

stance, would probably indicate that the child needs special attention if he is to get much good out of his school work, and one below 3 might indicate feeble-mindedness, though this should be verified by the Binet test.

We have standards now for only the three ages given. Any child may be judged by the standards nearest his own age at the time of the taking of the test. We shall be glad to receive results of this test on children of ages from 6 to 12 years; that is, the number of minutes for each child, the number of repetitions (including the last two with no errors), and the number of errors. Results will be of no value unless all the conditions of the test are followed exactly. The age of each child must be given in years and months to the nearest month. When we get results of tests of a large number of children of each age we shall publish better norms for the use of all teachers interested.

One of the greatest benefits that the writer has derived from the giving of this learning test to numerous subjects is the insight into their mental operations that it affords. Every person has his own characteristic manner of wrestling with the problem, and the tester, who makes a complete record of the subject's significant responses, comes to appreciate keenly the nature of his several difficulties and even to anticipate those that will arise in successive repetitions. He notices failure of retention due to improper attention to essential relations; narrowing of attention due to confusions resulting from slight errors, and consequent failure to avoid guessing numbers that he knows full well belong to letters already learned; strong tendencies, probably innate, on the part of certain persons to respond in a sort of trial and error manner even to a rational problem and then to think afterwards; and many other individual differences and general principles of learning which give him a real interest in and knowledge of the processes of learning with which the teacher has so much to do.

JOSEPH PETERSON

The first thing, naturally, when one enters a scholar's study or library, is to look at his books. One gets a notion very speedily of his tastes and the range of his pursuits by a glance round his bookshelves.—Oliver Wendell Holmes.

### III

#### SOME OF THE NEWER TESTS

With the opening of school the problem arises afresh of measuring the material at hand and of measuring the result of instruction. Numerous school systems have now established the thrice-a-year plan of measuring achievement and intelligence, and most progressive schools do some desultory testing.

The purposes of this article are to call attention to a somewhat wider range of testing devices and materials than is in general use and to point out some of the newer developments in testing. Later articles will furnish special bibliographies and detailed studies of special problems and the use of different tests.

While the new crop of tests each year is bewildering, two very sane tendencies apparently can now be seen at the end of the dozen years since Thorndike's test in handwriting, the first of its kind, came out. Many tests have fallen out of general use, and those that are proving more valuable and adaptable are being rigidly revised and the accompanying directions for giving and scoring are being simplified and improved. It is therefore certain that the teacher's tools of diagnosis will in the next few years be tremendously improved so that a quarter century of the testing movement is likely to show far greater progress than any corresponding period even in the history of medical practice.

#### INTELLIGENCE TESTS AND TESTING<sup>1</sup>

Individual testing of the intelligence of pupils will be made somewhat less expensive of both time and money by using the new Herring Revision of the Binet-Simon Tests. This is arranged in what may be called the spiral form so that a short series of tests may be given if the intelligence quotient only is desired or a longer series if a diagnosis of the child's strengths and weaknesses is desired. It is claimed that results with this test correlate very closely with those gotten by the use of the Terman Revision which has been in vogue for some time and has

<sup>1</sup>The majority of the tests referred to in this article are published and distributed by the World Book Company, Yonkers, N. Y. Unless therefore the tests mentioned are published by another concern, the publisher will not be referred to.

proved such an excellent tool for individual testing.

In the primary field, the popularity of the Haggerty and Otis Tests for use with groups has been maintained as well as that of several other tests, while the test used by the Detroit schools and known as the Detroit First-Grade Intelligence Test promises to be another effective non-literate test. It is easily administered and offers much simpler material than some of the earlier tests. The tests seem well adapted to measuring abilities that are required in reading in the first grade.

For the grammar grades it is doubtful if a more practical and usable group of tests has come to light than the National Intelligence Test which has the advantage of being published in four equivalent forms with others to follow from time to time. It will be remembered that this was developed from the work of several educator-examiners of the men in the army during the Great War and hence has the advantage over many tests of not having the bias of an individual educator. A supplementary book which gives norms and other valuable information has been published recently.

For the measurement of intelligence of high school students and college freshmen, the Miller Mental Ability Test is now available as supplementing Otis, Haggerty, Thurstone, and others. The Miller test has, unlike most tests, only three parts, a word-relation test, a cause-effect test, and a directions test. It seems therefore to throw the emphasis upon abilities of the more abstract nature. They have the advantage of being inexpensive and quickly administered and scored.

The Myers Mental Measures<sup>2</sup> is a picture test for use with all ages, being devised by the authors for use in classifying illiterates in the army. Its usefulness and its usability are much enhanced by the recent publication of an excellent manual or examiner's guide giving norms, indicating the use of the test, and giving other valuable data.

#### TEACHING ACHIEVEMENT IN SCHOOL SUBJECTS

Here again the same tendencies of standardization and revision are perhaps the most

striking phases of the development of the past two years. At the same time the effort at simplification in the giving and scoring of tests has gone on, while the tendency to throw the emphasis on diagnosis rather than on measuring in terms of norms or group standards is also marked. It is apparent that those who devise and publish tests as well as the educators themselves are making it possible for the relatively untrained teacher to handle the testing work in her own grade or classes. In this report no mention will be made of the tests in fields where standardization has for several years been fairly definite, for example, arithmetic, writing, language, spelling, composition, reading and algebra, but attention is paid rather to work in other and newer fields.

While in the field of Latin, the only available tests on the general market are the Henmon tests for measuring vocabulary and sentence ability, investigations are now under way which are more promising than those in any other high school subject. The so-called "classical investigation"<sup>3</sup> which was begun last year in an effort to determine the values of Latin teaching and which is under the general chairmanship of Dean Andrew F. West of Princeton University, has found it important and necessary to devise tests to measure the results of Latin teaching. It is to be hoped these will shortly become generally available. In the meantime teachers of Latin will secure prompt co-operation if they will write the chairman or other members of the committee having the matter in charge.

In the field of modern language much remains to be done, but teachers of modern language are not without significant helps nevertheless. The Wilkins Prognosis Tests have proved very useful in guiding teachers both in their estimate of the pupil's probable ability to master French or Spanish and as a check on their growth thru the tests to be given at the end of four weeks of work in the subject. Henmon's tests in sentences and vocabulary in French and Handschin's tests in both Spanish and French are very inexpensive and should give a teacher excellent opportunity to determine the achievement of pupils in subjects where different methods of teaching sometimes make very

<sup>2</sup>Published by Newson and Company, New York City.

<sup>3</sup>See article with that title in *The Classical Journal* for October, 1921.

uncertain the progress of a class or an individual student.

It cannot but be hoped that science will some time be placed as thoroly on the defensive as has Latin, if accurate measuring instruments would be devised as a result. The progress in science tests seems to be very slow. At the present writing the Thurstone Test in Technical Information is one of the best available, if not the best, for diagnosing a pupil's ability and interest along scientific lines. It should be of very specific help in the upper years of the high school in suggesting what pupils are likely to succeed in this field.

A matter of very definite interest with the rapid growth of home economics in the schools of Virginia is the gradual development of suitable tests in that field. The pioneer test which has been on the market for some little time is the Murdoch Sewing Scale<sup>4</sup>. This is intended for use in the elementary grades and high school, and can be administered with about the same ease as the typical graphometer or handwriting scale, since it consists of photographed copies of actual samples. More recently other teachers in various schools and school systems have devised valuable tests most of which perhaps cannot be said to be as well standardized as some of the tests of mechanical or rote ability in elementary school subjects. Such are the tests in the classification and function of foods, and the preparation of menus by Miss Grace McAdam, Supervisor of Home Economics, of Detroit, and the Trilling and Trilling-Hess Tests used by the Department of Home Economics of Chicago University, largely covering the informational side of textiles and clothing. The next few years will undoubtedly see a large application of the testing concept not only to the skills involved but also the information and attitudinal aspects of these subjects. But in the meantime the teacher of home economics has a number of excellent tools at hand.

Scales of general interest for which a wide use should be guaranteed are the Upton-Chassell Scales for Measuring Habits of Good Citizenship.<sup>4</sup>

<sup>4</sup>Published by the Bureau of Publications, Teachers College, Columbia University, New York City.

Not only do these scales represent a development out of the field of mental testing into the field of moral-social testing, but the significance of citizenship as a general objective of school work is now so generally recognized that it is important that teachers in large numbers avail themselves of these and any other early tests in this field in order that revision and standardization may be hastened as much as possible.

W. J. GIFFORD

#### IV

#### PROFESSIONAL GROWTH

Two questions of similar content have been asked in the state examinations for first and second grade certificates in recent years: "How can a teacher improve professionally?", "Give three opportunities for professional growth which the teacher in service has."

The answers quoted below, which are typical of approximately forty-five per cent of all the answers, seem to show that many teachers have a lamentable ignorance of what constitutes professional growth and professional improvement of teachers. They seem to indicate that an article defining professional growth and pointing the way to professional improvement might be of value.

"By working hard." "By visiting parents." "By getting to school on time." "By punishing bad children." "By grading papers carefully." "By getting pupils to love you." "By being sociable." "Supervising playground." "Making school sanitary." "Remaining in same position two or more years." "The teacher can advance the children professionally by teaching them the four fundamentals, English and to read." "The teacher can advance herself in service professionally by joining an agency and getting better pay." "A teacher has the opportunity to get a position to teach a higher grade, fifth instead of third, high school instead of sixth, etc." "The teacher can improve the children professionally by teaching them to take good care of themselves." "The teacher can improve the community professionally by getting them to have a league and have regular meetings." "A teacher should go to church, Sunday school, and prayer meeting.