

Eastern Illinois University

## The Keep

---

Plan B Papers

Student Theses & Publications

---

1-1-1966

### Standardized Testing for Secondary School Guidance

William R. Quick

Follow this and additional works at: [https://thekeep.eiu.edu/plan\\_b](https://thekeep.eiu.edu/plan_b)

---

#### Recommended Citation

Quick, William R., "Standardized Testing for Secondary School Guidance" (1966). *Plan B Papers*. 494.  
[https://thekeep.eiu.edu/plan\\_b/494](https://thekeep.eiu.edu/plan_b/494)

This Dissertation/Thesis is brought to you for free and open access by the Student Theses & Publications at The Keep. It has been accepted for inclusion in Plan B Papers by an authorized administrator of The Keep. For more information, please contact [tabruns@eiu.edu](mailto:tabruns@eiu.edu).

STANDARDIZED TESTING FOR

SECONDARY SCHOOL GUIDANCE

(TITLE)

BY

**PLAN B PAPER**

SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR  
THE DEGREE MASTER OF SCIENCE IN EDUCATION  
AND PREPARED IN COURSE

Education 572

IN THE GRADUATE SCHOOL, EASTERN ILLINOIS UNIVERSITY,  
CHARLESTON, ILLINOIS

1966  
YEAR

I HEREBY RECOMMEND THIS PLAN B PAPER BE ACCEPTED AS  
FULFILLING THIS PART OF THE DEGREE, M.S. IN ED.

5-13-66  
DATE

ADVISER

5-13-66  
DATE

DEPARTMENT HEAD

## TABLE OF CONTENTS

<u>Chapter</u>		<u>Page</u>
I.	INTRODUCTION	1
II.	STUDENT INFORMATION OBTAINED BY STANDARDIZED TESTS	5
III.	TESTS AND A TESTING PROGRAM	10
IV.	JUDGING A TEST	16
V.	TEST ADMINISTRATION	21
VI.	TEST INTERPRETATION	27
VII.	THE FUTURE OF TESTING	32
	BIBLIOGRAPHY	37

## I. INTRODUCTION

The primary objective of formal education is to prepare the student to become an effective member of the society of which he will become a part. "Verna White described it more simply as the process of assisting children to a happier, more satisfying life."<sup>1</sup> The task of educational preparation is becoming more complex because the world is becoming vastly more complex each day. Therefore, the students of today are faced with a great variety of important and difficult questions and choices.

One purpose of counseling in the educational process is to help the students answer such questions as "What courses shall I take?", "Can I be a success in college?", "Should I study a certain vocation?", and to assist the students in making vocational and educational plans.

A guidance counselor must have a thorough understanding of the individual before attempting to answer the student's questions.

Nothing can do more harm to a student or to an adult in late life than to be required to do either more or less than that of which he is capable.<sup>2</sup>

---

<sup>1</sup>Vera White, *Studying the Individual Pupil*, (New York: Harper and Brothers, 1958) pp. 19-20.

<sup>2</sup>H. F. Grimes, "A Testing Program's Excuse for Being," Clearing House, (XXIX, September, 1954), pp. 33-34.

Guidance requires the evaluation of pupils so that their specific capacities, both strengths and weaknesses, may be determined. This information is necessary so that the pupils, differing in all ways within and among themselves, can be fitted into activities, curricula, and vocations which differ within and among themselves in the capacities they require so as to make the best fit between pupil and education. This fitting process is called guidance.<sup>3</sup>

There are several ways of collecting the necessary information about the individual. Some student information can be obtained through interviews and observations by various staff members. Also, information concerning strengths and weaknesses or probability for success in the future may be obtained by the guidance counselor from the student's academic record. However, there is certain information about the students which can be collected only by using objective, standardized tests and inventories.

The value of a good testing program cannot be overrated. Such a program can become perhaps the most valuable single aid in centering guidance upon individual needs and in assuring that each pupil is enabled to develop in accordance with his potential.<sup>4</sup>

All measurement is designed to contribute to the description of individuals and to the evaluation, prediction, and guidance of their behavior and education. Standardized tests are objective; that is not only do they involve observable, measurable performances, but the scores and ratings derived from them are not dependent upon the special bias or judgment of the individual observer. The score obtained by anyone on an objective test is arrived at by use of a scoring key; or the scoring is otherwise clearly defined, specified, and illustrated so that subjective judgment of individual examiners or scorers does not enter in at all or is reduced to a minimum. Thus an objective test provides a reasonably uniform means of evaluating psychological traits and functions; results obtained by a competent examiner may be compared with those obtained by others; several examiners using the same tests to measure intelligence, scholastic achievement, or specific aptitudes are all dealing with the same traits or functions rather than with their own several conceptions and rating. The test's objectivity and other aspects of standardization give them a scientific

---

<sup>3</sup> H. H. Remmers and N. L. Gage, Educational Measurement and Education, (New York: Harper and Brothers, 1943), p. 3.

<sup>4</sup> Arthur E. Traxler, "Standardized Tests, " Journal of the National Education Association, (XLVIII, November, 1959), p. 20.

quality which is, of course, absent in an individual's personal estimate of psychological traits and functions.<sup>5</sup>

The results of objective standardized tests are not always as accurate as they should be and therefore, a guidance counselor should use all the various sources of student information available. Standardized tests provide valuable clues and estimates, but they are only one aspect of evaluation, since they are not as exact as we would like or as we often pretend them to be.<sup>6</sup>

"In the context of guidance we think of tests as one among a number of tools useful in assessing a pupil's abilities and interests."<sup>7</sup> "The significance of test scores is greatest when they are combined with a full study of the person, by means of interviewing, case history, application blanks, and other methods. Tests provide facts which help us understand people. They are almost never a mechanical tool which can make decisions for us."<sup>8</sup> "In short, let us use the standardized test as we use our watches, always mindful of the fact that they may be a little fast or a little slow, but that they are, nevertheless, more reliable and accurate than a glance at the sun."<sup>9</sup>

Schools vary in location, size, and objectives and, therefore, it is impossible to outline a standardized testing program for all schools.

---

<sup>5</sup> Frank Freeman, Theory and Practice of Psychological Testing, (New York: Henry Holt and Company, 1950), pp. 1-2.

<sup>6</sup> M. W. Gipe, "Standardized Tests," Instructor, (LXXII, February, 1963), pp. 29-32.

<sup>7</sup> C. H. Miller, "Guidance and Programs of Testing," School Life, (XLII, September, 1959), p. 18.

<sup>8</sup> Lee Cronbach, Essentials of Psychological Testing, (New York: Harpers and Brothers, 1949), pp. 8-9.

<sup>9</sup> Helen M. Robinson, "After Testing, What?" Elementary School Journal, (LXII, May, 1962), pp. 402-405.

The purpose of any standardized testing program for guidance should be to meet the individual needs of the students and their parents in the particular school. No one program of testing can be recommended for all schools; each school should tailor its program to meet its particular needs. There is no one "pat" program which can be recommended as best for all school situations. One of the most serious errors into which a school may fall is to adopt a program of testing wholecloth because it has proved successful in another school. There is no substitute for careful and intelligent planning by the local school in designing a testing program to meet its own needs.<sup>10</sup>

The remainder of this paper contains information about administration, selection, interpretation, and the future of standardized tests which should be considered in developing a standardized testing program for guidance in the high school. This information was collected from books and periodicals available in the library at Eastern Illinois University.

---

<sup>10</sup>Miller, loc. cit., p. 19.

## II. STUDENT INFORMATION OBTAINED BY STANDARDIZED TESTS

Before a minimum testing program can be decided upon, a decision must be made concerning the types of student information necessary to counsel most high school students.

General agreement exists among authors in the field of guidance testing as to the main types of student information needed for counseling. Hatch and Dressel identify these types as:

1. Mental Abilities (intelligence)
2. Achievement (Math, Science, English, etc.)
3. Special Aptitudes (Clerical, Artistic, etc.)
4. Measured Interests (Vocational, Academic, recreational, and social activities)
5. Personal and Social Adjustment (self-understanding, role in groups, etc.)<sup>1</sup>

Thorndike and Hagen have listed those mentioned above and also highly recommended a reading test be included. "The importance of a reading test is due to the need for rapid comprehensive reading skill as the student advances to the higher levels of education."<sup>2</sup>

Traxler also indicated that the reading test is very important.

---

<sup>1</sup>Raymond N. Hatch and Paul L. Dressel, Guidance Services in the Secondary School, (Dubuque, Iowa: William C. Brown Company, 1953), p. 25.

<sup>2</sup>Robert L. Thorndike and Elizabeth Hagen, Measurement and Evaluation in Psychology and Education, (New York: John Wiley and Sons, Inc., 1955), pp. 436-438.



"He states that the student's lack of reading ability could affect his personal adjustment and his mental test scores."<sup>3</sup>

### Mental Ability

The term "scholastic ability" is used synonymously with such terms as "scholastic aptitude," "academic aptitude," "general intelligence," and "mental ability." For this human quality there is as yet no standard terminology. While this may be somewhat confusing to the beginner in the guidance testing field, it should not be a matter of great concern to him. The important point to recognize is that however scholastic ability is designated, evidence concerning an individual's intellectual functioning must be gathered, if he is to be understood fully or to be helped effectively. <sup>4</sup>

### Achievement

Achievement tests can be a valuable tool for the guidance worker. To do their job well, counselors have to obtain a clear and accurate picture of the present level of a student's achievement. A significant part of this picture may be revealed by standardized achievement tests. The first guidance use of standardized achievement tests is to help the student determine his present educational status. In order to plan intelligently for the future, students need to know the answers to questions such as: Can I do simple arithmetic? Am I able to read with reasonable speed and comprehension? Have I achieved at the level of which I am capable? <sup>5</sup>

---

<sup>3</sup>Arthur E. Traxler, Techniques of Guidance, (New York: Harper and Brothers, 1957), pp. 156-157.

<sup>4</sup>Clifford P. Froehlich and Kenneth B. Hoyt, Guidance Testing, (Chicago: Science Research Associates, Inc., 1959) p. 96.

<sup>5</sup>Ibid., pp. 140-141.

## Aptitude

"Ed certainly is a gifted musician." "Ruth has a flair for art." "Jim is so handy with tools." "Joe is a natural athlete." We use words like "gifted," "flair," "handy," and "natural," often to convey the idea that some people appear to have the knack for doing certain things. These specialized talents are referred to as "aptitudes."

By examining a student's past record, the counselor can find many valuable clues regarding his comparative potentiality for success in different fields of study. These clues have definite meaning; what a person has done in the past is ordinarily a good indication of what he will do in the future. Counselors, however, need other methods of judging aptitude. The counselor will find it necessary and advisable to measure a student's aptitudes in advance of training instead of using achievement at the end of training as an index of original aptitude.

Tryout and exploratory courses have their place in a student's educational experience, but they are sometimes wasteful of his time and effort. To prevent such waste, students need help in selecting those trial situations where they have some hope of success and in avoiding those where their aptitudes indicate probable failure. In order to provide this help, counselors need objective information about student's aptitudes; where possible, students should receive this information as well. In an effort to furnish such objective information, a number of tests have been developed for the purpose of measuring aptitudes.<sup>6</sup>

"The counselor needs to know what special aptitudes, if any, the student has so that he may counsel the student in choosing a vocation where his greatest potentials would be realized, or to make the student aware of his lack of special aptitude for a chosen vocation?"<sup>7</sup>

---

<sup>6</sup>Ibid., pp. 113-115.

<sup>7</sup>John G. Darley, Testing and Counseling in the High School Guidance Program, (Chicago: Science Research Associates, 1943), p. 38

### Interest

Too frequently, the results of interest inventories are used in isolation, apparently on the assumption that they can stand alone and tell the whole story. But the fact is that interest inventory scores have real meaning only when they are a part of a large body of knowledge about the individual.<sup>8</sup>

The making of judgments about an individual's interests, whether done on the basis of test data or information gathered by nontest methods, is probably one of the most difficult aspects of guidance work. For this reason, the beginning counselor particularly should interpret interest data with the greatest possible care and caution.<sup>9</sup>

### Personality

Guidance workers have two major reasons for studying the personality of students: (1) To help the student discover the suitability of his personality make-up for his vocational and educational choices: (2) To identify students whose personal adjustment is interfering with their development of their potentialities.

Testing personality and predicting from personality tests do not tell how much of a given personality trait or which combinations of personality traits result in successful school achievement or successful job adjustment. One reason for this is that people vary in their definitions of a given trait and in their opinions of what behavior indicates that trait. Two people may use the same trait word, such as "lazy," "persevering," or "well-adjusted," but they will not always agree on the types of behavior which the word describes. Constructors of personality tests have the same difficulty in agreeing on which names to assign to various scores on their tests. Even if two tests purport to measure the same characteristic, it is no guarantee that they do.<sup>10</sup>

---

<sup>9</sup>Clifford P. Froehlich and Kenneth B. Hoyt, Guidance Testing, (Chicago: Science Research Associates, Inc., 1959), p. 174.

<sup>10</sup>Ibid., pp. 201-203.

Reading

In most secondary schools, reading tests are administered periodically as a regular part of the all-school testing program. The results are recorded on the student's cumulative records, are used by counselors as one basis for educational guidance, and are reported to all teachers. By means of tests, students needing special instruction in reading are identified.<sup>11</sup>

The secondary schools have a responsibility to provide not only diagnostic and remedial work in reading and listening for those students whose basic skills have not been adequately developed, but also a developmental program in these areas. The receptive communication skills are the basic media of learning, and inadequate development of these skills handicaps a student in his entire educational program.<sup>12</sup>

---

<sup>11</sup>Georgia Sachs Adams, Theodore F. Torgerson, and Ernest R. Wood, Measurement and Evaluation, (New York: The Dryden Press, 1956), p. 255.

<sup>12</sup>Ibid., p. 269.

### III. TESTS AND A TESTING PROGRAM

Now that the necessary student information which can be obtained by testing has been determined, the consideration of a testing program is possible.

Testing programs developed for specific guidance purposes should be planned to meet the needs of the particular school. A testing program established only for the purpose of identifying the able students is courting difficulty. A testing program must serve the needs of all pupils in the school which maintains it. This does not mean that the same test prescription should be administered to all pupils, although there may well be a common core of tests, which are administered to all in the interests of administrative efficiency. Beyond this common core, testing will vary according to differing purposes and special needs of individual pupils.<sup>1</sup>

Group tests differ from individual tests in that group tests permit many subjects to be tested at once. This distinction refers more to the way in which the tests are commonly used than to differences in their structure. Group tests can be given to a single individual if that is desirable. Many individual tests require careful oral questioning or observation of reactions, in which case a tester cannot work with several subjects simultaneously, but some individual tests have been modified and simplified so that group administration is also possible.<sup>2</sup>

As to when tests should be given, it would seem sensible to test when children are to begin a new developmental phase of schooling such as beginning senior high school. At this point, test data will

---

<sup>1</sup> Miller, loc. cit., p. 20.

<sup>2</sup> Cronbach, loc. cit., p. 8-9.

indicate the child's capacity for school work (as measured by the scholastic ability test) as well as a corresponding level of academic achievement (as measured by the achievement tests).<sup>3</sup>

Perhaps the most common selection is a relatively general group measure of mental ability. In the later years a multiple-aptitude battery like the Differential Aptitude Tests can serve even better to differentiate between those who should follow an academic program. Pupils who are found to have unusually high or low mental capacity can then be given an individual test like the Stanford-Binet or the Wechsler Scales, and goals and special programs can be selected for them commensurate with their abilities.<sup>4</sup>

A testing program should provide tests of academic aptitude given in the senior high school. Tests of academic achievement should be given annually or biannually, and these tests should be selected so that comparisons could be made from year to year in order to provide information about the student's educational growth. These achievement tests should include not only general academic achievement tests concerned with the broad fund of knowledge, but also more specific achievement tests that provide information about the pupil's background in such things as American history, beginning algebra, or introductory French. Tests of special or differential aptitudes should be given at the beginning of senior high school. During the senior high school years, tests of vocational interests and personality inventories would provide additional valuable information in schools which have adequate personnel to make use of such data.<sup>5</sup>

"A test to determine every student's reading achievement should be given to high school freshmen. The evidence shows that given proper diagnosis and the systematic application of properly constructed instructional and drill materials, underachievers can attain significant improve-

---

<sup>3</sup>A. K. Boag, "Standardized Tests--How, When, Why," Instructor, (LXV, October, 1955), p. 24.

<sup>4</sup>Warren G. Findley, "The Complete Testing Program," Theory Into Practice, (II, October, 1963), pp. 195-196.

<sup>5</sup>Ralph F. Berdie and others, Testing in Guidance and Counseling, (New York: McGraw Hill Book Company, Inc., 1963), p. 84.

ment in reading ability in a relatively short time."<sup>6</sup>

Considering the foregoing information, the author worked out the following high school group testing program. It is assumed that there are enough adequately trained guidance counselors and clerical assistants available to administer the program. All high schools will not have the personnel, resources, or student needs for such an extensive group testing program.

<u>Grade</u>	<u>Time of Administration</u>	<u>Type of Test</u>
Ninth	Beginning of year	Mental Ability
Ninth	Beginning of year	Differential Aptitude
Ninth	Beginning of year	Diagnostic Reading
Tenth	Beginning of year	Diagnostic Achievement
Tenth	End of year	Interest
Eleventh	Beginning of year	Differential Aptitude
Eleventh	End of year	Mental Ability
Twelfth	End of year	Predictive Achievement
Twelfth	End of year	Interest

In working with a student who has special problems, the counselor will need information not available through group testing. The reserve testing folder should contain several intelligence, aptitude, and interest tests for use with students who need individual help of an educational or vocational nature. "Tests of personality should be used only in cases in which the results are likely to be applied wisely; that is, when there is an adequately trained staff and when psychological service is available to help students who need such assistance."<sup>7</sup>

---

<sup>6</sup>Harry A. Greene, Albert N. Jorgensen, and J. Raymond Gerberich, Measurement and Evaluation in the Secondary School, (New York: Longmans, Green and Company, 1943), p. 332.

<sup>7</sup>Adams, Torgerson, and Wood, loc. cit., p. 503.

The next problem is to determine what tests of the various types are available and to evaluate them. Since there are a great number of tests available for high school use, no attempt will be made to evaluate them in this paper. The counselor can refer to the Buros Mental Measurements Yearbook for information of the various tests. "Buros' Mental Measurements Yearbook is the best single guide for the consumer of tests."<sup>8</sup>

A list of the most frequently used tests appears below:

Scholastic Aptitude

American Council on Education Psychological Examination  
for High School Students  
Army General Classification  
California Mental Maturity  
Nelson Denny  
Ohio State  
Otis Series  
Revised Alpha  
Revised Beta  
Wechsler

Interest

Allport-Vernon  
Brainard  
Cardall  
Kuder  
Lee-Thorpe  
Strong  
Thurstone

Special Aptitudes

Bennett Mechanical  
Cardall Practical Judgment  
Detroit Retail  
Engineering and Physical Science  
George Washington Educational  
Iowa Legal

---

<sup>8</sup>Cronbach, loc. cit., p. 80



Special Aptitudes, Continued

Law Aptitude  
 Lewerenz Art  
 MacQuarrie Mechanical  
 Medical Aptitude  
 Meier Art Judgment  
 Minnesota Clerical  
 Minnesota Paper Form Board  
 Minnesota Rate of Manipulation  
 Minnesota Spatial Relations  
 O'Connor Finger Dexterity  
 O'Connor Tweezer Dexterity  
 Purdue Peg Board  
 Stanford Educational  
 Stanford Scientific  
 Thurstone Clerical

Achievement

Cardall Arithmetic Reasoning  
 Cooperative: Contemporary Affairs  
 Cooperative: Effectiveness of Expression  
 Cooperative: Mechanics of Expression  
 Cooperative Reading  
 Cooperative Vocabulary  
 General Educational Development: Literary  
 General Educational Development: Natural Science  
 General Educational Development: Social Studies  
 Iowa Chemistry  
 Iowa English Training Materials  
 Iowa Mathematics Training  
 Iowa Physics Training  
 Iowa Placement Series  
 Iowa Silent Reading  
 Michigan Vocabulary  
 Stanford Achievement  
 Triggs Reading  
 United States Armed Forces Institute: Business Arithmetic  
 Woody-McCall Arithmetic

---

Personality

Ascendance-Submission

Bell (Adult)

Bell (Student)

Bernreuter

California

Minnesota Multiphasic

Personal Audit<sup>9</sup>

#### IV. JUDGING A TEST

The purchaser of tests has a confusing problem. He is faced with a choice among long tests and short tests, famous tests and unfamiliar tests, old tests and new tests, ordinary tests and novel tests. The catalogue of a single leading test distributor offers thirty-five tests of general mental ability, and eighteen tests of personality. Each of these tests was published by a person who thinks his test is in some way superior to the others on the market. He is frequently correct. Different tests have different virtues; there is no one test of any sort which is "the best" for all purposes.

Tests must always be selected for the particular purpose for which they are to be used. Some tests work well with children but not with adults; some give precise measures but require more time than can be allowed for testing; some give satisfactory general estimates of subjects but less detailed diagnosis of each individual than another test. Not all published tests are good tests, because some have been published without adequate research and refinement. Some, even those having wide popularity, do not succeed in measuring what they were intended to measure. Some measure characteristics different from what their titles indicate. Test publication is a commercial activity, and, although most test authors and publishers maintain high standards, the description of a test furnished by the author usually advertises its favorable features. Since some published tests are nearly worthless, and others found useful for one task will not perform well in another situation, the user must be able to choose among tests intelligently.<sup>1</sup>

The most important factor in the suitability of a test is whether it does the job it is supposed to do. But the tester must bow to numerous practical considerations which limit the tests he can use. Of all the tests available, he must cross off those which are impractical before making a careful investigation of the validity of the remainder. Practical considerations never justify using a test which gives worthless information, but a technically sound test cannot serve where it is impractical.

---

<sup>1</sup>Cronbach, loc. cit., pp. 43-44.

The cost of the usual test is only a few cents, but when one is testing a large number of persons, a difference in cost may be important. Fortunately there is little relation between the cost of tests and their quality, so that even a limited budget permits the use of well-constructed tests. The cost is greatly reduced where it is possible to use an answer sheet and a reusable question booklet. Most tests intended for use with large groups are now published in this form. In determining the cost of a test, one must consider not only the cost of the materials but also the cost of scoring. However, cost must not be outweighed in comparing tests. The cost of tests is trivial compared to the cost which results from a wrong decision: training a worker who will not stay with the job, or giving a semester's college education to a boy who will fail. Even several dollars spent to reduce such errors are well spent.

Time requirements of a test are frequently significant. Where only a limited time is available to obtain information, it may be necessary to use a short test rather than a longer one which would be more accurate. Sometimes several short tests give a more complete picture of the person than a single long one. The length of a test has an important effect on the cooperativeness of the subject. If a test begins to bore him, he is likely not to show his best ability and may develop antagonism toward the organization testing him.

Ease of administration and scoring must be considered, since some tests require the services of expertly trained testers and scorers. Unless such services are available, it will be impossible to use the tests validly. Even where skilled persons are available, it is sometimes wise to use a simpler test which others can give, conserving the time of the expert for other duties. In schools where classroom teachers can give the tests themselves, they often take a greater interest in the results than when "outsiders" must be called in. On the other hand, a testing program which requires that teachers score large numbers of papers becomes unpopular; tests that can be scored by clerks are more readily accepted. Scoring is facilitated by efficient scoring stencils. In most sections of the country, a test-scoring service is available where tests may be machine-scored for a moderate fee.<sup>2</sup>

---

<sup>2</sup> Cronbach, loc. cit., pp. 44-46.

"A number of factors affect ease of administration—the length of the test; the clarity of instructions to examiner and subjects; the adequacy of sample exercises; and the requirement of close timing involving use of a stop watch. Examination of the manual will provide the necessary information for judging ease of administration."<sup>3</sup>

Comparable forms are helpful when tests are used for measuring the effect of teaching or therapy. It is desirable to use equivalent tests before and after, rather than repeating the same test, in order to rule out the effect of memory. An equivalent form is also useful to confirm a test score which is possibly inaccurate owing to the emotional disturbance of the subject or some other unfavorable condition.<sup>4</sup>

Even though a test may generally be considered a valid measure of knowledge of American history, a teacher might not accept it as a valid measure for his class because, for example, of its overemphasis on military events and its underemphasis on the development of political democracy. The chief basis for judging the validity of an achievement test, then, is the truthfulness or accuracy with which the content of the test represents the content of the course of instruction. In other words, if the test scores are to give a true or valid picture of students' achievement in a subject, the item selections<sup>5</sup> must be representative of the total learnings in that subject.<sup>5</sup>

The proper mechanical make-up of a test may be very important in its indirect effect on the validity of students' scores. The format should be attractive, and the size of type appropriate. The quality of pictures and diagrams is also important.<sup>6</sup>

---

<sup>3</sup>Adams, Torgerson, and Wood, loc. cit., pp. 61-62.

<sup>4</sup>Cronbach, loc. cit., p. 47.

<sup>5</sup>Adams, Torgerson, and Wood, loc. cit., pp. 42-43.

<sup>6</sup>Adams, Torgerson, and Wood, loc. cit., p. 61.

A major characteristic of a good test is statistical usefulness. Many test experts argue that standard-score norms are the most useful methods of reporting student achievement, their superiority over percentile systems being great. However, few teachers fully understand what standard scores are or the full implications for their use. While the writers would admit that perhaps most teachers do not understand the use of percentile norms as fully as would an expert, the fact remains that percentiles are far easier to interpret to teachers, parents, and students than are standard scores. More people are going to understand the meaning of a score that is reported to be equivalent to the 98th percentile than a standard score of plus 2 standard deviations, or a T score of 70.<sup>7</sup>

The arrangement of test items should be considered. That is in most tests the items should be arranged so that the simplest or least difficult items appear first and the hardest items appear last.

Reliability means the degree to which the test agrees with itself, to what extent two or more forms of the test can be relied upon to give the same results, or the same test to give the same results when repeated. Reliability means consistency.<sup>8</sup>

The idea has come to be accepted that tests with a reliability coefficient below 0.85 should not be used. However, this is dependent upon the validity of the test. If a test makes a unique contribution to a test battery, it should be used, regardless of the size of the reliability coefficient. This is done on the chance of securing information available in no other way.<sup>9</sup>

Validity means to what degree a test measures what it claims to measure. Validity means truthfulness. No matter what other merits the test may possess, if it lacks validity, it is worthless. A student's performance on a mechanical test would not mean very much if the test really measured reading ability primarily

---

<sup>7</sup>Alfred Schwartz and Stuart C. Tiedeman, Evaluating Student Progress, (New York: Longmans, Green and Company, 1957), pp. 91-92.

<sup>8</sup>Virginia Daniels, "Concerning the Validity of Standardized Tests," Clearing House, (XXXIX, September, 1964), pp. 12-13.

<sup>9</sup>William C. Cottle, "A Form For Evaluating Standardized Tests," Occupations, (XXX, December, 1951), pp. 188-193.

instead of mechanical ability. And because he has to read the test, this sometimes happens.<sup>10</sup>

Because correlations between scores and criteria are among the best indicators of the validity or meaning of tests, the counselor should always look for such correlations in the descriptive manuals which accompany tests. Almost always, he will find that the coefficients of validity (test vs. criterion) are lower than the coefficients of reliability (test vs. retest). Because of the difficulty of obtaining accurate measures of real life success, the validity coefficients for tests usually range from about .35 to about .60. These coefficients are sufficiently high to be of value in guidance work.<sup>11</sup>

It is a basic principle of mental testing that the individual being tested should not deviate from the general characteristics of the normative population of the test; the more the deviation, the less sure one may be of the meaning of his score.

Intellectual ability and reading skill are of particular importance to those working with the population in question. Too often the relationship between intelligence, education, and reading skill, and their implications for testing are not considered. There is no way of knowing how much time has been wasted, how many adverse attitudinal and motivational changes have been effected, and how many incorrect interpretations of test results have been made because paper and pencil tests have been given to individuals with intellectual abilities and reading skills inadequate to comprehend them. This error may arise in part because of a tendency to over-accept commonly used tests and to assign some of them almost automatically instead of selectively.<sup>12</sup>

---

<sup>10</sup>Daniels, loc. cit., pp. 14.

<sup>11</sup>Froehlich and Hoyt, loc. cit., p. 85.

<sup>12</sup>Doral N. West, "Reducing Chance in Test Selection," Personnel and Guidance Journal, (XXXIV, February, 1958), pp. 420-421.

## V. TEST ADMINISTRATION

"Tests are scientific instruments only when they are used scientifically. When they are not, they are no more scientific than, say, a chemistry beaker used as a beer stein."<sup>1</sup>

After the counselor has decided what test to use, he must make some decisions about giving the test. A test may be carefully devised and have maximum reliability and validity, but its results may be meaningless unless it is administered correctly. The most important policy in the administration of tests is to follow directions. Standard conditions are essential for all types of testing. For example, time is critical in a clerical test, for we are interested in how many items of a given task a person can complete within a time limit. If one test administrator allows a minute too long, and still another allows a minute too short, the three sets of scores cannot be compared.

To interpret a test score correctly, directions must be followed exactly as specified by the test publisher in his test manual. Appointments to preferred positions or scholarships are based on examination results. If a test administrator, either inadvertently or deliberately, has given too much time to his pupils, he has handicapped his students by giving them an unrealistic picture of their ability. If he allows too little time for a test, his pupils will be at a disadvantage when their scores are compared to the norm group being used by the admitting college. When test scores are used in counseling, unless standardized conditions have been met, the scores will not accurately represent the true performance of the person taking the test and both the counselor and the counselee will obtain a false picture of the counselee's aptitudes, achievements, and interests. Thus they may arrive at a wrong decision as to the course of action that the counselee should pursue."<sup>2</sup>

---

<sup>1</sup>Gene R. Hawes, Educational Testing for the Millions, (New York: McGraw-Hill Book Company, 1964), p. 245.

<sup>2</sup>Berdie and others, loc. cit., p. 94-95.



It should be recognized at the outset that a guidance testing program is sound only when it is an individual program for each student. For example, in any high school there are a few students who are considering further art training. In counseling with them, the counselor may obtain the results of an art aptitude test. Because only a few students want and need this information, they alone should be given the test, if the counselor is to follow the wise policy of administering a test only to those students who can benefit from its results.

The counselor may recognize the need for some estimate of the achievement level and scholastic ability of all students entering high school if he is to work effectively with them in program planning. Therefore he is justified in giving all entering students achievement and scholastic ability tests. Although these are called group tests, group refers to the test administration and not its application. The most important use of any test, as far as guidance is concerned, is in counseling with the individual student. Since certain kinds of tests have potential use for all students, the guidance program, by using such tests, is in no way going counter to the principle of planning individual testing for each student"<sup>3</sup>

Differences of motivation may create unstandardized conditions even under the best administrative arrangements where the pupils have been seated properly, the time limits have been rigorously observed, the handling of test material has been as specified, and directions have been read word for word as given in the manual. Test publishers do spend some time in discussing motivation in their manuals. However, they frequently assume that motivation is going to be constant from one test administration to another. Experience and observation indicate a wide variation of student motivation in different testing situations. Motivation for the purpose of this discussion, may be defined as the pupil's desire to do the best he possibly can on a test. Achieving motivation consists of properly preparing pupils for the administration of the test.

The person who is to administer the test should tell the pupils about the test well in advance of the time it is given. The administrator should bear in mind that some of his pupils may not

---

<sup>3</sup> Froehlich and Hoyt, loc. cit., p. 93.

have had any experience with standardized tests. He should prepare these pupils with particular care, taking pains well before the day of the actual test administration to acquaint pupils with this type of test. He should stress the reason for taking the test and let the pupils know for what purposes the test results will be used. He should answer as honestly and as completely as he can all questions pupils raise.

The administrator should be a person whom the pupils know well, whom they respect, and with whom their relations are cordial. No one thing will ruin a test administration more, even when all other standardized conditions have been met, than an unruly, undisciplined group of pupils. Where they are noisy and laugh and talk, the morale of the whole group can be lowered. A counselor whom the pupils respect can do much to prevent such situations before they arise.

Once a testing has been planned, the testing dates must be selected carefully. Shall the tests be given in the beginning, in the middle, or toward the end of the year? The purposes for which the test results are used should help to answer the question. If the tests are to be used for counseling and guidance, they should be given early in the year, so that as much as possible of the school year remains during which the counselor may use the results in counseling. If tests, particularly achievement tests, are given for purposes of evaluating the standing of a given class from one year to the next, the tests should be given at the same time, preferably the same month, each year. The pupils then will have been exposed to the same amount of teaching and the same experiences in the school curriculum. When pupil's scores are going to be compared with their scores on the same test given previously, the testing dates should be selected according to the experiences the pupils should have had before they are retested.

After the question of what the test is to be used for has been answered and the approximate testing dates have been chosen, the administrators should next look at their school program to see what other activities will be scheduled at that time. The wise administrator will select specific dates which minimize conflicts with other activities.

---

Where long testing sessions are being scheduled, timing should be such that rest periods are provided. Natural breaks such as those between test sections should be utilized.

Many schools will find it impossible to provide an ideal testing room, particularly for large group testing sessions. However, the administrator should be aware of how deviations from the ideal interfere with good testing procedure so he can do everything possible to avoid a poor or unstandardized testing situation. The room should be large enough to permit only alternate seats to be filled. This is the simplest and easiest way to prevent cheating and unnecessary talking between students. Should the school be unable to provide this seating arrangement, additional proctors should be available to help the examiner. When a suitable room is available, a proctor for each fifty students is sufficient. Under less favorable conditions, one proctor for each twenty-five students should be provided. Lunch rooms and auditoriums frequently are used by schools for large testing sessions. Auditoriums usually are large enough, but often do not have seats with writing surfaces. Lapboards of adequate size must be provided in this case. Lunchrooms where students face each other around a table are generally poor, but if used, can be satisfactory if provided with additional proctors and if groups of troublemaking students are not permitted to sit together. The fewer students who sit at each table the better. Whatever room is used, adequate provision should be made for lefthanded persons so their writing position does not offer an undue opportunity for cheating by others.

Lighting, heating, and ventilation must be adequate. The examiner should know in advance what he must do should a fuse blow or some other emergency occur during a test session. The rooms chosen should be free from outside disturbances, e.g., noise of passing classes, band rehearsals, or other pupils entering the room. A notice should be posted outside the door of the testing room and a proctor should stand outside the door while classes are passing. A check several days beforehand with the maintenance staff may provide happy dividends in avoiding a conflict with repairmen hammering in nearby rooms or even attempting to paint or wire in the test room itself.

---

The examiner should study the directions for administration well ahead of time. He should know who his proctors are going to be and should meet with them and brief them thoroughly on their duties.

Tests vary widely as to time limits. When time limits are specified, they should be followed exactly. For tests that do not have a time limit e.g., personality and interest inventories, the examiner needs to know what he will do with pupils who do not complete the test in the regularly scheduled period. If at all possible, the unfinished tests should be completed in the next class period following the regular administration. Again the examiner must remember the requirement of standardized conditions.

Some pupils may complete the test in less than the allotted time. The examiner should pay particular attention to what the specific test manual says should be done, whether early finishers should be allowed to leave as they complete the test or whether the entire group should be retained for the entire period. In the absence of any specific instructions, the examiner should retain the entire group for the whole period. Pupils leaving intermittently throughout the examination period will disturb those working.

As soon as "stop" has been called to terminate the examination period, the examiner and his proctors should move swiftly to collect and check all test materials. The group should not be dismissed until all material is accounted for.

The test administrator always must report any unusual circumstances which may affect an individual pupil's score. Usually a notation on the answer sheet is sufficient to explain the occurrence, but the examiner should attach a longer explanation on a separate sheet of paper should he feel it necessary. The central testing agency and whoever uses the test score are then in a position to judge the accuracy of the score and make a fair decision on whether a retest of the pupil is warranted.

A few pupils may fail to comprehend the directions and completely ruin their answers or spend valuable time in fumbling around getting started. These instances should be carefully noted. Not only can the pupil's performance be re-evaluated, but the school, the central testing agency, or the publisher can revise their directions to eliminate as many ambiguities in the directions as possible.

---

When special answer sheets are used and mailed to be scored, great care must be exercised in handling and packing them, since they are usually scored by machine.<sup>4</sup>

---

<sup>4</sup>Berdie and others, loc. cit., pp. 96-101.

## VI. TEST INTERPRETATION

In guidance work, statistical measures can be used to compare an individual's performance with that of a group. To interpret test results, the counselor must see students not only as they now are in relation to others like them, but also as they may be in relation to others whom they want to be like or with whom they want to compete.<sup>1</sup>

Lister and Ohlsen concluded from results of their research that "appropriate test interpretation can increase self-understanding in students at all educational levels."<sup>2</sup>

Although to a large extent the counselor, in his interaction with the student, interprets tests, this use of tests must be subordinated to the wider and more essential aims of counseling. These are to acquaint the student with his assets and liabilities, to help him assimilate this knowledge and act on it, and to be able to make the best possible adjustment.

Three crucial aspects of the counseling process must be considered in discussing the interpretation of test results. Test interpretation can be meaningful and constructive only if: (1) There is a proper psychological atmosphere that pervades the relationship, (2) the counselor makes use of appropriate techniques of good communication, and (3) he has a thorough, technically sound comprehension of tests and measurements in general and the instrument he is interpreting in particular.

---

<sup>1</sup>Froehlich and Hoyt, loc. cit., p. 45.

<sup>2</sup>James F. Lister and Merle M. Ohlsen, "The Improvement of Self-Understanding Through Test Interpretation," The Personnel and Guidance Journal, (XLIII, April, 1965), p. 810.

The first important function of the counselor is to create an atmosphere that is conducive to good counseling and to adequate interpretation of the test results. Without such an atmosphere it is virtually impossible for the test results to be made meaningful and for the student to benefit from this new knowledge. In creating this atmosphere, the counselor tries to build up a feeling in the student of being understood, accepted, and respected. While the counselor does not make any attempt to sugar-coat the data he is about to give him, he nevertheless permits the student to react to such information on his own terms. This means that the counselor must listen to the student, try to understand him, and show him in some way or another that he is sensitive to his feelings, his needs, his emotionalized attitudes, and his general state of mind. While the counselor is uninvolved in the test results and tries to be as objective as possible in conveying them to the student, he also attempts to be as warm, considerate, and nonretaliatory or nonpunitive as possible. This is the usual atmosphere which prevails in a situation where the people involved have a deep understanding, respect, and constructive good will toward each other.

Within the positive psychological atmosphere described, the counselor tries to communicate the results of the tests as he has them to the student. Before he does very much with the test results, he must decide what meaning these results will have for the student. He must give the dialogue a certain anchorage in the cultural, class and general milieu of the student in order to make it meaningful to him. He must take into consideration the level of sophistication of the student with reference to the tests, while at the same time he must be sure not to condescend to him. He must also be alert to the probability that the student comes to counseling with certain defensive reactions which he will muster up as quickly and as strongly as he can in order to preserve his feelings of self-respect and self-esteem.

The student will also have a tendency to distort information in the direction of his own needs and the counselor must be careful not to couch his communications in such terms that distortion is facilitated. He also allows the student to save face. That is to say, the student will occasionally need to rationalize. The counselor should feel that he is able to accept such rationalizations for what they are and the self-protective purpose they serve. If these rationali-

---

zations are of such magnitude that they would prevent the student from taking constructive action on the basis of this new-found information, then the counselor may want to point out the nature of such rationalization. However, it is advisable not to get involved in this kind of interaction unless a sound, warm relationship has already developed and the counselor is fairly sure that the student is really rationalizing.

The communications should be as simple and as uninvolved as possible. They should be as meaningful as possible. Seldom does the counselor attempt to advise, inspire, exhort, or force his own values on the student. If he is seduced into taking such a role, he is ethically bound not to give the student the impression that these are scientific results stemming directly from the test. Of course, it is true that the counselor, like the rest of us, tends implicitly to be guided by certain basic, personal values. It is difficult, if not impossible, to tease out these values even in discussing such apparently cut-and-dried information as a score on an intelligence test.

The third aspect of counseling, the interpretation of test results, is most efficient when the proper relationship or psychological atmosphere has been established and the counselor adheres to good standards of communication. The variety of tests the student takes depends, of course, on the nature of his difficulty or problem. It also depends on the kinds of questions the currently available tests purport to answer. Finally, it depends on the specific tests, of the thousands which are available on the market today, with which the counselor is familiar. Usually he evaluates the student along several dimensions, being most interested in what kind of a person he is, what special and general abilities he has, and what his interests or preferences are. Accordingly, a battery of tests would normally include measurement of the student's general mental ability, his interests, preferences, values, personality traits, specific aptitudes or talents, and his achievement in some academic areas. The results of these constitute the basic data for interpretation.

In interpreting test results, the counselor has to decide in what kind of terms he will talk about results. There is a great deal of emotional and unrealistic thinking about IQ scores, for example, and these would best be avoided. In a more technical sense the

---



IQ is frequently different, depending upon the different kinds of tests that the individual takes. Rather than get involved in a long explanation of the pitfalls involved in talking about IQ's and in the emotionality that might result from dealing with these IQ's it is best for the counselor to avoid them altogether. It is probably best to talk in terms of average, below average, or above average when one is talking about general mental ability. Should the test material warrant such an interpretation and should the student be sophisticated enough, the counselor may talk in terms of standard scores or percentile scores which are more meaningful and certainly more acceptable to the people who are working with tests.

It is not necessary to burden the students with technical information about the tests. The counselor, on the other hand, should at no time give any test interpretation to the student without having prior and thorough knowledge of the technical features of the test, including especially validity and reliability and the normative data.

This information with reference to validity, reliability, and norms is extremely important and the counselor will discuss the test results with the student on the basis of his knowledge of this information. Should it happen--and unfortunately it does--that the reliability of the test is low, and the validity is not too high, and the normative data are rather vague, based on small samples and not too well worked up, the counselor should exercise much caution in using them. He is ethically bound and technically right not to give the student any information other than tentative, broad, indefinite statements about what the test battery suggests or seems to point up with reference to his expected performance in a particular area of work or preparation.

In interpreting tests to the student, the counselor should make frequent use of such terms as "other things being equal," "on the basis of the odds," "in an actual sense," and such other terms which give the student a definite feeling that we are dealing with him objectively and, metaphorically, in the same manner that we deal with a race horse when we attempt to predict what he will do in a subsequent race. The odds that we place on his future performance depend on a host of factors which we weigh and consider during our conference with the client. There is, of course, always a possibility, in forming hypotheses about the future performance

---

of an individual, that we might accept him as having good potential for a program or job when he has actually no potential. Conversely, we might reject a student when he really would be adequate. The counselor must be careful not to exaggerate or oversell his tests and his professional skill. He must avoid dressing his crystal ball, if this is what he is using, in more presentable and scientifically more creditable test-clothing, as it were. He must also recognize that the test, because of its apparent finality, status, and authority in our society and in academic places, is potentially as much a weapon, a bludgeon, as it is an aid. Students, persons in need and unable to make realistic decisions, are usually vulnerable. Much harm can be done by a counselor's unconscionable indelicacy, by his being certain and positive when these attributes are not called for, and by his foisting values on the student which are subjectively built and rewarding only to himself personally.

It must be mentioned that in making inferences about the future performance of a student, counselors use data which are somewhat less explicit than test information but which nevertheless are exceedingly important and useful. For example, during the interviews counselors continually derive impressions of the client--his feelings, needs, determination to succeed, physical characteristics, and so forth. There is other information which is important--the social status of the individual, his achievement in high school up to the time of counseling, his attitudes toward others and toward himself, and the occupation and education of his parents. With all this additional information at hand, the counselor can temper or qualify the test results and increase his chances of accurate prediction.

---

<sup>3</sup>Bernard Saper, "The Interpretation of Tests in Counseling Students," Educational Record, (XLII, April, 1961), pp. 117-121.

## VII. THE FUTURE OF TESTING

In 1985, it is our hope that our schools will possess measures of intellect and mental capacity which will allow us to judge individual efficiency of teaching and learning, for individuals, rather than on a comparative or competitive basis. Our school of the future may have access to materials of evaluation which will make available, for supervisory and curricular adjustment purposes, information which will indicate the relative efficiency of learning by different methods, by different media and resources, and by different teaching-learning situations.

The school of the future will have access to measures of achievement which will be valid for measuring progress within a system from year to year at the same levels, and for measuring progress of the same population of students from point to point as they progress through their school careers. Such instruments will be so constructed that they can be applied to an analysis of the curriculum of a specific school system, at specified grade levels, and even allow for such variables as socioeconomic differences among school populations within the same system.

In the school of the future, the person with the most complete information about any one student will be that student. Increasingly self-appraisal and evaluation will be considered the central goal of testing and evaluation; and curricular adjustments, themselves, will be made by many students with the assistance of new tests and counseling procedures.

The child in the learning process, is and should be the focal point of all concerned. Here, too, testing in the new school can play a vital and positive role. More complex information, electronic calculation procedures, and automated systems of instruction and evaluation need not submerge the learner's importance and reduce him to a series of rectangular holes in a calculator card. Properly utilized, all these procedures can be brought to bear for the enormously

enriched benefit of the individual student--for his own enlightenment and self-appraisal, for guidance and counseling purposes, in the instructional experience by his teacher, and for careful scholarly analysis and adaption of the system-wide curriculum by school officials.<sup>1</sup>

Where the criteria and the means of appraisal are covert and dependent upon the whims of single individuals, there can be no assurance of justice and no assurance of improvement. Accordingly, the development of more objective means, more widely used means, and more standard means of appraisal are essential to the development of our democratic society. To take any other view is to argue that the errors of which we know nothing are preferable to those which we can identify.<sup>2</sup>

Such an idealistic testing situation is a tall order for our schools, however, there are steps which should be taken to facilitate the necessary improvements. The remainder of the chapter is a brief discussion of the current problems in testing and some suggestions for solving them.

One possible way to improve tests would be to declare a moratorium on the production of new testing instruments for a period of years. During the period obsolete and poorly conceived tests would be killed off, gains would be consolidated, and standards of test design and marketing might be strengthened. Unfortunately, such a plan can hardly be taken seriously, for the attractiveness of profits from test production and marketing is too great for many persons to resist. It does seem strange in a country in which butchers' scales are regularly checked that a test distributor may sell his products without any supervision or regulation. After reading many test manuals one is often left with the feeling that "There ought to be a law," and it may come to that. It seems to have been assumed

---

<sup>1</sup>Curtis Ramsey "Testing in Tomorrow's School" Educational Leadership, (Vol. 17, May 1960), pp. 503+.

<sup>2</sup>Paul T. Dressel, "The Role of External Testing Programs in Education," Educational Record, (XLV, Spring, 1964), p. 166.

in the past that educational or psychological tests could be produced and distributed without any kind of regulation. It has been found necessary to enforce compliance with Pure Food and Drug Acts to protect even professional persons, who, presumably, should not need protection.

Perhaps educators, psychologists, and counselors need similar legislation for protection from those who have taken advantage of freedom from control.

Tests and use of tests may be improved as the result of increasing sophistication and consequent demands for higher standards by users. The discouraging lack of progress to date may have occurred because test users have not learned what to seek from test publishers. Their failure to require high-quality tests has resulted in huge production and sales of instruments that cannot possibly do what is claimed for them. It does not seem likely that there will be a significant improvement until the level of sophistication of test users has been raised.

As one reads test manuals and literature about tests one must observe that speed seems to be of the essence. The reason for so much emphasis on speed is difficult to ascertain. If the performance of pupils is hurried, the sampling of items has been limited so that they can be done in one school period, and if scoring is to be done so quickly that thorough checking and examination of pupil's answers is not possible, one must wonder how dependable the results can be. When test users require test builders to put ease and speed of administration or scoring second to validity, reliability, or adequacy of norms, testing for counseling may become a more useful procedure.

It is conceivable that a test with high predictive validity might be constructed by selecting items subjectively, scoring them as though each item were of equal value, and christening the total score. Currently, however, no one can really claim that an instrument with high predictive validity has been produced by such methods. The best results obtained so far are indicated by such small coefficients of correlation between test scores and criteria that prediction of an individual's later performance in the area christened by the author is little better than chance. Perhaps the time has come for test builders to

---

re-examine their basic premises and techniques. Continuation of the usual timeworn processes of test construction that have proved to be almost sterile seems not to be justified. There appears to be little hope of significant contributions to counseling by workers in the testing movement until a testing Einstein arrives to shake up its very foundations. The current way to appear scientifically and statistically respectable is to follow the beaten path and to grind out again, with minor refinements, what has been endlessly ground out before.<sup>3</sup>

Much must be done in the immediate future to improve the use of standardized tests. The following suggestions, if consummated, could substantially help:

1. Steps must be taken in all states to help schools plan effective testing programs characterized by careful selection and use of standardized instruments.
2. An extensive task of teacher and administrator re-education is called for to increase understanding of evaluation and testing and the appropriate uses of standardized test results.
3. More uniformity is needed, at least within states, in recording and reporting academic progress, test results, and other important information on high school graduates so that interpretation by colleges and other agencies may be simplified.
4. Despite personnel shortages, colleges should consider total information about the student before a final decision is made regarding his admission
5. A simple and perhaps uniform procedure is needed for reporting to the high schools the admission of a pupil at the time of registration and his later progress through college.

---

<sup>3</sup>John W. M. Rothney, Paul J. Danielson, Robert A. Heimann, Measurement for Guidance, (New York: Harper and Brother, Publisher, 1959), pp. 323-335.

6. Professional educational organizations should continually inform the public of the values, limitations, and abuses of national testing programs.
7. Testing companies should emphasize the development of more and better tests in the fine arts and the vocational areas which could be included in local testing programs to aid in the identification of talent in these fields and to emphasize their importance.
8. External tests given primarily for the awarding of scholarships should be administered without cost to the public.
9. Some NDEA funds expended under Title Five should be spent on in-service programs to expand understanding of tests and their use.
10. State Departments of Education should provide more effective leadership in the improvement of testing practice and programs.
11. A Joint National Testing Committee should be formed by the American Educational Research Association, the American Association of School Administrators, the Council of Chief State School Officers, and the National Association of Secondary School Principals. This committee should continually study the implications and effects of national and state testing programs and provide national leadership in the improvement of testing efforts in public education.<sup>4</sup>

---

<sup>4</sup>Glenn R. Snider, "The Secondary School and Testing Programs," Teachers College Record, (Vol. 65, October, 1963), pp. 66-67.

## BIBLIOGRAPHY

### Books

- Adams, Georgia Sachs and Torgerson, Theodore L. Measurement and Evaluation. New York: The Dryden Press, Inc., 1956.
- Ahmann, J. Stanley and Glock, Marvin D. Evaluating Pupil Growth. Boston: Allyn and Bacon, Inc., 1959.
- Ahmann, J. Stanley and Glock, Marvin D. Evaluating Pupil Growth. Boston: Allyn and Bacon, Inc., 1963.
- Andrew, Dean C. and Willey, Roy DeVerl. Administration and Organization of the Guidance Program. New York: Harper and Brothers, Publishers, 1958.
- Bauernfeind, Robert H. Building a School Testing Program. Boston: Houghton Mifflin Company, 1963.
- Berdie, Ralph F., Layton, Wilbur L., Swanson, Edward O., and Hagenah, Theda. Testing in Guidance and Counseling. New York: McGraw Hill Book Company, Inc., 1963.
- Cronbach, Lee J. Essentials of Psychological Testing. New York: Harper and Brothers, Publishers, 1949.
- Darley, John G. Testing and Counseling in the High-School Guidance Program. Chicago and Atlanta: Science Research Associates, 1943.
- Erickson, Clifford E. A Basic Text for Guidance Workers, New York: Prentice-Hall, Inc., 1947.
- Freeman, Frank S. Theory and Practice of Psychological Testing. New York: Henry Holt and Company, Inc., 1950.



- Froehlich, Clifford P. and Hoyt, Kenneth B. Guidance Testing. Chicago: Science Research Associates, Inc., 1959.
- Green, Harry A., Jorgensen, Albert N., and Gerberich, K. Raymond. Measurement and Evaluation in the Secondary School. New York: Longmans, Green and Co., 1943.
- Hatch, Raymond N. Guidance Services in the Elementary School. Iowa: Wm. C. Brown Company, 1951.
- Hatch, Raymond N. and Dressel, Paul L. Guidance Services in the Secondary School. Iowa: Wm. C. Brown Company, 1953.
- Hawes, Gene R. Educational Testing for the Millions. New York: McGraw-Hill Book Company, 1964.
- Humphreys, J. Anthony and Traxler, Arthur E. Guidance Services. Chicago: Science Research Associates, Inc., 1954.
- Jones, Arthur J. Principles of Guidance. New York: McGraw-Hill Book Company, Inc., 1945.
- Jones, Arthur J. Principles of Guidance. New York: McGraw-Hill Book Company, Inc., 1951.
- Koos, Leonard V. and Kefauver, Grayson N. Guidance in Secondary Schools. New York: The Macmillan Company, 1932.
- Lefever, D. Wertz, Turrell, Archie M., and Weitzel, Henry I. Principles and Techniques of Guidance. New York: The Ronald Press Company, 1950.
- Los Angeles County, California, Superintendent of Schools Office. Guiding Today's Children. Los Angeles: California Test Bureau, 1959.
- Marzolf, Stanley S. Psychological Diagnosis and Counseling in the Schools. New York: Henry Holt and Company, Inc., 1956.

- McDaniel, Henry B. Guidance in the Modern School. New York: The Dryden Press, Inc., 1956.
- Peters, Herman J. and Farwell, Gail F. Guidance: A Developmental Approach. Chicago: Rand McNally and Company, 1959.
- Remmers, H. H. and Gage, N. L. Educational Measurement and Evaluation. New York: Harper and Brothers, Publishers, 1943.
- Rothney, John W. M., Danielson, Paul J., and Heiman, Robert A. Measurement for Guidance. New York: Harper and Brothers, Publishers, 1959.
- Schwartz, Alfred and Tiedman, Stuart C. Evaluating Student Progress in the Secondary School. New York: Longmans, Green and Company, Inc., 1957.
- Smith, Glenn E. Principles and Practices of the Guidance Program. New York: The MacMillan Company, 1951.
- Stoops, Emery and Wahlquist, Gunnar L. Principles and Practices in Guidance. New York: McGraw-Hill Book Company, Inc., 1958.
- Taylor, Arthur E. Techniques of Guidance. New York: Harper and Brothers, Publishers, 1957.
- Thorndike, Robert L. and Hagen, Elizabeth. Measurement and Evaluation in Psychology and Education. New York: John Wiley and Sons, Inc., 1955.
- Traxler, Arthur E. Techniques of Guidance. New York: Harper and Brothers, Publishers, 1957.
- Warters, Jane. Techniques of Counseling. New York: McGraw-Hill Book Company, Inc., 1954.
- White, Verna. Studying the Individual Pupil. New York: Harper and Brothers, Publishers, 1958.
- Willey, Roy Deverl and Andrew, Dean C. Modern Methods and Techniques in Guidance. New York: Harper and Brothers, Publishers, 1955.

Periodicals

- Bereiter, Carl. "Using Tests to Measure Change." Personnel and Guidance Journal. (XLI, September, 1962), pp. 6-11.
- Boag, A. K. "Standardized Tests--How, When, Why." Instructor. (LXV, October, 1955), p. 24.
- Cashen, V. M. "A Different Technique in Group Testing." Personnel and Guidance Journal. (XL, April, 1962), pp. 728-729.
- Coleman, William. "Assisting Teachers in Using Test Results." Personnel and Guidance Journal. (XXXVI, September, 1957), pp. 38-40.
- Cottle, William C. "A Form for Evaluating Standardized Tests." Occupations. (XXX, December, 1951), pp. 188-193.
- Cox, F. N. "Test Anxiety and Achievement Behavior Systems Related to Examination Performance in Children." Child Development. (XXXV, September, 1964), pp. 909-915.
- Cunningham, James B. "Preparing Students for Group Testing." Chicago Schools Journal. (XLVI, October, 1964), pp. 25-26.
- Dallmann, M. "Tests and How to Give Them." Grade Teacher. (LXXIX, January, 1962), p. 40.
- Daniels, Virginia. "Concerning the Validity of Standardized Tests." Clearing House. (XXXIX, September, 1964), pp. 12-14.
- Davis, Frederick B. "Testing and the Use of Test Results." Review of Education Research. (XXXII, February, 1962), pp. 7-8.
- Dressel, P. L. "The Role of External Testing in Education." Education Record. (XLV, Spring, 1964), pp. 161-166.

- Englehart, Max D. "A Useful Technique for Analyzing Test Results." Chicago Schools. (XLIII, May, 1962), pp. 361-376.
- Findley, Warren G. "The Complete Testing Program." Theory into Practice. (II, October, 1963), pp. 195-196.
- Fishman, J. A. "What Can Mass-Testing Do for-and-to the Pursuit of Excellence in American Education." Harvard Education Review. (XXXIV, Winter, 1964), p. 65.
- Gipe, Melvin W. "Standardized Tests." Instructor. (LXXII, February, 1963), pp. 29-32.
- Grimes, H. F. "A Testing Program's Excuse for Being." Clearing House. (XXIX, September, 1954), pp. 33-34.
- Holland, John. "Computer-Measurement for Guidance." Harvard Educational Review. (XXXV, Winter-Spring, 1965), pp. 77-78.
- Lister, James L. and Ohlsen, Merle M. "The Improvement of Self-Understanding Through Test Interpretation." The Personnel and Guidance Journal. (XLIII, April, 1965), p. 810.
- Marks, M. B. "Better Directions, Better Response." Audio Visual Communication Review. (X, May, 1962), pp. 169-175.
- Maughamian, Henry. "Trends in Testing." Review of Education Research. (XXXV, February, 1965), pp.1-101.
- Miller, C. H. "Guidance and Programs of Testing." School Life. (XLII, September, 1959), pp. 18-20.
- Needham, John. "Improving Test Interpretation Through Films." Vocational Guidance Quarterly. (XII, Winter, 1963), pp.141-144.
- Peters, Herman J. "Some Key Sources of Error in Test Administration." Clearing House. (XXXIV, November, 1959), pp. 161-163.
- Ramsey, Curtis. "Testing in Tomorrow's School." Educational Leadership. (XVII, May, 1960), pp. 503+.

- Rinsland, Henry D. "A Form for Briefing and Evaluating Standardized Tests." Journal of Education Research. (XLIX, April, 1956), pp. 629-632.
- Robinson, Helen M. "After Testing, What?" Elementary School Journal. (LXII, May, 1962), pp. 402-405.
- Saper, Bernard. "The Interpretation of Tests in Counseling Students." Educational Record. (XLII, April, 1961), pp. 117-121.
- Snider, Glenn R. "The Secondary School and Testing Programs." Teachers College Record. (LXV, October, 1963), pp. 59-67.
- Stone, Leroy A. "Two Culture Counselors." Personnel and Guidance Journal. (XLIII, March, 1965). pp. 715-716.
- Traxler, Arthur E. "Standardized Tests." Journal of the National Educational Association. (XLVIII, November, 1959), p. 20.
- Traxler, Arthur E. "Use of Results of Large-Scale Testing Programs in Instruction and Guidance." Journal of Education Research. (LIV, October, 1960), pp. 60-62.
- Turnbull, W. W. "Testing for Guidance and Selection." Phi Delta Kappan. (XLIV, May, 1963), pp. 372-378.
- Wellman, Frank E. "Administration of the Testing Program." School Life. (XLII, September, 1959), pp. 18-25.
- West, Doral N. "Reducing Chance in Test Selection." Personnel and Guidance Journal. (XXXVI, February, 1958), pp. 420-421.
- Willett, Henry I. "Interpreting Test Results." Journal of the National Education Association. (XLVIII, November, 1959), p. 25.
- Wright, E. Wayne. "A Comparison of Individual and Multiple Counseling for Test Interpretation Interviews." Journal of Counseling Psychology. (X, Summer, 1963), pp. 126-135.