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SOME SUGGESTED IDEAS
FOR THE USE OF
ACHIEVEMENT, APTITUDE, INTELLIGENCE,
INTEREST, AND PERSONALITY TESTS
IN THE
SMALLER MONTANA SCHOOLS

by

WILLIAM GEORGE GASKELL

B. A. Montana State University, 1951

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of the requirements for the degree of

Master of Arts

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CHAPTER I

INTRODUCTION

I. THE PROBLEM

There can be no doubt that guidance tests are being used in a number of Montana schools; and, although this program yields much information of value to the individual schools, there is little evidence that all of the potential uses of this information are being exploited. The reasons for this situation are not difficult to determine for those familiar with the background and training of the average educator doing guidance work in Montana, and the time he is allotted to do the job. The statement by Manuel,¹ "that it may be said that in very many situations in which test results might be of substantial service, they are not available, are not used when available, or are not used most wisely," and again,² "in many local school systems the use of test results is greatly restricted by the lack of suitable organization and personnel for making the results available and interpreting them," may well be applied to the Montana situation, particularly in many of the smaller school systems of the state. "The value of testing in a guidance program is almost wholly dependent upon the

¹ Herschel T. Manuel, "The Use of Test Results," Educational Record Supplement, No. 12:154, 1939.

² Ibid., p. 156.

effectiveness with which the results are used by the faculty of the school."³ Traxler also points out clearly that we must have a definite plan of testing and usage. As Hall has stated:⁴

Effort must be made to make every possible use of test results. The needs, abilities, achievements, interests, personality characteristics, and special aptitudes of each student must be properly appraised and the results used to the end that the child will develop to his optimum.

No criticism of the people doing guidance work in the smaller schools of Montana is intended; many are doing a commendable job. Rather, this is merely a presentation of the existing condition. Naturally, all educators are interested in the constant improvement of our educational facilities and achievements through all effective means. This thesis is concerned with one problem that warrants improvement. All educational research should have this as a goal. This is what makes the field of education so vital and interesting.

II. THE AIM OF THE STUDY

The aim of this study is the development of a practical source of ideas for the use of the results of some of the various types of guidance tests that are being used in

³ Arthur E. Traxler, "Evaluation of Aptitude and Achievement in a Guidance Program," Educational and Psychological Measurements 1, 6:13, 1946.

⁴ E.C. Hall, "The Proper Use of Test Results," The Elementary School Journal 8, 14:450, 1954.

Montana, and more specifically in the smaller school systems of the state. Educators know that as early as possible in the educational career of a child an estimate should be obtained of his eventual educational level.⁵ The same sort of information should be collected in order to carry out the function of vocational counseling. Whether or not this work is carried on by the superintendent or some other member of the staff to whom the job has been delegated, the administrator should keep in mind that he is quite an important factor in any guidance program.⁶ Theoretically, the following guidance services are needed to supplement the activities of the teachers:⁷

1. Means of acquiring an understanding of the unique assets, liabilities, and needs of each pupil - educational, social, emotional, and vocational, as well as physical.

2. Means of assisting each individual student to select those resources of the school and community which will provide experiences appropriate to his needs and potentialities.

3. Personalized assistance to each student in utilizing these resources.

4. Remedial instruction and counseling for those students who fail to adjust and to develop in line with their potentialities.

⁵ Ralph F. Berdie, W.L. Layton, and Theda Hagenah, A Manual for the State Wide Testing Programs of Minnesota (Minneapolis: Association of Minnesota Colleges, 1953), p. 13.

⁶ E.G. Williamson, and M.E. Hahn, Introduction to High School Guidance (New York: McGraw-Hill Book Company, Inc., 1940), p. 246.

⁷ Ibid., p. 74.

The classroom teacher should not be overlooked in any guidance activity. "The classroom teacher, more than any other worker in secondary education, has an opportunity to establish contacts with students, a necessary condition in personnel work."⁸

No matter to whom the responsibility for the guidance program is delegated, the job should be done in the most thorough manner possible. This means that the results of the tests must be constantly and professionally employed.⁹

III. LIMITATIONS OF THE STUDY

As the ultimate aim of this study is the development of a usable source of ideas for the use of the results of various types of tests, the construction and content of some of the tests will be only briefly mentioned. Those who might wish to know more about the tests will find the bibliography contained in this thesis at the end of chapter nine a good point from which to begin their investigation. Those educators in Montana having considerable guidance training will probably find this thesis of little value to them. The paper is designed primarily for those who find themselves in charge of the guidance program but who lack sufficient background.

⁸ Ibid., p. 125.

⁹ Floyd I. Marchus, R.F. Sando, and H.J. DeFraga, Mr. Superintendent, How Do You Do? (Martinez, California: Sandemark Enterprises, 1954), p. 30.

IV. IMPORTANCE OF THE STUDY

Since the beginning of the State Wide Cooperative Testing Program, there has been an apparent need for a compilation of ideas for the practical use of test results. Such a collection of ideas for practical use may well lead to a wider usage of guidance testing in the smaller schools of the state. Froehlich¹⁰ has much to say about guidance in the smaller schools. He admits that there are certain difficulties a small school may have with guidance because of a lack of financial resources. However, he points out some advantages the small schools have. Due to the small enrollment in these schools, faculty members can get to know the students well. The small school usually has close community ties. Another advantage, according to Froehlich, is that the teachers in small schools are usually young, and are generally more flexible. Also, a small group can function more efficiently than a large one.

Some sort of a planned testing program should be constructed by every school. Likewise, a program of a state wide nature would be beneficial to the schools of the state. "Coordinated guidance services mean that duplication is reduced, thus making it possible to extend the services to

¹⁰ Clifford P. Froehlich, Guidance Services in the Smaller Schools, (New York: McGraw-Hill Book Company, Inc., 1950), pp. 4-5.

additional students."¹¹ The following is a list of possible uses of test results, given in a general way, which indicates the help that many schools might conceivably receive from the results of tests in solving many of their current problems:¹²

1. Tests reveal strengths and weaknesses of the individual and of the group. This information is useful for educational and vocational guidance.

2. Tests may indicate discrepancies between capacity and achievement.

3. Tests may be used as an aid in counseling concerned with college attendance.

4. The results of intelligence and achievement tests may be used as partial criteria in helping a student select his course in high school, or elective subjects within his course.

5. Tests may be used in determining requirements for those who wish to pursue studies which require specialized abilities.

6. Tests are helpful in sectioning classes.

7. Tests help the classroom teacher determine the range of capacity within a group.

8. Tests may be used to determine the status of a group or individual in respect to the materials to be used in class instruction.

9. Tests can be useful to point out the exceptional pupil who receives no challenge from his school work, to the slow pupil whose capacity will never allow him to reach the standards required of the group. Each of these types may present behavior problems.

10. Standardized tests tend to show instructional weaknesses.

¹¹ *Ibid.*, p. 40.

¹² *Ibid.*, pp. 197-8.

V. PROCEDURE

The method of dealing with the problem was primarily one of library research. An investigation of pertinent research was conducted. General uses are presented along with some uses for specific tests in each general area.

At the end of each chapter, following the general and specific discussions, there appears, in abbreviated form, an outline of the uses for the tests that have grown out of the foregoing investigation.

Chapter VIII presents a partial manual of procedure for the appraisal and development of testing programs.

CHAPTER II

DISCUSSION OF THE MONTANA TESTING PROGRAM AND THE VALUE OF TESTING PROGRAMS

Now that guidance and counseling have been recognized universally as important parts of any school program, there is little need to defend the existence of an organized guidance program. There is, however, a need to point out the advantages of the use of a minimum state wide program such as was set up by the Advisory Committee on Guidance and Testing. Before discussing these advantages, some mention of the Advisory Committee and some of the activities that were carried on by the committee should be made in order to orient the reader to the Montana program and to develop an appreciation of the work of this committee. The Montana State Wide Cooperative Testing Program was conceived at the Bozeman Conference, November 4, 1943, when Mr. Leo Smith, then Supervisor of Distributive Education, and at the present time Registrar of Montana State University, called the Advisory Committee on Guidance together for the first time.¹ At the meeting in Bozeman, the following points were discussed and adopted:²

¹ Leo Smith, Bulletin by the State Department of Public Instruction, Division of Vocational Education, Division of Distributive Education, May, 1943.

² Donald J. Olson, A Study of the Iowa Tests of Educational Development and the SRA Primary Mental Abilities Used in the Montana State Wide Cooperative Testing Program, Thesis, Montana State University, 1951. p. 6.

1. There should be a specific training program at the institutions of higher learning for the training of qualified counselors to direct school guidance programs.

2. The program of guidance should be concerned about supplying individuals with cumulative inventories of their abilities, aptitudes, interests, and achievements.

3. Information should be distributed about occupations, college entrance requirements, and other life situations.

4. Assembling all available information about each individual, and counseling him so that he can make intelligent decisions regarding his future is important.

The committee continued to meet periodically, and, at a meeting in Helena, in August of 1947, the foundations were laid for a state-wide testing program.³ Some basic principles that were agreed upon were:⁴

1. That guidance services included personal health, civic, group-life, and vocational orientation.

2. That all teachers are counselors and that the vocational counselor is a consultant to whom students can go in regard to understanding their interests, aptitudes, achievement, and personality.

3. That the individual inventory or counseling folder is basic to adequate guidance services in a school and that testing is only one phase of this record and its pertinent data concerning the pupil.

4. Tests are tools to supply facts which are supplementary to other evidence not readily available or obtainable.

5. The selection of tests should consider fully the needs of the pupil, the counselor, the teacher, the administrator, and the employer.

³ Ibid., p. 9.

⁴ Ibid., p. 10.

6. Tests are of even greater service as a gauge of the significance of the other items on the individual inventory.

Donald J. Olson,⁵ in his thesis concerning two of the tests included in the state wide testing program, carefully traced the activity of the Advisory Committee. Only a few of the highlights are mentioned here, as the work done by Mr. Olson is quite complete. Those interested in the history of this committee and its activities are urged to consult his thesis. According to Olson, the committee agreed that a battery of achievement tests should be given to all sixth graders on a state wide basis. Also, the committee decided to test interests, aptitudes, and achievement of all juniors in Montana high schools. The tests finally selected were:

1. The Coordinated Scales of Attainment by M.J. Van Wagenen, L.J. Brueckner, and others, published in 1947 by the Educational Test Bureau of Minneapolis.

2. The Kuder Preference Record by G.F. Kuder, published in 1942 by Science Research Associates of Chicago.

3. The SRA Primary Mental Abilities by L.L. Thurstone, and T.C. Thurstone, published by Science Research Associates.

4. The Iowa Tests of Educational Development by Paul Bloomer, K.W. Vaughn, Julia Peterson, and John W.

⁵ Ibid., pp. 11-31.

Maucker,⁶ published in 1952 by Science Research Associates.

5. The Metropolitan Reading Readiness Test by G.H. Hildreth, and N.J. Griffiths, published by World Book Company in Yonkers, New York, in 1939.

6. The Henmon-Nelson Test Of Mental Ability by V.A.C. Henmon, and M.M. Nelson, published in Boston by Houghton-Mifflin Company, in 1932.

The Coordinated Scales were selected because the committee felt they were capable of measuring what the committee desired to be measured, and because the results could be put in easily usable form.

The Kuder test, to be administered to the eleventh grade, establishes an interest pattern that the committee considered most usable on the high school level.

The Primary Mental Abilities test was selected because this test provides a total score that is comparable to scores, or quotients, obtained from other intelligence tests, plus single scores in the five primary mental abilities.

The Iowa tests were selected because they measure both factual knowledge and the ability to think. The Committee considered these tests valuable for the purpose of educational guidance and curricular evaluation.

The Metropolitan tests were selected for reasons of

⁶ J.W. Maucker is the former Dean, School of Education, Montana State University.

quality and the fact that this test gives the teacher a survey of pupil potentialities.

The Henmon-Nelson test was selected because the committee was of the opinion that at least one general group factor test should be used, mainly as a check on the other tests.

As can be seen by the foregoing discussion, the Advisory Committee expended a great deal of thought and effort to improve the guidance situation in Montana. That the tests selected are not up-to-date is possible, but this will remain uncertain since the program has had little use. Common sense should indicate that a change should not be contemplated until much more experience has been had with the program and the situation given considerable study. This sort of study could only be made on the basis of extensive use of the program in the schools of Montana.

Now that the Montana State-Wide Cooperative Testing Program is no longer used by the schools of the state, the question for the smaller schools to consider is: What can be done in the guidance programs of the smaller schools? To begin, testing should probably be continued. "One of our best methods of obtaining facts about pupils is the use of tests."⁷ The effectiveness of any attempt to individualize classroom instruction and high school planning

⁷ Frank G. Davis, Guidance Manual for Principals, (New York: McGraw-Hill Book Company, Inc., 1949), p. 28.

depends upon the utilization of objective and reliable information about individual pupils.⁸

Traxler listed fifteen criteria for a testing program:⁹

1. Is the testing program comprehensive?
2. Does the testing program include all pupils in the school?
3. Are the tests given at regular intervals?
4. Are the tests well timed, given when useful?
5. Are the tests in the school's testing program comparable?
6. Do the tests used agree with the objectives and the curriculum of the school?
7. Are the specific tests carefully chosen?
8. Are the specific tests carefully administered to each group?
9. Are the specific tests scored accurately?
10. Are the test results interpreted in terms of appropriate norms?
11. Are the test results quickly reported to teachers and counselors in understandable terms?

⁸ Ralph F. Berdie, Wilbur L. Layton, and Theda Hagenah, A Manual for the State Wide Testing Programs of Minnesota (Minneapolis: Association of Minnesota Colleges and the Student Counseling Bureau, 1953), p. 5.

⁹ Arthur E. Traxler, "15 Criteria of a Testing Program," Clearing House, 25:3-7, September, 1950.

12. Are the test results recorded on individual cumulative record forms?

13. Is a definite attempt made to relate the test scores to other kinds of information?

14. Is there provision for special testing as needed in addition to the regular testing program?

15. Does the school have an in-service program for education of teachers in the use of test results?

There are certain things that are necessary before a testing program can be used effectively. Some of these prerequisites to effective use of test results are:¹⁰

1. Cooperation between teachers and test specialists in test construction.

2. Planning and carrying on of systematic testing programs annually or semi-annually.

3. Including different types of tests in the testing program.

4. Taking the tests "in stride."

5. Administering and scoring the tests accurately.

6. Organizing and recording and reporting the test results in a form that is readily understandable and usable.

7. In-service training for teachers in the interpretation and use of test results.

¹⁰ Margaret Selover, and others, Introduction to Testing and the Use of Test Results (New York: Educational Records Bureau, 1950), pp. 101-4.

The above points were presented to aid the school in planning a testing program, or improving the existing program. Tests are worth while because the test results may be used for such things as:¹¹

1. Educational and vocational guidance, and adjustment counseling.
2. Individualization of instruction.
3. Diagnosis of strengths and weaknesses of individual pupils and in making allowances and correcting weaknesses.
4. Appraisal of the effectiveness of different kinds of instruction.
5. Action research on questions of practical importance.
6. Bases for counseling parents.
7. Formulation of reports to colleges and to prospective employers.

The school administrator will find ample use for test results in that they provide such facts as:¹²

1. The level of mental maturity or intelligence for a school system as a whole, and for individual schools can be found. Tests suggest the level of achievement which should be attained by the district as a whole, and the

¹¹ Ibid., pp. 104-6.

¹² Staff, "Administrative Uses of Test Results," Test Service Bulletin, No. 4 (Los Angeles: California Test Bureau, 1953), p. 1.

variations which should be expected among the schools.

2. Tests reveal what is being accomplished, where the strong and weak points are, and thus suggest where administrative and supervisory services are most needed.

3. Personality and mental health tests can reveal whether the schools are too traditional or too informal, and the attitude of the community toward the educational program.

4. Interest inventories reveal whether the type of program offered meets the interests and needs of the students.

Another important advantage of an organized testing program lies in the fact that when the administrator has a great deal of test information handy, he can use this information to:¹³

1. Refute charges that school achievement is lower than is reasonable.

2. Determine whether differences in achievement between succeeding grades are satisfactory.

3. Determine whether the curriculum objectives are being achieved.

4. Determine whether marking practices in various schools and classes reflect true performance.

5. Determine whether the proportion of students who fail reflects the true performance.

¹³ Ibid., p. 3.

6. Use as a basis for developing policies on grouping.

7. Determine whether the achievement test results are reasonably satisfactory in the light of the intelligence of the students and other related factors.

Tests do provide a wealth of information; and, when the test results are used properly, the school should profit. The following chapters contain some general and specific suggestions for the use of achievement, aptitude, intelligence, interest, and personality test results in the smaller schools.

CHAPTER III

ACHIEVEMENT TESTS

I. GENERAL

Achievement testing is an established and important part of any testing program. Many authorities list achievement tests as essential to any minimum testing program.¹ Achievement tests are both general and specific. The general type is the one most frequently used in the elementary school, and the secondary schools usually employ the specific type.

The type of achievement test, or tests, to be used in a particular school will depend upon what the school expects of the achievement tests. The individual school should study the needs of that school regarding achievement testing, and then select the tests that will satisfactorily meet those needs. Achievement tests probably should be given every year, as there is no assurance that an achievement score for one year will indicate the exact achievement score of the following year.²

What are some of the generally accepted uses of

1. Arthur E. Traxler, and others, Introduction to Testing and the Use of Test Results in Public Schools, (New York: Harper and Brothers, 1953), p. 42.

2 Roger T. Lennon, "The Stability of Achievement Test Results from Grade to Grade," Educational and Psychological Measurements, 11, 1:121-27, 1951.

achievement test results? Froehlich suggests these common uses of test results for smaller schools, most of which may be reasonably used with achievement tests:³

1. Tests reveal strengths and weaknesses of the individual and of the group. This information is quite useful in both educational and vocational guidance.

2. Tests may indicate discrepancies between capacity and achievement. How this may be easily seen will be demonstrated later in Chapter 5.

3. Tests may be used as an aid in counseling concerning college attendance.

4. The results of intelligence and achievement tests may be used as partial criteria in helping a student select his course in high school or elective subjects within his course.

5. Tests may be used in determining requirements for those who wish to pursue studies which require specialized abilities.

6. Tests are helpful in sectioning classes. Whether the district practices homogeneous or heterogeneous grouping, test results can afford useful insight.

7. Tests may be used to determine the status of a group or individual in respect to the materials to be used

³ Clifford P. Froehlich, Guidance Services in Smaller Schools, New York: McGraw-Hill Book Company, Inc., 1950, pp. 197-198.

in class instruction.

8. Tests help the classroom teacher determine the range of capacity within a group.

9. Tests can be used to point out the exceptional pupil who receives no challenge from his school work, or the slow pupil whose capacity will never allow him to reach the standards required of the group. Each of these types may present behavior problems.

10. Standardized tests tend to show instructional weaknesses.

Greene and Jorgensen list these instructional uses of achievement tests:⁴

1. Pupil guidance. Most administrative problems arise through the failure of the school system to properly stimulate and occupy the pupil's mind.

2. Individual pupil diagnosis.

3. Pupil gradation. This will be useful in districts or schools where, because of promotional policies and the like, the placement of children is a problem.

4. Class analysis and diagnosis. On the face of this suggestion, one would infer that the authors would favor achievement testing in the fall of the year.

5. Group comparisons. Weaknesses and strong points

⁴ Harry A. Greene, and Albert N. Jorgensen, Measurement and Evaluation in the Elementary School (New York: Longmans, Green and Company, 1942), pp. 99-104.

should frequently be examined for curricular implications.

6. Measuring the efficiency of learning.

Several authorities suggest these general uses of achievement tests:⁵

1. To provide an incentive to study.
2. To constitute a method of instruction.
3. To stimulate improvement of teaching.
4. To provide a basis for the appraisal of teachers and departments.

5. To assist in accrediting.

6. To provide data for educational guidance.

7. To accumulate materials for research.

Perhaps some of the above points are controversial. Some of the suggestions will likely be useful to most schools. Whatever the case, the purpose of this thesis is not to recommend specific uses for all schools, but rather, to provide a number of uses from which the individual schools may select the ones which will be helpful to the particular school.

Hall suggests that schools might well use charts which contain a comparison of chronological age and achievement age, and also charts which compare achievement and

⁵ Herbert E. Hawkes, E.F. Lindquist, C.R. Mann, editors, The Construction and Use of Achievement Examinations, (Boston: Houghton-Mifflin Company, Inc., 1936), p. 446.

intelligence scores.⁶ Figure I is a chart relating chronological age to educational age or achievement age. The diagonal lines of boxes indicate the area in which chronological age and educational age are the same. Pupils whose scores fall above and to the left of the boxes are achieving less than their chronological age would indicate they should. Pupils falling below and to the right of the boxes are "overachieving," if this is possible.

Figure II shows the distribution or comparison of educational age and mental age in months. The diagonal boxes will represent children whose educational age and mental age are equal. Positions above and to the left of the boxes indicate mental ages which are less than the educational age, if this is possible, and those people may be said to be "overachieving." Positions below and to the right of the diagonal boxes have mental ages greater than their educational age and are achieving less than one would expect.

Hall also speaks highly of the value of the accomplishment quotient, or the ratio of mental age of the pupil to the educational age of the pupil.⁷ The formula for this is: $AQ = 100 \times \frac{EA}{MA}$.

⁶ E.C. Hall, "The Proper Use of Test Results," Elementary School Journal, 54:450-5, April, 1954.

⁷ Ibid., p. 453.

FIGURE I

COMPARISON OF CHRONOLOGICAL AND EDUCATIONAL AGE
(in months)

Chronological Age	No. of pupils with Educational Age of -					
	75-82	83-90	91-98	99-106	107-113	-----
187-194						
179-186						
171-178						
163-170					=====	=====
156-162				=====	=====	
----			=====	=====		
----		=====	=====			
----	=====	=====				
----	=====					

FIGURE II

COMPARISON OF EDUCATIONAL AGE AND MENTAL AGE
(in months)

Educational Age	No. of pupils with Mental Age of -					
	-----	-----	-----	-----	-----	-----

-----						=====
-----						=====
-----					=====	=====
-----				=====	=====	
-----		=====	=====			
-----	=====	=====				
-----	=====					

Following this activity, these questions might be examined and the results applied to the local situation:⁸

1. How did the ability and achievement results of the test compare with similar measures previously determined?

2. If there were significant differences in these and other test results, what factors may have accounted for such differences?

3. What factors may have entered that would make these results invalid or unreliable?

4. What factors could keep the pupil's educational age from being equal to, or greater than, his chronological age?

5. Is the work outlined by each teacher of such character as will motivate each pupil regardless of his ability and level of achievement?

6. Why should the educational age of a pupil lag behind his mental age? How is this related to problems of motivation, home condition, and the physical condition of the pupil?

7. What constructive plans have been developed in dealing with the gifted children? Are they working to capacity?

8. Has adequate attention been given to the possibility that lack of achievement may be related to poor

⁸ Ibid., p. 455.

vision, poor hearing, or other physical disorders?

9. Does the teacher have a thorough understanding of the home life and emotional climate in which the pupil lives?

There is little doubt that a wiser use of test results will improve most testing programs. Mediocre achievement of superior pupils is dangerous in these times, their achievement must equal their ability.⁹ "Securing normal progress in all pupils, each according to his ability, is vastly superior to getting average progress in all pupils, regardless of ability."¹⁰ This problem is the concern of the entire school staff. "Wise use of test results will help the administrator to discover the reasons for any weaknesses that may show up in the school."¹¹ Many of our young people are finding themselves in trouble partly because they do not like school.¹² Achievement tests can help the school to assign realistic tasks to the children whose school experience has not been pleasant. This may well lessen their dislike for school. This seems to be a worthwhile goal. Some teacher, counselor, administrator, and curricular

9 Gilbert L. Betts, "Suggestions for a Better Interpretation of Standardized Achievement Tests," Education, 71:220-1, December, 1950.

10 Ibid., p. 221.

11 Frank G. Davis, and Pearle S. Norris, Guidance Handbook for Teachers (New York: McGraw-Hill Book Company, Inc., 1949), p. 115.

12 C.J. Eckenrode, "Their Achievement Is Delinquency," Journal of Educational Research, 43:557, March, 1950.

uses of achievement tests in general have been presented. At this point, perhaps some value will be gained by briefly examining one of the achievement tests used by many Montana schools.

II. STANFORD ACHIEVEMENT TEST AND SPECIFIC USES IDEAS

The Stanford Achievement Test, published by the World Book Company, has long been used by many Montana schools. The manual for the test has this to say about achievement testing:¹³

1. Teacher participation in the planning of a testing program serves to alert the teacher more fully to the possibilities of using test results for the improvement of instruction and for use in individual guidance.

2. Results of the same achievement tests may be used for a variety of purposes - administrative, supervisory, instructional, and guidance.

3. Standardized testing is essentially a method of fact-finding. The facts revealed do not in themselves indicate any appropriate action. They must constantly be related to other elements in the situation, such as the philosophy of the school system, administrative considerations, and pupil abilities.

4. A test should be selected primarily to do what it does best.

There seems to be nothing stated here that is not generally accepted by the various authorities that have been used in

¹³ Truman L. Kelly, and others, "Directions for Administering," Stanford Achievement Tests (New York: World Book Company, 1953), p. 12.

this chapter. The specific uses the test manual recommends are:¹⁴

1. Using the results for individual appraisal and guidance. The test will quickly indicate the approximate level of achievement so that individualized instruction is more possible. Also, superior achievers are more easily noted and proper enrichment programs can be instituted.

2. Using the results for an analysis of class performance. The teacher will see the areas needing more or varied activities and time.

3. Using the results in administrative and supervisory activities. The administrator, by comparing the norms of his school to the national norms for the test will have a better idea of how his school compares with other schools.

Thus, wise use of the Stanford, or any other reliable achievement test, would seem to indicate some practical activity. Once the tests are scored, the results of each student on each test should be studied carefully. Chronological and educational age could be compared to determine whether or not there is a lag. Educational age and mental age can then be compared, and the accomplishment quotient obtained. If, for example, a class pattern in arithmetic or reading appears to be one of under-achieving, definite

¹⁴ Ibid., p. 13.

corrective measures can be undertaken at once. Perhaps the materials used in the past to teach the particular course are not adequate. Possibly the method of instruction, the time allowed, the time of day given, or other variables should be examined. Finally, there is always the possibility that the teaching has not been satisfactory. Here, at least, is one way to find weakness. Also, if the tests were properly administered and properly scored, the school will have some fairly reliable evidence to back any stand which seems to be necessary. Should the school decide to go into this extensive use of achievement tests, the apparently most logical time to administer the tests is in the fall. This will give the school time to work on any apparent weaknesses almost immediately.

The counselor should see to the in-service training of the teachers in preparation for the giving of the tests. The normal environment should not be changed for this testing, so the teacher should probably give the test to his own students. The importance of the testing situation should be carefully restated to the teachers. Any variations from the normal routine of daily school life may seriously reduce the validity of the test results.

Here, again, the school, and particularly the administrator, should probably exercise care before placing the blame for unusually low achievement. While poor teaching may be the cause, the fault more than likely does not lie in the

teaching of the previous year; but may well be the result of several years of improper material, poor scheduling, ineffective methods, or careless teacher assignment by the administration. An excellent method by which the administrator can get to the cause of any apparent weakness is to use the teaching staff, or their representatives, as committees to thoroughly examine all of the implications of the weakness. This will increase the security of the teachers, and may result in an automatic correction of the weakness.

Another use of achievement test results is in a school which may experience a rapid increase of enrollment due to the addition to the community of many new families. The achievement of the students who have been in the schools for a reasonable length of time, say five years, and the achievement of newer students can be compared to see if there is any significant difference. This would require a statistical analysis. Any good measurements book, such as Measurements in Today's Schools, by C.C. Ross, will adequately explain how to make the frequency distribution. Fundamental Statistics in Psychology and Education, by J.P. Guilford, published by the McGraw-Hill Book Company, can then be used for the application of the Null Hypothesis, by which method the school may determine whether or not any significant difference in achievement scores is evident. If a significant difference should appear, some curriculum changes may

have to be made by the school.

III. SUMMARY

Some uses for the achievement test in the school situation have been given. In order that this material will be more readily usable, the suggested uses are summarized and grouped below into teacher, counselor, and administrator uses.

TEACHER USES:

1. To discover strengths and weaknesses of the individual and the group.
2. To determine discrepancies between capacity and achievement.
3. To help in grouping in classes.
4. To help to determine the range of capacity within a group.
5. To help to determine the status of a group or individual in respect to materials to be used.
6. To locate the exceptional pupil or the slow learner.
7. To discover instructional weaknesses.
8. To use in class analysis and diagnosis.

COUNSELOR USES:

1. To aid in counseling concerning college attendance.
2. To discover strengths and weaknesses of the individual and the group.

3. To help determine discrepancies between capacity and achievement.

4. To help students select high school courses and electives.

5. To help students with specific studies as a goal to determine the requirements for study.

6. To help locate the slow and fast learners.

7. To help in educational guidance.

8. To help in vocational guidance.

9. To help in individual pupil diagnosis.

10. To accumulate materials for research and experimentation.

ADMINISTRATIVE USES:

1. To discover strengths and weaknesses of the individual and the group.

2. To help in sectioning classes.

3. To help locate the slow and fast learners.

4. To discover instructional weaknesses.

5. To help in educational guidance.

6. To help in gradation.

7. To use in class, grade, and school diagnosis and analysis.

CHAPTER IV

APTITUDE TESTS

I. GENERAL

Aptitude testing is probably not being used in Montana schools as much as is desirable. At least two understandable reasons for the lack of use of aptitude tests in Montana exist. First, the general aptitude tests which are available are time-consuming, and the individual who has the responsibility for testing and guidance in the smaller schools usually has an already crowded schedule. Secondly, the individual or small-group aptitude tests, while not requiring an excessive amount of time to administer, have a relatively high cost.

However, more and more school people are recognizing that intelligence tests and achievement tests cannot always predict future success academically, and that interest test results are limited in their usefulness in vocational counseling. Intelligence and achievement tests are aptitude tests of a sort, and should be considered as such in any attempt to determine an individual's possible success educationally or vocationally. Nevertheless, intelligence and achievement tests cover only a small part of the range of human capabilities, and are not fully reliable counseling aids in the area of specific talents. Furthermore, if

differentiated instruction is the aim of the school, intelligence tests are not a sufficient basis, but differentiated measurement of aptitude is also needed.¹

Interest tests are not aptitude tests, generally speaking. The aptitude of an individual for a specific job and his interest in that job may, or may not, be related. Interest tests are valuable in determining in what areas or types of occupations the interests of an individual are significant. Aptitude testing, then, helps to determine whether or not the chances for success of the individual in an occupational area are reasonable. Likewise, interest preferences necessarily must be weighed in relation to some reasonable evidence of related aptitudes.²

As far as educational guidance is concerned, many types of information are of use. Achievement, intelligence, interest, economic situation, vocational or professional demand, all are useful and must be taken into account if the counseling is to be adequate. However, all of the above items may indicate a somewhat definite pattern or logical course of action; but, unless appropriate aptitude is present, the chances for success are small.

Probably the best single predictor of over-all college grade average is the relative rank in the high-school

¹ Arthur E. Traxler, "The Use of Tests in Differentiated Instruction," Education, 74:273, January, 1954.

² Rose G. Anderson, "Do Aptitudes Support Interests?" Personnel and Guidance Journal, 32:17, September, 1953.

graduating class.³ Still, specific and general aptitude tests do a reasonably accurate job of prediction in this area. A word of caution should be given at this point. Although aptitude tests do perform a reasonably good job of predicting grades in college, undue weight should not be placed on the test scores of an individual in guidance, selection, or placement.⁵

Perhaps indicating the types of aptitude tests in general use will be a valuable contribution to the small-school counselor. This is not to say that the small schools should equip themselves with all of the different types of aptitude tests, but rather, that the small school should be aware of the different types in order that the students can be impressed with the necessity of good study habits in order to be better prepared for the possibility of aptitude testing as a requirement for the field of work the student may choose. There are aptitude tests for manual occupations, skilled trades, clerical occupations, and the professions. There are many divisions in each area, with the professions having the most divisions.

One source of help in the matter of aptitude testing

³ Ralph F. Berdie, and Nancy A. Sutter, "Predicting Success of Engineering Students," Journal of Educational Psychology, 41:190, March, 1950.

⁴ Loc. cit.

⁵ W.L. Wallace, "The Prediction of Grades in Specific College Courses," Journal of Educational Research, 44:596-7, April, 1951.

is the local office of the United States Employment Service. The officers of the Employment Service will, if approached during the winter months, generally be most happy to administer and score the aptitude test that is used by them for employment counseling. Thus, at no cost, the school can learn a great deal of valuable information about the older students of the school regarding aptitudes. The employment officials will furnish the school with a copy of the resulting profiles which can be used to good advantage by the counselor in the school. By working with these officials, the small-school counselor can increase his knowledge of aptitude testing and keep himself informed of the current local and national occupational trends at the same time.

"The most difficult phase of aptitude testing is interpretation of results."⁶ The data obtained from the aptitude test must be fitted into the framework of whatever else is known about the individual.⁷

In using the aptitude test results for counseling, many things should be kept in mind by the counselor. Almost all test manuals contain tables of norms, percentiles, and the like. These tables should be used to guide the counselor in interpreting the test results as they represent the best

⁶ Walter Van Dyke Bingham, Aptitudes and Aptitude Testing (New York: Harper and Brothers Publishers, 1937), p. 245.

⁷ Loc. cit.

available information of the type that is presented in the particular table. There are, however, certain precautions that one must observe when dealing with these norms.

Two steps are involved in appraising a test score regarded as a symptom of aptitude. The first step is to compare the person's performance with what others have done in the same test situation in order to decide whether his score shows a deviation, large or small, from the average of a group with which his performance may appropriately be compared, and from the general average of his own aptitudes. To do this, it is necessary to ask how accurately the score represents the individual's real ability in the task set by the test. How reliable is it? Does it measure a satisfactory sample of his performance? Then, having decided within what range of possible error allowance should be made for inadequacies of the test as an instrument of measurement, keeping in mind also the possibility of errors in administration and the chance the person may not have been at his best, the second step is to consider the evidence that deviations of this magnitude are symptomatic of later performance in the line of success in the activity under consideration, and from this evidence to estimate the probabilities of failure or success.⁸

The scores of an individual should be referred to norms with which he may be properly compared, for only then will this comparison have meaning.⁹ When norms for an occupational group are available, use them also.¹⁰ The counselor should familiarize himself as to the nature of the norms of the particular test with which he is concerned. Usually, differences in performance near the extremes are more significant for counseling than those near the middle,

⁸ Ibid., p. 246.

⁹ Ibid., p. 247.

¹⁰ Ibid., p. 247.

especially those using a percentile scale.¹¹ This may not be the case in standard scores expressed in sigma units are used.¹² When interpreting the performance of an individual, his score should not be thought of as a point on a scale, but as a zone around that point.¹³

The interpreter of test scores will bear in mind another precaution. These mathematical aids for use in ascertaining standard errors of measurement indicate only the allowance that should be made for unreliability inherent in the test, due to the limited sampling of the ability in question. They do not take into account any other sources of possible error such as mistakes made by the examiner in administering the test, carelessness in scoring, the possibility that the examinee did not put forth his best efforts, that he was ill or otherwise incapacitated, or that he had been coached. If there is reason to suspect that any of these extraneous sources of error has affected the performance, the remedy is not to juggle the scores, but to repeat the test in an alternative form when conditions are more favorable.¹⁴

Now that some of the background and precautions have been sketched, what are some ways that aptitude tests can be used in the school? "One of the newer uses to which aptitude tests are now being assigned is that of challenging the curriculum."¹⁵ Achievement tests traditionally have been used for this purpose, but there are some shortcomings to this use of achievement tests. Aptitude tests can raise questions as to whether the community is adjusting the

¹¹ Ibid., p. 250.

¹² Ibid., p. 252.

¹³ Ibid., p. 254.

¹⁴ Ibid., pp. 259-60.

¹⁵ Alexander G. Wesman, "Guidance Testing," Occupations, 30:11, October, 1951.

offerings of the school not merely to some educational philosophy, but to specific needs and abilities of students.¹⁶

Before examining a few specific aptitude tests, perhaps an exploration of some of the uses to which the counselor can put the results of aptitude tests will be valuable. In the first week of the school year, the school may find that giving aptitude tests for some of the high school subjects and using the results in placing students in courses that are consistent with their aptitudes will greatly reduce problems of discipline and pupil failure and drop-out. Aptitude tests can also be used to an advantage in helping the counselor suggest suitable avocational and hobby activities to the students. Aptitude test information will be valuable in helping local employers to locate permanent and part-time help that will be more likely to be successful. This will tend to gain support for the school from an important source. The counselor can, by using the results of aptitude tests wisely, help steer students into educational programs and plans of action that have meaning in terms of the capabilities of the individual student. By being careful in the selection of aptitude tests and in administering these tests, as well as using care in the interpretation of the results, the school can do a service

¹⁶ Loc. cit.

for the pupil, the school and the community. The test manual should be followed exactly in order that the results will be sufficiently reliable and valid. The local situation, and the total personality of the individual student should also be kept constantly in mind. All available information about the child, the community, and local and national employment and service trends should be part of the equipment the counselor brings to the counseling situation.

II. SPECIFIC

There are some tests of aptitude available to almost all levels of public education, and perhaps the school could find no better way of spending the first few days of the school year in using aptitude tests and applying the results.

The Orleans Algebra Prognosis Test, published by the World Book Company, has been in existence for a number of years, the most recent revision having been made in 1951. This test, which can be administered in one class period, attempts to measure those abilities that make for success in learning algebra.¹⁷ The test measures:¹⁸

1. The appreciation of the use of symbols to represent numbers.

¹⁷ Joseph B. Orleans, "Manual of Directions," Orleans Algebra Prognosis Test (Yonkers-on-Hudson: World Book Company, 1951), p. 2.

¹⁸ Ibid., p. 2.

2. The ability to substitute values for these symbols.

3. The ability to represent quantities by means of symbols, and to use them.

4. The ability to express relationships by means of symbols.

5. The ability to combine the above elements in solving problems.

The student's score indicates his chances of success in learning first-year algebra.¹⁹ This information is useful for:

1. The educational guidance of the individual.
2. The planning of the instructional program.

The Orleans Geometry Prognosis Test can be used in the same manner for geometry.²⁰

What is the meaning of a low score on an algebra or geometry aptitude test, whether individual or group? First of all, a low score on such an aptitude test should not forever prevent the individual from enrolling in the particular subject. Perhaps the low score is more valuable in pointing out where additional skill or drill is needed. The implication here is to look for positive information as well as negative information. If, for example, the ninth graders who came from the same school were to score low in aptitude

¹⁹ Ibid., p. 9.

²⁰ Joseph B. Orleans, "Manual of Directions," Orleans Geometry Prognosis Test (Yonkers-on-Hudson: World Book Company, 1951), pp. 1-12.

for algebra, the school should do more than assign them all to a general mathematics class for the year. This information will be very useful to the school from which these students came. On the other hand, if a group of ninth graders should score unusually high on this sort of test, perhaps this group could be placed in the same class and the instructor encouraged to proceed as far and as rapidly as the class appears to require.

Jacobs and Traxler reported a relatively new aptitude test for business, the Accounting Orientation Test.²¹ They stated that there is a definite shortage of tests employed on an individual or small-group basis with pupils whose interests and abilities seem to be concentrated in particular areas. The Accounting Orientation Test includes a test of general business ability and two levels of achievement tests. The Accounting Orientation Test, High School, is designed to provide teachers and counselors information about the student's potentialities for success in the field of accounting, or the general field of business.²² This is the sort of activity and service that the schools should look for while surveying their testing needs. The question could be asked: in what ways is the school attempting to help the students work toward careers that will be mutually adequate?

²¹ Robert Jacobs, and Arthur E. Traxler, "A Professional Aptitude Test for the High School," Clearing House, 28:266-8, January, 1954.

²² Ibid., p. 267.

The Differential Aptitude Test, published by Science Research Associates, is another relatively new test in the field of aptitude testing. The Differential Aptitude Test, or the D.A.T., is designed to provide an integrated, scientific, and well standardized procedure for measuring the abilities of children in grades eight through twelve, for educational and vocational guidance.²³ Studies indicate that aptitude tests do a satisfactory job in the area for which they are designed - that is, as supplements to the other methods of finding out as much about the students as possible.²⁴ As the D.A.T. predicts success on achievement tests to a reasonable degree, there seems to be good reason for assuming that this aptitude test will be at least moderately successful in prediction in areas not measured by achievement tests.²⁵

After the D.A.T. had been in use for five years, the test author made some generalizations based on the extensive follow-up studies that were conducted during that five year period. Some of the generalizations are:²⁶

²³ George K. Bennet, and others, "Aptitude Testing: Does It Prove out in Counseling Practices?" Occupations, 30:584, May, 1952.

²⁴ Ibid., p. 592.

²⁵ Jerome E. Doppelt, and Alexander G. Wesman, "The Differential Aptitude Tests as Predictors of Achievement Scores," Journal of Educational Psychology, 6:217, April, 1952.

²⁶ Alexander G. Wesman, "The Differential Aptitude Tests," Personnel and Guidance Journal, 31:167, December, 1952.

1. The Sentences and Verbal tests are the best predictors of grades in English.

2. The Numerical test is best in predicting mathematics and bookkeeping grades.

3. The Verbal, Sentences, and Numerical tests are fairly successful in predicting social studies grades.

4. The Verbal, Sentences, and Numerical tests, along with the Abstract Reasoning test, do a reasonable job of predicting science grades.

5. The Spelling test is the best predictor for shorthand.

6. The Space Relations test is best in predicting success in mechanical drawing and plane geometry.

The author of the test is also satisfied that the D.A.T. is stable enough to allow for long-range planning as well as planning for immediate goals.²⁷ He also cautions against basing counseling on interest scores without reliable information regarding appropriate aptitudes and abilities.²⁸

Some uses for the results of the D.A.T. are:²⁹

1. To use in the prediction of academic success and the guidance of pupils into proper courses and careers.

2. To provide the student with a clearer idea of his abilities and those of the competition he is likely to

²⁷ Ibid., p. 169.

²⁸ Loc. cit.

²⁹ Loc. cit.

meet in high school and in his future career.

3. To help the counselor to recommend the better qualified students to industry and to colleges.

4. To help the counselor to aid the student in finding appropriate jobs.

5. To use in curriculum research.

6. To bolster the self-regard of students whose earlier educational experiences may not have been wholly satisfactory.

The Differential Aptitude Tests, then, are a source of a great deal of useful information. This information may be used in several ways.

The Verbal Reasoning Test may be expected to predict with fair accuracy success in areas where the ability to grasp complex verbal relationships and concepts is important. Academic success in most fields will probably come under this classification. Therefore, this is one test that should be carefully considered in judging whether or not a student is likely to have a chance for success in college. Vocationally, the test indicates something of the occupational level to which the student may aspire since there seems to be, in many occupations, a definite relationship between the level of a job and the ability to comprehend complex verbal ideas. If a group, a class, or some other recognizable pattern of students should appear to be unusually low in verbal reasoning, the school might well look carefully at the previous

training given to these people. Perhaps some basic weakness in the curriculum may appear. Of course, one should compare these results against such item as intelligence scores, and so on, before reaching conclusions.

The Numerical Ability Test is a measure of the student's ability to think with numbers, to work with numerical relationships, and to deal intelligently with quantitative materials. Together with the Verbal Reasoning Test, the numerical test constitutes a rough measure of general learning ability. Educationally, the ability measured by this test may be important for success in such fields as mathematics, physics, chemistry, engineering, and other fields in which this sort of thinking is essential. Also, such occupations as those of the bookkeeper, the statistician, the bank teller, the shipping clerk, as well as carpentry and other skilled work may require various amounts of the ability to deal quantitatively with numbers. The counselor should consider the possibility that a low score here may not really indicate an absence of aptitude in this area; but, rather, that the low scores could possibly indicate that some general experience, through basic courses in mathematics, is the real need in this situation. This is, then, another way to look at the educational offering of the school and a clue to use in educational counseling.

The Abstract Reasoning Test measures the ability to perceive relationships in abstract figure patterns, or a

generalization of principles from nonlanguage elements. So, if a course of study, an occupation, or a profession seems to require perception of relationships among rather definite objects instead of among words or numbers, this score should have real meaning. If, for example, a student with a foreign background should score low on the Verbal Reasoning Test and relatively high on abstract figures, there would be reason to doubt the validity of the Verbal Score for that student.

The Space Relations Test is a measure of the ability of a student to deal with concrete material through visualization. There are many vocations in which one is required to imagine how an object would appear if rotated in a certain way. This ability to manipulate things mentally is often associated with drafting, dress designing, architecture, the arts, decoration, and so on. Whether or not any curriculum innovations can initiate a change in this sort of pattern is debatable, but this information can certainly be used to help place those students with this ability in courses which may be of future benefit to them.

The person who scores high on the Mechanical Reasoning Test usually finds easy the learning of the principles of operation and repair of complex devices. This is one score upon which experience probably has little effect. A student intending to major in physical science, or in technical or industrial training courses, and those people intending to

enter such occupations as carpentry, mechanics, and so forth, probably need the ability measured by this test. The Mechanical scores are generally more important for boys than for girls. If a girl expresses interest in mechanical work, her score will probably be more meaningful if compared to those of the boys in her grade rather than with those of girls, since she would be competing with boys in the classroom and on the job. While experience may have little effect upon this score, any definite patterns, such as unusually low scores for an entire class of boys should be carefully considered. This might lead to an insight about the community or the school that has previously escaped notice. If, for example, a pattern of low scores developed in mechanical reasoning, the school may decide to include a general shop course, or mechanical drawing course, as a required subject, or else spend even less time and effort in this direction, depending upon the situation.

The Clerical Speed and Accuracy Test is designed to measure speed of response in simple perceptual tasks. The ability measured by this test is perhaps important in filing, coding, stockroom work, and similar occupations. Academically, this score seems to be of little use. If, for example, a good all-around student should score rather low on this test, perhaps this indicates the stress the student places on accuracy and correctness rather than on the ability to work rapidly.

Even though each of the tests in the Differential Aptitude Tests is intended to add to the knowledge the school has about the student, the counselor should consider scores from two or more tests before accepting any pattern as indicative. For example, the Verbal Reasoning, Numerical Ability, and Abstract Reasoning Tests attempt to measure those functions which supposedly represent general intelligence. The Verbal and Numerical Tests measure together about the same area as intelligence tests which have only verbal content. The Abstract Reasoning Test scores attempt to get at non-verbal reasoning ability. As the counselor grows more used to working with the Differential Aptitude Tests, he will increase his skill in relating scores.

Finally, the caution should again be made that all test scores should only be considered in the light of what other information the school has about the student. An excellent time to give the D.A.T. would be in the first week of school, along with any other aptitude tests that might be given. The ninth grade seems to be the logical level to test for aptitudes each year.

III. SUMMARY

Despite the fact that aptitude tests are used less often than the other types of tests, there seems to be sufficient reason for the school that can afford the additional time and expense to include aptitude testing in

its guidance testing program. There are two general categories of aptitude tests, general and specific, each with its own merits. Aptitude tests might well be used in the smaller schools to:

1. Supplement that information which is gained by other means concerning the child.

2. Aid in educational guidance. This is best done by administering aptitude tests covering some of the major subjects at the beginning of the school year, and then using the results to place, or aid in placing, students into courses or major fields of study that are consistent with the information that the school has about the student.

3. Aid in vocational guidance. Aptitude information is valuable in this area as the final information necessary to make certain whether or not other information such as interest, intelligence, achievement, economic situation, employment trends, and so forth, are pointing to a plan of action that is likely to really fit the individual.

4. Help acquaint the student with himself. This is a desirable function in that the final choice of career must be the responsibility of the individual student. The counselor uses the information gained from tests to help the student arrive at this decision in a reasonable manner. In order for the student to be in a position to make a wise decision, he must have a good idea of his capabilities and his limitations. A knowledge of specific aptitudes can help

the student to make a wise decision.

5. Aid in curriculum research. Careful analysis of the information gained from the aptitude testing over a period of time will enable the school to determine whether or not the type of education being offered is one that will most benefit the students of the community. The needs of the community is a vital source of information in curriculum planning of any sort. The administrator could quickly check the educational offering of the school against a composite list of student aptitudes. Perhaps this sort of activity will upset established routine. At least this information may provide evidence that the routine should be upset.

6. Aid in placement. Quite often the school is called upon to supply names of young people for various types of jobs. If the student, graduate or under-graduate, does not perform satisfactorily, the school is subject to criticism, and both the student and the employer probably become discontent and lose confidence. The counselor can analyze the job in question, and, by using the aptitude test results, more nearly fit the job with an appropriate individual. A similar service can be performed regarding the selection of the college or university, or in the decision as to whether or not the student should attend college. This will also tend to increase the confidence of the community in the school.

CHAPTER V

INTELLIGENCE TESTS

I. GENERAL

Intelligence tests have been used widely for a number of years. Throughout these years, the use of intelligence testing in the schools has been attacked from many quarters and for many reasons. Gradually, as the tests have been improved, and, more important, the complex nature of intelligence better understood, the general confidence in this younger type of testing has increased.

A number of people have maintained, at one time or another, that a good teacher can estimate the intelligence of a child as well as can any test. Alexander, in studying this problem, found "that teachers may be expected to be correct in their usually good judgement of pupils of highest and lowest intelligence in the group slightly less than 60 percent of the time."¹ This percentage seems scarcely sufficient to warrant the discontinuance of intelligence testing. Therefore, if intelligence tests are to be used in the schools, and if they are controversial, what are some of the strengths and cautions the person responsible for the testing program should know about in dealing with intelligence tests?

¹ A.M. Alexander, "Teacher Judgment of Pupil Intelligence and Achievement Is Not Enough," Elementary School Journal, 53:400, March, 1953.

First of all, there is evidence that intelligence test scores predict the ability to learn.² That is:

Intelligence test results, interpreted in the more restricted sense, are of use in roughly determining whether a student is achieving results in a subject at a level appropriate to his ability, providing the subject matter is of a nature dependent upon factors which are measured by the particular test.³

This would seem to indicate that intelligence tests have some value in educational guidance, as is suggested in the summary section of this chapter.

The intelligence test indicates the differences in individuals, and thus serves as an aid to the teacher in his ever-challenging attempt to understand and work with his class.⁴ The tests also serve to help the child to understand and accept himself so that he can compete with himself, and others, in a reasonable manner.⁵

Frook listed these possible uses for group tests of mental ability:⁶

1. To divide students on the basis of general ability.
2. To advise students as to subjects or courses they

² J.W. Tilton, "Intelligence Test Scores as Indicative of Ability to Learn," Educational and Psychological Measurement 9, 3:296, 1949.

³ Robert F. Topp, "How Far Can We Trust I.Q.?" Grade Teacher, 68:113, September, 1950.

⁴ Frank G. Davis, and Pearle S. Norris, Guidance Handbook for Teachers (New York: McGraw-Hill Book Company, Inc., 1949), p. 119.

⁵ Ibid., p. 120.

⁶ W.F. Frook, "A Statistical Study of 224 Senior Students Graduated in June, 1949," Journal of Educational Research, 43:104, October, 1949.

should pursue.

3. To aid in vocational guidance.

4. To determine the student's capacity for higher education.

Teigs suggested essentially the same things as Froom, with perhaps more emphasis on the value of intelligence tests in helping to determine the type of educational program the pupil needs.⁷

Green and Jorgensen recommended the following uses of intelligence test results in the classroom:⁸

1. Individual diagnosis. This is especially helpful in determining and working with the unusual child.

2. Educational guidance.

3. Vocational guidance.

4. Class analysis and diagnosis.

How should the results of intelligence tests be treated? There is some danger in giving the results to parents and children.⁹ The parents may have a feeling of social insecurity, and the knowledge of their child's intelligence score may have explosive results. Also, the child might either quit trying, become unduly conceited, or

⁷ Ernest W. Teigs, "The Proper Use of Intelligence Tests," California Test Service Educational Bulletin No. 14 (Los Angeles) California Test Bureau, 1951), pp. 6-7.

⁸ Harry A. Green, and Albert N. Jorgensen, Measurement and Evaluation in the Elementary School (New York: Longmans, Green and Company, 1942), pp. 234-7.

⁹ Ibid., p. 224.

have a stigma attached to him, depending upon the nature of the intelligence score. On the other hand, Punke urges that children be told their intelligence scores on the grounds that tests are guidance aids; and, therefore, as the child is the primary concern, he should know his score. Also, the withholding of test information is essentially undemocratic. If the community reacts improperly to this sort of policy, the school personnel have the duty of re-orienting the community into the proper attitudes.¹⁰ Shoben, in answer to Punke, stated that intelligence test scores should not be given to the student or to the parent because:¹¹

1. Intelligence is too complex for easy understanding and too much damage can result from an improper understanding of this sort of information.

2. Guidance people are professional and are not emotionally involved with the child, and are therefore in the best position to handle this information.

3. There is always the danger of permanently labeling people.

4. A general idea, couched in recognizable terms, of the general ability of the child is sufficient for the parent and the child.

¹⁰ Harold H. Punke, "Tell Students Their Intelligence Ratings," School and Society, 73:408, June, 1951.

¹¹ Edward J. Shoben, "Tell Students Their Intelligence Ratings?" School and Society, 74:170, September, 1951.

In the final analysis, the decision as to whether or not the students and parents are to be told the child's intelligence score, or only be made aware of the general level of capacity, must be made by each local district. The problem should be studied, and a school-wide policy formulated and followed, or serious trouble may ensue.

II. SPECIFIC

The Otis Quick-Scoring Mental Ability Tests, published by the World Book Company, are made up of three parts:¹²

1. The Alpha Test, for grades one to four.
2. The Beta Test, for grades four to nine.
3. The Gamma Test, for high school and college.

The purpose of all three tests is to measure mental ability - that is, thinking power or the degree of maturity of the mind.¹³

According to Otis, mental tests are given for:¹⁴

1. Teaching purposes, to locate bright and dull students and assign them appropriate materials.
2. Administrative purposes, to regrade pupils in order to obtain the situation where students may progress at more nearly the same rate.

¹² Arthur S. Otis, "Manual of Directions for Beta Test," Otis Quick-Scoring Mental Abilities Tests (Yonkers-on-Hudson: World Book Company, 1939), p. 1.

¹³ Ibid., p. 1.

¹⁴ Ibid., p. 11.

3. Administrative and teaching purposes, to classify pupils into separate groups within a grade.

4. Research purposes.

5. Guidance purposes - educational, recreational, and vocational.

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

The Otis test, then, is a valuable research tool in the school program. The necessity of locating the dull and bright pupils is of unquestionable importance. Tests, like the Otis are not infallible; but, they are significantly indicative. If, for example, the teacher can see clearly that a student can only be reasonably expected to be able to do work of a certain type, a great deal of unnecessary frustration may be averted for some students. Likewise, should the intelligence test indicate superior learning capacity for a student, and if other test data and anecdotal information support this indication, then effective enrichment material, based on interest and aptitude, as well as intelligence, may be clearly indicated.

Administratively, intelligence scores can be of value if any systematic program of grouping is desired. If the school desires that all classes be composed of pupils that are as nearly alike as possible, then intelligence information, such as can be obtained from a group test like the

Otis, will be necessary. Likewise, should the school be in favor of distributing students of varying capacities systematically among all classes, this information will be of valuable assistance.

The school should also consider that a group test of intelligence like the Otis is, in a sense, a sort of academic achievement test. If a school, grade, or class should do less well than a normal class would be expected to do, then a careful look at the curriculum and teaching methods of the school would seem to be indicated.

Finally, if the school desires to do any research on the curriculum and methods of the school, this study and experimentation should probably be based upon, and bounded by, the measured intelligence of the students.

III. SUMMARY

There are several quick, easily-scored, group mental tests, including the Otis, which may be used to good advantage by the smaller schools. Teachers cannot be expected to determine subjectively the intelligence of the students.

Intelligence test results may be used:

1. To predict ability to learn, and are therefore useful in educational guidance.
2. To determine the differences in individuals, providing the teacher, counselor, and administrator with valuable information.

3. To help the counselor to help the child to understand and accept himself, thus serving the purposes of both educational and vocational guidance.

4. To divide students on the basis of ability, thus giving aid in grouping.

5. To determine the student's capacity for higher education.

6. To aid in selecting and building the educational program.

7. To assist in class analysis and diagnosis.

8. To point out the mentally superior and inferior students.

9. To assist in promotional policy action.

10. To provide essential material for research.

11. To aid in curriculum planning.

12. To aid the administrator in comparing classes, grades, and schools.

A form, similar to the ones described in Chapter III, and which could be of use to the administrator of the district, as well as the teachers and principals, is included here.

The grade placement, on Figure III, as determined by the achievement test, is located by using the numbers across the bottom of the form. The intelligence scores are located on the form by using the column at the left. To use this form, one would determine the achievement and intelligence scores of each member of the group to be studied (class,

grade, school, or district), and apply them. Each pupil would be assigned a number. This number is to be placed on the form at the point of intersection of two imaginary lines, one extending vertically up from the grade placement, and one extending horizontally from the proper intelligence score. After the numbers are placed on the form, several valuable items may be added to the frame of reference - the form - to help in the evaluation of the results. A solid line could be drawn vertically to represent the actual grade placement of the group at the time the achievement test was administered. Another vertical line denoting the average achievement of the group might be of value. A horizontal line extending from the number 100 on the left would indicate the assumed average national intelligence. Another horizontal line representing the mean or median intelligence of the group may be of value. Two diagonal broken-lines are then drawn from the lower left to the upper right, which will include the normal intelligence range, 90-110, directly above the specific grade level of the group to be studied. Thus, the students whose numbers fall above this diagonal range are considered to be achieving below expectancy; the students whose numbers fall within the diagonal range are achieving as is expected; and, the students whose numbers fall below the diagonal range would be considered to be achieving above their expectancy, if this is possible.

This form could be used to good advantage by:

1. The teacher to analyze a class.

2. A principal to analyze the various classes and grades within a building.

3. A superintendent to study the district.

If this information were available early in the school year, the areas in the instructional program which need some separate and special consideration could be discovered and studied while there was still time to do some special work. This is certainly an enterprise to which all schools might well devote some time.

FIGURE III

INTELLIGENCE AND ACHIEVEMENT TEST ANALYSIS

GROUP _____ DATE _____

NAME OF ACHIEVEMENT TEST _____

NAME OF INTELLIGENCE TEST _____

130

125

120

115

110

105

100

95

90

85

80

75

70

GRADE PLACEMENT

3 4 5 6 7 8 9 10 11 12 13

CHAPTER VI

INTEREST TESTS

I. GENERAL

Interest tests are a relatively widely-used and established part of most basic guidance programs. The results gained from the use of interest tests can have considerable effect on the individual and the school if properly used.

Because of the popularity of the Kuder Preference Record, only a brief general discussion of interest testing is included here.

To begin with, "interest inventories are used in counseling as an aid in determining what the counselee should do in the future."¹ Some uses for interest test results other than exploring occupational interests are:²

1. To dictate the area of consideration in searching for avocational hobbies.
2. To aid in determining the proper major course selection.
3. To help select the type of classroom activity which will interest a given pupil.

¹ Edward K. Strong, Jr., "The Role of Interest in Guidance," Occupations, 27:519, May, 1949.

² Andrew D. Roberts, "The Five Questions About Interest Testing," Clearing House, 28:195-6, December, 1953.

4. To provide a source for teachers to check their impressions about a certain student.

5. To give some insight into the total personality pattern of the child.

6. To obtain useful information concerning the forces which drive or impel the student.

As can be seen by the points listed above, carefully planned use of interest test results can benefit the individual and the school.

There has been some question about the stability of the interest patterns of people, particularly younger people. Reliable evidence has indicated that interests are reasonably stable in individuals after age fifteen.³ As one of the recognized authorities in the field of interest testing has stated the case, "fortunately, the existing data support the belief that interests are far more persistent than is popularly believed."⁴

II. SPECIFIC

G. Frederick Kuder began development of the Kuder Preference Record - Vocational during the school year 1934 - 1935.⁵ Mr. Kuder, who is Professor of Psychology at Duke University, and an editor of both Educational and

³ Strong, op. cit., p. 520.

⁴ Ibid., p. 521.

⁵ Examiner Manual for the Kuder Preference Record Vocational Form - C, Science Research Associates, p. 1.

Psychological Measurements and Personnel Psychology,

designed this test because he was sure that individuals need some way of narrowing the field of occupations in order to better determine those which may suit them.⁶ This test is a preference test, measuring ten broad areas: outdoor, mechanical, computational, scientific, persuasive, artistic, literary, musical, social service, and clerical. A Verification Scale is included which is intended as a validity measure, a means of identifying those who have not responded carefully or sincerely.⁷ The development of the test was undertaken with three principles in mind. First, a stable form of test item should be used; second, to insure efficient measurement, the scales developed should be relatively independent; and, third, scoring should be kept as simple as possible.⁸

Mr. Kuder has emphasized interest more than ability because he feels that attempts to predict achievement from tests of ability have about reached a ceiling.⁹ As motivation causes, in many cases, the apparent discrepancy between ability and accomplishment, the discovery of the areas in which a person is well motivated, or the opposite,

6 Loc. cit.

7 Loc. cit.

8 Ibid., p. 22.

9 Frederick Kuder, "The Use of Preference Measurement in Vocational Guidance," Educational Record Supplement, 14-17:67, January, 1948.

is important in helping him find the work for which he is best suited.¹⁰

As a result of much study and consideration, Mr. Kuder is also convinced that there is a relationship between preference scores and long range achievement.¹¹ Preference, too, seems to have some relation to success on the job.¹²

The reliability of the Kuder Preference Record - Vocational is shown in a table on page twenty of the Examiner Manual. They are all significant. Frandsen found that some student's intrinsic interests, as measured by the Preference Record, are significantly related to the school achievement patterns of the students.¹³ Traxler found the retest reliability of the test is rather high.¹⁴ He also discovered the following significant items:¹⁵

1. Practice on the test does not seem to influence scores.
2. Long range prediction for adults is possible.
3. Boys tend to score higher in scientific, computational, and persuasive areas.
4. Girls tend to score higher in the musical, art,

¹⁰ Loc. cit.

¹¹ Ibid., p. 68.

¹² Ibid., p. 70.

¹³ Arden N. Frandsen, and Alwyn D. Sessions, "Interests and School Achievement," Educational and Psychological Measurements 1, 13:98, 1953.

¹⁴ Arthur E. Traxler, "Some Data on the Kuder Preference Record," Educational and Psychological Measurements, 1:266, 1941.

¹⁵ Ibid., p. 267.

literature, and social service areas.

5. Interests and motivation in the tests areas are relatively mature by the time students reach the secondary level.

Information such as given above is very important in gaining confidence in the Preference Record. The fact that the interest patterns of adolescents and adults are sufficiently constant to allow occupational planning, and that interests and motivation are relatively mature in secondary level students, should indicate to the counselor that his efforts will surely be worth-while. Also, there is significance in the fact that generalizations about interests can be safely made.

Super is satisfied that enough data has been accumulated on the Kuder test to give a counselor some empirical basis for interpreting Kuder scores in vocational guidance.¹⁶ He warns, however, that "one should be especially alert for the possible effects of faking or stereotyping."¹⁷ Super also stated that the Kuder has more validity for women than does the Strong Blank.¹⁸ Triggs¹⁹ points out that the reliability of the Scales on the Kuder is high enough for

¹⁶ Donald E. Super, "The Kuder Preference Record in Vocational Diagnosis," Journal of Consulting Psychology, 11:184-93, July, 1947.

¹⁷ Loc. cit.

¹⁸ Loc. cit.

¹⁹ Francis O. Triggs, "A Study of the Relation of Kuder Preference Record Scores to Various Other Measures," Educational and Psychological Measurements, 3:341-54, 1943.

counseling, but that achievement and aptitude scores are still needed in counseling.

As is the case with almost all tests, the Kuder Preference Record has its critics. Almost all instruments of measure have some limitations. Healy and Borg²⁰ concluded that personality tests are more successful in predicting success in nursing than are the vocational interest tests like the Kuder, and that personality is an important factor in specific occupational choices. Dressel and Matteson²¹ reported the following in regard to the Kuder:

1. The experiences of the students tend to condition their responses.

2. There is a greater variability of interests than of experiences.

3. Science and Music areas show an interest-greater-than-experience trend; while Clerical and Persuasive show the opposite.

4. Males demonstrate more interest-experience differences in more areas than do females.

5. There is a possibility that those showing more interest than their experiences would indicate that they

²⁰ Irene Healy and Walter R. Borg, "Personality and Vocational Interests of Successful and Unsuccessful Nursing School Freshmen," Educational and Psychological Measurements, 12:767-75, 1952.

²¹ P.L. Dressel and R.W. Matteson, "The Relationship between Experience and Interest as Measured by the Kuder Preference Record," Educational and Psychological Measurements, 12:109-16, 1952.

should, possess higher academic aptitude and greater reading skill.

Many of the criticisms of the Kuder Preference Record came before the Vocational Form - C was in use. Kuder has continued his efforts to improve the test, the evidence of this being the appearance of several revised forms that have been improved by the constant efforts of research. Prior to the recent forms, Hahn called for careful use of the Record because of the lack of information, but he conceded, even then, that the test is usable.²² An attempt has been made in this section to present some of the criticisms of the Record, along with some of the limitations, in order that people in Montana who intend to use the Kuder test will see what some of the leading criticisms are. From examination of the foregoing evidence, both here and in the preceding paragraphs, there is little doubt that the Advisory Committee made a good choice when they selected the Kuder Preference Record.

The Examiner Manual for the Kuder Test gives these suggestions for specific uses of the Record:²³

1. To point out occupations for further study. These would be occupations that involve the type of duties for which the student expresses preferences. Preferences, of course, are a means for identifying the occupations but they must be supplemented with measures of ability. In no case is the Preference

²² Milton E. Hahn, "Notes on the Kuder Preference Record," Occupations, 23:567-70, May, 1945.

²³ Examiner's Manual, Op. cit., p. 1.

Record intended to substitute for measures of ability.

2. To verify a person's choice of occupation. The Preference Record is a particularly valuable check on whether a person's choice of occupation is consistent with the type of thing he ordinarily prefers to do. If the occupation is not made up of activities he usually enjoys, the choice may well be a poor one.

What does this mean in the school situation? In Counseling Practice, a mere mention of the various occupational areas in which the student may have an interest is not nearly enough. Much more work is needed. More information about the student is necessary. The student should be helped to learn as much as possible about the occupational field and some of the specific occupations within the field. The Dictionary of Occupational Titles (D.O.T.)²⁴ will be of great help in finding job classifications and descriptions. In this chapter is a table using the D.O.T. which will serve to introduce this counseling aid and serve as a guide to those who are unfamiliar with the D.O.T. The Career Monographs,²⁵ and other similar sources of occupational information will broaden the student's viewpoint. The interview with the student should call to his attention many of the points to be considered in planning for the future livelihood, points that quite frequently go unnoticed by many

²⁴ Dictionary of Occupational Titles, Parts I, II, and IV, United States Government Printing Office, Superintendent of Documents, Washington, D.C.

²⁵ Careers, Institute of Research, 537 South Dearborn Street, Chicago, Illinois.

young people when engaged in this sort of planning. Below is a partial list of questions to which the student should give due consideration before coming to any decisions.

1. How does one prepare himself for the particular occupations in question?
2. How much will the training, or education, cost?
3. Does the student have the mental qualifications necessary for success in the field?
4. Does the student have the physical capacity necessary for the field?
5. Are the parents able to afford the expense of this training, or can some other arrangements be made?
6. What are the chances for placement after the necessary training is secured? Will there be a demand for people trained in this field by the time the student is ready to go to work?
7. Where will these jobs most likely be?
8. What kinds of people will the student be associated with in this kind of work?

There are other suggestions that the helpful counselor can make to the student. Practical help, such as pointing out various members of the community and school who, because of training or experience, are in a position to help the student understand more about the occupational field can be given. Also, the student should be encouraged to talk his problems over with his parents, relatives, and friends. The

more viewpoints that can be obtained, the better prepared the student will be to make effective and satisfactory decisions. In the final analysis, the student must make his own decision, if any decision is to be made at all. The tests, the counselor, the occupational information, the teachers, the community, all are there merely to help the student to make his decision, not to make the decision for him.

As motivation is frequently the main problem in the teaching of reading, the Kuder may be used to determine subject matter which may appeal to students. Using the Preference Record will provide the students with appropriate occupational information, and will provide motivation in reading practice through identification of material that will be enjoyed.²⁶

At this point, the question could well be asked in each school situation: what do interest tests mean to the curriculum? Although the evidence is good that interests among high school students are reasonably stable, and that interest may have more influence than experience, there is still the possibility of exceptions, and these exceptions are usually quite important. Does a low score in social service, for instance, really mean that this person will never be happy as a teacher? Perhaps an interview will bring out the information that the idea of social service has been misrepresented to the student. If an entire group of boys should score low in mechanical interest, there may be something

²⁶ Examiner's Manual, Op. cit., p. 2.

quite wrong somewhere. Perhaps, instead of concentrating on guiding these people away from fields where a mechanical interest is desirable, the school should attempt to give this group some basis for an introduction to mechanics. Should a class of girls score low in the artistic, literary, or musical areas, then, again, something may be lacking in the instructional program, or some unpleasant association with the low area may be causing an unrealistic block. To determine things like those just mentioned, the school will have to do a careful job of interviewing, and will have to study each profile in relation to all other information that is known about the individual.

The counselor will, after becoming more familiar with the Preference Record, be likely to discover some specific local uses for the test. Some examples of this sort of activity may serve to point out what is meant by local uses. Starting with general uses, the Kuder scores are helpful in counseling and placement.²⁷ However, when a student comes in for an interview, one should not begin by telling him in what he is interested. Rather, ask general questions and discuss such things as the school situation, keeping awake for any useful information, until the student shows some interest along the lines of occupations; then, use the very helpful

²⁷ Daniel J. Balanovich and Charles H. Goodman, "A Study of the Kuder Preference Record," Educational and Psychological Measurements, 4:325, 1944.

profile information.²⁸ In using the tests for counseling, the counselor should keep in mind all else that is known about the student. The Kuder is only one piece of evidence. One should take into account all of the other test information available. Such things as autobiographies, teacher comments, and personal knowledge may well enter the picture. One should be careful not to try to motivate in class by using the Preference Record, as this sort of activity may lead to inflated and unrealistic ambitions among the students. In short, care should be exercised so as not to overwork this tool.²⁹ Use of the Kuder should be restricted to the collection of valuable counseling and placement information, not to inspire dreaming. For high school students, this test is probably better used in determining areas of interest rather than specific interests.³⁰

Geiger and Evans used the Kuder to determine differences between groups of home economics majors in diatetics, teaching, and textile merchandising.³¹ While those interested in dietics and teaching had similar profiles, those interested in textile merchandising had quite different

²⁸ John G. Darley, "Counseling on the Basis of Interest Measurement," Educational and Psychological Measurements, 1:35-42, 1941.

²⁹ Fred M. Fowler, "Interest Measurement-Questions and Answers," School Life, 28:25-9, December, 1945.

³⁰ Ibid., p. 29.

³¹ Beatrice J. Geiger, and M. Catherine Evans, "Interest Patterns Give Clues for Guidance," Journal Home Economics, 40:509-10, November, 1948.

profiles. The dieticians were high in social service and scientific interests and low in persuasive. The teachers were high in social service, above average in artistic, and low in persuasive. The textile people were high in scientific interest, above average in persuasive, and low in social service and science. This evidence would seem to indicate that any career suggestions beyond areas of general interest may not be reliable. In any event, the student should be encouraged to investigate thoroughly before reaching any decisions. Such patterns as are described above, plus patterns found in the D.O.T., Kuder Examiner Manual, and other sources, will be of help to the counselor in gaining a more comprehensive viewpoint about occupations.

The Kuder manual has two tables of occupations. Table I is a classification of occupations according to major interests; and Table II contains the percentile ranks of the mean scores of men in various occupational groups. The D.O.T. is helpful in explaining jobs pertinent to the Kuder Scales. Table I, on the next page, is an interpretation of Kuder scores in terms of Part IV of the D.O.T. The table is comprised of information from the D.O.T., Part IV, and from a table reported by Lipsett.³² Mr. Lipsett arranged the code numbers according to the Kuder areas, and the page numbers are

³² Laurence Lipsett, "Interpreting the Kuder Preference Record in Terms of the D.O.T., Part IV," Occupations, 25:395-7, April, 1947.

TABLE I

INTERPRETATION OF THE KUDER PREFERENCE RECORD IN TERMS OF THE D.O.T., PART IV

AREA	CODE NO.	OCCUPATIONS	PAGE NO.
Mechanical	0-X7.4	Engineering and Related	28
	0-X7.7	Drafting and Related	30
	0-X8.4	Managerial Work, Industrial	33
	4-X	Mechanical Work	63
	6-X	Manual Work	115
Computational	0-X6.01	Commercial Education	23
	0-X7.11	Accounting and Related	27
	0-X7.4	Engineering and Related	28
	0-X7.7	Drafting and Related	30
	1-X1	Computing Work	30
	1-X2	Recording Work	39
	1-X4	General Clerical Work	44
	1-X5.0	General Public Contact Work	46
1-X5.7	Customer Service Work	47	
Scientific	0-X6.03	Agricultural Education	23
	0-X6.04	Vocational Education	23
	0-X7.0	Laboratory Science Work	25
	0-X7.3	Geographical Science Work	28
	0-X7.4	Engineering and Related	28
	2-X1	Cooking	50
	3-X1.1	Animal Care	55
	3-X8.7	Navigation Work	58
	3-X8.85	Fish Culture	60
	3-X9.94	Forest Preservation and Related	60
	4-X6.601	Mixing, Compounding, and Extracting, Assorted Materials	105
	4-X6.641	Mixing, etc., Plastics, Paints	108
	6-X2.601	Non-Metal Mixing, Compounding, Extracting	127
	6-X2.694	Petroleum Refining	131
Persuasive	0-X3.5	Copywriting and Journalism	22
	0-X4.2	Entertainment Work, Oral	22
	0-X7.12	Legal Work	27
	0-X7.15	Purchase and Sales Work	27
	0-X8	Managerial Work	32
	1-X5	Public Contact Work	46
Artistic	0-X1	Artistic Work	21
	0-X7.7	Drafting and Related	30
	2-X5.6	Adult Care	51

TABLE I (CONTINUED)

INTERPRETATION OF THE KUDER PREFERENCE
RECORD IN TERMS OF THE D.O.T., PART IV

AREA	CODE NO.	OCCUPATIONS	PAGE NO.
Artistic (cont.)	4-X6.24	Structured Work, Plastics	88
	4-X6.32	Wood Bench Work	94
	4-X6.33	Bench Work, Stone, Glass, Jewels	96
	4-X6.34	Bench Work, Plastic Materials	96
	4-X6.50	Art Work	103
	4-X6.651	Fabric and Leather Treating	108
	6-X4.23	Stone or Glass Structural Work	134
	6-X4.24	Structural Work, Plastics, Paint	134
	6-X4.60	Processing, Assorted Materials	154
Literary	0-X3	Literary Work	22
	0-X4	Entertainment Work	22
	1-X2.0	General Recording Work	39
	1-X2.3	Stenographic Work	41
	1-X2.9	Routine Recording Work	43
Musical	0-X2	Musical Work	21
	0-X4	Entertainment Work	22
	4-X6.309	Misc. Bench Work	92
	4-X6.328	Wood Forming	95
	4-X6.383	Sensory Testing	102
Social Service	0-X6	Public Service Work	23
	0-X7.02	Nursing and Medical Work	25
	0-X7.03	Biochemical Work	26
	0-X7.12	Legal Work	27
	0-X8.10	Managerial Work	32
	1-X5.0	General Public Contact Work	46
	1-X5.7	Customer Service Work	47
	1-X5.9	Misc. Public Contact Work	47
	2-X3	Child Care	50
	2-X5	Personal Service	50
6-X6.62	Elemental Service Work	155	
Clerical	0-X7.1	Business Relations Work and Related	27
	1-X1	Computing Work	39
	1-X2	Recording Work	39
	1-X4	General Clerical Work	44
	1-X5.0	General Public Contact Work	46
	1-X5.7	Customer Service Work	46
	1-X5.9	Misc. Public Contact Work	47

taken directly from Part IV. Using this table will help the counselor who is unfamiliar with the D.O.T. to become acquainted with this valuable occupational guidance tool.

An interesting idea for using the Preference Record for fostering parent-child understanding through the Parent-Teacher Association was advanced by David S. Brody, formerly of Montana State University. He suggested that parents fill out an interest inventory at the same time their children do, with the exception that the parents are to attempt to answer as they think their children will. A comparison of profiles is likely to be quite interesting, especially those having marked differences. Perhaps this activity will help to point out those homes in which the child is encountering a lack of understanding or where the parents are dictating interests and choices. One will have to be careful not to hurt any feelings.³³

III. SUMMARY

Interests and interest tests can provide a wealth of valuable information to the school and to the student if fully utilized. Because of the nature of the information to be gained from an interest test, the school will do well to

³³ David S. Brody, "The Utilization of an Interest Inventory in a PTA Project for the Purpose of Fostering Parent-Child Understanding," School and Society, 72:311-12, November, 1950.

give interest tests as early in the teaching year as possible. Interest tests are usually easily scored and this scoring can be done by the testee. The results of interest tests may be used with considerable confidence, as the interests of students, especially in the high school, are reasonably stable.

Some possible uses for the results of interest tests are:

1. To point out occupations that should be studied to a greater extent by the student.
2. To verify the previously stated occupational choices of an individual student.
3. To add to the knowledge of the student that has been gained from other sources.
4. To aid in proper course and major field selection.
5. To serve as an excellent entry for the counseling process.
6. To help indicate general fields of interest to the individual.
7. To help in aiding the parents to more fully understand and appreciate their children. This would seem to be a worth-while use.
8. To serve as one basis for the study of the world of work in social studies classes. The interest tests, after being studied by the students, would serve to point out some of the many differences in people. This would foster more

understanding among the students, and help orient them to the seriousness of mind that the proper selection of future careers demands.

9. To aid in curriculum evaluation. To the composite list suggested in Chapter IV, the administrator could add the prevalent interest patterns of the students and thereby increase his efficiency in curriculum planning.

10. To aid in the planning of appropriate career day activities. If there seems to be a few general interests that represent the majority of the students, general sessions with featured speakers will probably be sufficient to do the job. If there seems to be a wide variety of interests among the students, then a small-group, work-shop idea will more likely be in order.

11. To aid in the identification of areas of interest for the purpose of motivating students to improve their reading showing and comprehension. When the interests of a student are known, the teacher concerned with reaching the students with appropriate subjects for reports and general assignments can be helped in assigning appropriate material.

12. To help in suggesting appropriate avocational and hobby pursuits. This will be especially helpful with the superior and slow students who may otherwise present behavior problems. This is one area, at least, where the counselor can concern himself directly with discipline problems regardless of the policy of the particular school.

13. To aid in the placement of students in part-time or post-school employment. This suggestion stems from the same circumstances mentioned on page 51 of Chapter IV.

CHAPTER VII

PERSONALITY TESTS

I. GENERAL

The area of personality testing is probably the most controversial, least understood of the areas discussed in this thesis. This lack of understanding stems from both the fact that personality testing is relatively new, and from the complex nature of personality. Regardless of the controversy and misunderstanding, the issue remains that school people deal with personality every day whether there is understanding or not. Cox reported that 95 out of 100 counselors surveyed said that their most important job is dealing with problems resulting from failure in social adjustment and from unhappiness due to emotional conflicts.¹ The current philosophy in the field of education is based on the theory of individual differences. If one accepts the theory of individual differences, then one admits to dealing with complex children, each with different components to his total make-up, his personality. As long as the schools are dealing with personality in many ways every day, and as long as more and more schools are using various instruments in an attempt to learn more about the pupils in the classrooms, apparently

¹ Rachel D. Cox, Counselors and Their Work (Harrisburg, Pennsylvania: Archives Publishing Company, 1945), p. 54.

personality testing is here to stay. The purpose of this chapter is, then, to briefly survey some aspects of personality testing in order to acquaint the counselor in the smaller schools with this important phase of the total guidance program.

Probably the most used and most successful source of information about the individual is the interview.² There are, however, limits to the information that can be gained from the interview in the smaller schools. The people who have the responsibility for counseling and guidance activities in the smaller schools lack both the time and the necessary experience to realize the full potential of the interview. About the safest solution to this problem is the employment of some standardized test, or tests, to do the job.

Care must be exercised that personality tests be used cautiously and the results interpreted correctly.³ Personality tests should be used in the schools only by people with teaching experience and some psychological training, and then only after good rapport has been established with the pupil.⁴

Before the subject of personality testing is pursued further, attention should be called to the matter of discipline as it concerns the counselor. Frequently, counseling

² Paul L. Dressel, and William A. Mann, "Appraisal of the Individual," Review of Educational Research, 21:116, April, 1951.

³ Arthur E. Traxler, "Use of Tests in Differentiated Instruction," Education, 74:278, January, 1954.

⁴ Loc. cit.

personnel because of dual responsibilities, size of staff, and so forth, are required to act in disciplinary capacities. Many counselors believe their role as a consultant is damaged when they are forced into an authoritative or condemning role with the students.⁵ Other counselors believe that the handling of discipline increased their usefulness as counselors.⁶ Discipline in the counseling process would seem to be proper provided that one sees discipline as a satisfying pupil-teacher relationship, a necessary condition to guiding pupil activities.⁷ The problem is of sufficient importance to warrant careful thought. The person charged with the responsibility of the counseling and guidance program is entitled to a clear policy statement from the administration on this matter.

Personality is a difficult subject upon which to obtain a consensus of opinion. "There is considerable evidence that behavior traits used in describing personality are largely relative to the situation."⁸ This would seem to indicate that the school probably should decide what aspects

⁵ Cox, op. cit., p. 58.

⁶ Ibid., p. 59.

⁷ Ruth Strang, "Guidance in Personality Development," The 37th Yearbook of the National Society for the Study of Education: Part I, Guidance in Educational Institutions (Bloomington, Illinois: Public School Publishing Company), 1938, pp. 225-6.

⁸ Arthur E. Traxler, and others, Introduction to Testing and the Use of Test Results in Public Schools (New York: Harper and Brothers, 1953), p. 10.

of personality are necessary to be measured in the local situation before selecting a test.

The validity of any test is based upon many assumptions, two of these that are especially applicable to personality tests being:⁹

1. The individual has answered the test to the best of his ability.

2. While he was taking the test he was not under any unusual or atypical stress or strain.

When personality factors are being tested, however, the individual is being questioned in an area where deviation is socially unacceptable, and usually there is some question as to how correctly the individual will answer questions which pertain to highly personal things.¹⁰

The limitations of personality testing have been presented not to discourage the potential uses of this type of testing by the school, but merely to make clear that this is an area requiring a great deal of caution. Personality tests should be used because:¹¹

Although there are many limitations to the use of so-called personality tests, their application with caution and intelligence will provide a fifth kind of information to supplement general achievement, aptitude, general ability, and interest data supplied by other tests.

⁹ Dougald S. Arbuckle, "Personality Tests as a Means of Entry for Counseling," Educational and Psychological Measurements 9, 4:757, 1949.

¹⁰ Ibid., p. 758.

¹¹ Traxler, and others, op. cit., p. 10.

What is the background of personality testing and how are personality tests made? Ferguson listed these methods of measuring personality which have guided the researchers in the field of personality testing:¹²

1. The Empirical Approach which uses data derived from experience. Tests like the Strong Vocational Interest Test are empirical.

2. The Rational Approach which starts with theory and proceeds toward a predetermined objective without reference to experience or its derived data. The Kuder Preference Record was constructed from the rational approach.

3. The A Priori Approach which has the measuring scale prepared in advance and is completed before the test is given. This has been a popular approach.

4. The A Posteriori Approach which prepares the measuring scale after responses of the group being studied have been secured.

5. The Unidimensional Approach which provides an index that can vary back and forth on just one linear variable. This type of test defines only one trait and only one test score is secured.

6. The Multidimensional Approach which leads to several scores from the same set of items.

¹² Leonard W. Ferguson, Personality Measurement (New York: McGraw-Hill Book Company, Inc., 1952), pp. 419-31.

7. The Diagnostic Approach which emphasizes the present. This type of test requires a maximum degree of objectivity, reliability, and validity.

8. The Prognostic Approach which emphasizes some future outcome.

9. The Nonanalytical Approach which provides an index on any defined variable but does not contain or provide any of the supporting reasons, or the particular bases, from which the index was derived.

10. The Analytical Approach which provides supporting reasons or makes evident the bases for the derived indices.

11. The Perceptual Approach which attempts to derive implications relative to personality from the various sense perceptions.

12. The Imaginal Approach which makes use of imaginal concepts as the perceptual approach makes use of percepts for the deviation of insights into our personality.

13. The Observational Approach which utilizes performance as a basis for the deviation of inferences with respect to personality.

14. The Experimental Approach which requires that the investigator set up a situation requiring the subject to go through a specified set of procedures.

The two types of personality tests most frequently used in school situations are the uni-dimensional approach¹³

¹³ Ibid., p. 154.

and the multi-dimensional approach.

The Bernreuter Personality Inventory was one of the earlier widely used multidimensional approaches to personality.¹⁴ This test was designed to measure:

1. Neurotic tendencies.
2. Self Sufficiency.
3. Introversiion-extroversiion.
4. Dominance-submission.

The Bernreuter was criticized on three counts:¹⁵

1. The responses are mainly due to chance.
2. The responses are usually slanted in a direction to win social approval.
3. The responses are frequently dishonest.

As a consequence to these criticisms, subsequent tests have incorporated "Honesty Scales," or Lie Scales." These scales are usually derived from questions that have standard answers under standard conditions and which may indicate whether or not the testee is being honest in his response.¹⁶

There are both limitations and advantages to personality inventories, with the advantages seeming to be more than sufficient to offset the limitations.¹⁷ Some limitations of personality inventories are:¹⁸

¹⁴ Ibid., p. 173.

¹⁵ Ibid., p. 178.

¹⁶ Ibid., p. 179.

¹⁷ Joseph C. Heston, "Personality Inventories as Guidance Tools," Occupations, 29:497, April, 1951.

¹⁸ Ibid., p. 498.

1. Transparency.
2. Mood fluctuations.
3. Difficulty of validation.
4. Quantitative interpretation.
5. Mechanical error.

Some advantages of personality inventories are:¹⁹

1. Standardization interview providing convenience, freer expression, objective scoring, and group norms.
2. Basis for a later interview.
3. Possibility of identifying trait patterns.
4. Scores that have meaning.
5. Statistical advantages.

Some generalizations to assist counselors in using personality inventories are:²⁰

1. Personal adjustment, rather than ability, may sometimes be the key factor in success.
2. Personality can change, given time and modified environment.
3. People are usually willing to attempt a fair self-evaluation, given adequate motivation and assistance.
4. Personality traits are dynamic, not static. The interaction between traits must always be considered.
5. Inventory scores are objective data and probably represent the counselee's feeling more accurately than a

¹⁹ Ibid., p. 499.

²⁰ Ibid., p. 501.

judgement obtained through the preliminary subjective appraisal of the counselor.

6. Inventory data do not comprise a final diagnosis; they supply leads for further investigation.

7. Inventory data should always be seen against other background information, not as isolated facts.

8. One of the most suitable uses of inventories lies in the preliminary screening of larger groups to identify cases needing further individual consideration.

9. "Normality" in personal adjustment must represent a broader concept than often used for more definable attributes, such as intelligence or achievement.

10. Consequently, only the extreme two or three percentiles represent extreme cases, when norms are based on a generally representative sample.

11. Inventory scores can be willfully faked or slanted; hence, the motivation and cooperation of the testee must always be considered.

12. Extreme scores should always be verified independently to guard against faking, loafing, or possible scoring errors.

Three potential uses for personality inventories are:²¹

1. Use the data for screening.

²¹ Joseph C. Heston, and Claude F. Bridges, "Using Personality Inventories in Student Counseling," World Book Company Test Service Bulletin No. 70 (New York: World Book Company, 1951), p. 6.

2. Use the data in counseling.
3. Use the data to help understand the group process.

II. SPECIFIC

A test that is fast becoming popular with many schools is the California Test of Personality. This test was designed to identify and reveal the status of certain important factors in personality and social adjustment usually designated as intangibles.²² The components of the test are grouped under two main headings, Personal Adjustment and Social Adjustment, with six components in each group.²³

A profile accompanies the test materials, and the completion of this profile is the first step in the interpretation and use of the test results.²⁴ Definite steps are suggested in the manual for studying the profile. Most personality problems, according to the authors of this test, fall into one of six categories:²⁵

1. Undesirable habit patterns, situations which require practice to correct.
2. Erroneous beliefs and attitudes.
3. Unfavorable environmental conditions.
4. Undesirable forms of attempted adjustment.

²² Louis B. Thorpe, Willis W. Clark, and Ernest W. Tiegs, Manual, California Test of Personality, 1953 Revision (Los Angeles: California Test Bureau, 1953), p. 2.

²³ Ibid., pp. 3-4-5.

²⁴ Ibid., p. 11.

²⁵ Ibid., pp. 14-15.

5. Physical and nervous difficulties.

6. Mental disorders.

The manual contains descriptions of these general areas, and provides suggestions for action.

The authors suggested these possible uses of the results of the California Test of Personality for the administrator;²⁶

1. Supervisory schedules may be changed to offer more help where it is needed.

2. Classes containing an undue number of maladjusted students can be identified, and help can be provided to the teacher.

3. The curriculum can be examined for areas causing maladjustment.

4. Materials of instruction may be modified where necessary.

5. Teachers may be assigned to positions where their training and experience will do the most good.

6. The need for special help from outside agencies can be determined.

In a study to determine the personality characteristics of exceptional children and their mothers, the researchers found that without the understanding and cooperation of the parents, no progress can be made in the

²⁶ Ibid., p. 18.

treatment of the emotional problems of the child.²⁷ The method used in this study was that the California Test of Personality was given to the children and to their mothers. The major outcome was the intense interest in the results on the part of the parents - enabling useful conferences to be held because the parents gained a deeper insight into their own problems and the need for understanding those of their children.²⁸ The implications of this study are:²⁹

1. There is a need to study the parents of exceptional children and to work with them on their problems.

2. The use of the California Test of Personality offers a possible means of interesting parents in study groups and self-evaluation.

3. The use of this test offers a possible means of a challenge to the parent to improve the total personality adjustment of the child.

4. As the exceptional children in this study scored low in social skills, freedom from antisocial tendencies, and school relations, there may be a need for a consideration of this area in many schools.

Another study, concerning the relationship of pupils and their choices in the classroom to various components of

²⁷ Lillian Penn Brown, and others, "Personality Characteristics of Exceptional Children and of Their Mothers," Elementary School Journal, 52:286, January, 1952.

²⁸ Ibid., pp. 289-90.

²⁹ Ibid., pp. 290-1.

the California Test of Personality, included the following information:³⁰

1. The mean total scores on the test differentiated clearly between the most and least frequently chosen students.

2. All but one of the components of the test revealed differences in favor of the most frequently chosen group. The exception was social studies.

3. The mean differences between the scores of the most and the least frequently chosen students for four of the six Self Adjustment components were statistically significant. These four components were: (a) sense of personal worth, (b) sense of personal freedom, (c) feeling of belonging, and (d) freedom from withdrawing tendencies.

4. Only one of the six components of Social Adjustment, school relations, significantly differentiated between the most and least frequently chosen students.

5. With the exception of one component, school relations, scores made on Self Adjustment components differentiated more clearly between most and least chosen students than did the Social Adjustment Components.

An item analysis of the above study led the researcher to conclude that "under-chosen students feel insecure in the

³⁰ Onas C. Scandrette, "Classroom Choice Status Related to Scores on Components of the California Test of Personality," Journal of Educational Research, 47:291-6, December, 1953.

school environment."³¹ Specific attitudes more common to the infrequently chosen are:³²

1. Teachers have little personal interest in their students.
2. Teachers are unfair.
3. Teachers are unkind.
4. Other students are unfriendly.
5. Other students are unkind.
6. Association with the opposite sex is not enjoyable.
7. School work is too hard.

The author of this study suggested these remedies that the school can undertake to help the students who feel insecure in the school environment:³³

1. Teachers should make a special effort to show a personal interest in the problems, interests, and goals of the under-chosen child. They should be on guard against giving the under-chosen child any reason to feel that unfair treatment is being handed to him.

2. The use of sociometric techniques is probably the best way to give the under-chosen child security among his classmates. Teachers who are unfamiliar with sociometric techniques are referred to Sociometry in Group Relations, a Work Guide for Teachers, by Helen Hall Jennings, published

³¹ Onas C. Scandrette, "School - Through the Eyes of the Under-Chosen," Clearing House, 27:37, September, 1952.

³² Loc. cit.

³³ Ibid., p. 37.

by the American Council on Education.

3. Teachers should refrain from using the threat of a poor grade as a club to force the child to do his school-work. Positive motivation should be used.

III. SUMMARY

The area of personality testing, although complex and controversial, should be an important phase of the testing and counseling program of any school. Problems of social adjustment and unhappiness constitute an important part of the work of most counselors. Possibly, these problems are as important as any that the teacher faces in day-to-day classroom work and extra-curricular activities. This would seem to indicate the necessity for the close cooperation between the counselor and the teachers.

The personal interview is a good source of information about the pupil provided that the counselor has the time and experience to successfully handle the interview. In actual practice, many schools use varieties of personal interviews, even though the interview used may not be in any way standardized. If the person doing the interviewing will keep in mind the things he knows about people, and especially children, and does not attempt to pry too deeply before adequate rapport has been established, the personal interview will continue to give good service no matter how many forms and tests that the school might adopt.

Care must be constantly exercised in dealing with personality. The attitudes that an individual may have are frequently not transient things, but are an integral part of the person. Rapport is the key word. The counselor should refrain from plunging directly into the matter at hand until, and unless, this feeling of mutual confidence and respect exists. A counselor who is opinionated and expresses his opinions freely, cannot hope for too much success in the field of personality counseling. Probably, more eventual good will come of an interview during which nothing concrete was accomplished, than one in which the student receives the personal views of the counselor.

The counselor and the administrator should, at the beginning of the year, establish the responsibility of the counselor in the matter of discipline. Not only should this responsibility be set; but also, the faculty should be informed of both the policy and the reason for the policy. Definite channels of referral should be established and carefully followed. In exchange for this consideration, the counselor should endeavor to keep the interested faculty members informed of what is being done.

Before a school selects the instruments which seem most likely to fill the needs of the local situation, some definite planning and discussing should be done. Decide what the school means by personality. Estimate how much time is available for this function. Consider the training of the

counselor, or the person in charge of the guidance program. Then select the test, or tests, that will do the best job under the present circumstances.

There are definite and valuable uses for personality tests or inventories. First of all, the data obtained can be used for screening. In situations where one knows the type of individual characteristics one wants for a particular course, duty, or activity, the data obtained from a correctly administered personality test can be valuable. For example, if the school is going to try co-educational home economics, there may be some individuals for which the personality test will indicate the need for special supervision, or further preparation. On the other hand, a student who is suspected of having more ability than he demonstrates may be placed in an activity or given consideration that will vastly improve his performance. If, for example, the test indicates a previously undetected insecurity about the home situation, care can be exercised to not add any more assignments, grades, or punishments that may aggravate the situation until something positive can be done.

Secondly, as the personal adjustment of the individual, or personality, is so important to future success in most fields, the data obtained from a personality test can be of real service in counseling and placement. Once good rapport has been established, the counselor can easily point out that a student would probably have more success with teachers if

he were not so suspicious of them. Actual work should have been done previous to this statement to demonstrate how groundless these suspicions really are. Or, the individual who professes a desire to aim toward a field of work which requires a close and constant association with people can be helped to see that any anti-social attitudes will make success in that field unreasonably difficult. The test data may also indicate the real source of trouble, making positive remedial action possible.

Thirdly, the data from personality tests can be used to help understand the group process in a group, a class, or a school. As was demonstrated on pages 92,93, and 94 of this chapter, personality tests can be used as sources of information of relationships and pupil choices in a class. This may help solve the problems of a teacher without the additional work of applying and scoring sociograms. The real school leaders may not be the students approved of by the faculty. The administrator, the counselor, and the teachers need to know who the people are who really have influence over most of the students. Personality tests, used in a social analysis way, may provide the key to the situation, and may even point out the reasons for the existing situation.

The California Test of Personality is a useful tool in the above situations. Briefly stated, some of the more effective uses of this test are:

1. To aid in grouping. Different groups require different personality components for satisfactory performance. An idea of the personality traits of the pupils, compared and used with other information such as intelligence, interest, aptitude, and achievement, will increase the chances for the successful grouping according to the philosophy of the school.

2. To aid in locating the unaccepted student. Frequently, this may be accomplished by observation, but there are enough personality problems arising from the lack of acceptance, usually, to justify the use of personality tests for this purpose alone.

3. To aid in understanding the make-up of a class. This was discussed on page 93 of this chapter.

4. To aid in working with the exceptional child. Exceptional children may have problems that cannot be readily discovered. To work with these people, one must have an understanding of them. Personality tests may contribute information which will make possible the full realization of the potentialities of this child.

5. To assist in giving help where help is needed. Perhaps a girl need only be shown that just because she must wear glasses the world is not coming to an end. Or, perhaps the fat boy can be helped to accept his situation.

6. To aid in preventing the concentration of maladjusted children. This is not likely to happen in the small

schools, but at least the school can be prepared to guard against this sort of thing.

7. To aid in helping the maladjusted student. In order to help unhappy children, one needs to know the cause of the unhappiness. Once the source is known, remedial action is more possible.

8. To aid in curriculum evaluation. For example, if the method of presenting social studies is such that many of the students develop a positive dislike for social studies and everything that is connected with the subject, this information may well be hinted at in the personality test profiles of this group. Or, if a traditional college preparatory curriculum is so frustrating to one or more pupils, to the extent to the individual an unwholesome attitude seems proper, a personality test may show how a more acceptable attitude toward the school and faculty may be developed. If there is considerable dissatisfaction among the students toward the school, there must be a reason. The school can use personality tests, or inventories, to help uncover for this dissatisfaction.

9. To aid in the selection of materials of instruction. This use is closely related to the use denoted above.

10. To aid in assigning teachers to positions that will more fully utilize their training and experience. For example, if a group appears to be more than usually emotional and excitable, the administration can assign a teacher who,

because of training and temperament, will give this group the stability and understanding that it needs.

11. To aid in determining the amount of outside help the school may need. Not many small schools have readily available specialized help in this area. Nevertheless, if there is a need for this help, and personality tests may point out this need, then the school will have to do something of a positive nature. The tests may indicate the sort of help that is required.

12. To aid in gaining the understanding and cooperation of the parents. So many times the causes for personality disturbances are directly related to the home. By using such instruments as personality tests, the school will be better able to identify these difficulties, and to adopt reasonable courses of action. A comprehensive testing and counseling program, carefully explained to the parents, will tend to increase the confidence of the parents in the school. Once confidence is established, the school may work realistically toward reducing pupil tensions.

CHAPTER VIII

A PARTIAL MANUAL OF PROCEDURE

The first step that a school must take regarding the testing program is one of immediate appraisal. The administrator and the staff should establish criteria for a testing program that will reflect both the community and sound professional research and practice.

Possibly, one of the first problems that the administrator may have to solve is the question of how to effectively involve the staff in the program. The teacher is the center and the most important part of any guidance program. Therefore, the support of the teachers is important and necessary to a successful program. A good beginning can be made in this area by including the staff in the task of appraising the existing program. Some questions which may be used to begin this appraisal are:

1. What are the tests that are now being used?
2. What is the information that these tests are supposed to provide?
3. Do the tests provide this information?
4. According to the uses suggested in this thesis for various types of tests, are the tests being fully utilized?
5. What types of information needed by the school are not provided by the tests now being used?

6. How is counseling being handled in the school?

7. If there is no staff member specifically assigned the responsibility for the guidance program, is there a need for such a person in the school?

8. How are teachers involved in the guidance program at the present time, and is this consistent with the current trend toward total teacher participation in the guidance program?

9. How much money can be realistically afforded by the school for guidance purposes?

10. Which tests will give the desired information for the least cost?

11. How much training in testing and guidance do the various members of the staff have, and how much more training would be beneficial to the teachers and to the school?

12. Is there evidence of unusual student discontent that could become a serious problem?

13. From what is known about the graduates of the school, is there evidence that an undue number of them have not found satisfactory careers?

14. What is the situation in regards to pupil drop-out, and pupil failure?

The above questions will start the faculty on a line of investigation that will be suggestive of more pertinent questions. This is a big job. The administrator will have a certain amount of difficulty in convincing the staff that

this sort of activity is worth-while. The administrator will do well to employ all that he knows about the group processes in a practical sense. Perhaps the entire faculty will not cooperate immediately; but a few members will, and this will form a good group with which to work. This could be called the Guidance Steering Committee. If this group is handled properly, they will bring the other members of the faculty into the program gradually.

Because the teacher, as the staff member who is very close to the students, is the basis of any successful guidance program, the administrator must secure the cooperation and participation of every faculty member before embarking upon a full-scale testing program. In order to accomplish this end, the staff must recognize that a counselor or guidance director cannot handle the entire guidance program, especially the counseling. The guidance director has the responsibility for the technical part of the program. In a sense, he is the administrator of the program, and the teachers are the counselors. The counselor should keep abreast of current trends in counseling and guidance, and keep the staff informed of pertinent developments. He may be responsible for the scoring of most of the tests. He will usually administer aptitude and interest tests in the high school, and he may administer all of the special tests. Also, the director will collect and use occupational information. But, the teacher, especially in the elementary school, should

administer the tests to his class that are part of the program, as one of the dangers of testing is that test scores may be reduced in meaning if the normal environment of the child in school is changed. Teacher participation is fundamental.

Another function of a guidance director is the planning and carrying on of an in-service training program. The director, along with the Guidance Steering Committee, should plan an in-service program that will utilize all training the staff members have. The aim of this program should be to help the teachers, both elementary and secondary, to become conscious of the role of the classroom teacher in guidance, to appreciate the necessity of following test manuals exactly, to grow confident in administering tests, to become proficient in fundamental educational measurements, to use test results fully and wisely, and to gain skill in counseling.

No attempt has been made here to minimize the amount of time and effort required to implement an effective testing program. This is not a task that can be accomplished in a few weeks. Several months, or more, may be required. However, the value of a good testing program to a school, or district, can be so great, that almost any amount of work and time is worth-while.

While this appraisal and in-service training is in progress, the school should continue to use, as well as

possible, the existing tests. If there is no provision for achievement and intelligence testing in grades seven and eight, this should be done immediately. This sort of information, along with aptitude testing, is essential for realistic educational counseling for freshmen.

What sort of program should the smaller schools work toward? Idealistically, many things should be done; realistically, many things could be done; practically, many things can be done.

In the first grade, reading readiness should probably be tested. Such tests as the Metropolitan Reading Readiness Test, or the Van Wageningen Reading Readiness Test will give useful information. The Otis intelligence test, primary form, could well be used in either grade one or two. Another type of test that should be included in the first grade and that will provide quite useful information, is a reading achievement test. This test should be given toward the end of the year.

Grade two should have testing of reading achievement, as should grade three. Some test companies, World Book for example, publish achievement tests for grade three with some arithmetic and social studies included.

The third grade should be tested again for intelligence. This is a good level to begin the worth-while practice of intelligence testing every other year. This is desirable because the type of intelligence the schools are most

concerned with, mental age, or mental maturity, or the ability to learn, can change somewhat - that is, the measured result can change with growth. Mental age grows at different rates for different individuals. Intelligence testing at least every other year will help the school and the teacher to see and understand the children much more accurately.

Achievement testing should be a yearly event. Probably the most reasonable time to measure achievement is in the fall, as early as possible. Some advantages of fall testing are:

1. The teacher has a record of achievement for the whole class on the basis of the same source. Whereas, in spring testing, the students are out for the summer before the test results can be used.
2. The achievement picture is up-to-date. Fall tests give a fairly reliable index of permanent learning because of the usual loss of learning during the summer vacation.
3. Objective evidence is made available to the teacher which can help greatly in forming more realistic impressions of students.
4. The emphasis is placed on an analysis of the needs of all the children in the class.
5. Time pressure is reduced.
6. Testing might be considered as a way to motivate pupils to increased effort.

7. A more recent basis for modifying instruction is made available.

Thus, a desirable pattern of testing will include achievement testing in the early fall of each year, and intelligence testing in grades one, three, five, seven, nine, and eleven.

Personality testing may be introduced in the grades almost anywhere, but more usually in grade seven or eight. Aptitude testing should probably be begun at this level, too. This is an excellent time to begin helping the student plan his educational program for high school. Also, individual differences have become even greater by the time children reach the upper grades; and the school, in order to better understand and provide for these differences, will need the type of information gained from aptitude and personality testing to add to what is already known about the pupil.

If aptitude testing has not been completed, or begun, in grade eight, then the entering freshmen should be given special aptitude tests, like the Orleans Algebra Aptitude Test, and a general aptitude test, like the D.A.T. Chapter IV carries a discussion of the activity and some information pertinent to this point. Here, again, intelligence testing should be used.

Grade ten is a logical level for interest testing, especially if the Kuder is to be used. Chapter VI contains a complete discussion of interest testing.

In grade eleven, personality and intelligence should be measured again, and perhaps some special aptitudes. This is the level to utilize the services of the local office of the state employment service as described in Chapter IV.

The seniors, then, will have a vast source of useful information to use as a basis for making career selections that are reasonable. The school will have a wealth of material for curriculum research.

Finally, an area that requires considerable thought and planning is that of cumulative records. There is no value in collecting information unless this information is so organized as to be of use. The State of Montana has a cumulative record form that is satisfactory. Each school should study the matter from a local point of view, as well as from the standpoint of articulation. Probably nothing should be entered on the permanent record form that the school does not wish to send with the pupil as he moves from school to school, or from community to community. This problem should be studied carefully, and a policy adopted and followed. Much valuable information can be placed in permanent records, but no item should be included unless there is a good reason - a reason that is understood by the staff.

Another question concerning cumulative records that could well be considered by the faculty is that of where the records are to be kept. One suggestion is to have each

elementary teacher keep his own records in his room during the year; and have a central file, probably in the guidance room, or the school office, for the high school. The system should be so arranged that interested authorized personnel can have access to the records at almost any time. There is a need to keep this information safe from the students and community, as much of this information is highly confidential in nature, and the school could suffer a loss of good will on the part of the students and community through careless handling of the cumulative records. On the other hand, the records should not be so placed that they become too remote for teacher usage.

In summary, the schools should appraise the existing guidance and testing program, adopt a developmental plan of improvement, set up an in-service training program, and develop a usable system of cumulative records. This cannot all be accomplished at once, so a time-table, or schedule, will be of value. Participation by the entire staff is essential, and must be promoted. The guidance and testing program must be organized for complete utilization of all personnel and information.

CHAPTER IX

SUMMARY AND CONCLUSIONS

Guidance testing is an activity that is being carried on in a number of schools in Montana. There is, however, evidence that the results of the tests that are being given are not being utilized up to their full potential. This thesis attempted to suggest some possible uses for five general types of tests - suggestions that were both general and specific.

The five areas of testing were briefly discussed, and then some specific tests were studied for possible uses.

The discussion was not concerned with a close analysis of the various tests mentioned, but only with some ideas for their use in the smaller schools of Montana.

No recommendations for the adoption or inclusion of any specific tests into local testing programs were made because this is the responsibility of each local school system. The district should survey the testing needs of the school in that community, determine the types of information required to supplement the existing guidance program, select the tests that will accomplish this goal, and then initiate a program of testing that will make sure that the tests are administered properly and the results used in an efficient and business-like manner.

The State Advisory Committee in Guidance did a great

service for the schools of Montana when it established the Montana State Wide Cooperative Testing Program. For many reasons, the program did not receive what must be considered a fair test, the result being that the true effectiveness of the program was not determined.

As testing is valuable both to the school and to the student, the schools of Montana were urged to continue their testing programs, and to improve them if possible.

Achievement tests were presented as an essential part of any school program. The advantages of using achievement tests to the schools are many.

Aptitude tests were presented as valuable additions to the testing program of any school because of the additional information that is provided to the school by this type of test.

Intelligence tests were presented in this thesis as essential to the efficient functioning of any guidance program. The type of intelligence test to use, and the matter of who shall know the results of these tests, should be thoroughly studied by each individual concerned with the testing program of the school.

Personality tests, although controversial, are useful to the schools if they are used carefully. The information that can be obtained from the use of personality tests seems to be well worth the time and expense, as well as the effort. Individual students will benefit from this activity.

Interest tests were presented as essential if the school desires to do anything in the area of vocational guidance of a positive nature.

Many types of information about the child, having bearing on both educational and vocational guidance, cannot be gained from tests. Tests should never comprise the entire guidance program. All other sources of information about the child should be used.

There are methods of relating several sources of information about the child so that a more successful and meaningful guidance program is promoted. Some of these methods are contained in this thesis.

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