

THE RELATIONSHIP OF WRITING TO ASPECTS OF INTELLIGENCE AND READING

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The relationship among the various language arts (listening, speaking, reading, writing) has generally been established as high and positive in recent research (Schieb, 1978). Some researchers (Stotsky, 1975 and Combs, 1977) have found this relationship to be causal. Thus, by improving proficiency in one language art there is often a simultaneous improvement in another language art. In this regard writing and reading appear to be the two language arts areas most often linked.

Applebee (1977) has found the high positive correlation among the various language skills to evolve from their mutual dependence upon syntactic maturity. He reported that reading and writing experiences tend to increase syntactic maturity and therefore improve each other.

Elementary children are generally introduced to writing after instruction in reading. Chomsky (1971) argues that children are developmentally prepared to write before they are ready to read and that their introduction to print should be through writing.

While the research concerning the relationship among the various language skills is well documented, the research concerning the relationship between the various language skills and intelligence is best described as inconclusive and controversial. Although reading and writing achievement has been found to be related to intelligence, intelligence alone will not determine how well a given student will read or write. Some researchers have found there to be a higher and more positive relationship between intelligence and writing than between intelligence and reading (Myklebust, 1973). This strong relationship is attributed to the high level of abstract thinking required for writing (Kirk and Elkins, 1975). The inefficiency of predicting a student's reading or writing performances based upon intelligence scores is greatest with elementary students.

At present, many school districts have abandoned or greatly reduced their use of I.Q. score.

Those school districts and institutions which do use I.Q. tests will most often use the Wechsler Intelligence Scale for Children-Revised (WISC-R) or the Stanford-Binet as their screening instrument. The WISC-R is the intelligence scale most often used in the UGA Reading Clinic and the instrument used in this study.

The WISC is an individually administered intelligence test which was published in 1949. It was standardized on a total of 2,200 children, all white, and the 1940 census was used to decide the distribution of the norming sample. The revised WISC was published in 1974 and normed on a representative sample of the 1970 U.S. Census. Minorities were used in the norming sample for the 1970 version of the test.

The WISC-R is designed to be used with children aged 6.0 years to 15 years 11 months.

The test is divided into two parts, a Verbal Scale and a Performance Scale, each of these parts has five required subtests and one subtest that can be used as an alternative or supplemental.

In general, researchers have found the WISC-R to be more reliable than group I.Q. test, but are undecided whether the Verbal, Performance or Full Scale scores are more closely related to reading expectancy. However, after reviewing much of the literature Harris and Sipay report that the general conclusion is that fewer mistakes will be made relying upon the Full Scale I.Q.

Purpose

The purpose of this study was to examine the relationship of measures of reading ability to various measures of intellectual and writing performance of the same subjects. All measures were obtained in the UGA Reading Clinic. Ten variables were selected to be compared in this particular study. The variables were chosen because reported association with reading performance in previous research.

Subjects

The subjects used in this study consisted of 79 students in grades 1 through 6 who were tested in the University of Georgia Reading Clinic during the 1980/81 school year. The primary reason for referral to this clinic is the presence of a reading problem in school. Several of the students tested, however, were not having reading problems and were tested to ascertain existing reading strengths and weaknesses. Thus, the sample is not as truncated as one might normally expect from a clinic population. All testing was done in a one day visit to the clinic by the subjects. The various tests administered at this time depended upon the students' diagnostic needs. Therefore, not all subjects were administered the same tests. This accounts for the range of 56 to 79 subjects on the various measures. Students below or above the grades mentioned above were occasionally tested in the clinic but not in sufficient numbers to justify their inclusion in the study.

All tests were administered by graduate students under the supervision of clinic personnel. Subjects usually worked with four different clinicians during their day of testing. A day in the clinic began at 8 a.m. and usually concluded at approximately 3:30 p.m. with a one hour break for lunch.

The Variables

The data for this study were collected after the subjects were scheduled and tested in the clinic. No special considerations during the subject's testing were made to facilitate the study. The following ten variables were examined:

3. Wechsler Intelligence Scale for Children-Revised—Full Scale
4. An IRI-Instructional Level Score
5. Morris-McCall Spelling Score
6. The Woodcock Reading Test—Passage Comprehension Score
7. A Legibility Score
8. Number of T-Units in Writing Sample
9. Subjects Grade Level at the Time of Testing
10. Percent of Misspelled Words in the Clinic Writing Sample

Statistical Procedure

Pearson product-moment correlational coefficients were computed to determine the relationships between the ten measures collected in the clinic. The results of the analysis are presented in Table 1. Those subjects who are missing scores for no more than one of the variables are the only subjects whose scores are recorded in this table.

The Writing Sample

All students were shown a five by eight inch color painting of a rural farm community and read the following directions:

Look carefully at this picture and think about what it is showing or what the people are doing in the picture. Write at least three sentences about the picture.

The writing samples were scored on legibility and the number of t-units. The legibility scores were obtained by having 18 elementary teachers—3 for each of the grade levels in the study—rank the samples as either above average (1), average (2), or below average (3).

T-units, for the purpose of this study, are defined as any combinations of a subject noun phrase and a verb, including all object noun phrases and subordinate clauses.

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Table 1
CORRELATION COEFFICIENTS FOR ALL VARIABLES

	Grade	Woodcock Passage	Legibility	Percentage Misspelled	T-Units	Morris- McCall Spelling	IRI	WISC-R Full Scale	WISC-R Performance	WISC-R Verbal
WISC-R Verbal	-.121*	.505*	-.014	-.094	.015	.222*	.290*	.908*	.555*	1.000
WISC-R Performance	.099	.342*	-.168	-.001	.012	.189	.270*	.850*	1.000	
WISC-R Total	-.029	.482*	-.086	-.094	.004	.233*	.313*	1.000		
IRI	.642*	.773*	-.117	-.310*	.351*	.693*	1.000			
Morris- McCall Spelling	.690*	.789*	-.180	-.343*	.132	1.000				
T-Units	.215	.217	-.197	-.138	1.000					
Percentage Misspelled	-.309*	-.375*	.290*	1.000						
Legibility	.001	-.103	1.000							
Woodcock Passage	.590*	1.000								
Grade	1.000									

*Significant at or beyond the .05 level