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The development of perceptual-motor integration is an important area of study for the educational psychologist. This capacity is intimately or closely related to the development of reading and writing skills in children. This study reports a preliminary investigation of the reliability of one current test of this capacity, the Minnesota Percepto-Diagnostic Test. The sample consisted of one class of second, fourth and sixth grade children. The results indicate only a moderate level of reliability; this test should be used with caution. (Author)

THE MINNESOTA PERCEPTO DIAGNOSTIC TEST:
A STUDY OF RELIABILITY¹

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The development of perceptual-motor integration is an important area of study for the educational psychologist. This capacity is intimately or closely related to the development of reading and writing skills in children. This study reports a preliminary investigation of the reliability of one current test of this capacity, the Minnesota Percepto-Diagnostic Test. The sample consisted of one class of second, fourth and sixth grade children. The results indicate only a moderate level of reliability; this test should be used with caution.

The use of tests of perceptual-motor behavior as a technique for diagnosis of "reading disability," "learning disability," "brain injury," and "emotional disturbance" has a long history. These procedures were investigated experimentally by Koffka (1935, p. 184), and empirically by Bender (1938). The Bender-Gestalt Test has been used for over 30 years to investigate the relationship between perceptual-motor behavior and various psychological phenomena.

One of the most important diagnostic signs in the use of perceptual-motor tests is reportedly the amount of rotation of the figure drawing when it is reproduced. The existence of rotation in figure drawing is considered a sign of serious pathology in children. "There is no dispute that a rotation is a significant departure from normalcy" (Fuller & Laird, 1967, p. 10). The Minnesota Percepto-Diagnostic Test (MPD) was developed by assembling six combinations of Bender-Gestalt figures that produced the most rotations in children.

"The MPD provides a rapid and objective test to determine whether:...(b) Children have a schizophrenic disturbance, emotional disturbance, or are normal. (c) The etiology among children who have a reading disability is organic brain damage, primary retardation or secondary retardation" (Fuller & Laird, 1967, p. 7). The test measures the degree of rotation of the reproduced figure

drawing from the axis of the stimulus figure. The test was standardized on 4,000 pupils, and norms are provided that control for age and IQ differences.

The study here reported investigated the test-retest reliability of the MPD with classes of second, fourth, and sixth grade children. The children were pupils in a suburban school district of a large midwestern city. The test-retest interval was one week. The test was administered individually to one classroom of children at each grade level. There were 31 second-graders, 25 fourth-graders, and 27 sixth-graders in the sample.

Table 1 indicates the test-retest correlations for the three grades and over all grades.

Insert Table 1 about here

Table 2 indicates the test-retest correlations for the three grades when the grades are split by sex.

Insert Table 2 about here

These data indicate that the test possesses limited reliability. It should be used on elementary school children only with considerable caution. There are no significant differences in reliability of the test between boys and girls.

Table 3 gives the inter-scorer reliability coefficients when the test is scored by two independent scorers. The scorers did not know age, grade or sex of the children whose protocol they scored. The data indicate that scoring criteria are explicit and yield high consistency across scorers.

Insert Table 3 about here

In summary, the data indicate that the MFD has only limited test-retest reliability and that considerable caution should be exercised when it is used with elementary school children. The test does yield relatively high inter-scorer reliability.

Footnote

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References

- Bender, L. A visual motor Gestalt test and its clinical use. American Orthopsychiatric Association Research Monograph, No. 3, 1938.
- Burnett, A., & Fuller, G. B. Minnesota Percepto-Diagnostic Test performance in educable mentally retarded children. Psychology in the Schools, 1966, 3, 176-180.
- Fuller, G. B. Perceptual considerations in children with a reading disability. Psychology in the Schools, 1964, 2, 314-317.
- Fuller, G. B., & Laird, J. T. The Minnesota Percepto Diagnostic Test. Clinical Psychology Monographs, No. 16, 1967.
- Koffka, K. Principles of Gestalt psychology. London: Kegan Paul, 1935.

Table 1

MPD test-retest correlations for
three grades and over all grades

Grade	Scorer 1	Scorer 2
2	.26	.15
4	.61	.53
6	.50	.43
All	.61	.53

Table 2

MPD test-retest correlations by
sex for all three grades and over all grades

Grade	<u>Scorer 1</u>		<u>Scorer 2</u>	
	Boys	Girls	Boys	Girls
2	.44	-.20	.11	.24
4	.78	.59	.65	.56
6	.27	.80	.08	.90
All	.44	.46	.22	.58

Table 3

Inter-scorer reliability by two
independent scorers for three grades and over all grades

Grade	Pre-test	Post-test
2	.83	.63
4	.69	.69
6	.95	.91
All	.69	.69