

INTRODUCTION  
TO THE USE OF  
STANDARD  
TESTS  
PRESSEY



# INTRODUCTION TO THE USE OF STANDARD TESTS

*A BRIEF MANUAL IN  
THE USE OF TESTS OF BOTH  
ABILITY AND ACHIEVEMENT  
IN THE SCHOOL SUBJECTS*

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The aim of the World Book Company is to publish books that apply the world's knowledge to the world's needs. The need for knowledge of the ways and means of using and profiting by standard tests is the one that is felt more than any other at the present time by those engaged in educating the children of the country and the world. A great fund of information as to the use of standard tests is possessed by those who have specialized in this subject. The authors of this book are such specialists, and they seek to apply this knowledge to the needs of the busy teacher, principal, and superintendent, who are increasingly realizing the importance and the necessity of mental and educational tests.

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# INTRODUCTION TO THE USE OF STANDARD TESTS

## INTRODUCTORY

NO longer ago than 1908 appeared the first systematically organized form of the Binet Scale. In 1910 was published the first of the modern scales for the measurement of classroom products — Thorndike's Scale for Measuring the Quality of Handwriting. In 1915 Otis devised the first group scale for measuring general intelligence, embodying the principles later used in the army group tests. These dates may be taken as marking the real beginnings of the present efforts to measure mental ability and school attainment, though of course there had been scattered work in both lines before these years.<sup>1</sup>

The measurement movement, therefore, is comparatively new; in fact, the most important developments have come during the past few years. Particularly did the extensive psychological work done in the army during 1917 and 1918 give a new impetus to the movement, and establish new methods in testing. The testing of over one million draftees, and the use of test results in placing these men where they would be of the greatest value to the service, demonstrated the usefulness of these methods in a striking and dramatic way. As a result of the army work, and of continued

<sup>1</sup> Thus Rice's report on spelling in 1897 may be considered the first effort, in this country, to investigate empirically the product of teaching, and Cattell's paper in 1890, dealing with his tests of Columbia freshmen, the beginning of measurements of ability.



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trial of tests in the schools, it may be said that the usefulness of the test method is now an established fact. And tests are being used to an extraordinary extent, both in the public schools and in the selection of employees by business houses. A large number of excellent tests are now available; methods are gradually becoming standardized.

Now that tests are being used very extensively, by teachers and others not especially trained in their use, there is needed a simple and direct manual, covering tests of both ability and achievement, to make clear to such workers the fundamental facts with regard to tests, the handling of test results, and the significance to be attached to the results of testing. Particularly there is need of a systematic treatment of the ways in which test results may be used in dealing with school problems. The present brief text aims to fill, in some measure, the need for such a manual.

The effort has been first of all (1) to give a clear discussion of the nature of tests, the problems that may be dealt with profitably by means of tests, simple methods for the handling of test results, and common mistakes to be avoided. Every effort has been made to keep the treatment non-technical, and to make it of the most practical character. In the second part of the manual (2) certain of the best and most representative tests in the various school subjects are presented. This presentation has been made brief, since, with the present activity in this field, improved instruments are constantly appearing and present scales and tests will become out of date. Therefore attention has been concentrated rather upon the fundamental problems of

measurement in the various fields, and present tests have been used as illustrative material. In the third part (3) tests of ability, particularly tests of general intelligence, have been discussed in the same way, with special emphasis on the practical uses of test results. Finally (4) certain general principles with regard to the way in which test work should be organized, and related to practical problems, have been emphasized.

The manual is thus intended as an introductory handbook in the use of tests. The effort has been, throughout, to suit the book to the needs of the busy teacher, principal, or superintendent.

PART ONE

HOW TO USE THE

**PART ONE**  
**HOW TO USE TESTS**

# CHAPTER ONE

## THE FIRST CHAPTER

THE FIRST CHAPTER OF THE HISTORY OF THE UNITED STATES OF AMERICA, AS TOLD BY THE PEOPLE WHO WERE THERE, IS A STORY OF THE STRUGGLE FOR FREEDOM AND INDEPENDENCE. IT IS A STORY OF THE BATTLE OF BOSTON, THE DECLARATION OF INDEPENDENCE, AND THE FIGHT FOR THE CONSTITUTION. IT IS A STORY OF THE GREAT MEN WHO WERE THERE, AND OF THE GREAT IDEAS WHICH THEY FIGHTED FOR. IT IS A STORY OF THE FIRST STEPS TOWARDS THE BUILDING OF A NEW NATION, AND OF THE FIRST STEPS TOWARDS THE ACHIEVEMENT OF FREEDOM AND INDEPENDENCE. IT IS A STORY OF THE FIRST CHAPTER OF THE HISTORY OF THE UNITED STATES OF AMERICA, AS TOLD BY THE PEOPLE WHO WERE THERE.

## CHAPTER ONE

### WHAT IS A TEST?

**B**EFORE the appearance of the standard tests and scales with which this book is to deal, "test" was synonymous with "examination" or "written review." A test consisted of a number of questions selected by the teacher, and covering what she thought to be the important points of the subject studied. But with the introduction of the standard scales the word "test" has taken on a new meaning — a meaning which, superficially, appears very thoroughly to differentiate it from the ordinary school examination. Many teachers and administrators are still skeptical of the value of the new "tests" advocated by educationalists and psychologists. These practical schoolmen are skeptical not only of the practical value of the results obtained by use of these tests, but of the essential soundness of the present test movement. There is a feeling that testing is a time-consuming, artificial, and one-sided way of obtaining information which the teacher may acquire much better by her own observation of her pupils and their work. These circumstances make it necessary that the exact nature of the tests and the advantages of the test method should be thoroughly understood. It will be found the fundamental contention of this book that tests, as the term is now used, are not merely a very special method to be used only on special occasions. Instead, the new tests are the result of an effort to avoid certain limitations and failings of the usual written examinations. And it will be argued that, far from being a special method to be used only rarely,

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tests should be part of the equipment of every school, because tests will do much that has heretofore been done not at all or not so well by the usual examinations given by teachers or principal.

Three distinctive features of the "test," as compared with the usual school examination, will be pointed out.

### 1. CHOICE OF SUBJECT MATTER OF STANDARD TESTS

*A good test covers only the really important points of a subject.* A teacher intends to cover only important points, but no one person can have an unbiased opinion as to what is important. The maker of a test consults as many textbooks as he can find, talks with as many teachers of the subject as possible, corresponds with advanced students and experts in the subject under consideration, and so comes to a conclusion as to what points, in the total amount of subject matter, are of greatest importance. He then discards those questions that seem of relatively little significance and keeps only those which deal with basic facts. The subject matter of the tests is, then, far more carefully considered than are the questions of a school examination. The writers themselves have been guilty of making up the questions for an ordinary classroom examination while riding in the street car on the way to class; and they know some teachers who announce there will be a written lesson and then turn to the blackboard and write down such questions as occur to them while writing. It is evident that even the careful reflection of one person — and such reflection is not infrequently missing — cannot produce questions of so consistently



important a nature as can the thoughtful consideration of the problem by many people.

For instance, the Hahn-Lackey Geography Scale consists of a series of questions very carefully chosen. First, questions common to six modern textbooks were selected; only the essentials of the subject matter were thus included. This list of questions was also checked by study of the curricula worked out by special students of geography teaching in the public schools. Then the wording of these questions was very carefully examined to eliminate expressions that were over-technical. And the exercises were revised so that they contained about an equal number of "memory" and "thought" questions. It should be obvious that questions thus carefully selected are much more valuable than questions which might be chosen by a single teacher, no matter how careful she might be in making up her examination.

The best tests are based on very careful research as to the fundamental objectives in the subject concerned, and the material is selected with reference to its importance for these objectives. Thus, before constructing the Ayres Spelling Scale its author determined, by very careful and extended investigation, the words actually used most commonly by children and adults, in written work. The scale was then made to include only the one thousand words used most frequently. Clearly these are the one thousand words which it is most necessary that children should learn to spell.

*Moreover, not only is the importance of the questions in a standard test determined, but also their relative difficulty.* This is evidently of decided importance. The questions of a test should be neither too easy for the most capable children in the class nor too hard for the poorest children. Preferably the questions should be arranged in order from the easiest to the hardest.

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And the increases in difficulty should be regular. That is, Question 6 in the test should be as much harder than Question 5 as Question 5 is harder than Question 4. Actual experimentation has shown that it is practically impossible for a teacher to estimate the difficulty of questions; a question which she thinks easy, and to which she assigns little credit, may really be hard for the pupils.<sup>1</sup> The difficulty of each question in a standard test has been carefully determined by trial with a large number of school children. The test thus contains materials suitable for all degrees of ability in the grades to which it is applicable; there are some questions easy enough for the poorest pupils and some questions hard enough to try the mettle of even the best students. And the regular increases in difficulty make the test into a "scale" in which the units are, in a very important way, equal. And we can say that a child who scores 5 on the scale is as much better than the child who scores 4 as he is poorer than the child who scores 6; the child with the score of 5 does work as much more difficult than 4 as it is easier than 6.

Thus, Monroe's Silent Reading Tests begin with items which are very easy and progress by comparatively even steps to items of decided hardness, for the children to whom the test is supposed to be given. And a child is credited more for doing a hard item than for doing an easy one.

A "test" is thus to be distinguished from the usual school examination first of all by the extreme care used in the selection of materials for the test. The question

<sup>1</sup> Comin, Robert, "Teachers' Estimates of the Ability of Pupils." *School and Society*, Vol. 3, page 67, 1916.