeglass
C. shake
D. leak
E. slanted
47. pepl
A. chink
B. persons
C. spice
D. revolution
E. sewing machines
48. reman
A. poetry
B. discard
C. practice
D. peddle
E. stay
49. makrl
A. shopping center
B. bear trap
C. sharp blade
D. fish
E. manufacturer
50. pes
A. vegetable
B. tranquillity
C. gems
D. undeniable
E. bridle

**STOP. IF THERE IS
TIME, CHECK BACK
OVER YOUR WORK.**

PART IV. WORDS IN SENTENCES

This is a test of your ability to understand the function of words and phrases in sentences.

Look at the following sample item:

	<u>LONDON</u>	is the capital of England.
v.	<u>He liked to go fishing in Maine.</u>	
	<u>A</u> <u>B</u> <u>C</u> <u>D</u> <u>E</u>	

In the first sentence, which we will call the *key* sentence, LONDON is printed in capital letters. Which word in the second sentence does the same thing in *that* sentence as LONDON does in the *key* sentence? The right answer is the word "he," because the key sentence is about "London," and the second sentence is about "he." Therefore, answer space A has been marked for Example V on your answer sheet (SIDE B, PART IV, Words in Sentences).

Here is another sample item:

	Mary is cutting the <u>APPLE</u> .	
w.	<u>My brother John is beating his dog with a big stick.</u>	
	<u>A</u> <u>B</u> <u>C</u> <u>D</u> <u>E</u>	

In the key sentence, APPLE is the name of the thing which is being cut; in the second sentence, dog is the thing which is being beaten. Therefore, answer space D has been marked for Example W on your answer sheet.

Here is one for you to try. Mark your answer in Example X on your answer sheet.

	<u>MONEY</u> is his only object.	
x.	<u>Not so many years ago, most farming was done by hand.</u>	
	<u>A</u> <u>B</u> <u>C</u> <u>D</u> <u>E</u>	

The right answer is farming; it performs the same function in the second sentence as MONEY does in the key sentence. Therefore you should have marked space D.

Here is still another one, except that this time the choices are found in four sentences instead of only one. Be sure to look over all choices and choose the one which functions in *its* sentence in the way which most closely resembles that of the capitalized word in the key sentence. Mark your answer in Example Y on your answer sheet.

	There was much <u>TALK</u> about a rebellion.	
	Where is <u>John</u> ?	
	<u>A</u>	
y.	There is no <u>doubt</u> about it.	
	<u>B</u> <u>C</u>	
	There lay the dead <u>horse</u> .	
	<u>D</u>	
	There I found my <u>answer</u> .	
	<u>E</u>	

The right answer to sample question Y is doubt, space B.

When the examiner gives the signal turn the page and start the test. Remember, always look over all the choices to find the one which functions most nearly like the word or phrase in the key sentence.

In answering the test, use the separate answer sheet (SIDE B, PART IV, Words in Sentences). Try to answer every item; if you are not certain of the answer, give your best guess.

DO NOT TURN THE PAGE UNTIL THE SIGNAL IS GIVEN.

PART IV. WORDS IN SENTENCES (Continued)

1. Jill fell down AND Jack came tumbling after.
Now, you may wait out there, or you may come back on Friday if you wish.
A B C D E
2. I expect him to do good WORK.
On his trip across the United States and up to Alaska, Fred expected to see many interesting things.
A B C D E
3. John sold DICK his bicycle.
If their work is up to standard, I will guarantee them a bonus at the end of the week.
A B C D E
4. The school CLOSED for the summer.
Despite the efforts we had made to reinforce the material, it tore easily under the slightest strain.
A B C D E
5. HE was here.
Because of the great demand for this product, the committee should ask for it now.
A B C D E
6. Bill has gone TO make a telephone call.
Two people are needed to carry this box to the car because it is too heavy for one.
A B C D E
7. At midnight, the SCREAMING of sirens awakened me.
Painting in oils is a comforting hobby for busy executives who need relaxation.
A B C D E
8. The door OPENED quickly.
Because she had tied the package securely, it arrived without any damage from its careless handling.
A B C D E
9. The lake was dotted with SPEEDING boats.
Sometimes the very best method for good learning is constant practice.
A B C D E
10. The most influential WRITER of his day, he had but a modest pride of authorship.
Gockel, a Swiss physicist, sent an electroscope up to a height of 13,000 feet in a balloon.
A B C D E
11. They named him BILL.
Because of his military success during the Civil War, the people made Grant president of the United States.
A B C D E
12. The company owns every substantial PIECE of property in the town.
Before the dawn of history, men were raising corn very much like what we grow today.
A B C D E
13. It is not TO be passed over lightly.
She talked to me about how I should try to make the horse work instead of letting her graze at will.
A B C D E

GO ON TO THE NEXT PAGE.

PART IV. WORDS IN SENTENCES (Continued)

14. SEVERAL were absent from the meeting.
 In spite of the many proposals which were made, only one could be adopted.
A B C D E
15. I told him to come BUT he refused.
 If tests are made, even when there seems to be no change this system will show an advantage, and our customers will be convinced.
A B C D E
16. My finger became SWOLLEN from the infection.
 The child grew strong from the healing sunshine.
 The high wall was nearly hidden from view by the foliage.
A B C D E
17. My FRIEND went home.
 Behind the house but near the forest stood a barn.
A B C D E
18. That is the OLDEST house.
 It is farther from your hotel than the one we saw before, but it is the best example of earlier dwellings constructed by our former inhabitants.
A B C D E
19. FEW come back.
 In the middle of the lake will be found a small island crowned with a single tree.
A B C D E
20. He saw several fish SWIMMING slowly by.
 As he was walking down the lane, he found himself wondering who had been there before he arrived.
A B C D E
21. THIS is my first trip.
 Even though these letters arrived before those, that has not been answered yet.
A B C D E
22. The corn grew TALL during the summer.
 She raised yellow tulips in her small garden.
 The storm proved worse as the wind became stronger.
A B C D E
23. TO TELL THE TRUTH, it's hard to say.
 To sum up, this product is as efficient as any.
 To be or not to be, that is the question.
 To start the engine, push this button.
A B C D E
24. He drove FROM Boston to New York.
 To be safe, he decided to buy spare parts for any emergency.
A B C D E

GO ON TO THE NEXT PAGE.

PART IV. WORDS IN SENTENCES (Continued)

25. He nailed the board TIGHT against the house.
 He always did the job well.
 He poured the pail full.
26. Do AS I say.
Although the weather report predicted clear skies for today, it rained all day.
27. Is THAT your hat?
This looks better on you even though those suits are better bargains than the ones on this rack.
28. The weekly meeting, usually held on Friday night, is a fixed ACTIVITY of the Scout program.
Washington was the first president of the United States; he refused the crown that some of his admirers wanted him to have.
29. Put it WHERE it will do the most good.
At the signal, proceed to mark it as you were instructed in your last lesson.
30. NONE was more curious to solve the riddle than I.
 The government's first task was to check the prescriptions written by the doctors.
31. Which one do YOU think it is?
That one may belong to me.
 Please pay me before going on your trip.
32. A CALCULATING machine is useful to mathematicians.
Skiing is a fine sport during the winter months.
Seeing is believing.
33. As he sat down to rest, a FEELING of weariness came over him.
Swimming is relaxing exercise for growing boys in training for wrestling.
34. I will buy a car WHEN I get the money.
 After you left last night, most of the students remained until the end.
35. She played the piano EXTREMELY well.
Promptly on the dot of five, he came up the stairs, quite flushed with excitement and breathing very heavily.

GO ON TO THE NEXT PAGE.

PART IV. WORDS IN SENTENCES (Continued)

36. A NUMBER of people applied for the position.
I find many candidates who cannot offer more than two years' experience.
A B C D E
37. His wife bought HERSELF a new hat.
Why won't you tell me more about yourself than you did yesterday?
A B C D E
38. WHAT is this?
I do not know what book you want.
To whom do these belong?
Which fellow is your brother?
Those are mine.
D E
39. Let's make this campaign a SUCCESS.
Some people believe that the world is wholly a figment of the imagination; philosophers call
this theory a variety of solipsism.
C D E
40. Which color do YOU like best?
This one suits me better than the other.
A B C
It makes no difference to me.
D E
41. We plan to take IT today.
On the chance that he would see us, we took steps to put up a beacon.
A B C D E
42. They observed several artists PAINTING landscapes there.
While attempting to catch the ball, he found himself so blinded by the sun that he failed to
notice the overhanging limb.
A B C D
E
43. Some people enjoy EATING clams on the half-shell.
Hacking his way through the teeming jungle, he found abundant evidence of the vanished
A B C D E
civilization.
44. There is no POINT in going ahead.
When the light changed, he stopped the car.
A B
A river flows down to the sea.
C D E
45. The child hurt HIMSELF.
Although I myself would do that by myself, Mary gained herself the help of some of her
classmates.
A B C D
E

STOP. CHECK OVER YOUR WORK IF YOU HAVE TIME.

DO NOT TURN THE PAGE UNTIL TOLD TO DO SO.

PART V. PAIRED ASSOCIATES

Instructions. Your task is to MEMORIZE the Kurdish-English vocabulary below. Wait for the signal, then you will be given two minutes to study the vocabulary printed below. At the end of the two minutes the examiner will give you the signal to start filling in the blanks in the lower half of the PRACTICE EXERCISE SHEET which you have placed over page 11, to the right of this page. You are allowed to look back at the vocabulary on this page when you are filling in the blanks on the practice exercise sheet. After filling in the blanks, continue studying if there is still time.

Vocabulary (Memorize for 2 minutes)

<u>Kurdish</u> – <u>English</u>	<u>Kurdish</u> – <u>English</u>
hij – draw	kete – camel
naq – that	chie – few
sidqu – news	yong – hawk
nente – lady	hui – fall
ja – day	xozo – easy
ngoq – dark	mep – on
tsep – enter	lah – wolf
lohong – ask	wener – book
mupa – anger	mi – touch
nung – frog	jate – sun
chomco – body	e – bowl
roo – art	hon – cold

Instructions. In the next part of the test, you will be given the Kurdish words and 5 choices in English. Following is a sample item.

hij

- A. frog
- B. fall
- C. cold
- D. draw
- E. book

Since hij means draw you would place a black mark in space D, as shown in Example Z on your answer sheet.

These questions are to be done from memory.

DO NOT LOOK BACK AT THIS PAGE!
DO NOT TURN PAGE UNTIL TOLD TO DO SO!

For Part V,

**Lay your PRACTICE EXERCISE SHEET
over this page.**

DO NOT WRITE IN THIS BOOKLET.

PART V. PAIRED ASSOCIATES (Continued)

Place a black mark on your answer sheet (Side B, PART V, Paired Associates) for the letter of the English word that you select. You are not permitted to look back at the previous page, nor at the practice exercise sheet.

- | | | | |
|--|--|--|---|
| 1. mep
A. in
B. on
C. that
D. enter
E. art | 7. chomco
A. art
B. body
C. cold
D. news
E. dark | 13. naq
A. not
B. day
C. that
D. art
E. ask | 19. lohong
A. frog
B. wolf
C. body
D. ask
E. cold |
| 2. e
A. ball
B. at
C. body
D. cold
E. bowl | 8. nente
A. enter
B. anger
C. lady
D. few
E. fall | 14. ja
A. yes
B. day
C. on
D. sun
E. no | 20. hij
A. fall
B. day
C. easy
D. draw
E. sun |
| 3. lah
A. wolf
B. camel
C. dark
D. last
E. on | 9. mupa
A. map
B. draw
C. cold
D. wolf
E. anger | 15. roo
A. art
B. draw
C. ask
D. run
E. camel | 21. kete
A. kite
B. wolf
C. camel
D. that
E. touch |
| 4. tsep
A. ask
B. anger
C. enter
D. touch
E. draw | 10. yong
A. easy
B. young
C. few
D. touch
E. hawk | 16. ngoz
A. enter
B. lady
C. that
D. dark
E. on | 22. sidqu
A. easy
B. cold
C. news
D. dark
E. book |
| 5. jate
A. frog
B. body
C. hawk
D. sun
E. book | 11. chie
A. cold
B. camel
C. bowl
D. few
E. frog | 17. wener
A. never
B. book
C. anger
D. few
E. touch | 23. hui
A. ask
B. wolf
C. few
D. day
E. fall |
| 6. xozo
A. day
B. easy
C. news
D. touch
E. bowl | 12. hon
A. on
B. cold
C. in
D. fall
E. that | 18. nung
A. ask
B. hawk
C. day
D. that
E. frog | 24. mi
A. touch
B. draw
C. day
D. bowl
E. enter |

STOP. WAIT FOR FURTHER INSTRUCTIONS.

Spanish**form LA**

STUDENT'S NAME _____

PERIOD _____ TEACHER _____

SCHOOL OR COLLEGE _____ CITY _____

1. _____ 2. _____

3. _____ 4. _____

	Raw Score	Converted Score	Percentile Standing	Norms Group Used
LISTENING	<input type="text"/>	<input type="text"/>	<input type="text"/>	_____
SPEAKING	<input type="text"/>	<input type="text"/>	<input type="text"/>	_____
READING	<input type="text"/>	<input type="text"/>	<input type="text"/>	_____
WRITING	<input type="text"/>	<input type="text"/>	<input type="text"/>	_____

**MLA—Cooperative Foreign Language Tests****DO NOT TURN THIS PAGE UNTIL YOU ARE TOLD TO**

These tests were prepared under the Provisions of the National Defense Education Act of 1958, Title VI, Language Development Program, as a Cooperative Project of the Modern Language Association of America, the Educational Testing Service, and the United States Office of Education, Department of Health, Education, and Welfare.

Scoring Form for SPEAKING TEST

		R	W
Mimicry:	1	.....	.....
	2	.....	.....
	3	.....	.....
	4	.....	.....
	5	.....	.....
	6	.....	.....
	7	.....	.....
	8	.....	.....
	9	.....	.....
	10	.....	.....
	11	.....	.....
	12	.....	.....
	13	.....	.....
	14	.....	.....
	15	.....	.....
Oral Reading:			
<i>Critical</i>	16	.....	.....
<i>Features</i>	17	.....	.....
	18	.....	.....
	19	.....	.....
	20	.....	.....
	21	.....	.....
	22	.....	.....
	23	.....	.....
	24	.....	.....
	25	.....	.....
Total R's (Items 1-25)	.....	

Oral Reading:
 Reading
 Fluency

5	4	3	2	1	0
---	---	---	---	---	---

Circle one digit and copy it beside item number. 26

Raw Score (Items 1-26) _____

Total this column and transfer the score to space provided at the top of next column.

Raw Score: (Items 1-26)

Questions: Circle one digit for each question and copy it beside item number.

Picture 1	3 2 1 0	27
Picture 2	3 2 1 0	28
Picture 3	3 2 1 0	29
Picture 4	3 2 1 0	30

Descriptions: Circle one digit for each item and copy it beside item number.

Single picture

Vocabulary	5 4 3 2 1 0	31
Pronunciation	5 4 3 2 1 0	32
Structure	5 4 3 2 1 0	33
Fluency	5 4 3 2 1 0	34
<i>4-Picture Sequence</i>		
Vocabulary	5 4 3 2 1 0	35
Pronunciation	5 4 3 2 1 0	36
Structure	5 4 3 2 1 0	37
Fluency	5 4 3 2 1 0	38

Total Speaking Raw Score:

Add all numbers marked with an asterisk. Enter this total in box. Maximum raw score for the Speaking test is 82.

--

Transfer this score to Speaking Raw Score box on cover.

To the Student: DO NOT WRITE ON THIS PAGE.

LISTENING | Approximate Time—25 minutes

General Directions

This is a test of your ability to understand spoken Spanish. There are six parts in the test. At the beginning of each part, directions will be given in English. Listen to them carefully, and study the sample questions when you are asked to do so. The rest of the test is in Spanish.

The choices from which you are to select your answers are printed in your test book, but the questions will be spoken to you. Throughout the test you will hear each question only once.

In all parts of the test you will know that the next question or selection is about to be given when you hear the word *Número* and then the number. After each question you will hear a tone. This is the signal that you are to find the answer in your test book and mark your choice. Follow the numbering carefully.

Your score will be based on the number of questions you answer correctly. It will be to your advantage to answer every question even though you may not be sure that your answer is correct.



**Do NOT turn this page
until you are told to.**

LISTENING | Approximate Time—25 minutes

0

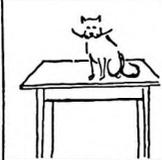
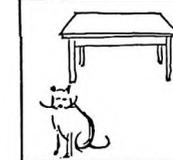
SAMPLE →

	A 	B 	C 	D 	
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1

A $\begin{array}{r} 20 \\ + 40 \\ \hline 60 \end{array}$	B $\begin{array}{r} 30 \\ + 40 \\ \hline 70 \end{array}$	C $\begin{array}{r} 13 \\ + 14 \\ \hline 27 \end{array}$	D $\begin{array}{r} 3 \\ + 4 \\ \hline 7 \end{array}$	1
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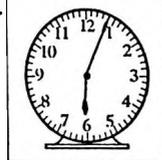
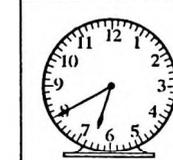
2

F 	G 	H 	J 	2
---	---	---	--	---

3

A 	B 	C 	D 	3
--	--	--	---	---

4

F 	G 	H 	J 	4
---	---	---	--	---

5

A 	B 	C 	D 	5
---	---	---	--	---

- Sample:
- 01 A Ahora no.
B Es sábado.
C En cinco minutos.
D Seguramente mañana.
-
- 6 F No, en el centro.
G Amigos, nada más.
H Tenemos muchos.
J Sí, un poco. 6.....
- 7 A A las cinco.
B Vuelven mañana.
C Sólo tengo una.
D Tres y cinco son ocho. 7.....
- 8 F A estudiar.
G No está bien.
H Amigo de Susana.
J En la biblioteca. 8.....
- 9 A Es azul claro.
B Me dio una camisa.
C Hace mucho calor.
D Mi tía me lo dio. 9.....
- 10 F Sí, tengo siete.
G No, soy hijo único.
H Sí, me gusta el mes de abril.
J No, todavía tenemos tiempo. 10.....
- 11 A Se llama Miguel.
B Me llamo Miguel.
C Muy bien, gracias.
D Te llamas María. 11.....
- 12 F Fui anoche.
G Fui con Isabel.
H Fui a su casa.
J Fui a las ocho. 12.....
- 13 A No, no vino.
B No, es temprano.
C Perdió la raqueta.
D Prefiero una limonada. 13.....
- 14 F Pesa menos que eso.
G Sólo tengo cincuenta.
H Son las doce y media.
J Gracias, no los necesito hoy. 14.....
- 15 A No, nunca estudia.
B Sí, ya está muy bien.
C No, tiene tres hermanos.
D Sí, tiene dieciocho años. 15.....
- 16 F Sale mañana.
G No, no pude verlo.
H Viste muy bien.
J Habrá una luna nueva. 16.....
- 17 A Me es igual.
B Sí, me gustaría.
C Sí, con mucho gusto.
D No hay de qué. 17.....
- 18 F Carlos lo tiene.
G Parece que sí.
H Compró un coche.
J Es magnífico. 18.....
-

Sample:

- 0 A En una tienda.
B En una iglesia.
C En un banco.
D En un restaurante.
-

- 19 A El hijo.
B El padre.
C El cartero.
D La persona a quien se escribe. 19.....

- 20 F Comprar unos cuadros.
G Saber dónde está el correo.
H Ir al correo con la señorita.
J Llevar las cartas al correo. 20.....

- 21 A Que es triste.
B Que es aburrida.
C Que es demasiado larga.
D Que es demasiado corta. 21.....

- 22 F Un baile.
G Un libro.
H Un disco.
J Un rico. 22.....

- 23 A En el de ropa.
B En el de libros.
C En el de dulces.
D En el de juguetes. 23.....

- 24 F Para su tía.
G Para su hija.
H Para su madre.
J Para sí misma. 24.....

- 25 A Tres días.
B Un remedio.
C El hospital.
D Cinco dólares. 25.....

- 26 F Cree que sí.
G Está enferma.
H Hace mal tiempo.
J Hace unos ocho días. 26.....

- 27 A De que está nevando.
B De que esperan una tempestad.
C De que tienen frío.
D De que hace calor. 27.....

- 28 F En su coche.
G En un tren.
H En la cárcel.
J En el tranvía. 28.....

- 29 A Le ha molestado el calor.
B Ha perdido un libro.
C Ha leído un libro interesante.
D Se ha puesto roja. 29.....
-

- 30 F Limpiando las avenidas.
 G Construyendo un edificio.
 H Guiando un grupo de turistas.
 J Vendiendo revistas de casa en casa. 30.....

- 31 A El toreo.
 B El baile.
 C El boxeo.
 D El fútbol. 31.....

- 32 F En el mercado.
 G En el aeropuerto.
 H En el campo de fútbol.
 J En la estación de ferrocarril. 32.....

- 33 A De directora.
 B De niños.
 C De profesora.
 D De criada. 33.....

- 34 F Para guardar legumbres.
 G Para viajar.
 H Para volar.
 J Para hacer muebles. 34.....

- 35 A En el teatro.
 B En el Círculo de Español.
 C En estudiantes pobres.
 D En construcción del colegio. 35.....

- 36 F No lo ha explicado.
 G No tiene trabajo.
 H Para ayudar a los estudiantes pobres.
 J Para construir un colegio nuevo. 36.....

- 37 A No hay fiesta.
 B Quiere algo nuevo.
 C Está muy cansada.
 D No le gusta el chico. 37.....

- 38 F El tiempo.
 G Unos precios.
 H La llegada de un doctor.
 J La velocidad en la carretera. 38.....

- 39 A Bastante calor.
 B Mal tiempo.
 C Cielo nublado.
 D Lloverá. 39.....

-
- 40 F Encantado.
 G Sí, gracias.
 H Vamos al cine.
 J Espera, voy a llamarla. 40.....

- 41 A De nada.
 B Yo no me río.
 C No tengo traje de baño.
 D Ana me lo dio. 41.....

- 42 F Hay dos equipos.
 G Sí, pero no puedo.
 H Se usa una pelota.
 J Ganamos nosotros. 42.....

-
- 43 A Acaba de comprar un coche.
 B Acaba de tener un choque.
 C Acaba de perder el permiso de manejar.
 D Acaba de ver un coche que le interesa. 43.....

- 44 F El precio del coche.
 G El peligro.
 H La condición de las llantas.
 J El color del coche. 44.....

- 45 A Cómo pagará el hijo el coche.
 B Cuántos kilómetros tiene el coche.
 C Dónde vio el hijo el coche.
 D Si el coche tiene llantas nuevas. 45.....

End of Listening test.

SPEAKING

General Directions

This test will take about 10 minutes. The first portion of the test does not appear in this book. Instructions for this portion and all directions for taking the test will be given to you from the test tape.

To get ready for the test, do these things:

- Seat yourself so that the microphone is the right distance from your mouth.
- Check to be sure that your tape recorder is turned on to the "Record" position.
- Put on your headphones, adjust them, and wait for the signal to begin.



**Do NOT turn this page
until you are told to.**

SPEAKING | Approximate Time—10 minutes

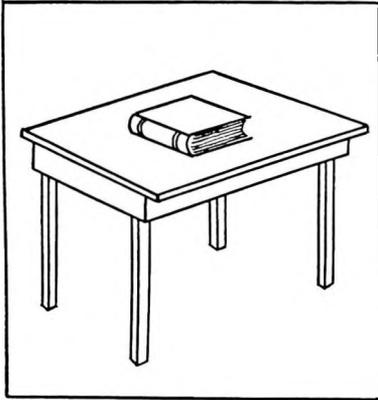
En una clase elemental, la profesora explica a los alumnos la importancia de la leche. Mientras habla, nota que Ricardo y Carlos no están escuchando. Por eso, le pregunta a Carlos si puede nombrar seis cosas que contienen leche.

—¿Seis cosas? pregunta el joven.

—Sí, seis cosas.

Piensa mucho, y por fin contesta:

—El helado, el chocolate, . . . y cuatro vacas.



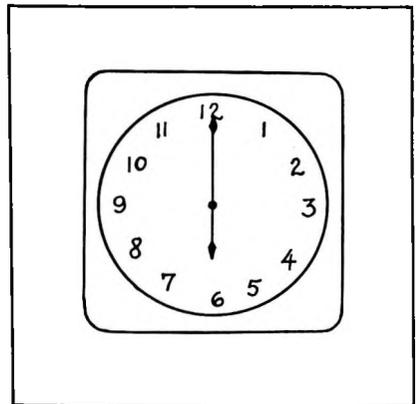
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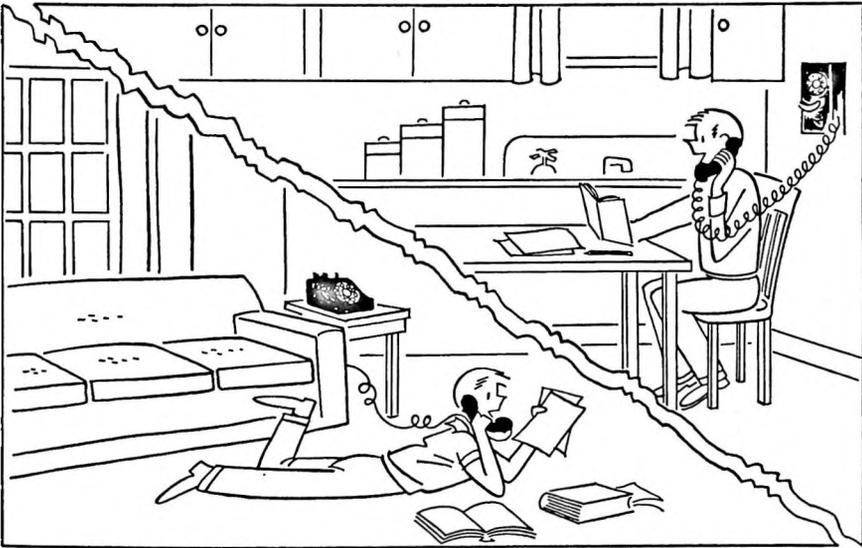
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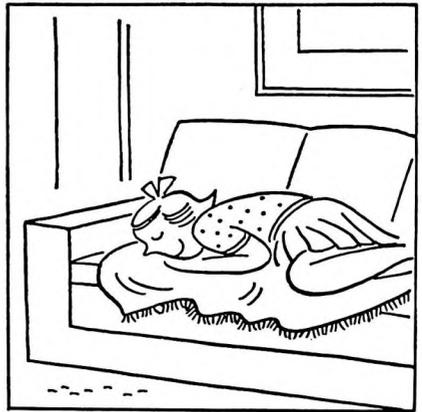
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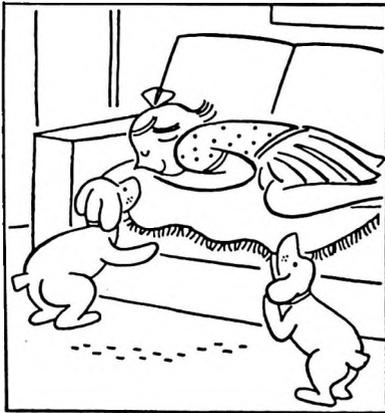
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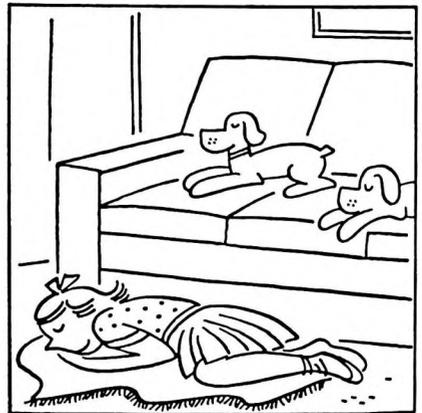
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2



3



4

READING

General Directions

This is a 35-minute test. When you are told to begin, turn the page, read the directions at the top of the page, and start immediately to work on the test. As you work through the test, be sure you read all directions carefully.

It is not expected that everyone will finish all the questions in the time allowed. Do not spend too much time on any one question. If a question seems to be too difficult, make the most careful guess you can, rather than waste time over it. Your score is the number of correct answers you mark.

Give only one answer to each question. Questions for which two or more answers have been marked will not be counted. If you make a mistake or wish to change an answer, be sure to erase your first answer completely.



**Do NOT turn this page
until you are told to.**

READING | 35 minutes

Directions: Each of the following sentences contains a blank space () indicating that a word or phrase has been omitted. From the four choices select the one which, when inserted in the (), best fits in with the meaning of the sentence as a whole.

- | | | | |
|--|---------------|---|----------------|
| <p>1 La salsa era tan picante que le pidió al mozo ().
A otra cuchara
B una mesa redonda
C un vaso de agua
D más sal</p> | <p>1.....</p> | <p>6 No puedo comprarlo porque me () dinero.
F falta
G dan
H presta
J regalan</p> | <p>6.....</p> |
| <p>2 No puedo hallar el reloj y no tengo tiempo para ().
F perderlo
G destruirlo
H echarlo
J buscarlo</p> | <p>2.....</p> | <p>7 Tuvo que guardar cama por estar ().
A enfermo
B vestido
C ocupado
D parado</p> | <p>7.....</p> |
| <p>3 Al oír del accidente de su buen amigo, Paco se puso ().
A alegre
B fatigado
C hambriento
D desconsolado</p> | <p>3.....</p> | <p>8 Aquí está tu café, Juanito. No te quemes, que está muy ().
F dulce
G amargo
H agrio
J caliente</p> | <p>8.....</p> |
| <p>4 Para celebrar el Día de la Independencia hizo subir la ().
F bandera
G temperatura
H cortina
J ventana</p> | <p>4.....</p> | <p>9 Aunque me atraen todos los deportes prefiero ().
A la lotería
B la escopeta
C el boxeo
D el piropo</p> | <p>9.....</p> |
| <p>5 Juan está muy cansado y quiere ().
A jugar
B dormir
C leer
D trabajar</p> | <p>5.....</p> | <p>10 ¡Tienes tanto trabajo! Queremos ().
F empujarte
G castigarte
H llevarte
J ayudarte</p> | <p>10.....</p> |

- 11 Al romper los anteojos, Juan se asustó porque no podía () sin ellos.
A discurrir
B oír
C ver
D entender 11.....
- 12 ¡Pobrecita! Está resfriada y no puede ().
F salir de casa
G recibir cartas
H respirar con pena
J leer las noticias 12.....
- 3 Era una noche oscura sin ().
A estrellas
B camas
C lágrimas
D nubes 13.....
- 4 Cuando Don Carlos salió de su casa, saludó a un amigo suyo: —Buenos días, ().
F ¿Qué va?
G ¿Cómo es?
H ¿Quién es?
J ¿Qué tal? 14.....
- 5 Es extraño que Paco quiera hacerse médico porque no le gusta ().
A ver sangre
B gastar dinero
C viajar mucho
D divertirse bien 15.....
- 6 Mañana vamos a la piscina porque Juan ha prometido enseñarme a ().
F nadar
G fumar
H silbar
J cocinar 16.....
- 17 ¡Qué ruido había con los gritos de los niños y el () de los perros!
A olor
B sueño
C hambre
D ladrar 17.....
- 18 Para saber la hora, don Juan miró el ().
F calendario
G bolsillo
H estante
J despertador 18.....
- 19 Yo, que comprendo poco de mecánica, sé que el auto no puede funcionar sin ().
A permiso
B comer
C aceite
D bocina 19.....
- 20 Nos dijo mamá que era hora de comer y por eso ().
F fuimos a nadar
G tomamos asiento
H comenzamos a fumar
J nos acostamos pronto 20.....
- 21 ¡Cuidado con ese cuchillo o vas a () el dedo!
A cortarte
B torcerte
C comerte
D quemarte 21.....
- 22 Tuvo tanto miedo de caerse que se negó a () con nosotros.
F almorzar
G charlar
H cantar
J patinar 22.....

- 23 Ya son las nueve y media y no llegaremos a tiempo si no ().
A nos quedamos aquí
B saltamos rápidamente
C nos damos prisa
D seguimos lentamente

23.....

- 24 Quería lavarse las manos pero no pudo hallar ().
F la ropa
G el jabón
H la sopa
J el espejo

24.....

- 25 ¡Anda! Ese () es mío y no debes ponérselo.
A traje
B cuaderno
C gato
D vaso

25.....

Directions: Each of the selections in this part is followed by several questions or incomplete statements. First read the selection carefully. Then on the basis of the selection decide which choice best answers each question or completes each statement.

En nuestra casa tenemos un gato negrísimo llamado Chocho. A mi parecer es el gatito más bonito del mundo y también el más perezoso. Suele pasar todo el día durmiendo en casa. De vez en cuando se despierta para tomar un poco de leche o comer un poco de carne y luego vuelve a su cama. Sin embargo, por la noche es otra cosa. A eso de las nueve sale a la calle en busca de compañeros y aventuras. Anda de una parte del pueblo a otra, divirtiéndose y cantando alegremente. Se quejan los vecinos del ruido que hace pero a él no le importa. Para él el individualismo es ley. Yo creo que tiene derecho de portarse como quiera. No es culpa suya que los humanos prefieran acostarse por la noche.

- 26 ¿Cómo es Chocho?
F Es tan blanco como las nubes.
G Es negro y muy feo.
H Es negro y muy hermoso.
J Tiene rayas blancas y negras.

26.....

- 28 ¿Qué actitud tiene el niño hacia los gatos?
F A él le gustan los gatos.
G Le desagradan los gatos.
H Quiere maltratarlos.
J Trata de evitarlos.

28.....

- 29 ¿Qué dicen las otras personas sobre Chocho?
A Que es una molestia
B Que es muy mono
C Que es simpático
D Que es listo

29.....

- 30 ¿Qué diría Chocho si pudiera hablar?
F Estoy de acuerdo con Uds.
G Prometo portarme de una manera distinta.
H Me porto como lo quieren Uds.
J Soy lo que soy.

30.....

- 27 ¿Por qué cree el niño que Chocho es perezoso?
A Porque pasa las horas cazando
B Porque duerme por horas enteras
C Porque corre sin parar por la casa
D Porque sube constantemente por las escaleras

27.....

Después de sus clases Juan pasa el resto de la tarde trabajando. Corta la hierba, lava los autos, cuida a los niños; en fin, parece ser un joven ambicioso e inteligente. No obstante, cada semana gasta más dinero de lo que gana. Muy a menudo tiene que pedirle prestado dinero a su hermana menor, Anita. Esto no le molesta mucho a la chica ya que sabe bien el sistema del banco y le cobra a su hermano un interés fijo del seis por ciento. Ella sabe que el dinero produce dinero. Además de ser Anita una muchacha muy guapa, parece ser muy inteligente, y quien sin duda alguna llegará a ser muy rica.

- 331 Juan trabaja mucho porque
- A se le hace interesante.
 - B necesita ejercicio.
 - C le falta dinero.
 - D le gusta mucho.
- 31.....

- 332 Aunque Juan parece ser inteligente, a veces no lo demuestra porque
- F siempre trabaja demasiado.
 - G pasa las tardes trabajando y no estudiando.
 - H no gana más dinero.
 - J no ahorra el dinero que gana.
- 32.....

- 333 En realidad admiramos a Anita porque
- A trabaja más que su hermano.
 - B le sabe sacar provecho al dinero.
 - C no se preocupa por el dinero.
 - D no ayuda a sus vecinos.
- 33.....

¡Era Nochebuena! En casa de los González, Pablo y Marta se reunían con su familia para hacer el Nacimiento. Pablo quería colocarlo en la ventana para que todos los vecinos al pasar tuvieran la oportunidad de mirarlo. Por su parte, Marta deseaba arreglar el establo y las figuras en una mesa cerca de la chimenea en donde se pudieran poner los regalos que les iba a traer el Niño. Después de la discusión, es la mamá quien resuelve el problema. Ella les propone que arreglen el Nacimiento y la mesa en un lugar entre la ventana y la chimenea. Al ver esta solución tan sencilla toda la familia se ríe.

- 34 Es evidente que Pablo y su hermana
- F tienen que ir a la calle.
 - G tienen que reunirse con sus vecinos.
 - H van a recibir regalos muy pronto.
 - J van a desobedecer a su madre.
- 34.....

- 35 La mamá de esta familia es buena porque
- A se enfada al escuchar a sus hijos.
 - B recibe regalos de sus hijos.
 - C ignora lo que pasa.
 - D comprende los problemas de sus niños.
- 35.....

- 36 El episodio descrito en este párrafo tiene lugar en
- F la primavera.
 - G el verano.
 - H el otoño.
 - J el invierno.
- 36.....

- 37 ¿En qué se distingue Pablo de Marta?
- A En que quiere impresionar a los vecinos
 - B En que le gusta el Nacimiento
 - C En que no le interesan los regalos
 - D En que no quiere seguir los consejos de su madre
- 37.....

¡Nunca comprenderé yo a estos norteamericanos! ¡Por ejemplo, su informalidad para con los suyos así como con los extranjeros es algo espantoso! ¡Y hasta usan un lenguaje muy raro! Tengo un compañero de clase que es un joven bien alto. Sin embargo, todos le llaman "el cortito." En cambio, a otro amigo mío que es muy delgado le han apodado "el gordito." Hace dos días mi amigo Jorge se despidió de mí diciendo: "Hasta luego, Raúl, no tomes ningunas monedas de madera." ¡Ay de mí! He buscado por todas partes de la ciudad sin encontrar tal cosa. En verdad, queridos amigos, ¿tienen ustedes los norteamericanos monedas hechas de madera?

- 38 Evidentemente, este extranjero se siente
- F muy contento en los EE. UU.
 - G muy asustado aquí.
 - H más o menos triste.
 - J bastante confundido.

38

- 39 En realidad, lo que le pasa es que no
- A tiene muchos amigos.
 - B puede comprender el inglés.
 - C aprecia el sentido de buen humor de los norteamericanos.
 - D busca monedas de madera.

39.....

- 40 El título de este pasaje podría ser
- F "El inglés es cosa necesaria"
 - G "Dificultades con el sistema monetario"
 - H "¿Por qué no nos gustan los extranjeros?"
 - J "Perplejidades de un estudiante extranjero"

40.....

Los naturales de Nueva Inglaterra son individuos generalmente sagaces que casi nunca malgastan sus palabras ni tampoco se opiniones. En sus breves comentarios se encuentra un gran sentido de buen humor. Por ejemplo, hace unos años cuando yo pasaba mis vacaciones en Vermont, interrogué a un viejo granjero de aquel estado sobre los aspectos del clima. Se apresuró a contestarme: "La verdad es que hay ocho meses de invierno y cuatro más cuando es algo difícil esQUIAR."

- 41 Aunque aquí tratamos en términos generales de los naturales de Nueva Inglaterra, el hombre descrito en el párrafo es bastante típico porque
- A conoce bien el clima del nordeste.
 - B es un viejo granjero.
 - C su modo de contestar es antipático.
 - D su respuesta es breve y llena de buen humor.

41...

- 42 Según la descripción del pasaje, los veranos en Vermont parecen ser
- F muy cortos.
 - G sumamente desagradables.
 - H más o menos tristes.
 - J normalmente difíciles.

42.....

- 43 Es fácil deducir que la persona que habla
- A tenga poco interés en los ciudadanos de Nueva Inglaterra.
 - B se enoje con la respuesta del granjero.
 - C admire ciertas características de esta gente.
 - D prefiera volverse a su casa.

43.....

La madre y los hermanos de Amalia la llaman "la dormilona." Casi todos los días de la semana la chica se levanta muy tarde y a menudo llega a sus clases media hora después que sus compañeras. En cambio, en los fines de semana cuando sus padres no tienen que levantarse tan temprano, Amalia se levanta muy temprano. Esta costumbre le molesta mucho a su mamá en particular, y por eso ella le dice a Amalia que la familia tendrá que obtener un nuevo tipo de calendario—uno sin el sábado y el domingo.

44. A Amalia la han nombrado "dormilona" porque
- F se levanta temprano todos los sábados y domingos.
 - G se acuesta tarde cada noche de la semana.
 - H se despierta media hora después que sus amigas.
 - J se levanta tarde durante la semana. 44.....

45. Refiriéndose al calendario sin el sábado y el domingo, la madre de Amalia le habla en
- A broma.
 - B balde.
 - C serio.
 - D vano. 45.....

46. Los padres de Amalia tienen que levantarse temprano
- F el sábado y el domingo.
 - G cada día menos el sábado y el domingo.
 - H cuando su hija no se despierta.
 - J todos los días. 46.....

A Luisito le encantaba mucho la televisión. Tenía la costumbre de sentarse en frente del televisor hasta muy entrada la noche. Hasta tomaba la cena mientras miraba sus programas favoritos. En vista de esto, sus padres decidieron no permitirle mirar la televisión hasta que terminara las lecciones.

47. ¿Qué prefiere Luisito?
- A Charlar con sus padres
 - B Alejarse del televisor
 - C Divertirse a solas
 - D Tomar la cena 47.....

48. ¿Qué decidieron sus padres?
- F Castigarle
 - G Ponerle condiciones
 - H Vender la televisión
 - J Ayudarle con sus estudios 48.....

A mí no me gusta visitar a mis abuelos porque aún me tratan de niño. Me hablan de tonterías a pesar de que tengo catorce años. Prefero hablarles de libros o de los gobiernos del mundo pero ellos creen que no comprendo nada de esto.

49. ¿Qué opinión tienen los abuelos de su nieto?
- A Creen que es muy sabio.
 - B Todavía lo consideran muy chico.
 - C Piensan que es un buen estudiante.
 - D Saben que sigue aprendiendo. 49.....

50. ¿De qué prefiere hablar el chico?
- F De la política
 - G De los dulces
 - H De los amigos
 - J De la comida 50.....

STOP!

Look over your work on the Reading test.

WRITING

General Directions

This is a 35-minute test. When you are told to begin, turn the page, read the directions at the top of the page, and start immediately to work on the test. As you work through the test, be sure you read all directions carefully.

Write all of your answers in the blanks provided in the test book. Write clearly and legibly so that there is no doubt as to what answer you mean in each case. If you make a mistake or wish to change an answer, be sure to erase your first answer completely.

It is not expected that everyone will finish all the exercises in the time allowed. Do not spend too much time on any one exercise. If an exercise seems too difficult, do the best you can with it, rather than waste time over it. Your score will be determined by the number of correct words and sentences you write.



**Do NOT turn this page
until you are told to.**

WRITING | 35 minutes

Directions: In each of the following sentences, one word has been omitted and replaced by a line. Complete each sentence by writing on this line a *single* Spanish word which is correct in both meaning and form.

Sample: Voy *a* estudiar.

1. Dicen que señor López no está aquí.
2. Ya son las doce y nosotros mucha hambre.
3. Celebramos la Independencia de los Estados Unidos en el mes de
4. Queremos ir teatro.
5. No puede ir al cine porque tiene estudiar.
6. ¿Tú conociste mi primo?
7. Es la iglesia más grande país.
8. ¿Dónde está Juan? No veo.
9. ¿Cuál te gusta más, este vestido aquél?
10. Juan ¿..... su padre profesor ahora?
11. El es más grande su hermano.
12. ¿Quién es la señora está allí?
13. Mi familia vive en Santa Fe. ¿..... vive la tuya?
14. Aquí hay cuaderno nuevo.
15. A nosotros no gusta el cine.
16. Juan, ¿tú sientas aquí?
17. ¿Pasaste mucho tiempo tratando aprender a esquiar?
18. Si un niño está enfermo, sus padres llaman al
19. Alberto, ¿..... años tienes, catorce o quince?

0. En este momento ellos leyendo el periódico.
1. Su mamá preparó la cena en la
2. Si hoy es jueves, mañana será
3. Es necesario estudiar salir bien en el examen.
4. ¿De quién son esos libros? Son María.

Directions: In each pair of sentences below, the two verbs of the first sentence are underlined. In the second sentence, the first of these verbs has been changed in tense and the second verb has been replaced by a line. Change the second verb so that it is in the *same tense* as the first, and write it on the line.

Sample: Primero como y luego trabajo.

Primero comí y luego trabajé.

5. Salí a las tres y llegué a las cinco.
Salgo a las tres y a las cinco.
6. No como ni tampoco descanso.
No he comido ni tampoco
7. Me marchaba muy temprano porque tenía prisa.
Me marcho muy temprano porque prisa.
8. ¿Me hablas en serio o me tomas el pelo?
¿Me estás hablando en serio o me el pelo?
9. María viene cuando quiere.
María venía cuando
10. Ud. lo lee antes y después lo escribe.
Ud. lo leyó antes y después lo

Go on to the next page.

Directions: Rewrite each of the following sentences so that the word printed on the line below it fits correctly into the new sentence. Make all changes necessary to produce a correct Spanish sentence, but do not add any words and do not leave any out. Do not change the tense of the verbs.

Sample: La muchacha viene conmigo.

Las *muchachas vienen conmigo.*

31. Estos chicos están cansados porque han trabajado mucho.

..... chico

32. Ellos no podían irse porque no habían estudiado.

Yo

33. ¿Ves a aquel muchacho? Es mi primo.

¿..... muchachas?

34. Yo tengo tanto frío que no puedo dormir.

Nosotros

35. ¿Quién fue el que no vino?

¿..... los

36. José, pregúnteles a ellas si están enfermas.

..... él

37. Nosotros no queremos levantarnos aunque hemos dormido mucho.

Tú

38. Si te gusta este libro, lo compraré mañana.

..... libros,

Directions: Use each of the following groups of words to write a complete Spanish sentence of not less than seven words and not more than fifteen words. Use all the words in each group in the order listed, but change the form of words as necessary.

Sample: libro / mesa / sala

Tus libros están en una mesa en la sala.

9. Roberto / María / querer / cine / tarde

.....
.....

10. no / gustar / clase / historia

.....
.....

11. quién / comprar / vestido

.....
.....

12. ir / fiesta / pero / estar / lejos

.....
.....

13. Juan / trabajar / sábado / tienda

.....
.....

14. tener que / amigos / escuela

.....
.....

15. primero / estudiar / después / fútbol

.....
.....

Go on to the next page.

Directions: On the lines provided below, write a six-line dialogue in the "usted" form between **la señora López** and **el doctor**. Use all the expressions listed below in the order given. Each line should have between two and eight words. You may write a first draft on the scratch paper provided, if you wish. When you have finished, reread your dialogue to be sure it makes good sense.

La señora López: "doctor García"

El doctor: "¿su niño?"

La señora López: "mejor"

El doctor: "¿ha comido?"

La señora López: "un poco de"

El doctor: "¡llámeme!"

La señora López:

.....

El doctor:

.....

La señora López:

.....

El doctor:

.....

La señora López:

.....

El doctor:

.....

To the Student: DO NOT WRITE IN THIS BOX				
	(circle one)			
46. Coverage of elements	5	3	1	0
47. Correct words	5	3	1	0
48. Sentences and phrases correct and meaningful in themselves	5	3	1	0
49. Sentences and phrases contributing to paragraph meaning	5	3	1	0
50. General quality	5	3	1	0
Sum of ratings 46-50	.....		

STOP!

Look over your work on the Writing test

APPENDIX B

RAW DATA USED IN THE INVESTIGATION

TABLE I

GRADE LEVELS, CHRONOLOGICAL AGES, IQ'S DERIVED FROM TOTAL SCORES ON THE CALIFORNIA SHORT-FORM TEST OF MENTAL MATURITY, AND SCORES ON THE MODERN LANGUAGE APTITUDE TEST FOR STUDENTS IN THE POPULATION

STUDENT	GL	CA	IQ	LAT
1M	9	161	122	51
2M	10	187	93	95
3M	10	178	114	75
4M	11	196	109	99
5M	10	188	98	88
6M	10	179	109	69
7M	11	190	95	95
8M	10	185	107	87
9M	10	179	132	112
10M	11	188	119	117
11M	10	182	125	98
12M	10	181	99	78
13M	10	184	111	90
14M	10	184	112	61
15M	10	178	115	68
16M	10	187	116	84
17M	11	193	112	84
18M	10	198	94	60
19M	11	189	115	138
20M	10	180	103	71
21M	11	198	109	110
22M	10	183	105	67
23M	10	176	90	76
24M	10	176	96	84
25M	10	183	115	92

TABLE I--Continued

STUDENT	GL	CA	IQ	LAT
26M	10	180	117	81
27M	10	178	113	72
28M	10	185	114	103
29M	11	189	111	97
30M	11	191	109	88
31M	10	184	82	66
32M	11	190	111	95
33M	10	187	88	51
34M	11	196	104	102
35M	10	184	95	79
36M	9	170	119	79
37M	9	173	114	97
38M	11	198	101	80
39M	10	182	117	89
40M	10	184	124	102
41M	10	186	116	64
42M	10	165	123	72
43M	10	181	119	101
44M	9	167	105	90
45M	9	191	110	99
46M	10	177	123	96
47F	11	188	112	124
48F	11	187	99	93
49F	10	185	104	59
50F	11	190	99	70
51F	9	168	106	99
52F	11	197	93	89
53F	11	189	116	149
54F	11	188	116	118
55F	9	164	121	91

TABLE I--Continued

STUDENT	GL	CA	IQ	LAT
56F	11	191	107	102
57F	10	186	103	110
58F	9	175	122	90
59F	11	189	103	115
60F	9	167	128	110
61F	10	177	103	67
62F	9	167	105	84
63F	9	166	127	87
64F	9	173	114	105
65F	11	192	108	116
66F	9	165	119	79
67F	10	181	106	67
68F	11	192	85	67
69F	10	177	104	126
70F	11	191	93	111
71F	10	187	113	93
72F	10	185	93	80
73F	11	190	114	123
74F	11	196	100	97
75F	9	166	106	98
76F	10	184	115	93
77F	9	169	113	80
78F	9	172	107	81

TABLE II

DISTRIBUTION OF SEX FOR THE FOUR EXPERIMENTAL GROUPS

STUDENT	SL-NIS	SL-IS	LL-NIS	LL-IS
1.	M	M	M	M
2.	M	M	M	M
3.	M	M	M	M
4.	M	M	M	M
5.	M	M	M	M
6.	M	M	M	M
7.	M	M	M	M
8.	M	M	M	M
9.	M	M	F	F
10.	M	M	F	F
11.	F	F	F	F
12.	F	F	F	F
13.	F	F	F	F
14.	F	F	F	F
15.	F	F	F	F
TOTAL MALE	10	10	8	8
TOTAL FEMALE	5	5	7	7

TABLE III
 DISTRIBUTION OF CHRONOLOGICAL AGES FOR THE
 FOUR EXPERIMENTAL GROUPS

STUDENT	SL-NIS	SL-IS	LL-NIS	LL-IS
1.	190	177	182	185
2.	198	188	190	180
3.	178	196	183	184
4.	181	187	188	191
5.	180	178	187	178
6.	176	184	170	185
7.	198	182	196	189
8.	165	179	184	198
9.	181	193	173	168
10.	191	176	186	184
11.	166	189	191	197
12.	164	190	192	185
13.	169	190	196	172
14.	187	188	185	187
15.	167	181	165	188
MEAN	179.4	185.2	184.5	184.7

TABLE IV

DISTRIBUTION OF IQ'S DERIVED FROM TOTAL SCORES ON THE
CALIFORNIA SHORT-FORM TEST OF MENTAL MATURITY
FOR THE FOUR EXPERIMENTAL GROUPS

STUDENT	SL-NIS	SL-IS	LL-NIS	LL-IS
1.	95	123	125	114
2.	101	119	111	117
3.	113	109	115	95
4.	99	93	98	109
5.	103	115	116	114
6.	90	111	119	107
7.	94	117	104	111
8.	123	109	124	109
9.	119	112	114	106
10.	110	96	103	115
11.	106	103	107	93
12.	121	99	108	104
13.	113	114	100	107
14.	113	116	93	99
15.	128	106	119	112
MEAN	108.5	109.5	110.4	107.5

TABLE V
 DISTRIBUTION OF SCORES ON THE MODERN LANGUAGE APTITUDE
 TEST FOR THE FOUR EXPERIMENTAL GROUPS

STUDENT	SL-NIS	SL-IS	LL-NIS	LL-IS
1.	95	96	98	103
2.	80	117	95	81
3.	72	99	92	79
4.	78	95	88	88
5.	71	68	84	75
6.	76	90	79	87
7.	60	89	102	97
8.	72	69	102	110
9.	101	84	105	99
10.	99	84	110	93
11.	98	115	102	89
12.	91	70	116	59
13.	80	123	97	81
14.	93	118	80	93
15.	110	67	79	124
MEAN	85.1	92.3	95.3	90.5

TABLE VI
 DISTRIBUTION OF SCORES ON THE LISTENING SUB-TEST
 OF THE MLA COOPERATIVE FOREIGN LANGUAGE TEST
 FOR THE FOUR EXPERIMENTAL GROUPS

STUDENT	SL-NIS	SL-IS	LL-NIS	LL-IS
1.	146	140	145	144
2.	139	139	148	144
3.	155	150	144	140
4.	149	144	144	140
5.	139	138	141	141
6.	148	140	144	141
7.	149	150	141	139
8.	144	138	140	143
9.	143	144	145	147
10.	151	147	147	150
11.	143	143	141	149
12.	150	143	149	140
13.	159	141	150	135
14.	148	145	139	147
15.	145	145	140	153
MEAN	147.2	143.1	143.9	143.5

TABLE VII
 DISTRIBUTION OF SCORES ON THE SPEAKING SUB-TEST
 OF THE MLA COOPERATIVE FOREIGN LANGUAGE TEST
 FOR THE FOUR EXPERIMENTAL GROUPS

STUDENT	SL-NIS	SL-IS	LL-NIS	LL-IS
1.	156	167	163	150
2.	151	155	184	150
3.	165	163	174	159
4.	156	159	151	147
5.	155	160	163	157
6.	152	164	157	152
7.	153	169	158	150
8.	153	159	147	157
9.	161	166	165	161
10.	152	175	170	166
11.	163	172	158	167
12.	165	155	173	160
13.	171	178	169	158
14.	161	169	165	164
15.	157	158	153	169
MEAN	158.1	164.6	163.3	157.8

APPENDIX C

STATISTICAL FORMULAS USED IN THE INVESTIGATION

STATISTICAL FORMULAS USED IN THE INVESTIGATION

I. Analysis of Variance

A. Simple Analysis of Variance

(1) Total Sum of Squares:

$$SS_{\text{tot}} = \sum X^2 - \frac{(\sum X)^2}{n}$$

where X = raw scores

N = the total number of subjects, all groups combined

(2) Between-Group Sum of Squares:

$$SS_{\text{bg}} = \frac{(\sum X_1)^2 + (\sum X_2)^2 + (\sum X_3)^2 + (\sum X_4)^2}{n} - \frac{(\sum X)^2}{N}$$

where n = the number of subjects in each group

(3) Within-Group Sum of Squares:

$$SS_{\text{wg}} = SS_{\text{tot}} - SS_{\text{bg}}$$

(4) Degrees of Freedom, Total:

$$df_{\text{tot}} = N - 1$$

(5) Degrees of Freedom, Between Groups

$$df_{bg} = K - 1$$

(6) Degrees of Freedom, Within Groups:

$$df_{wg} = N - K$$

(7) Mean Square, Between Groups:

$$MS_{bg} = \frac{SS_{bg}}{df_{bg}}$$

(8) Mean Square, Within Groups:

$$MS_{wg} = \frac{SS_{wg}}{df_{wg}}$$

(9) F Ratio:

$$F = \frac{MS_{bg}}{MS_{wg}}$$

B. Additional Formulas for 2x2 Factorial Design

- (1) Sum of Squares for Main Effect, Length of Laboratory Session:

$$SS_A = \frac{(\sum X_1 + \sum X_2)^2 + (\sum X_3 + \sum X_4)^2}{2n} - \frac{(\sum X)^2}{N}$$

where n is the same for each group

- (2) Sum of Squares for Main Effect, Opportunity for Independent Study:

$$SS_B = \frac{(\sum X_1 + \sum X_3)^2 + (\sum X_2 + \sum X_4)^2}{2n} - \frac{(\sum X)^2}{N}$$

- (3) Sum of Squares for Interaction Effect

$$SS_{AB} = SS_{bg} - (SS_A + SS_B)$$

- (4) Degrees of Freedom, Main Effect A:

$$df_A = A - 1$$

where A = the number of ways length of laboratory is varied.

(5) Degrees of Freedom, Main Effect B:

$$df_B = B - 1$$

where B = the number of ways opportunity for independent study is varied

(6) Degrees of Freedom, AxB Interaction:

$$df_{AB} = (df_A) (df_B)$$

(7) Mean Square, Main Effect A:

$$MS_A = \frac{SS_A}{df_A}$$

(8) Mean Square, Main Effect B:

$$MS_B = \frac{SS_B}{df_B}$$

(9) Mean Square, Interaction Effect:

$$MS_{AB} = \frac{SS_{AB}}{df_{AB}}$$

(10) F Ratio, Main Effect A:

$$F_A = \frac{MS_A}{MS_{wg}}$$

(11) F Ratio, Main Effect B:

$$F_B = \frac{MS_B}{MS_{wg}}$$

(12) F Ratio, Interaction Effect AxB:

$$F_{AB} = \frac{MS_{AB}}{MS_{wg}}$$

II. Tests for Homogeneity of Variance

A. Bartlett's Test

(1) Variance for Each Group

$$S_k^2 = \frac{SS_k}{n-1}$$

where SS_k = the sum of squares for any given group

n = the number of students in each group

(2) Chi Square (for Bartlett's Test):

$$\chi^2 = (2.3026)(n-1)\left(K \log \frac{\sum S_k^2}{K} - \sum \log S_k^2\right)$$

where K = the number of groups

(3) Corrected Chi Square:

$$\chi_c^2 = \frac{\chi^2}{1 + \frac{K+1}{3K(n-1)}}$$

B. Hartley's Largest F Ratio:

$$F_{\max} = \frac{SS_{\max}}{SS_{\min}}$$

where SS_{\max} = the largest sum of squares for any group

SS_{\min} = the smallest sum of squares for any group

III. Comparison of Treatment Means After Analysis of Variance

(1) Mean for Each Group:

$$M = \frac{\sum X}{n}$$

(2) Standard Error of a Single Mean:

$$S_M = \sqrt{\frac{MS_{wg}}{n}}$$

IV. Chi Square

$$\chi^2 = \sum \frac{(O-E)^2}{E}$$

where O = the observed frequency in any given cell

E = the corresponding expected frequency

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