A study of relationship between English usage, social status, knowledge of grammatical rules, and intelligence of ninety-six seventh grade pupils at John Hope, Walker, and Crogman public schools Atlanta, Georgia

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A STUDY OF RELATIONSHIP BETWEEN ENGLISH USAGE, SOCIAL STATUS, KNOWLEDGE OF GRAMMATICAL RULES, AND INTELLIGENCE OF NINETY-SIX SEVENTH GRADE PUPILS AT JOHN HOPE, WALKER, AND CROGMAN PUBLIC SCHOOLS ATLANTA, GEORGIA

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CHAPTER I

INTRODUCTION

Rationale.— Language is, as psychologists say, an "all or none" affair, "a total activity," wherein the full force of temperament and personality is involved. The mere words are relatively unimportant. All our organs are vocal organs. We are like dogs in the nursery rhyme - you remember? - Old Rover, when he barked, he barked all over.

Language is a means of, an instrument for, thinking. Increasing language power, therefore, is an effective way of increasing thought power; hence the language should be expressed in such a manner that the thought power will be increased, and the listener will comprehend the meaning clearly.

The English language is not only a means of, and an instrument for thinking; it is also a means of teaching and learning - one of the chief instruments of teaching and learning in all subjects, and in most of the school activities. How frequently the teacher, for example, employs language in the operations and occupations of the school may be seen by an examination of Commonwealth Teacher Training Study by Charter and Waples. Among the one thousand and one activities as performed by teachers, more than five hundred... involve the use of language of various types and for

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3 Ibid., p. 753.
various purposes. Whenever a teacher employs language in the classroom, he is setting the example, good or bad. Whenever he causes a student to employ language he is, in a sense, responsible for the quality of the language used. English is not primarily a subject to be learned; it is a means toward learning, thinking, discussing, explaining - in short, toward engaging in all school and classroom activities.

It is commonly thought that an individual should know his mother-tongue. He will learn it by practicing techniques and mechanics of English; however, educators disagree as to how these techniques and mechanics should be taught or become a part of a person's store of knowledge. One group holds that since language is a social activity, carried on generally in a group, and the genuine social activities of language are fundamental to learning it, each individual must subject himself to earnest drill, practice, apprentice work on his own. The other group holds that language is a social activity, carried on generally in a group, and the genuine social activities of language are fundamental to learning language, but it is not necessary for the individual to subject himself to earnest drill, practice, apprentice work on his own.

The effectiveness in English must not be conceived of as a set of mere conventions, or a body of highly specialized knowledge. If this view of it is to be taken, the teachers of other subjects are justified

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2 Walter Barnes, "English As a Cooperative Enterprise," pp. 753-54.
3 Ibid., p. 759.
in their objections to dealing with English in the work of their own classes, and the students may be expected to react in their usual luke-warm way.

Statement of the Problem.—This was a study of the relationship between English usage, social status, knowledge of grammatical rules, and intelligence of seventh grade pupils at Crogman, John Hope, and Walker Street Public Schools, Atlanta, Georgia.

Limitations of the Problem.—This study was made with the following limitations:

1. The pupils were selected on the basis of the same grade level.
2. The pupils were selected from three public elementary schools of widely separated areas.

Definition of Terms.—In the interest of clarity and proper interpretation, the following explanations are given for the terms used in this problem:

1. "Language usage" is the expression of the ideas in the mechanics, grammar, and rhetoric of language usage, the pupil has obtained as a result of his experience, and which is measured by the Ohio Every Pupil Test of English Usage.

2. "Knowledge of grammatical rules" means the proficiency on the mechanics - punctuation, capitalization, sentence structure, and correct

1 Walter Barnes, "English As a Cooperative Enterprise," p. 754.
usage. This proficiency is measured by the scores obtained from the 1 Schrammel-Davis Language Essentials Test.

3. "Social status" (socio-economic status) means the rating for 2 the family in terms of social class and economic level determined by Warner, Meeker, and Eells' Index of Status Characteristics with a modification by Dr. Mozell Hill.

4. "Intelligence Quotient" or I.Q. refers to the "measure of a 3 pupil's brightness" reflected by his Beta I.Q. derived from scores on the Otis Quick-Scoring Mental Ability Test.

Purpose of the Study.-- The purpose of the study was to answer the following questions concerning groups of pupils in the respective schools studied.

1. What is the language usage status of the subjects in the respective schools?

2. What is the social status of the subjects in each of the schools?

3. What is the knowledge of grammatical rules status of the subjects in each school?

4. What is the intelligence status of the subjects in the respective schools?

5. What is the relationship between the status of the subjects in


language usage and social status in each of the schools and for the total group?

6. What is the relationship between the status of the subjects in language usage and knowledge of grammatical rules in each of the respective schools and for the total group?

7. What is the relationship between the status of the subjects in language usage and intelligence in each of the schools and for the total group?

8. What is the difference, if any, in the language usage achievement of the subjects by schools?

9. What is the difference, if any, in achievement of the subjects by schools in knowledge of grammatical rules?

Location of the Study and Bases for Selection of Subjects.— The location of the study and bases for selection of the subjects were as follows:

1. There are thirty Negro elementary public schools in the city of Atlanta, whose population is approximately 500,000, about one-third of which are Negroes.

2. The subjects used in this study were ninety-six seventh grade pupils, who were among the 3,481 other elementary pupils enrolled in three of the thirty—Crogman, John Hope, and Walker during the 1953-54 school term.

3. Contacts were made with seventh grade teachers concerning the use of pupils; after which, all pupils in one group were selected on the basis of the willingness of the instructor to have the pupils participate, and a desire to learn how their pupils compared in language.
**Research Method and Materials Used.**— The method of research used in this study was normative-survey, employing tests, survey testing, and statistical techniques for collecting, analyzing, and interpreting the data.

The Ohio Every Pupil Test of English Usage was used because of its reported validity, reliability, and therefore ability to determine language usage status. The test consists of one hundred objective-type items of usage in six categories namely: sentences, parts of speech, punctuation and capitalization, vocabulary, spelling, and word usage.

The Warner, Meeker, Eells Index of Status Characteristics as modified by Dr. Mozell Hill, chairman of the Sociology Department of Atlanta University, was used to determine social class. The Index as devised by Warner, Meeker, and Eells considers occupation, source of income, house type, and dwelling area with statistically determined weights assigned to each item expressing its relative importance in prediction of social status. In this study, *education* was substituted for *house type*. Hill, having made a study of social status in this area, in which he substituted education for house type, assigning it the same statistically determined weight, found the results the same as the use of house type in the ISC as devised by Warner, Meeker and Eells. His conclusion was that education was a better factor to employ in a study of this nature.

The Davis-Schrammel Language Essentials Test, Form A was used to determine the status of subject in knowledge of grammatical rules for what? This purely objective test, with a unique feature of having the language functions incorporated in a continuous discourse, or story, is
composed of four parts covering the following functions: Part I, Punctuation; Part II, Capitalization; Part III, Sentence Structure; and Part IV, Correct Usage. The total number of items for each is 100.

As a measure of intelligence the Otis Quick-Scoring Mental Ability Test, Beta Test, was used for its reliability, validity, economy, and usability. The reliability coefficient is .96; biserial coefficients between each item and total score on test have a median value of .79. The test is self-administering. Although the test items are not grouped, there are heterogeneous questions such as are found in the analogies, abstract reasoning, verbal reasoning, and arithmetic divisions of some other tests.

Procedure.—The outlined procedure was followed in making the study, which was begun in the eleventh month of the 1953-54 school term.

The Ohio Every Pupil Test was administered to all pupils to determine language usage status. Unreliable papers were discarded.

With information supplied on Social Status Survey Sheets, interviews with children, and visits to homes and dwelling areas, the socio-economic status of pupils was computed by the Warner, Meeker, Eells Index of Status Characteristics with the Hill modification.

The Schrammell-Davis Language Essentials Test was administered to all pupils to determine knowledge of grammatical rules. Unreliable papers were discarded.

The Otis Quick-Scoring Test of Mental Ability was given to all pupils to ascertain capacity for achievement.

The data from the English tests were assembled and tabulated. The standard error of the "r", difference between the "r's", the Pearson's
product-moment correlation coefficient, and "t" tests were the statistical tools used in treating data from which conclusions and implications were drawn. The five per cent level of confidence was chosen as a standard of significance.

The research studies of English usage, research studies of factors related to English usage, presentation of data, findings and conclusions resulting from the procedure outlined here are presented in the following chapters.
Prefatory Statement.— Many studies have been made about language usage. Some have been made about language usage and related factors. The literature, which was considered relevant, was reviewed under two general topics - (1) research studies of English usage, and (2) research studies of factors related to English usage. Under the first general caption three subtopics were reviewed: research studies to lay the foundation for contemporary usage, research studies to show how language usage may be approached, and research studies to show the place of English usage in the school program. Similarly three sub-topics constituted consideration of investigation into relationships: research studies of the relationship between language usage and social status, research studies of the relationship between language usage and knowledge of grammatical rules, and research studies of relationship between language usage and mental ability (intelligence).

Research Studies to Lay the Foundation for Contemporary Language Usage.— Many studies have been made to lay the foundation for contemporary language usage. Korfmacher made a study in which some very enlightening facts about usage were revealed:

Nations, like individuals, have their peculiar fetishes. America is no exception. We adore the fetish of informality.... Informality is a natural product of democracy. Frankly, I oppose overinformality in letters. ... it is a cheapening of that most wonderful of all tools, the English language. ... it is a reprehensible selling out of our cultural birthright... it is a pulling down of national standards of good taste when, as a matter of fact, they should be pulled up.  

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1William C. Korfmacher, "What's Wrong with Coat-sleeve English?" School and Society, LXXII (July-December, 1952), 415.
Then he named and discussed the kind of English that is involved in the task of laying the foundation for contemporary usage:

Part of the task has to do with the use of the English language. It is concerned with what may be called "coat-sleeve English." I have no interest in bringing back a stilted, cumbersome, highly formalistic style of writing. The old "beg to advise," "the third instant," "your obedient servant" have no place in either "shirt-sleeve" or "coat-sleeve English."... all colloquial English is just as acceptable to "coat-sleeve" English as it is to "shirt-sleeve" English. Let us have less "shirt-sleeve" English in American business and political and social life. Let us remember that a product can be good and desirable without being merely best.

Leonard made an intensive study of the language of the eighteenth century, the period in which efforts to "correct" and "purify" English reached their highest degree. The study revealed the following:

...a large majority of rules are founded on well-meaning but mistaken efforts to correct the English language, on false concepts of language, on analogies with Latin or Greek, or on pure prejudice, some of it spiteful. The ideal of grammatical correctness, first announced in Swift's Proposal for Correcting, Improving, and Ascertaining the English Tongue (1812) was pursued through the 18th century with attempts at a rigorous, logical, recasting of the language chiefly on classical analogies.

Pooley made a study to trace the origin and development of the traditional rules and statements concerning usage and to show by means of clear-cut contrasts how they are at variance with the facts of past and present usage. This was shown by two developments having taken place in the language:

1. One was the historical and comparative study of language...

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1 William C. Korfmacher, op. cit., p. 416.
their common origins, incidentally contributed attitudes and techniques for the study of language on objective and scientific procedures.

2. The second development originated in the field of psychology, in which language was studied as a form of behavior, the product of social needs, originating, developing, and changing as the needs changed, and only truly valid as it continued to meet the current needs.\(^1\)

Research Studies to Show How Language Usage May Be Approached.— Many studies have been made to show how language usage may be approached. It is generally agreed that usage may be approached in two ways - either from the point of view of correctness, or from the point of view of clear, accurate, vivid expression. The first approach is largely a negative one, eliminating errors; the second approach goes directly to the heart of the effective use of language - clear thinking - in searching for words, phrases that express ideas clearly and vividly, and in changing commonplace but correct expressions to interesting expressions. This point of view is thoroughly explored and developed by Pooley in his Teaching English Usage and is expressed in the following quotation:

Unfortunately, however, because of the prevalence of certain undesirable forms and the exceeding difficulty in their eradication, the correction of poor usage, which is after all only a negative kind of instruction, tends to overshadow and supplant more positive instruction leading to an appreciation of the ways of the English language. ... language free from serious error is not necessarily good language. It becomes good as the child develops a feeling for the bright, sparkling word or phrase, the exact word for his needs, the sentence which says exactly what he wants to say as economically and clearly as possible.\(^2\)

Hatfield gives evidence that the positive approach is more helpful:

The positive approach through worthwhile activities which are interesting in themselves will do more to break down the customary

\(^1\) Sterling A. Leonard, op. cit., p. 48.

attitude of passive resistance than any amount of specific drill, no matter how badly needed.¹

Smith affirms the importance of social motivation and suggests several measures that may be taken:

Motivation for correctness is provided by many phases of a thoroughly sound language program such as the especially important one of setting up clearly defined, individual goals so that specific needs may be established and progress noted. Another primary requisite for improvement of usage is to provide much oral work. Correct forms of expression must be repeated sufficiently to cause the correct form to sound right.²

Hook believes that all teachers should teach English because it has indefinite boundaries and states the causes:

All teachers should teach English. It has indefinite boundaries which are caused by two facts: (1) English is in part a tool subject; such things as reading for meaning, organizing a paragraph, spelling parallel, punctuating a sentence, or making a verb agree with its subject are tools that the student may use in their other school subjects and in their lives outside of school; and (2) literature must be about something, and "something" may be art, economics, zoology, or any other realm of man's knowledge.³

For a record of practices in the teaching of language, one may turn to recent and current textbooks. It is admitted that the contents of textbooks do not accurately record prevailing practices, but they do reflect what authors and publishers think teachers want in the way of instructional material and consequently reflect current thinking and practices to some extent. It is thought that the reader should look for

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progressive changes in (1) subjects of compositions, (2) formal exercises, (3) artificial requirements, (4) emphasis on practical language activities, and (5) organization into large areas of experience.

Bossing gives evidence of this in a study in which it was revealed that two developments had taken place in curriculum organization for the purpose of showing how language usage may be improved:

Two developments have taken place in curriculum organization - the pedagogical and the psychological. The pedagogical organization gives due emphasis to the natural sequence or logical development type of learning. For example, the writer, Bossing, studied language for four years intensively in logical fashion but never achieved by the process an easy reading knowledge of language. The psychological basis for organization contends that interest is more fundamental than "simple to complex" in learning. They argue, for instance, that to learn a language the psychological way would be to begin reading and speaking the language. The easy reading knowledge of language was achieved.

Beecher, a consulting school psychologist, in making a study of how to devise a school curriculum so language usage may be improved found an important obstacle in the path of improving student's language habits. He concluded with a solution:

It is too much to expect that any school curriculum can be devised which will impart standardized language habits impartially to children, for children are not impartial to language. Each child considers himself as a part of some cultural group. If he approves of the ideals of the members of the group, he will agree in his language and behavior with what is current within the group. If he considers the group to which he belongs to be lacking in social significance and on the "wrong side of the tracks" he will select some other cultural group as his ideal. It is ... always the Cultural Ideal of the individual himself which will be the selector of those

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examples he chooses to incorporate into his own linguistic patterns.\textsuperscript{1}

Allen made an experimental study of the English fundamentals of fifth and sixth grade pupils to find out how language usage may be approached for a greater amount of improvement to result. Evidence of this is seen in:

She sought to determine the relative effectiveness of a technique of remedial teaching of English fundamentals as contrasted to regular classroom instruction.... After a diagnosis was made based upon certain errors in capitalization, punctuation, language usage, sentence sense, grammar, and letter-writing, and applying her technique, she found that a marked improvement was made by fourteen pupils in the use of verbs. The average score was increased 1.4 in the preliminary test to 19.4 in the final test. The average number of difficulties was reduced from 15.5 in the preliminary test to 10.1 in the final test. The error quotients in the final tests were much lower than those in the preliminary test.\textsuperscript{2}

Research Studies to Show the Place of Language Usage in a School Program.— Many studies have been made to show the place of language usage in a school program. It is generally agreed by authorities in the field that it has two places. (1) one as advocated by the traditionalists, and (2) another as approved by the moderns. Tidyman and Butterfield give evidence of this in:

In the traditional program, drill on usage occupied a large part of the children's time and took precedence over other, more important phases of the language program. In the modern program, it was recognized that "language is a living,


\textsuperscript{2} Marian Amelia Allen, "An Experimental Study of the English Fundamentals by the Fifth and Sixth Grades of Bell Street Public School." Unpublished M. A. Thesis, School of Education, Atlanta University, 1936.
growing instrument, flexible and adaptable to the demands of modern life for a direct, vigorous, idiomatic form of expression.\(^1\)

Hook, in speaking about the complexity of modern grammar and Old English grammar, reports the following evidence:

Modern English grammar is simpler than that of Old English. Language is not a master that prescribes "Thou shalt" and "Thou shalt not," it is a servant that says "You can," "and I will help you."\(^2\)

Tovatt gives this account:

There was a discussion of the place of grammar in the classroom. Junior and senior high school students responded to the foreign-sounding terminology, which we label grammatical elements, as his the writer's six year old daughter, Sis, who after hearing her fourth grade brother announce proudly that he had that very afternoon learned what synonyms, antonyms, and homonyms were, and that was not all he knew the definition of a noun - the name of a person, place, or thing; said, "Well, I can talk Indian!" "Me go home!" To young children grammar is another language.\(^3\)

Relationship Between Language Usage and Social Status. Statements made by many authorities confirming the positive relationship existing between language usage and social status are numerous. With reference to language and social status, Davis and Havighurst say:

Social-class differences... mould the child's language. In middle class life, language is a serious business. The middle class child learns very early that making a proper living depends on the right use of language. In many cases he learns that his father talks or writes for a living. In all cases he learns that his language is a mark of his station in life.... For the lower class child, however, language does not count heavily in the task of earning a living. Unless he

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2 J. N. Hook, \textit{op. cit.}, p. 307
happens to be reared with parents who train him to climb the social ladder, the lower class child is almost certain to stay behind the middle class child in the extent of his vocabulary, in the accuracy of his grammar, ...1

He further states that homes of low socio-economic and educational status tend to dwarf the individual's potentialities.

Gates concluded this:

The child's environment... will have a notable effect upon his learning of correct pronunciation, good usage, and correct grammar.2 He further states that homes of low socio-economic status tend to dwarf the individual's and educational potentialities.

Anderson is of the opinion that:

There is a relation between the quality of the language spoken (as measured by vocabulary and sentence structure) and the cultural background of the home.3

Research studies confirm the fact that a positive relationship exists between language usage and social status.

Day and Fisher carried on studies at the preschool level to indicate a relationship between socio-economic status of the home and the language children develop in the home. They found that due to certain aspects of the immediate home environment, the pupils of higher socio-economic status was language that is superior to those of lower status:

Children whose socio-economic status is higher tend to use longer sentences, a larger vocabulary, to ask more questions, and to use more remarks involving adapted

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1 Allison Davis and Robert Havighurst, Father of the Man (Boston, 1947), p. 115.
information. Living in a superior environment appears to give these children additional advantage of parents of a higher level of education, and to hear a larger vocabulary in daily use. Also the child in the home of higher status is provided with books, play materials, and enriching experiences, ... which the development of language.¹

Fries is carrying on a major project which he hopes to determine the relationship existing between language usage and social status. The purpose of the study is to describe accurately and give in quite complete detail the sort of English used by people with different educational backgrounds and social status and to get a distribution of the information by dialect areas. This is shown by:

A major project is being carried on ..., a considerable mass of manuscript written by persons whose precise educational and social status is on record. From analyses of these documents, it will be possible to describe very accurately and in quite complete detail, the sort of English used by barely literate persons, by those with a high school education, by those with university or college training.... Fries plans to get a distribution of this information by dialect areas.²

Hook gives evidence of social status being reflected by the language usage being on a certain level. This is shown by:

This ladder of levels... looks something like this - literary English, technical English, formal English, colloquial English, localisms, ungrammatical English, vulgarisms, and illiteracies.³


It is Hook's opinion that there are only two levels:

Standard - literary, technical, formal, and colloquial language; substandard - language that is not idiomatic, is not in accord with the grammar and usage of cultivated people, or is limited to a particular geographical area; for instance, "I bought the dog off of Harvey" is unidiomatic. He does not put slang on either level; but, says, "Slang is language of a highly colloquial type, considered as below the level of standard educated speech, and consisting either of new words or current words employed in some special sense."

Relationship Between Language Usage and Knowledge of Grammatical Rules.-- Investigators have failed to present proof of the value of grammar. Although most authorities conclude that there should be some kind of grammar somewhere in the language usage program. Information about grammar textbooks given by Cross and Carney is enlightening as a basis for further discussion:

The first textbook written about grammar for use in English schools was a book about the grammar of the Latin language. It was written by William Lily in 1512. It was called Lily's Latin Grammar, or the Grammar of Henry VIII. Ben Jonson, the dramatist, a contemporary of Shakespeare, wrote the first English grammar. This was published in 1640. Although Jonson was well educated in Latin, his grammar is an English book and does not make the vain attempt to base English on Latin. Later grammarians, who were Latin scholars, made the mistake of trying to find in English a parallel for every item of grammar that Latin has, and thus complicated English with difficulties that it does not have.

Tidyman and Butterfield, in speaking about some kind of grammar on the usage program, concluded:

Usage properly refers to habitual forms of expression, the language one actually uses. Grammar on the other hand, properly refers to the understanding of classes of words, their inflections, their relationships to each other, and their functions in

The relation of grammar to usage is the crux of the matter.\textsuperscript{1}

Tovatt proposed to find out whether there was a transfer of a skill - one of identifying the parts of speech in a sentence as a result of having learned grammatical rules as opposed to not having learned rules:

From the study which entailed responses to an identification of each part of speech in this simple sentence: \textit{Practically all boys play baseball at a very early age}, there was found a demonstrated lack of transfer in a skill in which teachers of English apparently have placed great faith - of the 110 persons who were unable to identify the parts of speech in the test sentence, 43 still maintained that they applied this skill when they wrote. Only 13 of the 40 who successfully completed the exercise indicated that this skill had any carry over value for them.\textsuperscript{2}

Smith made a study to find out whether language usage would be improved by one's having a knowledge of grammatical rules or by the thought approach. Her conclusion is stated thusly:

Evidence proves that ... matters of style... may be taught quite as effectively without grammatical knowledge as with it, if emphasis is placed upon clarity of thought and effectiveness of expression alone. For instance, a pupil writes, "I like hunting, to fish, and when I go swimming." That teacher points (in language readily comprehensive) to him that his three kinds of sport are parallel in his thinking and will be better expressed in parallel fashion. Without any hesitation he writes,"I like hunting, fishing, and swimming." No mention of gerunds or infinitives needs to enter into the problem at all.\textsuperscript{3}

Language Usage and Mental Ability.-- It is generally agreed by authorities in the field that a positive relationship exists between language usage and mental ability; however, our attention is called to certain facts.

\textsuperscript{1} Willard F. Tidyman and Marguerite Butterfield, \textit{op. cit.}, p. 303.
\textsuperscript{2} Anthony L. Tovatt, \textit{op. cit.}, p. 482.
\textsuperscript{3} Dora V. Smith, "English Grammar Again," \textit{The English Journal}, 27 (October, 1938), 643-44.
Terman's study of gifted children indicated that they tended to begin talking at an earlier age than normal children. Studies of mentally defective children, on the other hand, have indicated that with such children, the beginning of talking may be delayed for two years or more—though this is not always true. Slow starters may be slow for lack of motivation or other reasons and may achieve satisfactorily once they set to work on the task of learning to talk.

Strickland thinks it difficult to know how accurate a measure intelligence tests are since most of them are highly dependent upon the use of language. A child with a good command of language should score better than a child with a poor command of language, but how completely his intelligence is responsible for that command of language is difficult to ascertain. Environment and school or home experience enter into the problem. An example serves to illustrate this point:

Harry, the son of feeble-minded parents, was brought to school at the age of seven. The child appeared as low in intelligence as his parents, but knowing the meagerness of his preschool life, the school sought to build both vocabulary and background knowledge and experience through stories, books, and excursions out into the environment. At the end of six months of such intensive enrichment of experience, the child tested low average on an individual standardized intelligence test. The ability to learn was present but his school experience had afforded little opportunity for exercise of that ability.

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3 Ruth G. Strickland, op. cit., p. 22.
Jersild calls attention to this fact: "Though a mentally defective is likely in learning to talk, it does not follow that all slow starters are defective."

Watts concludes that judgments as to relative amounts of intelligence may be dangerous unless they have been brought up in similar environments and have had the same kind of school training. This was evidenced by:

In making a study of the vocabulary of several thousand ten-year old children in Birmingham, England, he found that the children from well-to-do districts scored on an average fifty per cent higher than children from poorer districts. As the age rose, the difference between the two groups narrowed and at the age of fourteen, there was little difference between the children in vocabulary scores.

Recent research along laboratory lines confirms the fact that there is a connection between linguistic ability and what is called general intelligence. In an experiment conducted by Warden sixty persons were set blindfolded to learn to tread a maze with a stylus. The number of trials needed to achieve a faultless performance was recorded in each case. The subjects were then closely questioned as to the methods they had adopted. It was found that seventeen had relied mainly on the 'feel' of the route as it was gradually worked out by them; this predominately kinaesthetic approach produced the faultless performance after 123.9 trials. Eighteen others relied almost entirely upon a visualized reconstruction of what they would have seen as they went along; these needed an average of 67.9 trials to achieve mastery. The connection between

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general intelligence and linguistic ability is seen in:

The remaining twenty-five verbalized the details of the route: e.g., "right forward, three times; left forward, twice," ... The trials needed by this group averaged 30.2.¹

Labrant made a study of language usage and mental age. She studied the development of the sentence in the writings of over a thousand pupils from eight years upward in American schools. After analyzing the writings, she classified the various dependent clauses used at different ages. She discovered that:

(1) Dependent clauses increased in frequency with greater maturity in the writers at the same time as they also increased in complexity and clarity of thought.
(2) The relationship between sentence-complexity and chronological age was closer than between sentence-complexity and mental age (which seems to suggest that experience plays an important part in the mastery of language).
(3) The dependent clauses least used were noun clauses and the adverbial clauses of condition, concession, place, purpose, result, and comparison, all these constituting at each mental level less than six per cent of the total clauses used.²

Summary of Related Literature.— The literature reviewed in this study showed:

1. A large majority of the rules in English usage are based upon well-meaning but mistaken efforts to correct the English language.
2. English usage has developed along two lines - historical and the psychological.
3. The enrichment of a person's experiences aids the use of language.
4. The language usage achievement is greater as a result of the

psychological curriculum organization.

5. Errors were decreased in a modern language program, where the language changed as the needs changed.

6. Marked improvement in language usage may result more from remedial teaching in English fundamentals than from regular classroom instruction.

7. The language usage of people of different educational backgrounds is a product of their environment.

8. The language usage of an individual seems to be influenced by socio-economic status.

9. The use of language is not dependent upon the transfer of a skill.

10. The use of the dependent clause increases with greater maturity of the individual.

11. The quality of mental ability seems to be related to the age at which talking begins.
CHAPTER III

PRESENTATION OF DATA

The findings presented in this section are based upon four kinds: (1) information concerned directly with English usage as measured by tests, (2) responses used in determining social status as measured by the ISC, (3) the data concerned with knowledge of grammatical rules as measured by tests, and (4) data used for determining intelligence as measured by tests.

The statistical techniques utilized in the analysis and interpretation of the data were:

1. The Pearson product-moment coefficient of correlation—one of a number of equally arbitrary mathematical procedures which, when applied to sets of related measures, will yield a single number somewhat indicative of the degree of relationship. The formula used was:

   \[ r = \frac{\sum_{i=1}^{n} x_i y_i - \left( \sum_{i=1}^{n} x_i \right) \left( \sum_{i=1}^{n} y_i \right)}{\sqrt{\sum_{i=1}^{n} x_i^2 - \left( \sum_{i=1}^{n} x_i \right)^2} \sqrt{\sum_{i=1}^{n} y_i^2 - \left( \sum_{i=1}^{n} y_i \right)^2}} \]

2. The standard error of the "r"—one of a number of mathematical procedures which, when applied to the "r" will yield a number indicative of the deviation of the distribution of the "r" of a very large number of random samples of the same size as the given sample—a measure of reliability of the "r" for a single sample. The formula used was:

   \[ \sigma_r = \frac{1 - r^2}{\sqrt{N}} \]

3. The difference between the "r's." The formula used was:

   \[ \sigma_{(X-Y)} = \sqrt{\sigma_X^2 + \sigma_Y^2} \]

   \[ 2\sigma \]
4. The degrees of freedom for any given "t" is determined by using the following formula:

\[ n (df) = N_1 / N_2 - 2 \]

5. The standard error of the median. The formula used was:

\[ \text{est'd mdn} = \frac{5}{4} \frac{6_{\text{sample}}}{\sqrt{N - 1}} \]

6. The standard error of the difference between the median. The formula used was:

\[ \frac{6_{\bar{X}_1} - 6_{\bar{X}_2}}{\sqrt{\frac{2}{6_{\text{mdn}}} + \frac{2}{6_{\text{mdn}}}}} \]

7. The "t" test of the median difference. The formula used was:

\[ t = \frac{\text{mdn}_1 - \text{mdn}_2}{\sqrt{\frac{2}{6_{\text{mdn}}} + \frac{2}{6_{\text{mdn}}}}} \]

8. The five per cent level of confidence was used in the study.

9. The mean used in the study was determined by adding the raw scores and dividing by the number.

10. The standard deviation was used to determine the standard error of the median and the standard error of the difference between medians. The formula used was:

\[ SD = \sqrt{\frac{\sum X^2}{N}} \]

Language Usage Status.— Data on language usage status for the subjects by schools are presented in Table 1 and 1-A.*

The language usage status has been presented by schools. The raw scores made by the subjects from School A ranged from a low of 16 to a high of 71; or a percentile range of 1 to 70. The median raw scores made by the subjects of School A was 37, which was equivalent to the tenth percentile.

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*Tables included in the body of the thesis are numbered 1, 2, 3, etc; tables numbered 1-A, 2-A, 3-A, etc. will be found in the Appendix.
The raw scores made by the subjects from School B ranged from a low of 17 to a high of 66; or a percentile range of 1 to 60. The median raw score made by the subjects of the School B was 39.5, which was equivalent to the tenth percentile. The raw scores made by the subjects from School C ranged from a low of 3 to a high of 73; or a percentile range of below the first, to the seventy-fifth. The median raw score made by the subjects of School C was 28.8, which was equivalent to the fifth percentile.

These data revealed that the pupils in each group varied widely in language usage. These data further showed that the median performance in language usage was very low.

Social Status.— Data on social status for the subjects by schools are presented by schools in Tables 2, 3, 4, 5, 6, and 7.

The social status has been presented by the four status characteristics which comprise the Index by schools. The total scores have been converted into social status.

The scores of occupational weighted-ratings of School A were 20 and 28, showing that one person was a manual worker of the apprentice-carpenter
TABLE 2
FREQUENCY DISTRIBUTION OF THE SCORES IN OCCUPATION OF NINETY-SIX STUDENTS IN THE REVISED WARNER, MEKER, ELLIS ISC

<table>
<thead>
<tr>
<th>Weighted-Ratings</th>
<th>School and Number of Scores</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>A</td>
</tr>
<tr>
<td>16</td>
<td>0</td>
</tr>
<tr>
<td>20</td>
<td>1</td>
</tr>
<tr>
<td>24</td>
<td>0</td>
</tr>
<tr>
<td>28</td>
<td>30</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>31</td>
</tr>
</tbody>
</table>

TABLE 3
FREQUENCY DISTRIBUTION OF THE SCORES IN SOURCE INCOME OF NINETY-SIX STUDENTS ON THE REVISED WARNER, MEKER, ELLIS ISC

<table>
<thead>
<tr>
<th>Weighted-Rating</th>
<th>School and Number of Scores</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>A</td>
</tr>
<tr>
<td>12</td>
<td>1</td>
</tr>
<tr>
<td>15</td>
<td>30</td>
</tr>
<tr>
<td>18</td>
<td>1</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>31</td>
</tr>
<tr>
<td>Weighted-Rating</td>
<td>School and Number of Scores</td>
</tr>
<tr>
<td>-----------------</td>
<td>-----------------------------</td>
</tr>
<tr>
<td></td>
<td>A</td>
</tr>
<tr>
<td>6</td>
<td>1</td>
</tr>
<tr>
<td>10</td>
<td>12</td>
</tr>
<tr>
<td>12</td>
<td>18</td>
</tr>
<tr>
<td>Total</td>
<td>31</td>
</tr>
</tbody>
</table>

## Table 5

FREQUENCY DISTRIBUTION OF THE SCORES IN EDUCATION OF NINETY-SIX STUDENTS ON THE REVISED WARNER, MECKER, ELLIS ISC

<table>
<thead>
<tr>
<th>Weighted-Rating</th>
<th>School and Number of Scores</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>A</td>
</tr>
<tr>
<td>6</td>
<td>0</td>
</tr>
<tr>
<td>9</td>
<td>8</td>
</tr>
<tr>
<td>12</td>
<td>7</td>
</tr>
<tr>
<td>15</td>
<td>3</td>
</tr>
<tr>
<td>18</td>
<td>11</td>
</tr>
<tr>
<td>21</td>
<td>2</td>
</tr>
<tr>
<td>Total</td>
<td>31</td>
</tr>
</tbody>
</table>
# TABLE 6

**FREQUENCY DISTRIBUTION OF THE TOTAL SCORES IN SOCIAL STATUS OF NINETY-SIX STUDENTS ON THE REVISED WARNER, MEEKER, EELLS ISC**

<table>
<thead>
<tr>
<th>Total Scores</th>
<th>School and Number of Scores</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>A</td>
</tr>
<tr>
<td>51-62</td>
<td>5</td>
</tr>
<tr>
<td>63-66</td>
<td>6</td>
</tr>
<tr>
<td>67-69</td>
<td>9</td>
</tr>
<tr>
<td>70-81</td>
<td>11</td>
</tr>
<tr>
<td>Total</td>
<td>31</td>
</tr>
</tbody>
</table>

# TABLE 7

**FREQUENCY DISTRIBUTION AND PER CENT OF THE SCORES IN SOCIAL CLASS OF NINETY-SIX STUDENTS ON THE REVISED WARNER, MEEKER, EELLS ISC**

<table>
<thead>
<tr>
<th>Social Class</th>
<th>A</th>
<th>B</th>
<th>C</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Number</td>
<td>Percent</td>
<td>Number</td>
</tr>
<tr>
<td>Upper-Lower</td>
<td>11</td>
<td>35</td>
<td>17</td>
</tr>
<tr>
<td>Lower-Lower</td>
<td>20</td>
<td>65</td>
<td>15</td>
</tr>
<tr>
<td>Total</td>
<td>31</td>
<td>100</td>
<td>32</td>
</tr>
</tbody>
</table>
type, while thirty engaged in migrant work of the heavy-labor nature. The ratings of School B were 16, 24, and 28, revealing the fact that one person engaged in work of the stenographic type, one was a semi-skilled worker as an assistant to a carpenter, while thirty were migrant odd-job-men. The School C weighted-rating scores were 24 and 28. This showed that one person was a semi-skilled worker, and thirty-two were migrant, odd-job, heavy laborers.

These data revealed that persons engaged in work of the migrant odd-job heavy laborer type, fewer engaged in semi-skilled work, and fewest in skilled work.

The scores of source of income weighted-ratings of School A were 12 and 15, that one person received a salary, and thirty were paid wages; those of School B were 12, 15, and 18, showing that two were salaried people, twenty-nine wage earners, and one was on private relief; the ratings of School C were 12, 15, and 18, showing that one person received a salary, twenty-nine were wage earners, while three were on private relief.

These data showed the majority of persons were wage earners. Some were salaried laborers, while a few were on relief.

The area weighted-ratings of School A were 6, 10, and 12. This showed that one person lived in an average area, twelve in a below the average area, and eighteen lived in a semi-slum area. The scores of School B were 6, 10, and 12, revealing the fact that sixteen persons lived in an average area, six in a below the average one, and ten in a semi-slum place. The weighted-ratings of School C were 6, 10, and 12, showing that thirty people lived in a below the average area, and three in a semi-slum place.

These data showed a large number of subjects lived in a below-the-
average area. Equally as many lived in semi-slum areas, while a smaller number lived in average area.

The educational weighted-ratings of the subjects of School A were 9, 15, 18, and 21, showing that eight persons were high school graduates, seven with from one to three years of high school training, three possessed grammar school training, eleven had from four to seven years of schooling, and two with less than fourth grade education. The weighted-ratings from School B were 6, 9, 12, 15, 18, and 21, revealing the fact that one person had a college education, ten possessed high school training, six from one to three years high school education, five were grammar school graduates, seven had been in school from four to seven years, and three attended school less than four years. The ratings of School C were 6, 9, 12, and 18, showing that four persons received a college education, six had high school training, eight had a grammar school education, and five from four to seven years of schooling.

The data with respect to education revealed that in each group more persons possessed from four to seven years of training of grammar school than high school or college. Only five persons received a college education from the three groups.

The total scores of School A showed that eleven people were in the upper-lower class, while twenty were in the lower-lower class. Those of School B showed that seventeen persons were in the upper-lower, and fifteen were in the lower-lower class. The scores of School C showed that twenty persons were in the upper-lower class, and thirteen were in the lower-lower class.

These data showed that all of the subjects were in two classes: (1) upper-lower, and (2) the lower-lower. The larger number of subjects were in
the latter social class.

TABLE 8

NUMBER, MEDIAN, AND PERCENTILE OF THE SCORES OF NINETY-SIX STUDENTS MADE ON THE DAVIS-SCHRAMMEL LANGUAGE ESSENTIALS TEST

<table>
<thead>
<tr>
<th>Schools</th>
<th>Number</th>
<th>Median</th>
<th>Percentile</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>31</td>
<td>62</td>
<td>5</td>
</tr>
<tr>
<td>B</td>
<td>32</td>
<td>57.8</td>
<td>5</td>
</tr>
<tr>
<td>C</td>
<td>33</td>
<td>49</td>
<td>1</td>
</tr>
</tbody>
</table>

The knowledge of grammatical rules has been presented by schools. The raw scores made by the subjects from School A ranged from a low 23 to a high of 90; or a percentile range of 1 to 95. The median raw score made by the subjects of School A was 62, which was equivalent to the fifth percentile. The scores made by the subjects from School B ranged from a low 32 to a high of 84; or a percentile range of 1 to 75. The median raw score made by these subjects was 57.8, which was equivalent to the fifth percentile. The scores made by the subjects from School C ranged from a low of 25 to a high of 88; or a percentile range of below 1 to 90. The median raw score made by the subjects of School C was 49, which was equivalent to the first percentile.

These data revealed that the pupils in each group varied widely in knowledge of grammatical rules. These data further showed that the median performance in knowledge of grammatical rules was very low.

Intelligence. Data on mental ability, intelligence, mental and chronological ages for the subjects are presented by schools in Tables 9, 9-A, 10, and 11.
TABLE 9
NUMBER, MEDIAN, AND PERCENTILE OF THE SCORES OF NINETY-SIX STUDENTS MADE ON THE OTIS QUICK-SCORING TEST OF MENTAL ABILITY

<table>
<thead>
<tr>
<th>Schools</th>
<th>Number</th>
<th>Median</th>
<th>Percentile</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>31</td>
<td>22.7</td>
<td>9.5</td>
</tr>
<tr>
<td>B</td>
<td>32</td>
<td>27.6</td>
<td>24</td>
</tr>
<tr>
<td>C</td>
<td>33</td>
<td>24</td>
<td>9.7</td>
</tr>
</tbody>
</table>

TABLE 10
FREQUENCY DISTRIBUTION OF THE SCORES OF NINETY-SIX STUDENTS ON THE STANFORD-BINET I.Q. RANGE

<table>
<thead>
<tr>
<th>Range</th>
<th>School and Number of Scores</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>A</td>
</tr>
<tr>
<td>111-120</td>
<td>1</td>
</tr>
<tr>
<td>91-110</td>
<td>2</td>
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<tr>
<td>81-90</td>
<td>9</td>
</tr>
<tr>
<td>71-80</td>
<td>11</td>
</tr>
<tr>
<td>51-70</td>
<td>8</td>
</tr>
<tr>
<td>Total</td>
<td>31</td>
</tr>
</tbody>
</table>
TABLE II
FREQUENCY DISTRIBUTION OF THE MENTAL AND CHRONOLOGICAL
AGES OF NINETY-SIX STUDENTS

<table>
<thead>
<tr>
<th>C. I.</th>
<th>School and Number of Scores</th>
<th>M.A.</th>
<th>C.A.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>A</td>
<td>B</td>
<td>C</td>
</tr>
<tr>
<td>14-11</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>13-11</td>
<td>7</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>12-11</td>
<td>13</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>11-11</td>
<td>11</td>
<td>4</td>
<td>0</td>
</tr>
<tr>
<td>10-11</td>
<td>0</td>
<td>5</td>
<td>10</td>
</tr>
<tr>
<td>9-11</td>
<td>0</td>
<td>8</td>
<td>6</td>
</tr>
<tr>
<td>8-11</td>
<td>0</td>
<td>5</td>
<td>7</td>
</tr>
<tr>
<td>7-11</td>
<td>0</td>
<td>3</td>
<td>7</td>
</tr>
<tr>
<td>6-11</td>
<td>0</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Total</td>
<td>31</td>
<td>32</td>
<td>33</td>
</tr>
</tbody>
</table>

The intelligence of the subjects has been presented by schools. The raw scores made by the subjects from School A ranged from a low 9 to a high of 55. The median raw score was 22.7, which was equivalent to a M.A. of 9.5. The I.Q. range was from a low of 58 to a high of 117, which was from a feebleminded person to a superior subject. The M.A. range was from 7-5 to 15-0. The scores made by the subjects from School B ranged from a low of 5 to a high of 49. The median raw score was 27.6, which was equivalent to a M.A. of 10.1. The I.Q. range was from a low of 51 to a high of 112. The M.A. range of the subjects was from 7-0 to 13-11.
The scores made by the subjects from School C ranged from a low of 4 to a high of 46. The median raw score was 24, which was equivalent to a M.A. of 9.7. The I.Q. range was from a low of 54 to a high of 103. The M.A. range was from 6-9 to 13.3. The C.A. range of the subjects from School A was from 11-0 to 13.9. The C.A. range for the subjects from School B was 11-8 to 14-9, and from School C, 11-4 to 14.4.

These data revealed the fact that the pupils in each group varied widely in intelligence. These data further showed that the median performance in intelligence was very low. The data also showed that their chronological ages did not vary widely.

**TABLE 12**

<table>
<thead>
<tr>
<th>Relationship Between</th>
<th>Schools</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>A</td>
</tr>
<tr>
<td><strong>Language Usage and Social Status</strong></td>
<td>r</td>
</tr>
<tr>
<td>English Usage and Knowledge of Grammatical Rules</td>
<td>.24</td>
</tr>
<tr>
<td>English Usage and Intelligence</td>
<td>.52</td>
</tr>
<tr>
<td>English Usage and Intelligence</td>
<td>.58</td>
</tr>
</tbody>
</table>
For the purpose of determining the relationship, if any, between language usage and social status, language usage and knowledge of grammatical rules, language usage and intelligence of the subjects, the Pearson product-moment coefficient of correlation between the paired raw scores of the subjects on the Ohio Every Pupil Test of English Usage and the Index of Status Characteristics, the Ohio Every Pupil Test of English Usage and the Language Essentials Test, and the Ohio Every Pupil Test of English Usage and the Otis Quick-Scoring Test of Mental Ability for the three schools were computed. See Table 12.

For the Ohio Every Pupil Test of English Usage and the Index of Status Characteristics, computation revealed the obtained \( r \) to be .24 with a standard error .17 for School A. Inasmuch as the \( r \) was not three times its standard error, it was not significant. When the \( r \) subjected to the \( t \) was less than .355 which was necessary to be significant at the five per cent level of confidence with twenty-nine degrees of freedom. These findings indicated that there was no relationship between the language usage and social status of these subjects.

For School B, computation revealed the obtained \( r \) to be .03 with a standard error of .18. Inasmuch as the \( r \) is less than three times its standard error, and \( r \) of this size might have been due to chance factors alone. The obtained \( r \) when subjected to the \( t \) test was less than .349. This number was necessary to be significant at the five per cent level of confidence with thirty degrees of freedom. There was no relationship between their language usage and social status.

For School C, computation revealed the obtained \( r \) to be .25 with a standard error of .07. Inasmuch as the \( r \) was greater than three times the standard error there was possible relationship between language usage
and social status. When the obtained "r" of .25 was subjected to the "t" test, it was less than .349. This number was necessary to show positive relationship, and to be significant at the five per cent level of confidence with thirty-one degrees of freedom. Although the obtained "r" was greater than three times the standard error, when subjected to the "t" it did not prove significant. There was no relationship between these subjects' language usage and social status. The data revealed no relationship between the subjects' language usage and social status for the three schools.

For the Ohio Every Pupil Test of English Usage and the Language Essentials Test, computation revealed the obtained "r" to be .52 with a standard error of .13 for School A. Inasmuch as the "r" was more than three times the standard error, this "r" showed a positive relationship between the pupils' language usage and their knowledge of grammatical rules. The obtained "r" when subjected to the "t" test was more than .355. This number was necessary to be significant at the five per cent level of confidence with twenty-nine degrees of freedom. This further showed a positive relationship between the pupils' language usage and their knowledge of grammatical rules.

For School B, computation revealed the obtained "r" to be .67 with a standard error of .09. Inasmuch as the "r" was more than three times its standard error, it showed positive relationship between language usage and knowledge of grammatical rules. The obtained "r" when subjected to the "t" test was more than .349. This number was necessary to be significant at the five per cent level of confidence with thirty degrees of freedom. This further showed a positive relationship between language usage and
knowledge of grammatical rules.

For School C, computation revealed the obtained "r" to be .61 with a standard error of .11. Inasmuch as the "r" was greater than three times the standard error, it showed positive relationship between language usage and knowledge of grammatical rules. The obtained "r" when subjected to the "t" test was more than 3.49. This number was necessary to be significant at the five per cent level of confidence with thirty-one degrees of freedom. This further showed positive relationship between the subjects' language usage and their knowledge of grammatical rules.

The data for each of the three schools revealed positive relationship between language usage and knowledge of grammatical rules for the pupils.

For the Ohio Every Pupil Test of English Usage and the Otis Quick-Scoring Test of Mental Ability, computation revealed the obtained "r" to be .58 with a standard error of .12, for School A. Inasmuch as the "r" was three times the standard error, it showed positive relationship between language usage and intelligence of the subjects. The obtained "r" when subjected to the "t" test was greater than 3.55. This number was necessary to be significant at the five per cent level of confidence with twenty-nine degrees of freedom. This further showed positive relationship between the subjects' language usage and intelligence.

For School B, computation revealed the obtained "r" to be .69 with a standard error of .09. Inasmuch as the "r" was greater than three times the standard error, it showed positive relationship between language usage and intelligence. The obtained "r" when subjected to the "t" test was greater than 3.49. This number was necessary to be significant at the five per cent level of confidence with thirty degrees of freedom. This further showed positive relationship between language usage and intelligence.
For School C, computation revealed the obtained "r" to be .62 with a standard error of .10. Inasmuch as the obtained "r" was greater than three times the standard error it showed positive relationship between language usage and intelligence. When the obtained "r" was subjected to the "t" test, it was greater than .349. This number was necessary to be significant at the five per cent level of confidence with thirty-one degrees of freedom. Therefore, there was a positive relationship between the subjects' language usage and intelligence.

Relationship Between Language Usage and Social Status: The findings as determined by the scores from the Ohio Every Pupil Test of English Usage with those obtained from the modified Warner, Meeker, Eells Index of Status Characteristics revealed no relationship for Schools A and B, when tested by the "r." When the "r" for School C was subjected to the "t" test of significance, there was temporary positive relationship. The "r's" made by the subjects in language usage and social status as computed by the Pearson product-moment coefficient of correlation were .24, .03, and .25, respectively. The standard errors were .17, 18, and .07, respectively. The obtained "r's" when subjected to the "t" test were less than .355 for School A and .349 for Schools B and C. These numbers were necessary to show positive relationship. Since the obtained "r's" were less than the numbers required to pass the "t" test, and were not three times the standard error in two cases, Schools A and B, and the third, School C, did not prove significant when subjected to the "t" test, there was no relationship between the subjects' language usage and social status for the three schools.

Relationship Between Language Usage and Knowledge of Grammatical Rules: The findings as determined by correlation of scores from the Ohio Every Pupil Test of English Usage with the Schrammel-Davis Language Essentials
Test revealed a positive relationship between language usage and knowledge of grammatical rules for the subjects at Schools A, B, and C. The "r's" were .53, .67, and .61, respectively. The standard errors were .13, .09, and .11, respectively. The obtained "r's" when subjected to the "t" test were greater than .355 and .349, which were necessary to show positive relationship.

Relationship Between Language Usage and Intelligence: The findings revealed a positive relationship between language usage and intelligence for the subjects at Schools A, B, and C. The "r's" were .58, .69, and .62, respectively. The standard errors were .12, .09, and .10, respectively. The obtained "r's" when subjected to the "t" test were greater than .355 and .349, respectively.

TABLE 13

STATISTICAL DATA FOR COMPARISON OF ACHIEVEMENT OF NINETY-SIX PUPILS IN LANGUAGE USAGE BASED ON SCORES OBTAINED FROM THE OHIO EVERY PUPIL TEST OF ENGLISH USAGE

<table>
<thead>
<tr>
<th>English Usage</th>
<th>Schools</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>A</td>
</tr>
<tr>
<td>English Usage</td>
<td></td>
</tr>
<tr>
<td>Median</td>
<td>37</td>
</tr>
<tr>
<td>Standard Deviation</td>
<td>14.80</td>
</tr>
<tr>
<td>Median Difference</td>
<td>2.5 (A and B)</td>
</tr>
<tr>
<td>Standard Error of the Median</td>
<td>3.4</td>
</tr>
<tr>
<td>&quot;t&quot; Ratio of Median Difference</td>
<td>.527 (A and B)</td>
</tr>
<tr>
<td>Standard Error of Difference Between Medians</td>
<td>4.74 (A and C)</td>
</tr>
</tbody>
</table>
Comparison of Language Usage Achievement: The comparison of language usage achievement by schools was made by comparing the medians for the subjects on the Ohio Every Pupil Test of English Usage. The median raw scores for Schools A, B, and C were 37, 39.5, and 28.8, respectively; the standard deviations were 14.80, 14.60, and 15.10, respectively; the standard errors were 3.4, 3.3, and 3.4, respectively. The standard error of the difference between the medians for Schools A and B was 4.74; between Schools A and C it was 4.81, and for Schools B and C it was 4.74. The "t" for the difference between Schools A and B was .5274. This "t" value was less than 2.000 which was needed to be significant at the five per cent level of confidence with sixty-one degrees of freedom. Therefore, there was no significant difference in the language usage achievement for subjects in Schools A and B. The "t" for the difference between Schools A and C was 1.704. The "t" value was less than 2.000 which was needed to be significant at the five per cent level of confidence with sixty-two degrees of freedom. Therefore, the difference in language usage achievement for the subjects in Schools A and C was not significant. The "t" test of significance for Schools B and C was 2.257. The "t" value was greater than 1.998 which was needed to be significant at the five per cent level of confidence with sixty-three degrees of freedom. Therefore, there was a significant difference in the language usage achievement for the subjects in Schools B and C.

Comparison of Knowledge of Grammatical Rules Achievement: The comparison of knowledge of grammatical rules achievement was made by comparing the medians for the subjects on the Schrammel-Davis Language Essentials Test. The median raw scores for Schools A, B, and C were 62, 57.8, and 49, respectively; the standard deviations were 13.82, 14.60, and 16.49, respectively; the standard errors were 3.1, 2.9, and 3.6, respectively. The standard error of
TABLE II
STATISTICAL DATA FOR COMPARISON OF ACHIEVEMENT OF NINETY-SIX PUPILS BASED ON SCORES OBTAINED FROM THE SCHRAMMEL-DAVIS LANGUAGE ESSENTIALS TEST

<table>
<thead>
<tr>
<th>Knowledge of Grammatical Rules</th>
<th>Schools</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>A</td>
</tr>
<tr>
<td>Median</td>
<td>62.0</td>
</tr>
<tr>
<td>Standard Deviation</td>
<td>13.62</td>
</tr>
<tr>
<td>Median Difference</td>
<td>4.2 (A and B)</td>
</tr>
<tr>
<td>Standard Error of the Median</td>
<td>3.1</td>
</tr>
<tr>
<td>&quot;t&quot; Ratio of Median Difference</td>
<td>.948 (A and B)</td>
</tr>
<tr>
<td>Standard Error of Difference Between Medians</td>
<td>4.43 (A and B)</td>
</tr>
</tbody>
</table>

The difference between the medians for Schools A and B was 4.43; between Schools A and C it was 4.75; and for Schools B and C it was 4.62. The "t" for the difference between Schools A and B was .9480. This "t" value was less than 2.000 which was needed to be significant at the five per cent level of confidence with sixty-one degrees of freedom. Therefore, there was no significant difference in knowledge of grammatical rules achievement for subjects in Schools A and B. The "t" for the difference between Schools A and C was 2.739. This "t" value was greater than 2.000 which was needed to be significant at the five per cent level of confidence with sixty-two degrees of freedom. Therefore, there was a significant difference in the knowledge of grammatical rules achievement for subjects in Schools A and C. The "t"
for the difference between Schools B and C was 1.948. This "t" value was
less than 2.000 which was needed to be significant at the five per cent
level of confidence with sixty-three degrees of freedom. Therefore, there
was no significant difference in the knowledge of grammatical rules achieve-
ment for the subjects in Schools B and C.
CHAPTER IV

SUMMARY, CONCLUSIONS, IMPLICATIONS, AND RECOMMENDATIONS

The General Plan of the Study. — The general plan of the study includes: a statement of the problem, specific purposes of the study, method of research, including techniques and instruments used, procedure, summary of findings and conclusions, and implications and recommendations.

Statement of the Problem. — This was a study of the relationship between English usage, social status, knowledge of grammatical rules, and intelligence of ninety-six seventh grade pupils enrolled at Jogn Hope, Walker, and Crogman public schools, Atlanta, Georgia, for the school term 1953-1954.

Specific Purposes of the Study. — The specific purposes of the study were (1) to determine status in language usage, knowledge of grammatical rules, and intelligence as measured by objective tests, (2) to determine social status as measured by the modified Warner, Meeker, Eells Index of Status Characteristics, (3) to determine relationship between language usage, social status, knowledge of grammatical rules, and intelligence for the group as measured by these instruments, and (4) to compare the achievement of the group in language usage and knowledge of grammatical rules.

Method of Research. — The normative-survey method of research with the techniques of testing, survey-testing, informal interviews, and statistical treatment were used for gathering and ordering the data for this study.

Method of Procedure. — One section of the seventh grade in each of the three schools was selected for the study. The seventh grade section of the
study was selected on the basis of the interest of the teachers in the study, and their willingness to have pupils participate. After three class groups had been selected, all pupils in these class groups were used.

The data gathering instruments used for the study were as follows:

1. Ohio Every Pupil Test of English Usage
2. A modified form of the Warner, Meeker, Bells Index of Status Characteristics
3. Schrammel-Davis Language Essentials Test, Form A
4. Otis Quick-Scoring Mental Ability Test, Beta Test
5. The data were tabulated and appropriate tables were established

The median and the range were computed. The Pearson Moment Coefficient of Correlation techniques was used to determine the relationship between language usage and social status, between language usage and knowledge of grammatical rules, and between language usage and intelligence.

An analysis of the tables and figures was made and an interpretation of the data was presented. The findings were derived from an interpretation of these data and the conclusions were extracted from the findings. The implications and recommendations were based upon the findings and conclusions of the study, and in connection with the over-all views as expressed in the related literature.

Summary of Findings in Related Literature.-- The review of literature related to this study revealed that the various authorities who have studied this aspect of communication agree that language usage is an integral part of our daily activities. The literature reviewed in this study may be said to reflect the following vital points relative to the importance of language usage in school and home life.
1. Language usage has had two places in the school program; the modern or psychological place accounts for greater improvement in language usage than the traditional or pedagogical.

2. Language usage materials have been taught by the formal and functional methods; the pursuance of the functional method is known to account for greater language usage improvement than the formal method; and some pupils need special instruction in language usage.

3. Language usage has a positive relationship with the socio-economic and educational status of the home; homes of high socio-economic and educational status tend to aid the development of the individual's language usage potentialities.

4. Language usage and the quality of mental ability are positively related; gifted children begin to talk earlier than normal children; mentally defected children talk later than either gifted or normal children.

The literature for this study was collected from authorities who have made important contributions to the broad field of language usage, and also language usage and related factors. Authorities in these categories include: Nelson L. Bossing, Willard Beecher, Walter Barnes, W. W.

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Charters and Douglas Naple, 1 John S. Kenyon, 2 William C. Korfmacher, 3
Dora V. Smith, 4 Anthony L. Tovatt, 5 C. J. Warden, 6 John R. Anderson, 7
Ella J. Day, 8 Allison Davis, 9 Mary S. Fisher, 10 J. N. Hook, 11 Arthur T.
Jersild, 12 Ruth G. Strickland, 13 L. M. Terman, 14 W. F. Tidyman and

1 W. W. Charters and Douglas Naple, The Commonwealth Teacher-Training
Study (Chicago, 1929), p. 171.
2 John S. Kenyon, "Levels of Speech and Colloquial English," English
3 William C. Korfmacher, "What's Wrong with Coat-Sleeve English?" School
and Society, LXXII (July - December, 1952), 415.
4 Dora V. Smith, "English Grammar Again," English Journal, XXVII
(October, 1938), 643-44.
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6 C. J. Warden, "The Relative Economy of Various Methods of Attack on
7 John R. Anderson, The Psychology of Development and Personal Adjust-
ment (New York, 1949), p. 158.
8 Ella J. Day, "The Development of Language in Twins: A Comparison of
9 Allison Davis, Social Class Influences Upon Learning (Cambridge, 1951),
p. 73.
10 Mary S. Fisher, Language Patterns of Preschool Children (New York,
1934), p. 66.
11 J. N. Hook, The Teaching of High School English (New York, 1950),
pp. 27-8.
13 Ruth G. Strickland, The Language Arts in the Elementary School
(Boston, 1951), p. 23.
14 L. M. Terman, Mental and Physical Traits of One Thousand Gifted
Summary of Findings of Research Data.— The following findings by schools have been drawn from the research data of this study:

1. Language Usage: The subjects in Schools A, B, and C were limited in language usage. The median raw scores made by the ninety-six subjects on the Ohio Every Pupil Test of English Usage were 37, 39.5, and 28.8, respectively. The percentile ranks were 10, 10, and 5, respectively. The standard deviations were 14.80, 14.60, and 15.10, respectively.

2. Social Status: The subjects in Schools A, B, and C were in the upper-lower and lower-lower social classes. The frequencies of the total weighted-ratings made by the subjects on the modified Warner, Meeker, Bells Index of Status Characteristics were 5, 5, and 10, respectively for the interval 54-62; these subjects were in the upper-lower social class.

1 W. F. Tidyman and Marguerite Butterfield, Teaching the Language Arts (New York, 1951), pp. 20-1.
The frequencies of the total weighted-ratings were 6, 7, and 10 for the interval 63-66; these subjects were in the upper-lower social class. The frequencies of the total weighted-ratings were 9, 7, and 7 for the interval 67-69; these subjects were in the lower-lower social class. The frequencies of the total weighted-ratings were 11, 8, and 6 for the interval 70-80; these subjects were also in the lower-lower social class. Most of the subjects were in the lower-lower social class.

3. Knowledge of Grammatical Rules: The subjects were limited in knowledge of grammatical rules. The median raw scores made on the Shcrammel-Davis Language Essentials Test were 62, 57.8, and 49, respectively. The percentile ranks were 5, 5, and 1, respectively.

4. Intelligence: The major portion of the subjects in Schools A, B, and C were low in intelligence. Some possessed normal intelligence; other subjects possessed superior intelligence as shown by the I.Q range 51-120. The median raw scores made by the subjects by schools on the Otis Quick-Scoring Test of Mental Ability were 22.7, 27.6, and 24, respectively. The mental ages corresponding to these median raw scores by schools were 9.5, 10.0, and 9.7, respectively. The frequency by schools for the interval 51-70 of I.Q. scores was 8, 10, and 14, respectively, which showed the number of pupils classified as "morons" according to the Terman revision of the Binet Scale. The frequency distribution for the range 71-80 of I.Q. scores was 11, 6, and 8, respectively, which showed the number of pupils classified as "borderline" according to the Terman revision of the Binet Scale. The frequency distribution for the range 81-90 of I.Q. scores was 9, 9, and 7, respectively, which showed the number of pupils classified as "low normal" according to the Terman revision of the Binet Scale. The frequency distribution for the range 91-110 of I.Q. scores
was 2, 4, and 6, respectively, which showed the number of pupils classified as "normal" according to the Terman revision of the Binet Scale. The frequency distribution for the range 111-120 of I.Q. scores was 1, 1, and 0, respectively, which showed the number of pupils classified as "superior" according to the Terman revision of the Binet Scale.

5. Relationship Between Language Usage and Social Status: There was no relationship between the language usage and the social status of the ninety-six subjects in the three schools on the Ohio Every Pupil Test of English Usage and the modified Warner, Meeker, Bells Index of Status Characteristics. The "r's" made as computed by the Pearson product-moment method of correlation were .24, .03, and .25, respectively. The standard errors were .17, .18, and .07, respectively. The "r" in each case was less than three times the standard error and therefore justifies the conclusion that the "r" was not significant by the standard error test of significance. When the obtained "r" was subjected to the "t" test it was less than .355 for School A and .349 for Schools B and C. This further justifies the conclusion that the "r" was not significant.

6. Relationship Between Language Usage and Knowledge of Grammatical Rules: There was a significant positive relationship between the language usage and knowledge of grammatical rules for the ninety-six subjects in Schools A, B, and C on the Ohio Every Pupil Test of English Usage and the Schramm-Davis Language Essentials Test. The "r's" made by these subjects as computed by the Pearson product-moment technique of correlation were .53, .67, and .61, respectively. The standard errors were .13, .09, and .11, respectively. The obtained "r's" when subjected to the "t" test were greater than .355 for School A and .349 for Schools B and C.
which was necessary to show significant positive relationship. Further, each "r" was greater than three times its standard error.

7. Relationship Between Language Usage and Intelligence: The findings revealed a definite positive relationship between language usage and intelligence for the subjects at Schools A, B, and C. The "r's" were .58, .69, and .62, respectively. The standard errors were .12, .09, and .10, respectively. Each obtained "r" was three times its standard error which showed significant positive relationship. Further, the obtained "r's" when subjected to the "t" test were greater than .355 for School A and .349 for Schools B and C, which also showed significant positive relationship.

8. Comparison of Language Usage Achievement: The comparison of language usage achievement by schools was made by comparing the medians for the subjects on the Ohio Every Pupil Test of English Usage. The median raw scores for Schools A, B, and C were 37, 39.5, and 28.8, respectively; the standard deviations were 14.80, 14.60, and 15.10, respectively; the standard errors were 3.4, 3.3, and 3.4, respectively. The standard error of the difference between the medians for Schools A and B was 4.74; between Schools A and C it was 4.81, and for Schools B and C it was 4.74. The "t" for the difference between medians of Schools A and B was .5274 which was not significant at the five per cent level of confidence. The "t" for the difference between Schools A and C was 1.704 which was not significant at the five per cent level of confidence. The "t" for Schools B and C was 2.257 which was significant at the five per cent level of confidence.

9. Comparison of Knowledge of Grammatical Rules Achievement: The comparison of knowledge of grammatical rules' achievement was made by comparing the medians for the subjects on the Schrammel-Davis Language
Essentials Test. The median raw scores for Schools A, B, and C were 62, 57.8, and 49, respectively; the standard deviations were 13.82, 14.60, and 16.49, respectively; the standard errors were 3.1, 2.9, and 3.6, respectively. The standard error of the difference between the medians for Schools A and B was 4.43; between Schools A and C it was 4.75; and for Schools B and C it was 4.62. The "t" for the difference between Schools A and B was .9480 which was not significant at the five per cent level of confidence. The "t" for the difference between Schools A and C was 2.739 which was significant at the five per cent level of confidence. The "t" for the difference between Schools B and C was 1.948 which was not significant at the five per cent level of confidence.

Conclusions.— The findings from this study warrant the following conclusions in answer to questions stated in the purpose of the study.

1. The low level of English usage indicated the possibility that the pupils studied were handicapped in most or all factors required in the development of acceptable patterns of expression. Obviously, this would mean limitations throughout the curriculum.

2. Classification of subjects into upper-lower and lower-lower social classes revealed that in all probability they had been limited in their familiarity with certain activities which motivate high levels of English usage.

3. The subjects' limited knowledge of grammatical rules indicated that in all probability they were not equipped to engage in self-criticism of their patterns of expression.

4. The low ratings on intelligence tests strongly suggested that the subjects' slower rate of mental growth delayed their readiness for experiences considered "normal" at various grade levels.
5. The positive relationship which existed between the subjects' language usage and knowledge of grammatical rules revealed that in all probability they are aware of grammatical rules when they employ language, but the low achievement in knowledge of grammatical rules would mean poor language usage.

6. The positive relationship between the subjects' language usage and intelligence indicated that the type of language employed was commensurate with the degree of their mental ability.

7. There was no significant difference between the subjects' language usage in Schools A and B and A and C which showed that there was no difference in the language usage in Schools A and B and A and C.

8. The significant difference between the subjects' language usage in Schools B and C showed that the language usage in School B was better than the language usage in School C.

9. There was no significant difference between the subjects' knowledge of grammatical rules in Schools A and B and B and C revealed the fact that there was no difference between the subjects' knowledge of grammatical rules in Schools A and B and B and C.

10. There was a significant difference between the subjects' knowledge of grammatical rules in Schools A and C showed that the subjects in School A were superior to the subjects in School C in knowledge of grammatical rules.

11. Subjects in Schools A and B tended to be alike in language usage and knowledge of grammatical rules, and somewhat superior to subjects in School C.

Implications.— The findings of this research seem to have important implications for educational theory and practice.
A. Educational Theory

1. The consistent pattern shown by a low median being made by all groups in language usage and knowledge of grammatical rules showed that either the material to which they had been subjected, or the pupils to whom the material was subjected, or both were not compatible with the demands for high achievement.

2. The fact that their social status was in two categories—upper-lower, and lower-lower showed that they were victims of circumstances into which they had been thrust.

3. The low intelligence scores made by them revealed the fact that either their inherited mentality was limited, or the experiences to which they had been subjected, or a coupling of the two produced a low level of achievement.

B. Educational Practice

1. Language usage material to which pupils are subjected should be studied and selected by experts in accordance with our best known theory.

2. Various methods of helping children improve language should be pursued in the classroom.

3. The environment is an important factor in the life of an individual and should be improved.

4. All teachers should pursue courses in English usage while continuing their educational growth.

5. A comprehensive language usage program should be organized in the schools to aid language usage.

6. Opportunities should be provided in school programs for
English teachers to meet and discuss their problems in language usage and compare their teaching procedures.

7. In-service training should be provided in areas showing greatest need in English usage.

8. Since professional books, journals, and magazines make it possible for teachers to keep abreast of the recent trends in language usage, the school administrators should make available a more adequate supply of requisite resources materials; they should as far as possible, encourage teachers to accumulate a personal professional library.
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Books


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APPENDIX
TABLE 1-A

FREQUENCY DISTRIBUTION OF THE SCORES OF NINETY-SIX STUDENTS MADE ON THE OHIO EVERY PUPIL TEST OF ENGLISH USAGE

<table>
<thead>
<tr>
<th>Scores</th>
<th>School and Number of Scores</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>A</td>
</tr>
<tr>
<td>70-74</td>
<td>1</td>
</tr>
<tr>
<td>65-69</td>
<td>1</td>
</tr>
<tr>
<td>60-64</td>
<td>1</td>
</tr>
<tr>
<td>55-59</td>
<td>1</td>
</tr>
<tr>
<td>50-54</td>
<td>4</td>
</tr>
<tr>
<td>45-49</td>
<td>2</td>
</tr>
<tr>
<td>40-44</td>
<td>5</td>
</tr>
<tr>
<td>35-39</td>
<td>1</td>
</tr>
<tr>
<td>30-34</td>
<td>5</td>
</tr>
<tr>
<td>25-29</td>
<td>3</td>
</tr>
<tr>
<td>20-24</td>
<td>5</td>
</tr>
<tr>
<td>15-19</td>
<td>2</td>
</tr>
<tr>
<td>10-14</td>
<td>0</td>
</tr>
<tr>
<td>5-9</td>
<td>0</td>
</tr>
<tr>
<td>0-4</td>
<td>0</td>
</tr>
</tbody>
</table>

Total            31  32  33
Median           37  39.5  28.8
Percentile       10  10  5
TABLE 8-A
FREQUENCY DISTRIBUTION OF THE SCORES ON NINETY-SIX STUDENTS MADE ON THE DAVIS-SCHRAMEL LANGUAGE ESSENTIALS TEST

<table>
<thead>
<tr>
<th>Scores</th>
<th>School and Number of Scores</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>A</td>
</tr>
<tr>
<td>90-94</td>
<td>1</td>
</tr>
<tr>
<td>85-89</td>
<td>0</td>
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<tr>
<td>80-84</td>
<td>2</td>
</tr>
<tr>
<td>75-79</td>
<td>2</td>
</tr>
<tr>
<td>70-74</td>
<td>3</td>
</tr>
<tr>
<td>65-69</td>
<td>7</td>
</tr>
<tr>
<td>60-64</td>
<td>1</td>
</tr>
<tr>
<td>55-59</td>
<td>5</td>
</tr>
<tr>
<td>50-54</td>
<td>2</td>
</tr>
<tr>
<td>45-49</td>
<td>2</td>
</tr>
<tr>
<td>40-44</td>
<td>2</td>
</tr>
<tr>
<td>35-39</td>
<td>1</td>
</tr>
<tr>
<td>30-34</td>
<td>0</td>
</tr>
<tr>
<td>25-29</td>
<td>2</td>
</tr>
<tr>
<td>20-24</td>
<td>1</td>
</tr>
<tr>
<td>15-19</td>
<td></td>
</tr>
<tr>
<td>10-14</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>31</td>
</tr>
<tr>
<td>Median</td>
<td>62</td>
</tr>
<tr>
<td>Percentile</td>
<td>5</td>
</tr>
</tbody>
</table>
### Table 9-A

**Frequency Distribution of the Scores of Ninety-Six Students Made on the Otis Quick-Scoring Test of Mental Ability**

<table>
<thead>
<tr>
<th>Scores</th>
<th>School and Number of Scores</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>A</td>
</tr>
<tr>
<td>55-59</td>
<td>1</td>
</tr>
<tr>
<td>50-54</td>
<td>0</td>
</tr>
<tr>
<td>45-49</td>
<td>0</td>
</tr>
<tr>
<td>40-44</td>
<td>0</td>
</tr>
<tr>
<td>35-39</td>
<td>1</td>
</tr>
<tr>
<td>30-34</td>
<td>3</td>
</tr>
<tr>
<td>25-29</td>
<td>8</td>
</tr>
<tr>
<td>20-24</td>
<td>7</td>
</tr>
<tr>
<td>15-19</td>
<td>3</td>
</tr>
<tr>
<td>10-14</td>
<td>6</td>
</tr>
<tr>
<td>5-9</td>
<td>2</td>
</tr>
<tr>
<td>0-4</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>31</td>
</tr>
<tr>
<td>Median</td>
<td>22.7</td>
</tr>
<tr>
<td>Percentile</td>
<td>9.5</td>
</tr>
</tbody>
</table>
ENGLISH USAGE
Grades 7, 8, and 9
EVERY PUPIL TEST
December, 1953
Ohio Scholarship Tests
State Department of Education
Columbus, Ohio

Constructed by
Vera Toy, Albert Chambers, Elia Herriman
Ethel Bowers, Maude Reed
C. W. Schmidt, Chairman
Hubbard High School, Hubbard, Ohio

Name

Age

Grade

Date

School

Town

State

PART I

SENTENCES

Score = Rights (15) (_______)

Section 1

DIRECTIONS: On the line at the left of each item in Column I, write the letter of the term in Column II that designates whether that group of words as punctuated is a complete sentence, a run-on sentence, or merely a fragment.

COLUMN I

COLUMN II

1. It is fun to pick wild berries in the woods.

1. Complete sentence

2. Black and red berries on green vines.

2. Run-on sentence

3. When Bob saw a small snake on a vine.

3. Fragment of a sentence

4. Berries shining wet with dew.

5. I picked them early last year.

6. Gooseberries are my favorite they make good pies.

7. We pick green and ripe gooseberries they taste good either way.

8. She said, "Yes, I'm here."

9. Don't go now please wait for me.

10. I never go to movies.

Section 2

DIRECTIONS: In Column I below are five sentences; in Column II are four sentence patterns. Decide which pattern each sentence follows, and write the number of that pattern on the line at the left of the sentence. Item 0 is an example.

COLUMN I

Sentence Patterns

0. The water is cold.

1. Subject - Predicate

11. The little girl stubbed her toe.

2. Subject - Predicate - Object

12. That man is my uncle.

3. Subject - Predicate - Predicate Noun

13. Down the street ran Bob.

4. Predicate - Subject

14. The woman in the center of the picture is my mother.

15. The wind howled and shrieked.
PART II Score = Rights (10) (_____)  

PARTS OF SPEECH  

DIRECTIONS: On the line at the left of each sentence, write the part of speech of the underlined word. You have learned these: noun, verb, pronoun, adjective, adverb, preposition, conjunction, and interjection. Item 0 is an example.

0. The night is long.  
verb

16. He is a good reader.  

17. Good habits build good manners.  

18. The leaves fell lazily to the ground.  

19. Oh! I must have lost my money.  

20. This ball belongs to me.  

21. While I was working, I thought of the future.  

22. I came before the storm.  

23. The boy in uniform is my brother.  

24. The night was dark and stormy.  

25. Mother usually calls me for dinner.  

PART III (Continued)  

Score = Rights (20) (_____)

PUNCTUATION AND CAPITALIZATION

Section 1

DIRECTIONS: In each sentence there is one error—in either capitalization or punctuation. On the line at the left of the sentence, write your correction. If your correction is a mark of punctuation, be certain to include the word preceding the mark to indicate its place in the sentence. Item 0 is an example.

0. I have studied piano, violin and voice.  

26. Don complained, "no one asked me to go."  

27. I think that mother can come.  

28. Yes I can see now.  

29. What a runner he is?

30. "Don't crowd me! yelled Buck.  

31. Dr Smith is a good man.  

32. I wrote a letter in Spanish.  

33. Don't go now, Please wait for me.  

34. Tom my brother, came home last night.  

35. After the show was over I went home.

Section 2

DIRECTIONS: In each of the following sentences the blank denotes an omission. From the two numbered expressions below each sentence, choose the one that will make the sentence correct, and write its number on the line at the left. Item 0 is an example.

2. Susan came home — you seen her yet?  
(1) yesterday have (2) yesterday. Have

36. The other boy did not — must have gone home.  
(1) come he (2) come; he

37. The creaking door awakened Jack and —.  
(1) me (2) I

38. Father and — are making a kite.  
(1) he (2) him

39. She and — came too late.  
(1) us (2) we

40. While — his dog died.  
(1) he was in the army, (2) in the army,

41. It — look like rain.  
(1) don't (2) doesn't

42. — you born in this state?  
(1) Was (2) Were

43. She has — twice.  
(1) wrote (2) written

44. George amassed a fortune — he did not live to enjoy it.  
(1) ; however, (2) however,

45. Walking tirelessly for many miles, —.  
(1) he finally reached his destination. (2) the destination was finally reached.
PART IV  

**Score = Rights (10) ( )**  

**VOCABULARY**  

**DIRECTIONS:** On the line at the left of each of the following items, write the number of the expression that provides a correct definition or example of the underlined word. Item 0 is an example.  

<table>
<thead>
<tr>
<th>Item</th>
<th>Word</th>
<th>Definition 1</th>
<th>Definition 2</th>
<th>Definition 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.</td>
<td>rival</td>
<td>(1) opponent</td>
<td>(2) joyous</td>
<td>(3) having fun</td>
</tr>
<tr>
<td>46.</td>
<td>appease</td>
<td>(1) to set a value on</td>
<td>(2) to pacify</td>
<td>(3) to consent</td>
</tr>
<tr>
<td>47.</td>
<td>canine</td>
<td>(1) dog</td>
<td>(2) type of flower</td>
<td>(3) illness</td>
</tr>
<tr>
<td>48.</td>
<td>aversion</td>
<td>(1) greediness</td>
<td>(2) retard</td>
<td>(3) dislike</td>
</tr>
<tr>
<td>49.</td>
<td>feign</td>
<td>(1) to become ill</td>
<td>(2) to pretend</td>
<td>(3) to appear foolish</td>
</tr>
<tr>
<td>50.</td>
<td>jubilant</td>
<td>(1) shouting with joy</td>
<td>(2) suffering</td>
<td>(3) sad</td>
</tr>
<tr>
<td>51.</td>
<td>morose</td>
<td>(1) gloomy</td>
<td>(2) thinking</td>
<td>(3) funny</td>
</tr>
<tr>
<td>52.</td>
<td>ruthless</td>
<td>(1) eternal</td>
<td>(2) without pity</td>
<td>(3) stealing</td>
</tr>
<tr>
<td>53.</td>
<td>sparse</td>
<td>(1) type of grass</td>
<td>(2) thinly scattered</td>
<td>(3) something to eat</td>
</tr>
<tr>
<td>54.</td>
<td>buccaneer</td>
<td>(1) mineral deposit</td>
<td>(2) stolen goods</td>
<td>(3) pirate</td>
</tr>
<tr>
<td>55.</td>
<td>fantastic</td>
<td>(1) to make easy</td>
<td>(2) unreal, hard to believe</td>
<td>(3) hard to please</td>
</tr>
</tbody>
</table>

PART V  

**Score = Rights (15) ( )**  

**SPELLING**  

**DIRECTIONS:** On the line at the left of each of the following sentences, you are to write the correct spelling of the underscored word. However, if the word is spelled correctly, write C on the line. Item 0 is an example.  

<table>
<thead>
<tr>
<th>Item</th>
<th>Sentence</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.</td>
<td>I love music.</td>
</tr>
<tr>
<td>56.</td>
<td>John is an athlete.</td>
</tr>
<tr>
<td>57.</td>
<td>Excitement was in the air.</td>
</tr>
<tr>
<td>58.</td>
<td>The good apples were separated from the bad apples.</td>
</tr>
<tr>
<td>59.</td>
<td>It is better to give than to receive.</td>
</tr>
<tr>
<td>60.</td>
<td>Many great men were born in February.</td>
</tr>
<tr>
<td>61.</td>
<td>Mary is writing a letter.</td>
</tr>
<tr>
<td>62.</td>
<td>Please acknowledge the receipt of the package.</td>
</tr>
<tr>
<td>63.</td>
<td>He gave us definite information.</td>
</tr>
<tr>
<td>64.</td>
<td>His behavior was disgraceful.</td>
</tr>
<tr>
<td>65.</td>
<td>I will make the penny disappear.</td>
</tr>
<tr>
<td>66.</td>
<td>I believe you are right.</td>
</tr>
<tr>
<td>67.</td>
<td>Do you agree with me?</td>
</tr>
<tr>
<td>68.</td>
<td>Have you written to your friend?</td>
</tr>
<tr>
<td>69.</td>
<td>They're going home now.</td>
</tr>
<tr>
<td>70.</td>
<td>It is too late now.</td>
</tr>
</tbody>
</table>
DIRECTIONS: If the sentence is not correct, cross out the incorrect expression, and write the correct one on the line at the left. If the sentence is correct, write C on the line at the left.

71. We boys must stay together.

72. To who are you speaking?

73. Are them things yours?

74. I am too tired to do it.

75. I think I shall choose an apple.

76. Her and I are good friends.

77. Lay down on the bed.

78. I'll set down here.

79. You have done well.

80. I done it for you.

81. We have almost too many to carry.

82. It was him who asked the question.

83. He may have wrote it yesterday.

84. Raise the window, please.

85. If I was you, I wouldn't do that.

86. They have went home.

87. Please set the table.

88. Lay down, Rover.

89. He has only himself to blame.

90. It ain't true.

91. The members of the club are doing their own work.

92. Each of the boys did their share of work.

93. The sun is raising.

94. I have sat here for an hour.

95. I wish I was going too.

96. Jack and his sister is invited.

97. I knowed it was true.

98. You should have done that before.

99. It was divided between the three brothers.

100. We eat the pie yesterday.
GENERAL DIRECTIONS
for
ADMINISTERING THE EVERY PUPIL TESTS
Conducted by
OHIO SCHOLARSHIP TESTS
State Department of Education
Columbus, Ohio

If you will send your copies of the Every Pupil Test Reports (Form 2 and Form 4), marked State Department's copy, to Ohio Scholarship Tests by the date given in the directions on each test, we shall be able to send you the state report within four weeks after these forms are received in Columbus.

Each teacher who is to administer the Every Pupil Tests should have a copy of the General Directions and should become thoroughly familiar with them.

A summary report of the results from all the schools will be compiled and sent to each cooperating school. This report will be valuable to each teacher, superintendent, and principal.

STEPS OF PROCEDURE
1. Give the tests.
2. Score the tests.
3. Make distribution of total scores on Form 2.
4. Fill in Class Error Check Sheet, Form 3.
5. Copy on Form 4 the numbers found in Column D of Form 3.
6. Send copies of Forms 2 and 4 to the Ohio Scholarship Tests as soon as possible after these data have been tabulated.

NOTE: The quartile papers may be sent to the state office at any later date. These papers need not be sent if they are needed for local use.

See that each person who gives a test understands each step of procedure. A teachers' meeting prior to the administration of the test, for the purpose of discussing details and answering questions, is recommended.

DIRECTIONS FOR GIVING THE TESTS

In order that your school and every other school may be able to get the maximum value from these tests, it is necessary that these directions be followed explicitly.

General
1. Each class takes the test at the regular class hour; but in a school where there are two or more sections in the same subject, arrangements should be made so that all these sections will take the tests the same period or the following period. Do not let the noon hour intervene. This will eliminate the possibility of "talking over the items."
2. The administrator should have one other teacher or assistant in the room. This person should remain in the back of the room and assist the administrator.
3. Have blank sheets of paper ready for pupils who may need them. This is especially essential for the Mathematics and Science tests.
4. See that each pupil has two sharpened pencils. Have several extra ones on hand. (For the Geometry test each pupil should bring a compass and a ruler.)
5. Distribute the test papers with top down. Instruct the pupils that they are not to turn them until the signal is given. The first pupil in each row may distribute the papers.
6. Time. The amount of time to be used is printed on each test. You must use the greatest care and see that the exact amount of time is given between "Go" and "Stop" signals.
7. Have the papers collected immediately after the final "Stop" signal. In some tests all pupils will finish before the time is up. In this case collect the papers as soon as the last pupil has finished.
8. See that the papers are tied up and put in a safe place until you are ready to score them.

Directions To Be Read Aloud To The Pupils:
1. Listen carefully. No other directions of any kind will be given during the test by any one.
2. You are not to receive or to give help during this test.
3. There is to be no talking during the test. If you need a pencil or paper, raise your hand.
4. As soon as I tell you, turn your test paper around and carefully fill in all the blanks at the top. As soon as you have finished, look up and hold up your pencil so that I can see when everyone has finished.
5. As soon as I finish reading the directions I shall give the signal "Go!"
6. As the signal "Go!" you are to begin and continue until you finish or until you hear the signal "Stop!" As soon as the signal "Stop!" is given, look up and hold up your pencil.
7. TURN YOUR PAPER AROUND AND CAREFULLY FILL IN ALL OF THE BLANKS. (To the administrator: You must see that each pupil continues to look up and hold up his pencil until all pupils have finished. Go on just as soon as all have finished.)
8. Look at the directions at the top of the page while I read them. (Teacher should read the directions at the top of the test paper. As soon as the directions have been read, give the signal "Go!" As soon as the time is up, give the signal "Stop!")

SCORING THE TEST PAPERS

The teacher may use trustworthy, conscientious pupils (Grades 7-12) to assist in the scoring. The pupils will consider it an honor. They must be carefully supervised.
1. All papers must be scored under the immediate direction of the one who is required to sign the Distribution Sheet.
2. The tests are easily and quickly scored.
3. A key that fits each test is provided.
4. The papers must be scored according to the key.
5. Use red pencils in scoring the first time. Draw a short red line through the item number of each wrong answer, and a circle around the item number of each omitted answer. Do not mark the correct answers.
6. Place the score for each part on the line at the beginning of that part and on the proper line in the score-box on the front page of the test.
7. Total the score-box carefully and indicate the final score.
8. All papers should be rescored by another person.
9. Use a blue pencil in resoring. Mark only in blue those items that were not properly scored the first time.
10. Check the final score. Errors are frequently made in transferring the scores and in addition.
METHOD OF RECORDING SCORES

Record the scores in Column A of Distribution Sheet, Form 2, according to the following method:

1. After all papers have been scored, rescoring, and checked, arrange the papers in consecutive order according to the score—highest, next highest, etc.

2. Record in Column A, opposite the corresponding groups (0–4, 5–9, 10–14, 15–19, 20–4, 25–9, 30–4, etc.) the number of papers having, respectively, scores between 0 and 4.9, 5 and 9.9, 10 and 14.9, 15 and 19.9, 20 and 24.9, 25 and 29.9, 30 and 34.9, etc.

3. The sample of Form 2 illustrates how this is done. For example, there were 33 test papers. One student had a score between 90 and 94; one had a score between 80 and 84; two students, between 75 and 78, etc.

4. Add the number of scores recorded to be sure that they equal the total number of papers recorded.

5. The first-quartile, the median, and the third-quartile scores must be recorded.

FORM 2

<table>
<thead>
<tr>
<th>Raw Score; i.e., Scores Between</th>
<th>Number of Papers</th>
</tr>
</thead>
<tbody>
<tr>
<td>100</td>
<td></td>
</tr>
<tr>
<td>95–9</td>
<td></td>
</tr>
<tr>
<td>90–4</td>
<td>1</td>
</tr>
<tr>
<td>85–9</td>
<td>1</td>
</tr>
<tr>
<td>80–4</td>
<td>2</td>
</tr>
<tr>
<td>75–9</td>
<td>3</td>
</tr>
<tr>
<td>70–4</td>
<td>4</td>
</tr>
<tr>
<td>65–9</td>
<td>2</td>
</tr>
<tr>
<td>60–4</td>
<td>3</td>
</tr>
<tr>
<td>55–9</td>
<td>3</td>
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<td>50–4</td>
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<tr>
<td>45–9</td>
<td>4</td>
</tr>
<tr>
<td>40–4</td>
<td>2</td>
</tr>
<tr>
<td>35–9</td>
<td>3</td>
</tr>
<tr>
<td>30–4</td>
<td>2</td>
</tr>
<tr>
<td>25–9</td>
<td>2</td>
</tr>
<tr>
<td>20–4</td>
<td>2</td>
</tr>
<tr>
<td>15–9</td>
<td>1</td>
</tr>
<tr>
<td>10–4</td>
<td>1</td>
</tr>
<tr>
<td>5–9</td>
<td>1</td>
</tr>
<tr>
<td>0–4</td>
<td></td>
</tr>
<tr>
<td>Total No. of Papers</td>
<td>33</td>
</tr>
</tbody>
</table>

Median (Second quartile) 51.5

Highest score made in class or section 98

Lowest score made in class or section 8

METHOD OF DETERMINING MEDIAN (Second Quartile)

Use the following method to determine the median or second-quartile score (those who are familiar with the statistical method of determining the median or quartiles of grouped scores may use it):

1. If you have more than one section of a class, place all the papers together. See that the papers are arranged in a consecutive order from high to low.

2. Count the total number of papers and record this at the bottom of Column A as Total Number of Papers.

3. Find the score on the middle paper when there is an even number of papers, and the score halfway between the scores on the middle papers when there is an odd number of papers. The result is the desired median. Illustrations (x), (y), and (z) will make the above statement clear.

4. Place this determined value at the bottom of Column A after the median score.

5. Check and recheck your work.

6. The first quartile is found by taking one half the distance between the lowest score and the median score. The third quartile is found by taking one half the distance between the median or second quartile and the highest score. Use the statistical method if you are familiar with its solution. See examples (x), (y), and (z).

(x) is an example of an odd number of papers.

(y) is an example of an even number of papers with an even number of papers between the median and the new median having the same score, 43. The median is 43.

(z) is an example of an even number of papers, the papers nearest the median having different scores, 40 and 42. The median is 41, halfway between 40 and 42. (40 + 42) / 2 = 41.

IMPORTANT STATEMENTS

1. The Every Pupil Test Distribution Sheet, Form 2, is very convenient.

2. Each teacher should make out each distribution in triplicate—the Teacher’s copy, the Superintendent’s copy, and the State Department’s copy.

3. The teacher should retain the Teacher’s copy.

4. The State Department’s copy should be sent to the Director of Ohio Scholarship Tests, State Department of Education, State Office Building, Columbus. It must be sent on or before the date given at the beginning of these instructions.

5. The Superintendent’s copy should be sent to the county, city, or exempted village superintendent.

6. Each Distribution Sheet must be certified by the teacher of the subject and by either the superintendent or the principal.

7. Return at a later date, if not needed locally, three test papers: (a) the paper nearest the first-quartile score of the class, (b) the paper nearest the class median or second-quartile score, and (c) the paper nearest the third-quartile score of the class.

8. Both Forms and test papers are considered first-class mail. They must be prepaid to the state office.

9. Every pupil (in attendance) enrolled in the subject is expected to take the test. Where there are two or more class sections of the same subject, all sections are expected to take the test together, or in consecutive periods.
SOCIAL STATUS SURVEY

1. Name
   Last   First   Middle   Nickname

2. Address
   Number   Street   Direction   Apartment Number

3. Sex
   Check   Male or Female

4. Age (at last birthday)

5. Marital status (Parents) father or mother) (the head of the house)
   If you were never married, check "NM" on this line.
   If you are married, check "M" on this line.
   If you are divorced, check "D" on this line.
   If you are separated, check "SEP" on this line.
   If you are a widow, check "W" on this line.

   Note: Consider persons with a common law marriage as married.

6. Highest grade of school attended (1-16) Write the number.

7. Where do you work?
   (Type of industry.) If a domestic, give general location of employer(s).

8. What is your job there?
   (Give exact description. If not working, give last job.)

9. (If not working) ARE YOU LOOKING FOR WORK?

10. Household
    Condition (Check one) Excellent Good Medium Poor Very Bad

    Number of rooms

   **********************

DO NOT FILL IN.

ISC

   Occupation
   Source of Income
   Area
   House Type

   Score S. C.
LANGUAGE ESSENTIALS TESTS

Developed by

H. E. SCHRAMMEL
Director of Bureau of Educational Measurements
Kansas State Teachers College

and

VERA DAVIS
Supervisor of Elementary Schools
Dodge City, Kansas

Manual of Directions
FORMS A and B

DESCRIPTION OF THE TEST

The LANGUAGE ESSENTIALS TESTS consist of two equivalent forms, A and B. Each of these two forms is composed of four parts covering the following functions: Part I, Punctuation; Part II, Capitalization; Part III, Sentence Structure; and Part IV, Correct Usage. The total number of items for each form is 100.

This test is purely objective. By this method, it is possible to bring squarely before the pupil the points that all should know but that many miss. A unique feature of this test is that the language functions are incorporated in a continuous discourse, or story, which was especially written for this purpose. Hence, the pupil reacts to essential English functions in conjunction with connected thought-content material rather than in connection with isolated, uninteresting sentences.

PURPOSE OF THE TEST

The general purpose of this test is to measure objectively pupil and class proficiency on the essential mechanics of English. The test may be used for both survey and diagnostic purposes. Its chief value undoubtedly lies in its diagnosis of individual strengths and deficiencies in the English functions tested. This is made possible by use of the norms for each part of the test and by an analytical study of pupil errors made possible by a DIAGNOSTIC KEY TO ERRORS. Specific purposes are stated in detail in the section “Uses of Test Results.”

VALIDITY OF THE TEST

The content of this test is based on the common content of the leading textbooks and courses of study. A detailed content analysis was made of more than a dozen textbooks recently published. The aim was to include a fair sampling of valid items somewhat in proportion as they were stressed in these sources. Pupil errors on earlier editions of the test were also used for determining test content and in equating forms. Criticisms from teachers and supervisors were also carefully considered in the making of revisions and improvements while the test was in the process of construction.

RELIABILITY OF THE TEST

In order to obtain scores for computing the statistical reliability of this test, both forms were administered in Grades IV to VI in all of the Emporia, Kansas, city schools, and in Grades VII and VIII of the Roosevelt Junior High School, which is a part of the laboratory school system of the Kansas State Teachers College. The coefficients obtained are shown in Table 1.

EDUCATIONAL TEST BUREAU
Minneapolis - Nashville - Philadelphia
### TABLE 1

<table>
<thead>
<tr>
<th>Forms and Parts Correlated</th>
<th>Grades</th>
<th>No. of Cases</th>
<th>Reliability Coefficient</th>
<th>Probable Error of Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>A and B, whole test</td>
<td>4</td>
<td>43</td>
<td>.90 ± .02</td>
<td>3.0</td>
</tr>
<tr>
<td>A and B, whole test</td>
<td>5</td>
<td>42</td>
<td>.88 ± .02</td>
<td>2.6</td>
</tr>
<tr>
<td>A and B, whole test</td>
<td>6</td>
<td>70</td>
<td>.94 ± .01</td>
<td>1.5</td>
</tr>
<tr>
<td>A and B, whole test</td>
<td>7 and 8</td>
<td>45</td>
<td>.94 ± .01</td>
<td>1.8</td>
</tr>
<tr>
<td>A and B, Part I</td>
<td>4-8</td>
<td>451</td>
<td>.72 ± .01</td>
<td>.9</td>
</tr>
<tr>
<td>A and B, Part II</td>
<td>4-8</td>
<td>440</td>
<td>.77 ± .01</td>
<td>.9</td>
</tr>
<tr>
<td>A and B, Part III</td>
<td>4-8</td>
<td>473</td>
<td>.60 ± .02</td>
<td>1.0</td>
</tr>
<tr>
<td>A and B, Part IV</td>
<td>4-8</td>
<td>411</td>
<td>.92 ± .01</td>
<td>1.5</td>
</tr>
</tbody>
</table>

It will be observed that for the whole test for individual grades the reliability coefficients range from .88 to .94, and the probable error of scores, from 1.5 to 3.0. This is a very satisfactory degree of reliability. Moreover, it will be noted that the separate parts as units by themselves also possess reasonably high statistical reliability.

The probable error score of 3 points means that if the average of a pupil's score on a large number of equal forms of the test could be obtained and called his true score, then the pupil’s actual score on any one form would diverge from this hypothetical true score by 3 points or less in fifty per cent of the cases.

### NORMS

The two forms of this test were used in the 1938-39 school year in two nationwide EVERY PUPIL SCHOLARSHIP TESTS, which were sponsored by the Kansas State Teachers College of Emporia. The percentile norms listed in Table 2 and those on page 2 of the SCORE TABULATION FORM were computed from 12,497 pupil scores reported by 435 schools located in 22 different states.

### ADMINISTERING THE TEST

Before the tests are distributed, the teacher should see that each pupil has a well-sharpened pencil.

Say to the pupils: I am about to distribute copies of an English test. Do not open the test booklet and do not put any marks upon it until I tell you to do so.

Distribute the test booklets. Have each pupil fill in the blanks provided on the cover.

Then say: Listen carefully. This booklet contains four tests of English. At the beginning of each test, you will find directions which will tell you what to do. Read the directions carefully and follow them exactly. Also note carefully the examples, which have been correctly marked. When you finish one test, go on to the next. If an item on a test puzzles you, do not spend too much time on it, but go on to the next item so that you can finish the examination in the time allowed. Then if you finish before time is called, you may go back through the booklet to study those items which you were unable to complete before. If you are not sure of the right answer to an item, you may guess. Try every item. You will have exactly thirty minutes for the entire test. If you finish before time is called, close your booklet, lay aside your pencil, and sit quietly while the other members of the class finish. After I tell you to begin, I shall not be able to answer any questions. Have you any questions now about what you are to do? (Pause.) When I give the signal, turn to Part I, read the directions carefully, and answer the items as directed. Ready! Begin!

At the end of exactly thirty minutes, say: Stop! Close your booklets and lay aside your pencils. Collect all tests at once.

The teacher should be watchful throughout the examination for those who break pencils or have some difficulty which is not directly due to ignorance of the correct answers to the test items. Reasonable aid for difficulties of this type should be given so that the test results may be truly indicative of English ability and not largely a measure of intelligence, eyesight, hearing, and other factors.

### INTERPRETATION OF RESULTS

By use of the norms listed in Table 2 and on page 2 of the SCORE TABULATION FORM, class and individual total scores may easily be converted into percentile scores. For example, in Grade IV, at mid-year a score of 79 merits a 95 percentile rank and means that the pupil reached or exceeded the performance of 95
per cent of the pupils from whose scores the norms were computed. Likewise, a score of
72 merits an 80 percentile rank; one of 62, a 50 percentile rank; and one of 34, a 5 percentile
rank.

Scores which pupils make on various parts of the test may be similarly interpreted from
the data on page 2 of the Score Tabulation Form.

For interpreting scores for a class which takes the test at mid-year of the school grade, the section of Table 2 marked Mid-Year should be used; if the test is administered near the end of the grade year, end-of-year norms should be used. In case the test is administered at the beginning of the school year, the end-of-year norms for the preceding grade should be used. For example, for interpreting scores made by a sixth grade class in September, use the end-of-year norms for Grade V.

Teachers will find it useful to profile the median class scores earned for the four parts of the test whether the test is used at the beginning or end of the year. (Use page 2 of the Score Tabulation Form.) However, the percentile equivalents should not be interpreted too literally, because the part-score distributions are really mid-year standards. Such profiling is a valuable visual aid and there is no objection to so employing the charts provided, once the limitation referred to above is understood.

USES OF TEST RESULTS

The principal uses that may be made of the results of this test are the following:

1. To discover specific weaknesses of individual pupils. This is undoubtedly the most important function of this test. Before specific weaknesses of a pupil can be overcome, it is important that a detailed diagnosis of his responses be made. By use of the Diagnostic Key to Errors, it may be determined which functions need to be stressed more thoroughly for the whole class, which ones are troublesome for a few pupils only, and which ones have been mastered by nearly all of the class. Proper instruction and drills can then be devised ac-

---

**TABLE 2**

Grade Percentile Norms (Total Scores)

<table>
<thead>
<tr>
<th>Percentiles</th>
<th>4 Gr.</th>
<th>5 Gr.</th>
<th>6 Gr.</th>
<th>7 Gr.</th>
<th>8 Gr.</th>
<th>4 Gr.</th>
<th>5 Gr.</th>
<th>6 Gr.</th>
<th>7 Gr.</th>
<th>8 Gr.</th>
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</thead>
<tbody>
<tr>
<td>99 %-ile</td>
<td>88</td>
<td>89</td>
<td>92</td>
<td>94</td>
<td>97</td>
<td>87</td>
<td>91</td>
<td>94</td>
<td>97</td>
<td>99</td>
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<tr>
<td>95 %-ile</td>
<td>79</td>
<td>84</td>
<td>88</td>
<td>90</td>
<td>93</td>
<td>82</td>
<td>88</td>
<td>90</td>
<td>93</td>
<td>96</td>
</tr>
<tr>
<td>90 %-ile</td>
<td>76</td>
<td>81</td>
<td>85</td>
<td>88</td>
<td>90</td>
<td>78</td>
<td>85</td>
<td>88</td>
<td>90</td>
<td>94</td>
</tr>
<tr>
<td>85 %-ile</td>
<td>74</td>
<td>79</td>
<td>83</td>
<td>86</td>
<td>89</td>
<td>76</td>
<td>83</td>
<td>86</td>
<td>89</td>
<td>92</td>
</tr>
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<td>74</td>
<td>81</td>
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<td>91</td>
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<td>75 %-ile</td>
<td>70</td>
<td>75</td>
<td>80</td>
<td>83</td>
<td>87</td>
<td>73</td>
<td>80</td>
<td>83</td>
<td>87</td>
<td>90</td>
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<td>70 %-ile</td>
<td>68</td>
<td>74</td>
<td>79</td>
<td>82</td>
<td>85</td>
<td>71</td>
<td>79</td>
<td>82</td>
<td>85</td>
<td>89</td>
</tr>
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<td>65 %-ile</td>
<td>67</td>
<td>73</td>
<td>78</td>
<td>81</td>
<td>84</td>
<td>69</td>
<td>77</td>
<td>81</td>
<td>84</td>
<td>87</td>
</tr>
<tr>
<td>60 %-ile</td>
<td>65</td>
<td>72</td>
<td>77</td>
<td>80</td>
<td>83</td>
<td>68</td>
<td>76</td>
<td>80</td>
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</tr>
<tr>
<td>55 %-ile</td>
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<tr>
<td>50 %-ile</td>
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<td>74</td>
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<td>81</td>
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<td>74</td>
<td>77</td>
<td>81</td>
<td>84</td>
</tr>
<tr>
<td>45 %-ile</td>
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<td>68</td>
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<td>77</td>
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</tr>
<tr>
<td>35 %-ile</td>
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<td>65</td>
<td>71</td>
<td>75</td>
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<td>60</td>
<td>70</td>
<td>73</td>
<td>77</td>
<td>81</td>
</tr>
<tr>
<td>30 %-ile</td>
<td>54</td>
<td>63</td>
<td>70</td>
<td>73</td>
<td>76</td>
<td>58</td>
<td>68</td>
<td>71</td>
<td>76</td>
<td>79</td>
</tr>
<tr>
<td>25 %-ile</td>
<td>51</td>
<td>61</td>
<td>68</td>
<td>72</td>
<td>76</td>
<td>56</td>
<td>66</td>
<td>70</td>
<td>74</td>
<td>78</td>
</tr>
<tr>
<td>20 %-ile</td>
<td>49</td>
<td>59</td>
<td>67</td>
<td>71</td>
<td>74</td>
<td>53</td>
<td>64</td>
<td>67</td>
<td>73</td>
<td>76</td>
</tr>
<tr>
<td>15 %-ile</td>
<td>46</td>
<td>56</td>
<td>65</td>
<td>68</td>
<td>72</td>
<td>49</td>
<td>61</td>
<td>65</td>
<td>71</td>
<td>75</td>
</tr>
<tr>
<td>10 %-ile</td>
<td>40</td>
<td>52</td>
<td>61</td>
<td>66</td>
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<td>45</td>
<td>57</td>
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<td>1 %-ile</td>
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<td>48</td>
<td>57</td>
<td>26</td>
<td>36</td>
<td>47</td>
<td>50</td>
<td>57</td>
</tr>
</tbody>
</table>

No. of cases | 1145 | 1410 | 1846 | 2314 | 2202 | 1517 | 1660 | 1999 | 2531 | 2873 |
S. D.        | 14.1 | 10.4 | 8.9  | 8.2  | 8.0  | 12.6 | 10.4 | 9.6  | 9.6  | 8.9  |
cording to the needs of the class and the
individuals.

If, for example, it should be found that a
class's achievement is inferior according to
the Part II percentile norms but average or
better on the other parts of the test, intensive
instruction should be given on capitalization.
Moreover, the teacher should make such a study
of the errors that she may know exactly on
what type of function in the field of capitaliza-
tion each pupil will need re-education. If this
is done, marked improvement on the part of
the individual pupils may be expected.

2. To motivate the mastering of the me-
chanics of English. Pupils like to get a meas-
ure of their own knowledge of a subject and to
compare their scores with standard scores, with
those of their own classmates, and, most im-
portant of all, with previous scores which they
themselves have earned. Such comparisons,
directed intelligently by teachers, serve to stim-
ulate further effort on the part of the individual
pupil.

3. To assist teachers in assigning pupil
grades. Scores earned on a good standardized
test are valuable aids to the teacher who seeks
to grade pupils intelligently. The weighting
attached to the test scores will vary with the
accepted promotion policy of individual schools
and districts. Some schools will grade on the
basis of how nearly a pupil's score approxi-
mates his expected attainment, rather than in
terms of how the pupil ranks with respect to a
standardized group. It is to be hoped that
many other factors in addition to the test scores
will influence either approach.

4. To measure individual and class growth.
By giving the test at the beginning of the school
term and again at mid-year or at the end of
the year, the teacher can appraise the progress
made along lines which the test measures. Such
information is useful in evaluating the effects
of remedial instruction along specific lines, or
in estimating the relative efficiency of different
instructional methods.

Scoring keys are provided for each form of
the test. The score for each Part of the test is
the number of correct responses within that
Part. The Total Score is the sum of the scores
on the four Parts. The highest possible score
for the entire test is 100 points.

Scoring keys are provided for each form of
the test. The score for each Part of the test is
the number of correct responses within that
Part. The Total Score is the sum of the scores
on the four Parts. The highest possible score
for the entire test is 100 points.

USE OF THE SCORE TABULATION
FORM

Page 1 — The purpose of this page is to
provide a display of pupil scores on each of the
four parts of the test. If the instructor is inter-
ested only in group tendencies, he merely enters
a small tally mark on the dotted line opposite
the scores of appropriate columns, for each
pupil on each division of the test. For indi-
vidual diagnosis, he may code the names of
pupils in his class and enter the code numbers
on the appropriate score levels beside the
original tally marks. Next, he computes the
mid-score earned by the class on each of the
four parts and on the Total Score column. He
then notes the score interval which appears
opposite this entry. This is the median score.¹

Page 2 — This page is intended to present
graphically the median scores computed on
page 1. In addition, it shows the relationships
of these median scores to the percentile dis-
tribution of the school population on which the
norms were based. The instructor need only
locate the profile appropriate to his grade or
grades, and enter the median score for each
Part of the test and Total Score on the graph.

Pages 3-4 — Use of this record provides the
documentary evidence to support the graphic
display obtained on pages 1 and 2 of the Score
Tabulation Form. If desired, the percentile
score of each child on each part of the test
(determined from page 2) may be entered in
red ink along with the raw score earned on
each sub-division and on the total.

¹To find the median for the column headed, TOTAL SCORE, follow usual procedure for computing median
from a frequency distribution: (1) Determine the mid-case. (2) Count up the frequency column as far as possible
without entering the step-interval in which the median lies; e.g., in a class of 35 pupils, suppose there are 15 cases
up to the step-interval 20-24. Let us suppose further that four cases appear opposite this step interval. Obviously,
then, the median case lies at the step-interval 20-24. (3) Calculate the difference between the mid-case and the
point at which you stopped; e.g., in the example above we stopped at the 15th case. The difference between this
and the median is 3. (4) Divide this difference by the number of cases in the median step-interval; e.g., 3 divided
by 4 equals .75. (5) Multiply this figure by the number of units in the step-interval; e.g., .75 times 5 equals 3.75.
(6) Add this result to the lowest number of the median step-interval (converting decimals to nearest whole number);
e.g., 20 plus 3.75 equals true median of 23.75. The nearest whole number is 24. This is the median.
LANGUAGE ESSENTIALS TESTS

Developed by

H. E. SCHRAMMEL
Director of Bureau of Educational Measurements
Kansas State Teachers College

and

VERA DAVIS
Director of Elementary Education
Chisholm, Minnesota

Grades IV-VIII

FORM A

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Name ........................................................................................................... Age ......................................

Last First Middle Years Months

City ........................................................................................................ School ...........................................................

Grade ........ Teacher ........................................................................ Date ..........................................................

<table>
<thead>
<tr>
<th>Part</th>
<th>Possible Score</th>
<th>Student's Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>I. Punctuation</td>
<td>20</td>
<td></td>
</tr>
<tr>
<td>II. Capitalization</td>
<td>20</td>
<td></td>
</tr>
<tr>
<td>III. Sentence Structure</td>
<td>15</td>
<td></td>
</tr>
<tr>
<td>IV. Correct Usage</td>
<td>45</td>
<td></td>
</tr>
<tr>
<td>TOTAL</td>
<td>100</td>
<td></td>
</tr>
</tbody>
</table>

Published by

EDUCATIONAL TEST BUREAU
EDUCATIONAL PUBLISHERS, Inc.
Minneapolis - Nashville - Philadelphia
Part I—PUNCTUATION

Directions: If all the punctuation marks in a sentence are right, make a plus (+) in the answer space which is numbered the same as the sentence. If the punctuation is not right, make a minus (—) in the answer space. Be sure to put your mark in the answer space whose number is exactly the same as the number of the sentence.

Examples:
(a) Are you going to school? a. ..+..
(b) I am going, but I am not quite ready, b. ..—..

(1) Every child has heard about George Washington. (2) How much do you know about him? (3) He was born February, 22, 1732. (4) He was President of the United States before John Adams, the father of J Q Adams. (5) George Washington was a great man, and Americans are proud of his record. (6) Girls like to read about Mrs Washington too. (7) What a charming woman she must have been!
(8) The Washingtons lived at Mount Vernon, Virginia. (9) Washington's home may still be seen there. (10) It isn't furnished as homes are today. (11) Mother said yesterday that "she would like to live there." (12) Womens' work in the home must have been difficult and tiresome in colonial days. (13) The women often had to cook, spin, weave, and sew for large families. (14) Yes they had to work hard. (15) "Many of them enjoyed their work though" said Mother. (16) The story called Martha Washington at Home tells about the life of colonial people. (17) There are twenty-five pages in the story. (18) "We think," said Jane, "that we should like to have known Martha Washington." (19) Yesterday I wrote this to my cousin:
Dear Sue;

We are reading about Martha Washington and her home.

(20) Our next story will be about the servants' life at Mount Vernon.

Score

Part II—CAPITALIZATION

Directions: If all the words in a sentence are capitalized right, put a plus (+) in the answer space numbered the same as the sentence. If words are capitalized which should not be capitalized, or if necessary capitals are omitted, put a minus (—) in the answer space. Be sure to put your mark in the answer space whose number is exactly the same as the number of the sentence.

Examples:
(a) Here comes mr. James. a. ..—..
(b) Last Friday he read a thrilling story to me about Robinson Crusoe.

(21) George Washington did not always live in Virginia. (22) He moved there after he left Philadelphia. (23) That was in march of 1797. (24) His home at Mount Vernon is on the Potomac River. (25) It is South of Washington, D.C. (26) Years before he moved there, Washington fought in the Revolutionary War.

(27) When he was in the army, our hero was called Gen. George Washington. (28) My Mother says that he was a great general. (29) We have all heard of his courage during the Winter at Valley Forge. (30) That helps us to realize what
A great Leader he was. (31) Later ne became president Washington. (32) Last named for Washington. (33) The Washington Square Church is one. (34) Our own Washington Grade School is another. (35) Sam, who lives on Jefferson Street, had many others on his list. (36) Next week we are going to read about independence day. (37) After this we will always think of our great countrymen when we hear these lines: “My country, ‘tis of thee, sweet land of liberty, of thee I sing.” (38) Today I wrote this letter to a friend of mine: (39) My Dear Alice, (40) We have just read about Valley Forge and Washington’s praying to God for help.

Part III — SENTENCE STRUCTURE

Directions: Look at each sentence carefully. If it is one well-organized and complete sentence, put a plus (+) in the answer space numbered the same as the sentence. If it is not one well-organized and complete sentence, put a minus (−) in the answer space. Be sure to put your mark in the answer space whose number is exactly the same as the number of the sentence.

Examples:
(a) Mary and John are building a playhouse. (b) Sitting by the stream with their dog.

(41) Washington liked to ride horseback.
(42) Having many miles to travel each day. (43) Usually rode at an average pace. (44) Sometimes galloping, however. (45) What beautiful horses he had! (46) Used to wish we could have a horse. (47) Washington rode to his farms on horseback every day. (48) A journey of twelve or fourteen miles. (49) Almost always he went alone. (50) Many persons would not have made the trip every day. (51) Washington was a good horseman and he had ridden a great deal in the war and he still spent much time on horseback. (52) He liked good horses he always had several good ones. (53) Today many persons have never owned or ridden a horse. (54) In Washington’s day almost everybody had horses. (55) Not so today, times having changed and the automobile having taken the place of many horses.

Part IV — CORRECT USAGE

Directions: In the story of this section, in each sentence several words are printed in heavy black type. One of these is the right word to use in making the sentence correct. Write the number of this word in the answer space which is numbered the same as the sentence. In example (a) below, the right sentence is: “Apples are good to eat.” A figure “2,” therefore, has been placed in answer space “a.” A figure “3” has been placed in answer space “b” to show that in sentence (b), word number 3 makes the sentence right. Write only one number for each sentence, and be sure to put it in the answer space numbered the same as the sentence.

Examples:
(a) Apples (1. is, 2. are, 3. am) good to eat. (b) Mary bought five and (1. gived, 2. gave, 3. gave) one to her brother.
(56) Life at Mount Vernon must (1. of, 56
2. have) been very interesting. (57) Wash-
ington seems to have (1. took, 2. taken)
an active part in the life about him.
(58) Even as he (1. grew, 2. growed) 58
older, he worked regularly. (59) Those
who (1. saw, 2. seen) him in his home
admired him. (60) Our (1. teacher, 60
2. teacher she) says that Washington was
a farmer. (61) It is hard for (1. we, 2. us)
girls to think of him as he was at his
home. 62. Our history book (1. don't,
2. doesn't) tell much about his home.
(63) He (1. taught, 2. learned, 3. taught)
his servants many lessons of thrift.
(64) He would not (1. leave, 2. let) them
waste money. (65) He liked servants
who did their work (1. good, 2. well).
(66) Each servant tried to do (1. his,
2. their) best. (67) Washington used to
(1. rise, 2. raise) at four o'clock in the
morning. (68) After he had (1. rode,
2. ridden) over his farms, he returned for
dinner. (69) He always (1. finished,
2. finished up) his farm work before three
o'clock. (70) He (1. sit, 2. set, 3. sat)
down to dinner at exactly three o'clock.
(71) (1. He, 2. Him) and his family spent
the evenings together. (72) Our teacher
(1. said, 2. says) yesterday that he read
the newspaper to his family. (73) He did
this while he (1. drank, 2. drank) his
one cup of tea. (74) He (1. didn't ever,
2. didn't never) have anything else for
supper. (75) He didn't even drink (1. to,
2. two, 3. too) cups of tea. (76) He always
(1. lay, 2. laid) his letters aside to be read
when he was alone. (77) He never
(1. threw, 2. throwned) a letter away with-
out answering it. (78) Answering his
many letters was a (1. very, 2. real) big
task. (79) He felt (1. glad, 2. gladly)
when all his writing was done. (80) Work
(1. give, 2. gave) him much pleasure.
(81) There (1. is, 2. are) many stories
about the people at Mount Vernon.
(82) One is about (1. a, 2. an) old Negro
fisherman, Jack. (83) One day the cook
had (1. chose, 2. chosen) to have fish for
dinner. (84) The rest of the meal was
(1. already, 2. all ready) to be served.
(85) It seemed (1. like, 2. as if, 3. like
as if) Jack would never come. (86) For
some time the cook had (1. show,
2. shown) signs of impatience. (87) He
knew that Jack had (1. gone, 2. went) to
sleep. (88) The fisherman probably had
(1. set, 2. sat) in the boat for hours
nodding. (89) Jack knew that he (1. ought
not, 2. hadn't ought) to do that.
(90) Finally the cook went after the fish
and (1. brang, 2. brung, 3. brought) them
to the house. (91) When he took them
(1. off, 2. off of) the stove, they were a
golden brown color. (92) This is one of
the stories (1. that, 2. what) our teacher
told us today. (93) (1. Us, 2. We) girls
like the story. (94) (1. Mary and I, 2.
I and Mary) especially liked the old
Negro. (95) Mary says she likes to sleep
almost as well as (1. he, 2. him).
(96) Both of us wish Washington (1. was,
2. were) alive today. (97) We wonder if
he would seem different (1. than, 2. to,
3. from) other men. (98) It seems to
Mary and (1. I, 2. me) that he would.
(99) In our English class yesterday we
(1. chose, 2. choosed, 3. choose) to give a
play about Washington. (100) We haven't decided yet (1. who, 2. whom) will
be Washington.

Score
The Otis Quick-Scoring Mental Ability Tests comprise three tests, called Alpha, Beta, and Gamma. The three tests are designed for grades as follows:

Alpha Test . . . . Grades 1–4
Beta Test . . . . Grades 4–9
Gamma Test . . . . High Schools and Colleges

The Alpha Test consists entirely of pictures and is completely new. The Beta and Gamma Tests are revisions and extensions of the Intermediate and Higher Examinations, respectively, of the Otis Self-Administering Tests of Mental Ability.

Purpose of the Tests

The purpose of the three tests in the series is to measure mental ability — thinking power or the degree of maturity of the mind.

It should be understood from the outset that it is not possible to measure mental ability directly. It is possible only to measure the effect mental ability has had in enabling the pupil to acquire certain knowledge and mental skill. Of course the answering of some types of questions depends less upon schooling and more upon mental ability than the answering of others, and in making up the test the aim has been for the most part to choose that kind of question which depends as little as possible on schooling and as much as possible on thinking.

However, in the interest of variety it has been found necessary and even advantageous to include in verbal tests of mental ability such as the Beta and Gamma Tests certain questions which might seem at first glance to be mere measures of achievement. This type includes questions on vocabulary, arithmetic reasoning, etc. It must be remembered, however, that any test which involves the use of language can measure mental ability only to the extent to which we may assume that pupils of the same age have had approximately the same opportunity to learn. Consequently, if a pupil has grown up with a limited educational opportunity, especially with reference to language, his mental ability is not fairly measured by any test involving language. But in a given community in which all children have approximately the same educational opportunity, it is reasonable to assume that a pupil who progresses rapidly in school and learns much has greater mental ability for his age than one who progresses less rapidly and learns less. To this extent, therefore, certain achievement questions such as vocabulary and arithmetic-reasoning questions, even though depending on language, do measure mental ability.
There are at present two forms of the Beta Test (Forms A and B), similar in construction and in difficulty but different in content. Two other forms, C and D, are in preparation.

**Special Features**

The tests are self-administering in the same sense as the Self-Administering Tests of Mental Ability, in that it is necessary merely to pass out the booklets, allow the pupils time to study the first page with a minimum of directions, and then let them go ahead and take the test. A single examiner may administer the tests to all the classes of a moderate-sized school in a day, by devoting a few minutes to start one class taking the test, leaving the class in care of the teacher, and going on to the next class, etc. This is a good way to assure reasonable uniformity of procedure in the giving of the tests.

In addition to the ease of administration which these tests afford by virtue of their single time limit, a new method of scoring is provided by which the tests may be scored even more rapidly than the Self-Administering Tests.

It will be observed that provision is made for the pupils to indicate their answers by putting crosses in circles, that when taking the test the circles corresponding to each item are directly opposite the items to avoid any possibility of a pupil putting a cross in the wrong row of circles, and that when the test is opened up, the four columns of circles all show at once. This enables the scorer to score the paper with one application of the scoring Key.

Moreover, the Key has holes in it, so placed that when it is properly adjusted over the test paper, the crosses that the pupil has put in the right circles of the test paper will show through the holes in the Key.

To score the paper, therefore, it is necessary merely to count the crosses that appear through the holes in the Key. Experience shows that this is the quickest possible method of scoring a test “by hand,” so to speak. Its principal advantage is that the scorer does not have to look at each answer to see whether the cross is in or not in a given square or circle — he disregards all wrong answers completely and merely counts right ones.

It is by reason of this new scoring feature that the tests are called “Quick-Scoring Tests.”

**Directions for Administering**

To administer Form A or Form B of the Beta Test, address the pupils as follows: (Give all directions slowly and distinctly, with a pause after each sentence.)

“We are now going to give you some tests that measure your ability to think. I will pass out the test papers and as soon as you receive one, read the first page and do what it tells you to do; that is, fill the blanks, giving your name, age, etc., and read the sample questions.

“Do not open or turn over the booklet. Part of the test is to see if you can follow directions.”

Have the test papers passed, one to each pupil, right side up; that is, with the title page up. See that every pupil is supplied with two pencils and an eraser. It is better not to have the pencils too sharp, principally because it is desired to have the pupils make wide marks, since these are easy to see.
Manual of Directions for Beta Test: Forms A and B

Allow reasonable time for all to finish reading the first page and studying the samples. A few laggards may be disregarded.

Then say: “As it says on the first page of the booklet, the test contains 80 questions. You are not expected to be able to answer all of them, but do the best you can.

“You will be allowed half an hour for the test. Try to get as many right as possible.

“Be careful not to go so fast that you make mistakes. Do not spend too much time on any one question.

“No questions about the test will be answered after the test begins.

“Make your crosses heavy so that they can be easily seen and be sure not to put more than one cross in any row of circles.

“Is there anyone who does not understand the first page?” This is the time to answer any questions that the pupils may have about the test, and the examiner should be satisfied that the pupils understand the samples and how to put a cross in the proper circle so as to indicate the correct answer to each item.

Then say: “Now turn the paper over. Open the flap at the right so that you can see the rows of circles in which you are to put the answers for page 1.

“As soon as you finish page 1, you are to open the booklet and do pages 2, 3, and 4 in the same way.

“Now take your pencils and begin.”

No further directions are necessary.

Note the exact time immediately and write it on the blackboard, together with the time it will be in exactly one half hour, when the pupils are to stop work. Or set the hands of your watch exactly on the hour and stop the work when your watch is at exactly half-past the hour.

It should be understood by the examiner (and by the teacher if the teacher is left in charge of the pupils while they are taking the test) that no questions about the test are to be answered which might give the pupils the slightest help in answering the questions; that is, the examiner or teacher may not explain the meaning of any word or give any hints. It is permissible at the beginning of the examination for the examiner or teacher to move quietly about the room to make sure that the pupils are indicating their answers in the proper manner, and if during the examination a pupil becomes confused on account of the unusual folding of the booklet, it is permissible, of course, to explain to him how to proceed. Thereafter it is better for the teacher to remain seated at her desk so that the room is quiet and the pupils may work undisturbed.

The one in charge of timing the test should be particularly impressed with the need to watch the time carefully, for it is very easy to forget the time and let the pupils work more than half an hour. When the pupils have worked exactly half an hour, the examiner or teacher should say: “Time is up. Everyone stop. Close the test booklet.” The test papers should then be collected.

DIRECTIONS FOR SCORING

A Key for scoring the test is included in each package of tests. In preparing to score the papers of a class, each paper should be opened by picking it up by the flap and then laid in a pile with the four columns of answers showing.

To score a test paper, lay the Key over the paper in such a way that the heavy circles which are printed with crosses in them at the top of the test appear
through the appropriate holes at the top of the Key. The Key will then be ad-
justed so that all the crosses that the pupils have made in the right circles will show
through the holes in the Key. It is necessary then merely to count the crosses
that appear through the holes. The number of crosses so appearing is the pupil's
score. This should be written in the space provided at the top of the title page.

The pupils have been instructed to be sure not to put more than one cross in
any row of circles. However, if in the case of any item two crosses have been
put in the same row of circles, no credit is given for that item.

There is no need to mark the answers right or wrong in this test, but merely
to count the right answers, for only the total score is of significance.

It is not necessary to fold up the booklets completely after scoring. It will be
found convenient, as each paper is scored, to turn over the right-hand page, by
lifting up the flap, in order to write the score on the title page and lay the paper
aside without entirely refolding it, for when the scores have been transcribed
from the test papers onto the Class Record, the papers may not need to be con-
sulted again.

In the interest of accuracy it is well for each paper to be scored independently
by two persons. If this is done, the score obtained by the first scorer may be
written at the foot of the column of answers for page 1 without turning over the
page and the booklet may be left opened out flat. Then, after the next scorer
has scored the paper and compared his count with that made by the first scorer
and found it to check, the page may be turned and the checked score written on
the title page.

If it is not possible for two persons to score the papers, it is advisable for the
scorer to check his count of correct answers by counting the circles without
crosses in them to see that the sum is 80. (If the number right is 40, record it,
then continue counting, 41, 42, etc.)

Directions for Recording Scores

In each package of tests there is included a Class Record which provides for the
recording of scores of a class.

Before entering the scores, arrange the papers either in alphabetical order or
in order of magnitude of score, according to preference. Then enter the name of
each pupil, his age in years and months, and his score.

Note that provision is made on the Class Record for entering later the IQ of
the pupil and any additional data, such as percentile rank in the class or school,
classification designation, etc., and for entering the median age, median score,
etc., if desired.

Provision is made at the foot of page 2 of the Class Record for distributing the
scores of a class or a school. To distribute the scores of a class, make a mark in
the second column of the table for each pupil's score, putting the mark opposite
the interval within which the score falls. Thus, if the first pupil has made a score
of 63, put a mark opposite 60-64. Draw each fifth mark across the preceding
four like this, \[ \text{JJJ} \text{JJ} \text{JJ} \text{JJ} \]. This makes it easier to count the marks.

After the marks are all entered, count those in each interval and write the
number in the column headed "Freq." (Frequency).

To find the median (middle) score, count from either end of the distribution
to the middle mark. If the middle mark falls, say, in the interval 50-54, sort out
Manual of Directions for Beta Test: Forms A and B

the papers whose scores fall in this interval, and, if the median is the third mark in the interval, find the score on the third paper in that bunch of papers. That score is the median score of the class. (See Chapter II of Otis: *Statistical Method in Educational Measurement*, or a similar text, for detailed explanations of other methods for finding the median.)

**REPORTING TO THE AUTHOR**

To assist in making the norms more comprehensive, the author would appreciate the favor of receiving from each school system using 100 tests or more the following data for each grade:

- Test used (Beta)
- Form used (A or B)
- Grade
- Date of the test
- Median Age (when each age has been recorded in years and months)
- Median Score

That is, the author wishes to know the median age in years and months and the median score of all the pupils in the school system who are in the fourth grade, the same for all who are in the fifth grade, etc., to the ninth grade (whatever grades were tested). Address Dr. Arthur S. Otis, care of World Book Company, Yonkers, New York. This courtesy will be appreciated.

**DISTRIBUTIONS OF SCORES**

Table 1 shows the distributions of scores by ages of 12,983 sixth-grade pupils. About half are from a large city in Ohio and about half from towns and villages of New York State. The median age of these pupils was 12 years and 4 months and the median score 42 points.

The table is read as follows: The column headed 12 contains the distributions of scores of the 5017 sixth-grade pupils whose age last birthday was 12 years, and

<table>
<thead>
<tr>
<th>SCORE INTERVALS</th>
<th>AGE LAST BIRTHDAY</th>
<th>TOTALS</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>9</td>
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<td>75-79</td>
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<td>70-74</td>
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<td>5-9</td>
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</tr>
<tr>
<td><strong>Totals</strong></td>
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<td>285</td>
</tr>
</tbody>
</table>

Median age: 12 yr., 4 mo. Median score: 42

1 Published by World Book Company.
whose ages therefore range from 12 years to 13 years at the time of the test. It shows that, of those pupils, 1 made a score that fell in the interval 75-79, 11 made scores that fell in the interval 70-74, etc.

Table 2 shows the distributions of scores by ages of 2657 urban eighth-grade pupils in South Carolina who took the test in April, 1937. The median age of these pupils was 14 years 5 months and the median score, 46 points.

<table>
<thead>
<tr>
<th>SCORE INTERVALS</th>
<th>AGE LAST BIRTHDAY</th>
<th>TOTALS</th>
</tr>
</thead>
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<tr>
<td></td>
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<td>80</td>
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<td>75-79</td>
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<td>65-69</td>
<td>4</td>
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</table>

Totals 2 82 855 880 482 239 77 33 7 2657

Median Age: 14 yr. 5 mo.  Median Score: 46

These tables are given partly in order to show what wide ranges of ages and ability are found in a single grade. Of course the average classroom does not show quite as wide a range of ages and scores, but nearly so. The need for dividing the pupils of such a grade into more homogeneous groups and the method of doing so are given below under the heading "Application of Results" (see page 11).

**Norms**

If a large number of 12-year pupils take a test and the scores are arranged in order, the median or middle score is considered just normal for 12-year pupils and is said to be the norm for the age of 12 years. Table 3 gives the norms for the various ages of pupils taking Beta.

Table 3 is read as follows: The norm for the age of 8 years 0 months is 13 points of score; the norm for the age of 11 years 3 months is 36 points, etc.

The norms in Table 3 are based in part on the scores of 16,242 pupils in Beta and in part on a comparison of scores in Beta and scores in the Intermediate Examination of the Otis Self-Administering Tests of Mental Ability made by means of an experiment in which 3259 pupils in Grades 4 to 9 took Beta: Forms A and B, and Form A of the Intermediate Examination, in part on a comparison between Beta and Alpha, Nonverbal, in which 612 pupils in Grades 4 and 5 took both these tests, in part on a comparison between Beta and Gamma, in which
TABLE 3

REVISED (1939) AGE NORMS FOR BETA: FORMS A AND B

<table>
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<th>YEARS→</th>
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<th>9</th>
<th>10</th>
<th>11</th>
<th>12</th>
<th>13</th>
<th>14</th>
<th>15</th>
<th>16</th>
<th>17</th>
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<td>57</td>
</tr>
<tr>
<td>7</td>
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<td>8</td>
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<td>47</td>
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<td>57</td>
<td>57</td>
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<td>9</td>
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<tr>
<td>11</td>
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<td>27</td>
<td>34</td>
<td>40</td>
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<td>48</td>
<td>52</td>
<td>54</td>
<td>56</td>
<td>57</td>
<td>57</td>
</tr>
</tbody>
</table>

742 pupils in Grades 7, 8, and 9 took these tests, and in part on a comparison between Beta and the Pintner General Ability Test (1661 scores).

These norms apply to a first test. If a pupil takes a second form of the test later, it is necessary to make a correction for familiarity with the test before using Table 3. (See “Practice Effect” below.)

**Practice Effect**

When a pupil takes a second form of a test within a short time after the first form, he tends to make a better score on the second test. This increase in score is generally called “practice effect.”

It was found that when a second form of Beta was given two days after the first form, the practice effect was about 4 points. This means that to render the second score of a pupil comparable to the first score if the tests were taken two days apart, 4 points should be subtracted from the second score.

Practice effect decreases, of course, as the length of time between tests increases. Possibly the amount of practice effect would drop to about 3 points if the interval were a week; to 2 points if the interval were a month; to 1 point if the interval were three months or more.

Whenever it is desired to find a Mental Age or IQ (see below) from the score of a pupil in a second test, the proper correction should be made for practice effect in the second score before comparing it with the norm for the pupil’s age in Table 3 or before finding the pupil’s Mental Age.

**Mental Ages**

Some examiners wish to express scores in terms of Mental Age. The term “Mental Age” originally meant the age for which a pupil’s score was normal or median. Thus, if a pupil makes a score just normal or median for pupils 10 years old, he is said to have a Mental Age (MA) of 10 years.

This method of interpretation has a serious limitation, since mental growth slows down along with physical growth, and pupils reach a mental maturity in their teens. Thus the highest norm for any age in the Beta Test is 57 points, as shown in Table 3. This means that some pupils make scores that are above what
Otis Quick-Scoring Mental Ability Tests

is normal for any age. In order to express degrees of mental ability which are above the norm for adults in terms of Mental Age, it is customary to proceed as though mental growth did not slow down but kept on increasing at approximately the same rate. According to this supposition, artificial mental ages are assigned to scores above age 13. This is called “extrapolation.” This extrapolation method is used also with the Binet Scale.

According to the above method the following table of Mental Ages (Table 4) has been drawn up.

Table 4 is read as follows: A score of 1 in Beta: Form A or Form B, denotes a Mental Age of 6 years 5 months; a score of 61 may be treated as denoting a Mental Age of 16 years 0 months (though actually it is 4 points above the norm for adults).

<table>
<thead>
<tr>
<th>Score</th>
<th>MA</th>
<th>Score</th>
<th>MA</th>
<th>Score</th>
<th>MA</th>
<th>Score</th>
<th>MA</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>6-5</td>
<td>21</td>
<td>9-2</td>
<td>41</td>
<td>12-3</td>
<td>61</td>
<td>16-0</td>
</tr>
<tr>
<td>2</td>
<td>6-6</td>
<td>22</td>
<td>9-3</td>
<td>42</td>
<td>12-5</td>
<td>62</td>
<td>16-2</td>
</tr>
<tr>
<td>3</td>
<td>6-7</td>
<td>23</td>
<td>9-5</td>
<td>43</td>
<td>12-8</td>
<td>63</td>
<td>16-4</td>
</tr>
<tr>
<td>4</td>
<td>6-9</td>
<td>24</td>
<td>9-7</td>
<td>44</td>
<td>12-10</td>
<td>64</td>
<td>16-6</td>
</tr>
<tr>
<td>5</td>
<td>6-11</td>
<td>25</td>
<td>9-8</td>
<td>45</td>
<td>13-0</td>
<td>65</td>
<td>16-8</td>
</tr>
<tr>
<td>6</td>
<td>7-0</td>
<td>26</td>
<td>9-10</td>
<td>46</td>
<td>13-3</td>
<td>66</td>
<td>16-10</td>
</tr>
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<td>7</td>
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<td>10-0</td>
<td>47</td>
<td>13-5</td>
<td>67</td>
<td>17-0</td>
</tr>
<tr>
<td>8</td>
<td>7-4</td>
<td>28</td>
<td>10-1</td>
<td>48</td>
<td>13-8</td>
<td>68</td>
<td>17-2</td>
</tr>
<tr>
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<td>7-5</td>
<td>29</td>
<td>10-3</td>
<td>49</td>
<td>13-11</td>
<td>69</td>
<td>17-4</td>
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<td>30</td>
<td>10-5</td>
<td>50</td>
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<td>70</td>
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<tr>
<td>11</td>
<td>7-9</td>
<td>31</td>
<td>10-7</td>
<td>51</td>
<td>14-4</td>
<td>71</td>
<td>17-8</td>
</tr>
<tr>
<td>12</td>
<td>7-10</td>
<td>32</td>
<td>10-8</td>
<td>52</td>
<td>14-6</td>
<td>72</td>
<td>17-10</td>
</tr>
<tr>
<td>13</td>
<td>8-0</td>
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<td>10-10</td>
<td>53</td>
<td>14-8</td>
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<td>18-0</td>
</tr>
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<td>14</td>
<td>8-2</td>
<td>34</td>
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<td>14-10</td>
<td>74</td>
<td>18-2</td>
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<td>15</td>
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<td>11-2</td>
<td>55</td>
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<td>75</td>
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<td>11-6</td>
<td>57</td>
<td>15-4</td>
<td>77</td>
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<tr>
<td>18</td>
<td>8-9</td>
<td>38</td>
<td>11-8</td>
<td>58</td>
<td>15-6</td>
<td>78</td>
<td>18-10</td>
</tr>
<tr>
<td>19</td>
<td>8-10</td>
<td>39</td>
<td>11-10</td>
<td>59</td>
<td>15-8</td>
<td>79</td>
<td>19-0</td>
</tr>
<tr>
<td>20</td>
<td>9-0</td>
<td>40</td>
<td>12-0</td>
<td>60</td>
<td>15-10</td>
<td>80</td>
<td>19-2</td>
</tr>
</tbody>
</table>

Measuring Brightness

Pupils making the same score in the test are presumed to have the same mental ability or, as we say, the same Mental Age even though their actual ages (spoken of as “chronological ages”) are not the same. That is, as explained above, a pupil who makes a score equal to the norm for the age of 10 years is said to have a Mental Age of 10 years, whether the pupil is 10 years old or 9 years old or 11 years old.

A 10-year pupil who has a Mental Age of 11 years is brighter than normal, and a measure of his brightness is often found by dividing his Mental Age of 11 years by his “chronological age” of 10 years (11 ÷ 10 = 1.10). The decimal point is then dropped and the 110 is called the pupil’s Intelligence Quotient (IQ). Intelligence Quotients so found cluster most thickly around 100, but in a few instances go above 150 and below 50. They are distributed according to the “law of normal distribution.”

A study of the dispersion of IQ’s of various populations aggregating 100,000 pupils, tested by various group tests of mental ability, showed standard deviations
Manual of Directions for Beta Test: Forms A and B

of IQ's ranging from 10 to 19 points of IQ for the various populations, the median value of the standard deviation of IQ's being between 15 and 16 points; hence theoretically about \( \frac{1}{10} \) of 1% of pupils make IQ's of 150 or over, \( \frac{1}{8} \) of 1% of pupils make IQ's of 142 or over, and so on as shown in Table 5.

### TABLE 5

<table>
<thead>
<tr>
<th>This per cent of pupils</th>
<th>make these IQ's:</th>
<th>This per cent of pupils</th>
<th>make these IQ's:</th>
</tr>
</thead>
<tbody>
<tr>
<td>( \frac{1}{10} ) of 1%</td>
<td>150 or over</td>
<td>( \frac{1}{10} ) of 1%</td>
<td>50 or less</td>
</tr>
<tr>
<td>( \frac{1}{8} ) of 1%</td>
<td>142 or over</td>
<td>( \frac{1}{8} ) of 1%</td>
<td>58 or less</td>
</tr>
<tr>
<td>1%</td>
<td>136 or over</td>
<td>1%</td>
<td>64 or less</td>
</tr>
<tr>
<td>5%</td>
<td>126 or over</td>
<td>5%</td>
<td>74 or less</td>
</tr>
<tr>
<td>10%</td>
<td>121 or over</td>
<td>10%</td>
<td>79 or less</td>
</tr>
<tr>
<td>25%</td>
<td>111 or over</td>
<td>25%</td>
<td>89 or less</td>
</tr>
<tr>
<td>33 1/3%</td>
<td>-107 or over</td>
<td>33 1/3%</td>
<td>93 or less</td>
</tr>
<tr>
<td>50%</td>
<td>100 or over</td>
<td>50%</td>
<td>100 or less</td>
</tr>
</tbody>
</table>

A measure of brightness comparable to the IQ can be found from scores of pupils in the Beta Test according to the method below. Although the measures are not quotients, they are called “Beta IQ’s” because they are comparable to IQ's.

**How to Find a Pupil’s “Beta IQ”**

1. Find the norm for the pupil’s age from Table 3.
2. Find the amount by which the pupil’s score exceeds (or falls below) the norm for his age. Call this his “deviation of score.”
3. Add the pupil’s deviation of score to 100 (or subtract from 100 if the deviation is downward). The result is the pupil’s “Beta IQ.”
4. If a pupil’s score is above 70, it is to be augmented before proceeding with Steps 2 and 3 above. Treat a score of 71 as though it were 72. Treat a score of 72 as though it were 74, etc., according to Table 6.

### TABLE 6

<table>
<thead>
<tr>
<th>Treat a score of</th>
<th>71</th>
<th>72</th>
<th>73</th>
<th>74</th>
<th>75</th>
<th>76</th>
<th>77</th>
<th>78</th>
<th>79</th>
<th>80</th>
</tr>
</thead>
<tbody>
<tr>
<td>as though it were</td>
<td>72</td>
<td>74</td>
<td>76</td>
<td>78</td>
<td>80</td>
<td>82</td>
<td>84</td>
<td>86</td>
<td>88</td>
<td>90</td>
</tr>
</tbody>
</table>

As a sample of Step 4, suppose a pupil of 16 years 6 months makes a score of 75 in Form A. The norm for 16 years 6 months is 55. To find his deviation of score, treat the score of 75 as though it were 80, subtract 55 from 80 (answer 25), and add 25 to 100, yielding a “Beta IQ” of 125.

Various determinations of the dispersion of “Beta IQ’s” yield standard deviations of “IQ” of from 10 to 17 points for various populations. It is believed that “Beta IQ’s” tend to be somewhat less dispersed than IQ’s obtained by the division method from group tests in general (that is, they tend to be somewhat nearer to 100). Therefore allowance should be made for this fact when comparing “Beta IQ’s” with ordinary IQ’s from other tests.

However, the above method is recommended as yielding measures of brightness that are more consistent and constant for a given individual than ordinary IQ’s.
By "reliability" is meant the degree of precision with which a test measures what it measures.

One common measure of the reliability of a test is the coefficient of correlation between two forms of the test. Table 7 gives the coefficients of correlation between Forms A and B in Grades 4 to 9 of a large school system, the average number of pupils per coefficient being 86. The average of the 12 coefficients is .79. For Grades 4 to 9 combined the coefficient is .96.

<table>
<thead>
<tr>
<th>GRADES</th>
<th>A (1st)-B (2d)</th>
<th>B (1st)-A (2d)</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>.730</td>
<td>.764</td>
</tr>
<tr>
<td>5</td>
<td>.979</td>
<td>.842</td>
</tr>
<tr>
<td>6</td>
<td>.826</td>
<td>.859</td>
</tr>
<tr>
<td>7</td>
<td>.711</td>
<td>.869</td>
</tr>
<tr>
<td>8</td>
<td>.833</td>
<td>.688</td>
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<tr>
<td>9</td>
<td>.665</td>
<td>.651</td>
</tr>
<tr>
<td>COMBINED</td>
<td>.96</td>
<td>.865</td>
</tr>
</tbody>
</table>

Another measure of reliability is the coefficient of correlation between odd and even items of a single test. This is virtually a correlation between two forms of a short test each half as long as the full test, the two tests being given, we might say, simultaneously.

It is customary, then, to correct the coefficients of correlation between the half tests by the Spearman-Brown formula to obtain the corresponding coefficient for two full-length tests given under the same circumstances.

The coefficients of correlation for the odd and even items of one test are as shown in Table 8.

<table>
<thead>
<tr>
<th>GRADES</th>
<th>CORRECTED COEFFICIENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>.81</td>
</tr>
<tr>
<td>5</td>
<td>.92</td>
</tr>
<tr>
<td>6</td>
<td>.90</td>
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<tr>
<td>7</td>
<td>.87</td>
</tr>
<tr>
<td>8</td>
<td>.86</td>
</tr>
<tr>
<td>9</td>
<td>.79</td>
</tr>
</tbody>
</table>

The average of the six corrected coefficients in Table 8 is .86, which is 7 points higher than .79, the average of the coefficients of Table 7. This deficiency of 7 points in the coefficients of Table 7 is due to the instability of the pupils themselves. That is, if pupils remained as constant in ability from day to day as from moment to moment, so to speak, the coefficients in Table 7 would be as high as the coefficients in Table 8.

By validity of a test is meant the degree to which it measures the ability it is designed to measure. Or we might say, it is the degree to which it serves its purpose.

Now the purpose of the Beta Test is most generally that of finding the degree of brightness of a pupil; that is, obtaining some measure (such as the IQ) that indicates the probable rate of progress the pupil will make in school. This being the case, it follows that actual rate of progress of pupils through school is the most appropriate criterion of the validity of the Beta Test.
This criterion is the one that was used in the standardization of the Otis Intermediate Examination, from which most of the items of the Beta Test were taken. The method is described in the Manual for the Otis Self-Administering Tests of Mental Ability (page 3). The determination of the validity of each item consisted of comparing the number of passes of that item by a group of pupils who were making rapid progress through school with the number of passes of the item by a group of pupils who were making slow progress through school. Only those items were used which showed a distinct gain in number of passes of the rapid-progress pupils over the number of passes of the slow-progress pupils. Each item justified its inclusion, therefore, because it contributed definitely to the capacity of the test to measure brightness as reflected in rate of progress through school.

**Probable Error of a Score**

Another measure of reliability which is entirely independent of the degree of heterogeneity of the group is the probable error of a score. By “probable error of a score” is meant the median amount by which any pupil's actual score differs from his true score. While we do not know the true score of any pupil (by which is meant the average of a great many scores found under identical conditions), we can tell from the differences between scores pupils make in two forms what this probable error is.

In the case of 465 pupils in Grades 4 to 9 the median amount of difference between two scores of the same pupil was 3.8 points, from which it follows theoretically that the probable error of a score is 2.7 points. \(3.8 \div \sqrt{2} = 2.7\)

That is, a pupil's score will be in error only between 0 and 2.7 points in 50% of cases, and so on as shown in Table 9.

**Table 9**

<table>
<thead>
<tr>
<th>In this per cent of cases</th>
<th>the pupil's score will probably be in error</th>
</tr>
</thead>
<tbody>
<tr>
<td>50%</td>
<td>between 0 and 2.7 points</td>
</tr>
<tr>
<td>32%</td>
<td>between 2.7 and 5.4 points</td>
</tr>
<tr>
<td>16%</td>
<td>between 5.4 and 8.1 points</td>
</tr>
<tr>
<td>2%</td>
<td>over 8.1 points</td>
</tr>
</tbody>
</table>

**Application of Results**

Purposes of mental ability tests. The principal purposes for which mental tests are given are these:

1. For teaching purposes, to discover which pupils are bright and capable of doing better school work than they are doing and to discover which pupils are dull and may be attempting work beyond their capacity.

2. For administrative purposes, to regrade pupils so that the pupils in any one grade will be more homogeneous in mental ability and therefore able to progress at a more nearly the same rate than otherwise.

3. For administrative purposes, to classify pupils into separate groups within grades in order that the brighter or the more mature pupils may be given an enriched curriculum and in order that the duller or the less mature pupils may be allowed to progress at a slower rate.
Such classifying is sometimes done on the basis of score (dividing the pupils on the basis of mental maturity) and sometimes on the basis of IQ (dividing the pupils on the basis of brightness). The first of these methods is recommended.

4. For research purposes, to obtain two or more groups of equal mental ability or brightness which may be given different methods of instruction for the purpose of determining which method is superior.

5. For guidance purposes, to assist pupils to choose wisely in planning their educational, recreational, and vocational programs.

6. For administrative purposes, to determine the comparative mental status of pupils of different schools or localities.

Distributing scores. For any one of the purposes mentioned above it is desirable to distribute the scores of a class. This is usually done by finding the intervals 0–4, 5–9, etc., into which the scores fall. Provision is made for so distributing the scores of a class on the Class Record, a copy of which is enclosed in each package of tests.

Classifying pupils according to score. If desired to divide the pupils of a grade into classes according to score, the scores of all the pupils of the grade may be entered in one distribution on a Class Record or the test papers may be arranged in order of score. The scores may then be divided into an upper third, middle third, and lower third, or in any other convenient way, and the pupils classified accordingly.

It will be found that pupils so grouped are much more alike in their ability to learn than the pupils of the whole group and can be taught together much more easily.

Acknowledgments

Thanks are due to Dr. Leon N. Neulen, Superintendent of Schools, Camden, New Jersey, and to the teachers of Camden; to Dr. W. C. McCall, University Personnel Bureau, University of South Carolina; to Dr. William L. Connor, formerly head of the Bureau of Research at Cleveland; and to Dr. Leo J. Brueckner of the University of Minnesota, for kind cooperation in furnishing scores for standardizing the Beta Test.

Thanks are due also to Dr. A. L. Maxon, Director of Research, Department of Public Instruction, Schenectady, New York, for cooperation in the standardization of Beta, Form Cm.
Examination begins here.

1. Which one of the five things below does not belong with the others?
   1. potato 2. turnip 3. carrot 4. stone 5. onion

2. Which one of the five answers below tells best what a sword is?
   1. to cut 2. a weapon 3. an officer 4. a tool 5. to fight

3. Which one of the five words below means the opposite of north?
   1. east 2. star 3. south 4. pole 5. equator

4. The smell of is to a banana and the color is to an ear of corn the same as a shell is to what?
   1. an apple 2. an egg 3. juice 4. a peach 5. a hen

5. A child who knows he is guilty of doing wrong should feel?
   1. bad 2. sick 3. better 4. afraid 5. ashamed

6. Which one of the five things below is the largest?
   1. knee 2. toe 3. leg 4. ankle 5. foot

7. Which one of the five words means the opposite of strong?
   1. man 2. weak 3. small 4. short 5. thin

8. Three of the four designs at the right are alike.
   Which one is not like the other three?
   [Designs: 1, 2, 3, 4, 5]

9. Which one of the five things below is most like these three: a chair, a bed, and a stove?
   1. a chair 2. a stick 3. a window 4. a table 5. a floor

10. A knee is to a leg as an elbow is to what?
    1. an arm 2. a shoulder 3. a bone 4. a wrist 5. a hand

11. Which word means the opposite of joy?
    1. sorrow 2. bad 3. happiness 4. joy 5. cry

12. If I find a kind of plant that was never seen before, I have made —
    1. an invention 2. an adoption 3. a creation 4. a novelty 5. a discovery

13. A sculptor is to a statue as an author is to —
    1. a book 2. a man 3. a name 4. a bookcase 5. a pen

14. At 3 cents each, how many pencils can be bought for 27 cents?
    1. 27 2. 21 3. 3 4. 5 5. 30

15. Three of the four designs at the right are alike.
    Which one is not like the other three?
    [Designs: 1, 2, 3, 4, 5]

16. Which is the most important reason that words in the dictionary are arranged alphabetically?
    1. It is the simplest arrangement. 2. It puts the shortest words first. 3. It enables us to find any word quickly. 4. It is a custom. 5. The printing is easier.

17. Which one of the five things below is most like these three: a saw, a hammer, and a file?
    1. a brush 2. a pen 3. a screwdriver 4. a fork 5. a carpenter

18. If the following words were arranged in order, which word would be in the middle?
    1. luncheon 2. dress 3. undress 4. supper 5. breakfast

19. The saying, "Don't count your chickens before they are hatched," means —
    1. Don't hurry 2. Don't be too sure of the future. 3. Haste makes waste. 4. Don't gamble. 5. Don't raise chickens.

20. Three of the four designs at the right are alike.
    Which one is not like the other three?
    [Designs: 1, 2, 3, 4, 5]

21. A boy who often tells big stories about what he can do is said to —
    1. lie 2. fake 3. boast 4. joke 5. brag

22. Which tells best just what a colt is?
    1. an animal with hoofs 2. an awkward little beast 3. an animal that runs fast 4. a young horse 5. a little animal that eats hay.

(Go right on to Page 2.)

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23. Which of the five things below is most like these three: a horse, a pigeon, and a cricket?
    1. a stall 2. a saddle 3. a feather 4. a goat 5. a wing

24. Railroad tracks are to a locomotive as what is to an automobile?
    1. tires 2. steam 3. speed 4. the road 5. gasoline

25. Which word means the opposite of pretty?
    1. good 2. ugly 3. bad 4. crooked 5. nice

26. Which one of the words below would come first in the dictionary?
    1. tramp 2. saint 3. razob 4. quart 5. gass

27. An event which is sure to happen is said to be —
    1. probable 2. possible 3. doubtful 4. certain 5. delayed

28. One number is wrong in the following series. What should that number be?
    1. 7 1 7 2 7 3 7 4 7 5 7 6 7 7 1 7 2 6 3 8 4 5 5

29. Which of these series contains a wrong number?
    1. 3-6-9-12-15 2. 2-5-8-11-14 3. 3-4-7-10-12 4. 2-4-6-8-10 5. 1-3-5-7-9

30. Which one of the five things below is most like these three: a ship, a bicycle, and a truck?
    1. a sail 2. a wheel 3. a train 4. the ocean 5. a tire

31. Which statement tells best just what a halfway is?
    1. a small room 2. a place to hang your hat and coat 3. it is long and narrow 4. where to say goodbye 5. a passage leading from one room to another

32. Steam is to water as water is to —
    1. hot 2. ice 3. an engine 4. a solid 5. gas

33. Which one of these words would come last in the dictionary?
    1. health 2. juggle 3. normal 4. never 5. grateful

34. If George is taller than Frank and Frank is taller than James, then George is ()?
    1. taller than 2. shorter than 3. just as tall as 4. (cannot say which)

35. A man who betrays his country is called a —
    1. thief 2. traitor 3. enemy 4. coward 5. slacker

36. Count each 7 below that has a 5 next after it.
    75 30 87 35 87 74 217 57 324 70 937 57 57 57 47

37. How many such 7's did you count?
    1. 11 2. 22 3. 33 4. 44 5. 55

38. The daughter of your mother's brother is my —
    1. sister 2. niece 3. cousin 4. aunt 5. granddaughter

39. Peace is to war as (?) is to confusion.
    1. explosion 2. order 3. armistice 4. riot 5. police

40. If Paul is older than Herbert and Paul is younger than Robert, then Robert is (?)
    1. older than 2. shorter than 3. just as old as 4. (cannot say which)

41. If the following words were arranged in order, with what letter would the middle word begin?
    Week Year Hour Second Day Month Minute
    1 W 2 S 3 H 4 D 5 M

(Go right on to Page 3.)
to make a good sentence, the third word of the sentence would begin with a wall built stone.

1. Which one is not like

1. stone
2. wood
3. water
4. glass

2. Stormy weather causes large waves in harbors.

3. Ships usually sink in storms.

4. Most like these three: cannon ball, wire, and penny?

5. Tag (don't)

6. Pencil (not)

7. Key (not)

8. Horse in the mouth. This means —

9. Worth of a horse. You cannot judge the age of a gift horse by his teeth.

10. Although you question the value of a gift, accept it graciously.

11. A shepherd (a)

12. A dog (a)

13. To make a good sentence, with what letter would the last word of the sentence start?

14. Table wood

15. 1 w 2 d 3 a 4 t 5 m

16. Sides yield somewhat in their demands. He called —

17. An understanding

18. A deadlock

19. An armistice

20. Which one is not like

21. Letter that comes next after M in the alphabet?

22. Reading series: 1 2 4 8 24 32 64 What should that number be?

23. 5 48

24. Boxes in it and five very small boxes in each small box, how many boxes?

25. Even 3 ten 4 twelve 5 thirteen

26. Practice is worth a pound of preaching. This means —

27. More than words.

28. Preaching takes practice.

29. Don't practice.

30. A 3 inches long is enlarged to be 10 inches wide, how many inches?

31. 3 15 4 20 5 30

32. 1 2 4 5 7 8 10 11 12 14 What should that number be?

33. 1 2 4 6 8 10 12 14 16

34. States past 10, the hands were interchanged. The clock then said about —

35. 10 3 8 min. of 2 4 5 min. of 10 5 8 min. past 2

36. Radiator containing 1 quart of alcohol to every 2 quarts of water. How many quarts of the mixture?

37. 1 7 2 4 3 14 4 20 5 5

38. Bears a third time nearest the beginning?

39. B C D A E B D 1 A 2 B 3 C 4 D 5 E

40. "Pisa secu means white snow; numer corva means very well.

41. 2 nume 3 bega 4 copa 5 serco

42. Not belong with the others?

43. 4 generous 5 loyal

44. His sister. In 4 years he will be only twice as old. How many years old?

45. 3 4 4 5

46. A quantity which grows larger is said to —

47. 1 prosper 2 increase 3 fatten 4 rise 5 bear

48. A bicycle is to a motorcycle as a wagon is to what?

49. 1 an engine 2 an automobile 3 a horse 4 a 5 an airplane

50. Which of the five things below is most like these three: a tie, flag, and a sail?

51. 1 a shoe 2 a ship 3 a 4 a towel 5 a rope

52. What is the most important reason that we use clocks?

53. 1 To wake us up in the morning. 2 Help us catch the train. 3 To regulate our daily lives. 4 They are ornaments.

54. 5 So that children will get to school on time.

55. If the following words were rearranged to make a good sentence, what letter would the third word of the sentence begin with?

56. Stone houses built of men wood and

57. 1 a 2 b 3 c 4 m 6 w

58. Which of these expressions is the most definite?

59. 1 soon 2 early 3 later 4 morning 5 ten

60. A vase is to flowers as (?) to milk.

61. 1 a cow 2 a pitcher 3 white 4 drink 5 e

62. A lamp is to a light as (?) to a breeze.

63. 1 a fan 2 bright 3 sailboat 4 a window 5 l

64. If the following words were arranged in order, which word would be in the middle?

65. 1 good 2 excellent 3 wretched 4 fair 5

66. If Henry is taller than Tom and Henry is shorter than George, then George is (?) to Tom. 1 taller than 2 shorter than

67. 3 just as tall as 4 (cannot say which).

68. A king is to a kingdom as a president is to what?

69. 1 q 2 vice-president 3 senate 4 republic 5 dem

70. John is the fifth child from each end of a row. How many puppets are there in a row?

71. 1 ten 2 eleven 3 seven 4 nine 5 five.

72. Which tells best what an automobile is?

73. 1 a thing with nothing to travel in 3 an engine mounted on wheels 4 a horseless carriage 5 a vehicle propelled by an engine.

74. Brick is to a wall as (?) is to a table.

75. 1 a chair 2 red 3 eat 4 a kitchen 5 w

76. A wire is to electricity as (?) is to gas.

77. 1 a flame 2 a spark 3 hot 4 a pipe 5 a

78. An object or institution that is designed to last only a time is said to be —

79. 1 temporary 2 changeable 3 unbreakable 4 worthless 5 unstable

80. Which word means the opposite of humility?

81. 1 joy 2 pride 3 dry 4 funny 5 reckless

82. A word that means suitable, fit, or proper is —

83. 1 grotesque 2 odd 3 inadequate 4 superficial 5 appropriate

84. (Go on to Page 4 under P.)