

How Well Are They Learning?

Longitudinal records of children's mental age and reading age in a school system furnish data with important implications for instruction.

HOW WELL are the children learning? This question outnumbers all others asked about children. For school systems which will expend the necessary time and energy, good answers can be secured. This article will describe what the School District of the City of Ferndale, Michigan, is doing through its testing program to provide teachers and parents with better answers to their questions regarding children's learning.

Development of Testing Program

The first district-wide testing program in Ferndale was organized in 1926. A standardized achievement test and a standardized mental ability test were used. In 1932 the program was discontinued and the use of standardized tests was left to the discretion of individual teachers. Reasons given for discontinuing the program were: dissatisfaction with the tests and the cost of the program.

In 1943, at the request of principals and teachers, district-wide testing was resumed in Ferndale. A standardized achievement test was given in grades four through eight and a standardized mental ability test was given in grades four, seven, and eight. Principals made a special effort to encourage teachers to

use the results which were compiled and analyzed by the director of group testing. The reports to teachers emphasized the importance of a favorable comparison between class group averages and test norms. Frequent mention was made of the importance of corrective instructional procedures which would reduce the number of slow learners.

Nevertheless, test results continued to show what was to be expected in a growing school system: the number of children who achieved below test norms multiplied with each increase in enrollment. Achievement tests given in October 1948, revealed that the range in scores for fourth graders was from grade three to grade six. The range of differences in average achievement between schools was almost as great as the range of differences between pupils in a given school. Test data on seventh graders for 1948 showed a sharp increase in the range of differences in achievement over fourth graders for pupils and for schools.

By the late 1940's, analysis of an accumulation of a quarter of a century of test data revealed that neither a test-teach-test procedure, remedial instruction, the nonpromotion of pupils achieving below grade norms, or adjustment rooms for the mentally retarded, singly

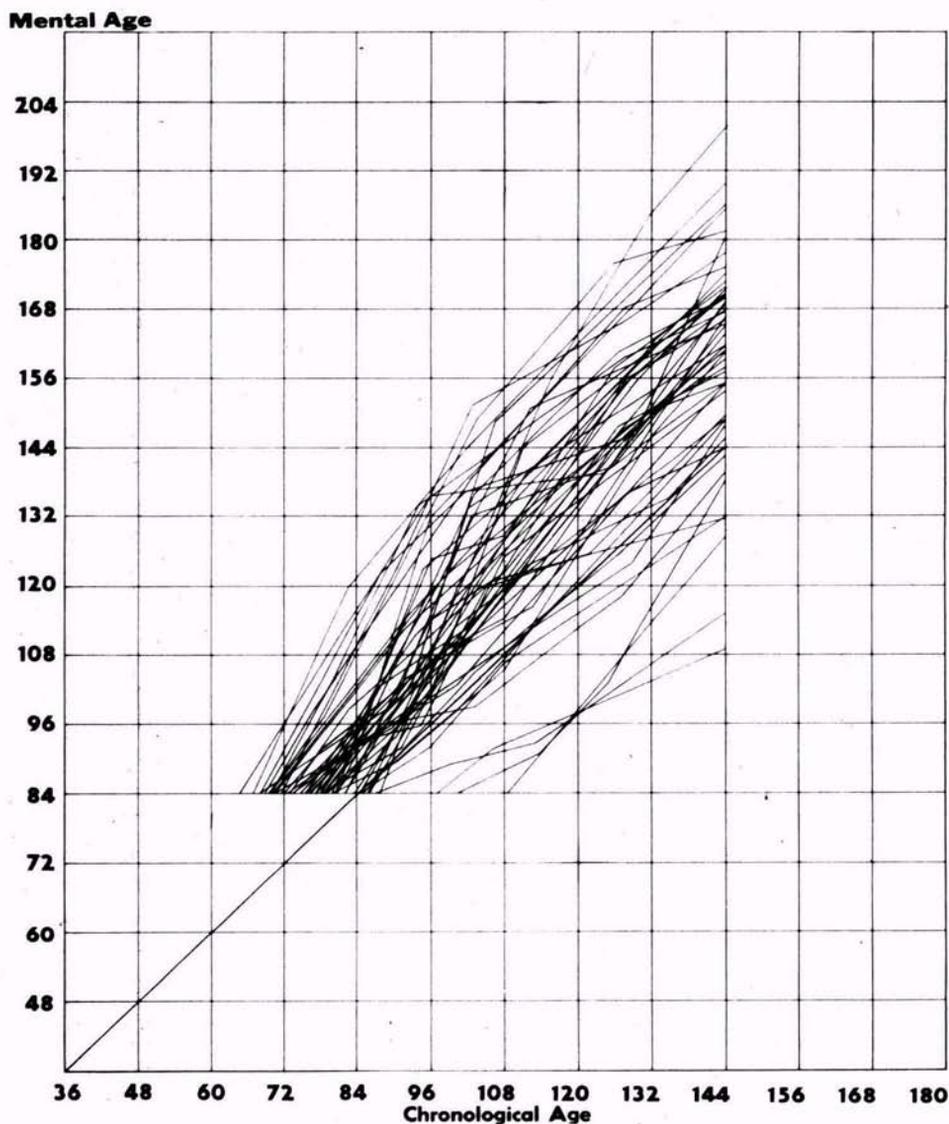


Figure 1. Individual Differences in the Longitudinal Records of Mental Ages for 50 Children

or in combination, had any demonstrable effect on the range of individual differences in learning. In the search for clarification and understanding, a clue was taken from longitudinal studies of children which had shown that learning for each child progresses with chronological age according to a unique pattern. This idea suggested the possibility that the problem of differences with which teachers had been wrestling could be traced to the nature of children and were, therefore, only partially amenable to teaching methods.

Revised Ferndale Testing Program

A longitudinal growth record is secured by testing the same child periodically through time with the same test. In 1951 the Ferndale testing program was enlarged so that longitudinal records could be kept of the physical, mental and academic growth for all elementary school pupils. The new program provided for the following system-wide testing schedule: in grades one and two a mental ability test and a reading test in October and April; in grade three a reading test in October and a reading test and a mental ability test in April; in grades four, six, and eight an achievement test battery in October; and in grades five and seven a mental ability test in October. The purposes of the expanded testing program were (a) to emphasize the extent and dynamics of individual differences in children's capacities to benefit from instruction and (b) to increase the effectiveness of teachers in assessing the individual needs of pupils as a basis for improving teaching methods and the curriculum.

The data which follow have been taken from a complete analysis of the Ferndale testing program which was completed in 1957. The analysis was

made possible by a grant to the University of Michigan from the United States Department of Health, Education, and Welfare under the provisions of Public Law 531, 2d Session, 83d Congress. Discussion will be limited to the mental and reading test data.

Longitudinal Records of Mental Age and Reading Age

One of the few items which all children share without prejudice is the calendar by which their progress through life is measured. Consequently, chronological age is the most appropriate baseline for measuring growth. Since most standardized test scores are capable of conversion into age equivalents in months, a convenient and effective device for the graphic representation of longitudinal records is provided. The result is illustrated in Figures 1 and 2 which present the longitudinal records of individual differences in the mental ages and in the reading ages of 50 children. The graphs have been modified for discussion purposes. The lines have been drawn so they begin at 84 months, the mental age and reading age of an average beginning second grader, and they end at 144 months of chronological age, the average age at which pupils leave elementary school.

Figures 1 and 2 show, above all, how fantastically complex learning can be, even when considered apart from all of its emotional, social, and motivational overtones. Consider, in Figure 1, the differences in chronological age at which

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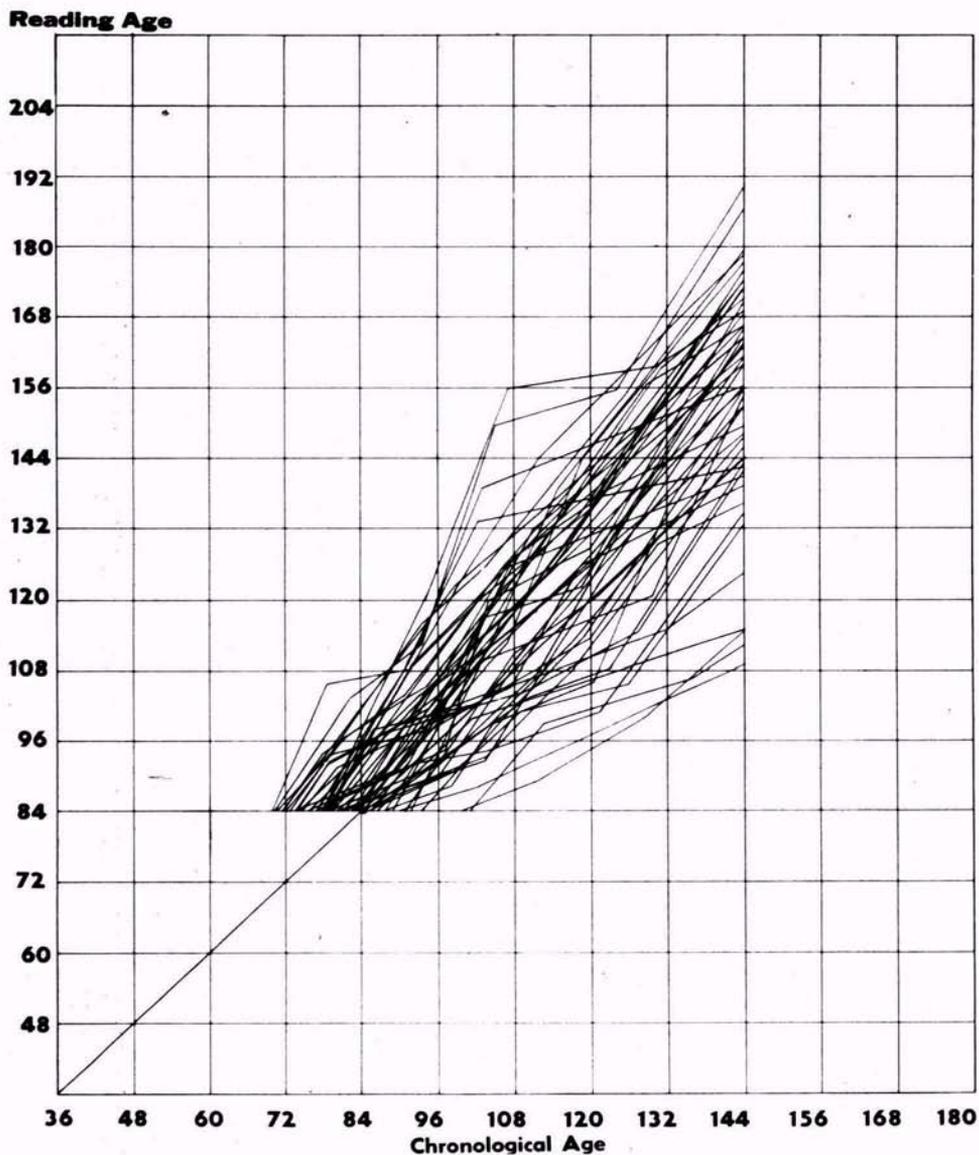


Figure 2. Individual Differences in the Longitudinal Records of Reading Ages for 50 Children

children in Ferndale can be expected to achieve a mental age of 84 months, the mental age of an average beginning second grader. One child has the mental ability of a seven-year-old when he is still only five and one-half and is presumably still in kindergarten. Another child does not achieve a mental age of seven years until he is nine years old and presumably in grade four. Individual differences in the mental ability of twelve-year-olds in Ferndale are equally impressive. The brightest child at twelve years has the mental ability of a typical sixteen and one-half-year-old who would ordinarily be in the middle of grade eleven. The least bright child at twelve years has the mental ability of a typical nine-year-old who would be found normally in grade four. A comparison of Figure 1 with Figure 2 reveals a high degree of similarity between individual differences in the longitudinal records for mental age and the longitudinal records for reading age. It is indicated from the evidence that individual differences in the age at which children learn to read and their achievement of reading skill are as closely related to their mental abilities as they are related to methods of teaching.

Each line in Figures 1 and 2 represents the progress of a child toward greater mental ability and better reading skill. Differences in the slope of the lines indicate that the children achieved their mental abilities and reading skills at very different rates. Consequently there was not the close relationship which might be expected between the age at which a particular child achieved 84 months of mental age or reading age and his rank in the group at age twelve; i.e., the last child to achieve 84 months of reading age and mental age was not the least bright or the poorest reader at age

twelve. The individual records show that while some children began early and progressed rapidly and some began late and progressed slowly, other children began late and progressed rapidly and still other children began early and progressed slowly. In other words, some children catch up while others do not succeed in keeping up. These data must lead to grave doubts regarding the accuracy with which children's mental abilities and academic progress at the completion of elementary school can be predicted from their tested or observed performance in the early grades.

The most simple, obvious, and positive interpretation of the Ferndale data is that all children increase in mental ability and reading skill with age and schooling. While neither the wishes of all parents nor the satisfaction of all teachers can be met by any known method of instruction, there should be considerable comfort for all in the knowledge that all children learn when they are taught.

To summarize: The significance of the Ferndale records is their corroboration of existing knowledge about learning heretofore based largely on data on children in laboratory schools. Sufficient evidence is now available to support the following generalizations:

1. There is a wide range of individual differences in mental abilities and learning of children no matter how early they are tested.
2. The range of individual differences among children increases as their chronological age increases.
3. When the beginning of learning and the progress of learning are charted, the resultant longitudinal record shows a high degree of individuality in each child's progress.

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or two most capable students regardless of formal identification

3. Explore the idea of using the committee within each building as a panel to discuss individual programs with teachers having gifted children in their classes

4. Standardize the forms to be used in gathering information on gifted children, and define more carefully the way anecdotal records should be kept

5. Encourage all teachers who have gifted children in their classes to work more closely with the gifted committee and share more in activities and planning

6. Expand the idea, developed in several schools, of setting up small clubs or seminar groups around special interest areas for gifted pupils

7. Work out a more effective system of communication between the buildings, thus enabling all to benefit from shared ideas, projects and resources

8. The Steering Committee should develop more extensive policies for working with teachers, parents, and lay groups in this program

9. Develop further a program for bringing parents of gifted children into the planning

10. Continue in-service training of teachers, stressing the work of specialists brought in for consultation

11. Locate and secure more usable materials for gifted students on appropriate levels in the fields of their interests

12. Continue the collecting of study materials in the central office available for teachers' reading

13. Work toward the time when a specialist will be available to help teachers identify the gifted, study their abilities, plan their program, and secure needed materials.

A school psychologist has been added to the staff this year whose chief responsibility is further testing and counseling with this group of children.

Our study of the gifted has had a

marked effect on the teaching of all children. In identifying children who are intellectually gifted, a great interest has been created in identifying special interests and talents of other children. It has also led to a careful examination of the curriculum and exploration to discover where individualized teaching can be utilized. A number of teachers in the group which is studying classroom research this year are working on specific problems in the area of the child who seems not to be achieving at the level of his potential. Some are approaching it from the angle of social adjustment. This is a field which needs careful application of what is already known and more research to assist teachers and administrators in curriculum planning.

Even though the entire staff feels it is just beginning, it seems as if one of the greatest values gained is that everyone is involved in the study. There is continued professional growth as each person assumes his responsibility in some phase of the program. Curriculum study should never be considered an added chore, but an opportunity to do better the most important work of all, helping children grow, physically, emotionally, socially and intellectually.

How Well

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Let there be no doubt as to what is being said. This is the way children really learn, no matter where they are found and no matter who teaches them. The major problem facing teachers is not how to eliminate individual differences, but rather how to cope with them.

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