

**CORRELATES OF THE SLOSSON INTELLIGENCE
TEST WITH THE LORGE-THORNDIKE
INTELLIGENCE TEST AND THE
GATES-MACGINITIE READING TEST**

BY

JERRY CRAIG SETTLE

CORRELATES OF THE SLOSSON INTELLIGENCE TEST
WITH THE LORGE-THORNDIKE INTELLIGENCE TEST
AND THE GATES-MACGINITIE READING TEST

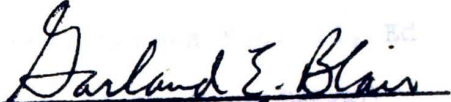
A Research Paper
Presented to
the Graduate Council of
Austin Peay State University

In Partial Fulfillment
of the Requirement of the Degree
Master of Arts

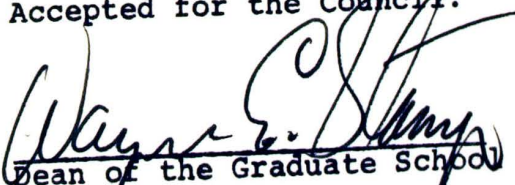
by
Jerry Craig Settle
August 1973

To the Graduate Council:

I am submitting herewith a Research Paper written by Jerry Craig Settle entitled "Correlates of the Slosson Intelligence Test with the Lorge-Thorndike Intelligence Test and the Gates-MacGinitie Reading Test." I recommend that it be accepted in partial fulfillment of the requirements for the Master of Arts, with a major in Psychology.


Major Professor

Accepted for the Council:


Dean of the Graduate School

ACKNOWLEDGEMENTS

The author wishes to express sincere appreciation to Dr. Garland E. Blair, Chairman of the Department of Psychology, who suggested the problem and who aided and counseled him during the course of the study.

The author wishes to thank Jim Tucker, Principal of Woodlawn Elementary School, for his cooperation and assistance during this study; to Mrs. Lorena Bagwell, Ed Lester, and the teachers of Woodlawn Elementary School for their assistance in administering the tests used in the research.

I wish to express special appreciation to my wife, Linda, for her help during this study.

TABLE OF CONTENTS

CHAPTER	PAGE
I. INTRODUCTION.....	1
II. REVIEW OF THE LITERATURE.....	2
III. METHOD.....	6
IV. RESULTS.....	9
V. DISCUSSION.....	12
VI. SUMMARY.....	14
VII. REFERENCES.....	15

LIST OF TABLES

TABLE	PAGE
I. Correlations Between Tests.....	9
II. Means and Standard Deviations.....	10

Chapter 1

INTRODUCTION

First grade teachers are faced with the problem of grouping their students in such a manner that the classroom instructions will benefit all of the students. The teacher needs to have some idea as to what level each student is presently functioning. The task of assessing students could be very time consuming if each student had to be tested with an individual intelligence test that required an hour or more to administer.

There is a need for a short test that can be administered by teachers and others that has good predictive value for measuring school success at the first grade level. Since Richard L. Slosson introduced the Slosson Intelligence Test (SIT) in 1963, it has gained wide usage in many school systems both as a clinical and research tool. The SIT may be administered by classroom teachers in ten to thirty minutes. It is intended to be a quick screening device for children with suspected intellectual deficits. The standardization data available in the manual strongly supported the author's contentions.

The present study is being conducted to investigate the usefulness of the SIT as a predictor of school success at the primary level.

Chapter 2

REVIEW OF THE LITERATURE

The literature presents conflicting evidence about the usefulness of the SIT as a screening device. Hammill (1969) conducted a study involving 98 boys and 58 girls from all intellectual, racial, and socioeconomic groups in the greater Philadelphia area. He found a .65 correlation between the SIT and the Lorge-Thorndike Intelligence Test (LT) administered to children between ages 4 and 16, and a .60 correlation between the SIT and the reading section of the Wide Range Achievement Test. Hammill concluded the Slosson to be reliable and valid as a screening test that can be administered and scored proficiently by teachers in ten to twenty minutes.

Swanson and Jacobson (1970) conducted a study both to check the validity of the SIT and to test the hypothesis that SIT scores are essentially a measure of verbal intelligence. The subjects in this study were 64 second grade children, who on the basis of teacher referral and group test data, were believed to have learning disabilities. The investigators found a .64 correlation between the SIT IQ and the WISC verbal IQ; a .44 correlation between the SIT and the WISC full scale IQ, and a .10 correlation between the SIT IQ and the WISC performance IQ. The results of the study suggest that the SIT is not

entirely satisfactory as a screening instrument for identifying children with learning disabilities at the second grade level, and that SIT scores are essentially a measure of verbal intelligence.

Houston and Otto (1968), in a study to examine the usefulness of the SIT with poor readers, found a .64 correlation between the SIT IQ and the WISC verbal IQ and a .42 correlation between the SIT IQ and WISC performance IQ of subjects ranging in age from 7 to 14. The results of the study suggest that the SIT is appropriate for preliminary screening of students with reading disabilities, and it provides a rough measure of intelligence. The reliability of the SIT IQ scores could not be estimated from the data.

In another study conducted by Armstrong and Mooney (1971) the SIT was the object of a validity study using the Stanford-Binet as the validity criterion. The study used, for its testing sample, a total of 204 students, ages 6 to 14, enrolled in ten public school systems in northeastern Massachusetts. The experimenters found a .93 correlation when both tests were administered by test specialists; and a .94 correlation when the Stanford-Binets were administered by test specialists and the SITs by teachers. The results suggest that the SIT is a valid screening and retesting instrument that can be used with as much confidence as scores obtained from the Stanford-

Binet administered by a test specialist. This should be of particular interest to reading personnel who are faced with a shortage of time and qualified personnel to administer the more technical tests.

Another pertinent study was conducted by Jongeward (1969). He purported to check the validity of the SIT as a screening test for EMR subjects, using the Stanford-Binet as the validity criterion. The SIT mean IQ was 2.4 points above that of the Binet, but there was only a chance difference in the standard deviations of the two tests. The results of this study suggest that the SIT has merit as a screening instrument for EMR children, but it should not be used to replace the Stanford-Binet as a basic tool for assessing the mental abilities of EMR children.

In a study by Hutton (1969) it was determined that success on the SIT for preschool subjects depends, to a very large extent, upon the child's ability to answer questions vocally. In light of these findings it follows that a child's score on the SIT would be related to his or her reading ability. The ability to read would necessarily be connected to school success, therefore a child's score on the SIT would be related to his success in school. This logic is somewhat disturbed by the findings previously cited by Swanson and Jacobson (1970), Jongeward (1969) and by Houston and Otto (1968). These

investigators found the SIT to be less than a valid measure of intelligence in their particular situation. On the other hand, Hammill (1969), Armstrong and Mooney (1971) have found the SIT to be a valid screening and retesting instrument. In view of the ambiguity of the previously cited studies the present study was formed.

The findings in the literature led to this question: Is the SIT, given at the beginning of school, a valid test for predicting school success at the primary level? The above question led to the following null hypotheses:

- (1) There is no correlation between the SIT and the Lorge-Thorndike Intelligence Test.
- (2) There is no correlation between the SIT and the vocabulary section of the first grade level Gates-MacGinitie Reading Test.
- (3) There is no correlation between the SIT and the comprehension section of the first grade level Gates-MacGinitie Reading Test.
- (4) There is no correlation between the SIT and the vocabulary section of the second grade level Gates-MacGinitie Reading Test.
- (5) There is no correlation between the SIT and the comprehension section of the second grade level Gates-MacGinitie Reading Test.

There must be a significant difference found at the .05 level.

Chapter 3

METHOD

The Sample

Subjects used in the study were 51 students; 27 girls and 24 boys who had attended Woodlawn Elementary School in the Clarksville-Montgomery County School System for the first three school years. Because some scores were not available for all students included in the sample, the number of subjects for the correlation between SIT scores and both the second year Gates-MacGinitie and Lorge-Thorndike scores was reduced to 45.

Description of the Instruments

The SIT is a short individual intelligence test similar to an abbreviated Stanford-Binet Form L-M. The test spans all age levels beginning at one-half year of age and reaching all the way to adulthood. After the six year level most of the test items are verbal. The test yields a ratio IQ.

The Gates-MacGinitie Reading Test (G-M) was chosen as a validity criterion because of its use throughout the entire school system at the first and second year level. This series of tests replaces the Gates Primary and Advanced Primary Reading Tests. The test yields two different scores. It yields a vocabulary score that is derived from asking the examinee to decide which of the

possible answers is most similar in meaning to the stimulus word given by the examiner. The comprehension subtest requires the student to read a sentence or short passage and respond to questions, select the most appropriate picture, or choose the appropriate words to fit into the blanks in the paragraph (Powell, 1969).

The Lorge-Thorndike was also chosen as a validity criterion because of its use throughout the entire school system at the third year level; as well as the fact that it meets generally accepted standards for test construction and standardization procedures (Tittle, 1972). The Lorge-Thorndike used in this study was the level two non-verbal battery used for grades 2 and 3. It is a group intelligence test that requires about 35 minutes to administer. It can be administered by the regular classroom teacher.

Administration and Scoring

The SIT was administered individually to each subject during October by the school counselor and an undergraduate psychology major at Austin Peay State University. It was scored by the administrator at the conclusion of the testing session.

The first year level of the Gates-MacGinitie Reading Test was administered during the month of April of the first school year. It was administered to the subjects as a group by the individual classroom teacher and

machine scored. The second year level of the Gates-MacGinitie was administered in the same manner as the first during April of the second school year.

The Lorge-Thorndike Intelligence Test was administered during April of the third school year. It was administered to the subjects as a group by their regular classroom teacher and hand scored by her also.

Chapter 4

RESULTS

The Pearson Product-Moment technique was employed to compute the correlation coefficients. In the computations IQ scores were used for the SIT and the Lorge-Thorndike, while grade level scores were used for both year levels of the Gates-MacGinitie Reading Test.

Table 1
Correlations Between Tests

Tests	r	N
SIT - LT	.55**	45
SIT - Vocab. 1st yr. G-M	.42**	51
SIT - Comp. 1st yr. G-M	.36*	51
SIT - Vocab. 2nd yr. G-M	.58**	45
SIT - Comp. 2nd yr. G-M	.58**	45
SIT - LT boys	.76**	24
SIT - LT girls	.31	27

* Significant beyond .05

** Significant beyond .01

Table 2

Means and Standard Deviations

Tests	M	SD	N	t
SIT	107.022	14.011	45	
LT	103.355	10.986	45	
Vocab. 1st yr. G-M	1.680	.406	51	
Comp. 1st yr. G-M	1.735	.355	51	
Vocab. 2nd yr. G-M	3.015	1.141	45	
Comp. 2nd yr. G-M	3.137	1.325	45	
SIT Boys	108.083	15.151	24	.55*
SIT Girls	106.407	12.014	27	
LT Boys	103.250	11.410	24	.02*
LT Girls	103.296	10.091	27	

* No Significant difference between means

Table 1 gives the correlations for all the tests administered. Both the vocabulary and comprehension sections of the second year level of the G-M had the highest correlation with the SIT (.58). The SIT-LT had a correlation of .55. The comprehension section of the first year level G-M had the lowest correlation with SIT (.36), but was significant at the .05 level.

Although not stated in the original hypotheses the results of the SIT-LT correlation for boys and girls proved to be interesting. The SIT-LT correlation for boys was .76, while the SIT-LT correlation for girls was .31. These results should be investigated in depth in future research.

Table 2 gives the means and standard deviations for each test given. The mean of the SIT was higher than that of the LT. The mean of the SIT for boys was higher than for girls, but the mean of the LT was higher for girls than for boys. There was no significant difference in the means between boys and girls.

Chapter 5

DISCUSSION

All the correlation coefficients that were included in the original hypotheses were significant beyond the .05 level. The correlation obtained between the SIT and LT is comparable to that reported by Hammill (1969) in a study that spanned a one month period. The present study extended over a three year period. The similar correlation coefficients, despite the time difference between tests administrations, seem to lend support to the validity of the SIT.

The correlation between the first year G-M and the SIT are somewhat lower than those of the second year G-M and the SIT. The correlation between the second year G-M and the SIT is similar to that of the LT and SIT. This may suggest that the second year G-M presents a more stable picture of the child's reading ability than does the first year G-M.

Upon close scrutiny of the data, the investigator noted some interesting results not contained in the original hypotheses. There was a difference in the correlation coefficient found between the SIT-LT for boys (.76) and the SIT-LT for girls (.31). This may have been a function of the sample used in the study, and yet Mendels (1973) reports sex as being one of four factors

that accounted for 68 percent of the variance in the correlation matrix used in his study. His study was conducted with subjects at the kindergarten level. Bowlig and Fletcher (1973) reported differences in correlation coefficients found between the Metropolitan Readiness Test (MRT) and the Stanford Achievement Test (SAT) for boys (.68) and the MRT-SAT for girls (.75). They concluded the MRT was a better predictor of school success for girls than for boys at the kindergarten level.

While the findings of the present study indicate a more extreme difference in correlation coefficients between boys and girls than those cited above, the evidence is not sufficient to draw any valid conclusions. It is clear, however, that differences in test scores between boys and girls at the primary grade levels seems to be fallow ground for research.

These findings support conclusions reported in the literature. The study concluded that differences in test scores between boys and girls at the primary level

Chapter 6

SUMMARY

The purpose of this study was to determine the usefulness of the Slosson Intelligence Test as a predictor of subsequent academic success. The Lorge-Thorndike Intelligence Test and the first and second grade level Gates-MacGinitie Reading Test were used as the validity criterion. The correlation coefficients obtained in this study ranged from .36 to .58. They were all significant beyond the .05 level.

In light of these significant correlations it is concluded that the Slosson Intelligence Test is a valid predictor of success at the first grade level if success is measured by an instrument that requires verbal ability.

The investigator found other data relating to differences in test scores obtained by boys and girls at first to third year level. These findings support conflicting evidence previously reported in the literature. In light of these findings it is concluded that differences in test scores between boys and girls at the primary level needs much investigation.

REFERENCES

- Armstrong, R. J., & Mooney, R. F. The slosson intelligence test: Implications for reading specialists. The Reading Teacher, 1971, (24), 337-341.
- Bolig, J. R., & Fletcher, G. O. The mrt vs. ratings of kindergarten teachers as predictors of success in first grade. Educational Leadership Research Supplement, 1973, April, 637-640.
- Bruning, L. L., & Kintz, B. L. Computational Handbook of Statistics. Glenview: Scott, Foresman, 1968.
- Hammill, D. The slosson intelligence test as a quick estimate of mental ability. Journal of School Psychology, 1968-69, (7), 33-37.
- Houston, C., & Otto, W. Poor readers' functioning on the wisc, slosson intelligence test and quick test. The Journal of Educational Research, 1968, (62), 157-159.
- Hutton, J. B. Practice effects on intelligence and school readiness tests for preschool children. Training School Bulletin, 1969, (65), 130-134.
- Jongeward, P. A. A validity study of the slosson intelligence test for use with educable mentally retarded students. Journal of School Psychology, 1968-69, (7), 59-63.
- Mendels, G. E. The predictive validity of the large-thorndike intelligence tests at the kindergarten level. The Journal of Educational Research, 1973, (66), 320-322.
- Powell, W. R. Gates-MacGinitie reading tests. Journal of Educational Measurement, 1969, (6), 114-117.
- Swanson, M. S., & Jacobson, A. Evaluation of the s.i.t. for screening children with learning disabilities. Journal of Learning Disabilities, 1970, (3), 22-24.
- Tittle, C. K. The large-thorndike intelligence test. In O. K. Buros (Ed.), The seventh mental measurement yearbook. Highland Park: The Gryphon Press, 1972.