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# **One-Year Stability of the Elementary Reading Attitude Survey**

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## **Abstract**

*This study examined the one-year stability of a measure of children's attitudes toward reading. Two hundred and eighty-nine students in grades one through five completed the Elementary Reading Attitude Survey (ERAS) at the beginning of two consecutive academic years. For both years, reading attitudes were normally distributed across recreational and academic subscales as well as the total reading attitude score of the ERAS. Substantial test-retest correlations were found both for the subscales and for the total score, reflecting good stability for the instrument. Non-significant grade differences were observed, however females consistently expressed more positive attitudes toward reading than did males. Implications for the classroom and directions for future research are provided.*

Without doubt, improvement of children's reading in the public school setting remains one of the most important functions of contemporary education. Attitudes about reading are, arguably, formed as a result of repeated success or failure with the task of reading. While students with good reading ability may have positive attitudes toward reading, students who are poor readers often have to overcome negative reading attitudes in order to improve their reading skills (Johnson, 1981).

Teacher perceptions of student attitudes toward reading do not always match attitudes held by their students, and may be based to a greater degree on reading achievement (Swanson, 1985). Even though student reading attitude is commonly identified as an important area for student growth (Quinn & Jadav, 1987), very little time is devoted to fostering favorable attitudes to reading in the schools (Greaney, 1991; Heathington & Alexander, 1984). This may be due to teacher pressures to focus on basic skills, or from the belief that improving reading achievement will indirectly improve students' attitudes.

Young students seem to hold positive reading attitudes early in the development of their academic skills (Guthrie & Greaney, 1991), but with repeated failure may begin to view reading in a more negative light (Swanson, 1985). Good readers generally have more positive attitudes toward reading than poor readers (Wigfield & Asher, 1984), although only moderate correlations (.20 to .40) are typically found between reading attitude and achievement (Deck & Barnette, 1976; Roettger, Szymczuk, & Millard, 1979). As Mickelson concluded (1990), research on attitude-behavior relationships has yielded contradictory and uncertain outcomes (p. 48).

The uncertainty regarding the longitudinal stability of reading attitudes has resulted, in part, from the use of inadequate attitude scales (Marjoribanks, 1992, p. 945). Before questions concerning predictive validity can be answered, the short- and long-term reliability of the measures used to assess reading attitude must be established. Classroom teachers who wish to monitor changes in student reading attitudes from the beginning to the end of the school year will want to avoid scales which do not provide consistent, reliable measurement. Similarly, the effects of educational interventions targeted towards at-risk students can be evaluated only if the scales used to measure reading attitudes reflect true changes in reading attitudes, rather than random score variation. Therefore, this study examined the one-year stability of a measure of reading attitude, the Elementary Reading Attitude Survey (McKenna & Kear, 1990).

Obviously, a one-year test-retest interval will be dependent upon both the psychometric properties of the ERAS and the stability of the reading attitude construct. Typical test-retest correlation coefficients are based on shorter intervals, normally between several weeks and few months. Certainly, a one-year stability coefficient will be moderately decreased as a function of both the time interval between the first and second administration of the test and as a function of the childrens' development. Since physical, maturational, psychological and situational factors will all serve to affect the temporal stability of the ERAS scores, the purpose of the present study is to determine to what extent this will occur. Because real-life instruction and academic interventions are typically measured in intervals closer to a year in length, rather than the shorter periods of time

for which test-retest reliabilities are normally calculated, this study reflects an important addition to the existing body of knowledge concerning the reading attitudes of children.

### **Method**

#### **Participants**

Two hundred eighty-nine students (139 male, 150 female) enrolled in grades one through five of a southwestern, suburban school district served as subjects. Students were randomly assigned to teachers in one of seventeen classrooms. Ethnic status, as reported in school records completed by parents, was: 94% White, 4% Hispanic, 1% Black and 1% Asian. The socioeconomic level of the school was judged to be middle-class, based upon the proxy measure of percentage of students (10% or less) participating in free or reduced-cost lunch programs (Peng, Wang, & Walberg, 1992). Single-family homes comprised 76% of the housing, and more than 50% of the parents had some college education.

#### **Instrument**

The Elementary Reading Attitude Survey (ERAS) (McKenna & Kear, 1990) is a 20 item public-domain questionnaire developed for use in grades one through six. Pictorial representations of the comic strip character, Garfield the cat, are presented on a 4-point scale which asks children to rate how much they like to read. Each item presents a brief, simply-worded statement about reading, followed by four pictures of Garfield. Each Garfield pose shows a different emotional state ranging from Very Happy to Very Upset. Children circle the picture that reflects how they feel about the particular statement. Responses are summed and transformed into percentile ranks via national norms tables. Percentile ranks are obtained for total reading attitude and two component subscales: Recreational reading attitude and Academic reading attitude.

The ERAS was normed on over 18,000 students in Grades 1-6. Children were drawn from 95 schools across 38 states. Internal-consistency coefficients ranged from .74 (Recreational subscale at first grade level) to .89 (Total scale at grades 4-6). The intersubscale correlation was .64 and a factor analysis of the normative sample provided construct validity evidence supportive of the claim that the measure's two subscales reflect discrete aspects of reading attitude. Comparable internal-consistency estimates have been reported for the ERAS when it was applied to a small, independent sample of children (Allen, Cipielewski & Stanovich, 1992); and concurrent validity with other measures of reading attitude has been shown as well (Estes, Estes, Richards, & Roettger, 1981; Marjoribanks, 1992).

#### **Procedure**

Students completed the ERAS in the fall semester of two consecutive school years. Administration was given to intact classrooms. Teachers read the directions aloud

while the students read along silently. Following several practice items, students completed the 20 items of the questionnaire.

Completed ERAS forms were scored by the experimenters according to standardized instructions provided by McKenna and Kear (1990). Raw scores were converted to standard scores ( $M = 100$ ,  $SD = 15$ ) by a computer program (Watkins, 1992) which were used in all subsequent analysis.

### **Results**

Table 1 presents descriptive statistics for the Total sample and for males and females for both administrations of the ERAS. Responses for the Recreational, Academic and Total scores were relatively normally distributed with mean for all scales near 100 and standard deviation near 15. Score ranges varied approximately two standard deviations above and below the standard score means.

**Table 1**

**Means, Standard Deviations, and Ranges of the Elementary Reading Attitude Survey for the Total Sample and by Gender**

	Mean	SD	Minimum	Maximum
Recreational (Test)	100.80	14.89	54	128
Male	96.79	15.41	54	127
Female	104.51	13.41	68	128
Academic (Test)	100.69	15.12	58	134
Male	97.38	14.96	58	131
Female	103.76	14.67	67	134
Total (Test)	100.80	15.04	60	135
Male	96.78	15.11	60	131
Female	104.51	14.02	70	135
Recreational (Retest)	98.89	16.27	55	127
Male	93.31	16.49	57	127
Female	104.05	14.28	55	127
Academic (Retest)	100.99	15.12	61	127
Male	96.64	15.19	65	126
Female	105.01	13.92	61	127
Total (Retest)	99.94	15.72	53	128
Male	94.37	15.63	57	128
Female	105.11	13.98	53	128

Table 2 presents correlation coefficients for the Total sample and for males and females for both administrations of the ERAS. All correlations exceeded the .001 significance level. Intersubscale correlations were .65 and .63 for test and retest administrations, respectively. These results are almost identical to the intersubscale correlation of .64 reported for the normative sample. The test-retest reliability for the Total ERAS scale, following a one year interval, was .43. A series of Fisher  $r$  to  $z$  transformations

indicated non-significant gender differences across all correlations. That is, test-retest correlations were of equal magnitude for boys and girls.

<b>Table 2</b>					
<b>Test-Retest Correlations for the Elementary Reading Attitude Survey for the Total Sample and by Gender</b>					
	Academic (Test)	Total (Test)	Recreational (Retest)	Academic (Retest)	Total (Retest)
Recreational (Test)	.65	.89	.43	.31	.41
Male	.63	.89	.34	.27	.35
Female	.63	.88	.41	.25	.37
Academic (Test)		.92	.32	.34	.37
Male		.91	.24	.29	.30
Female		.92	.32	.32	.36
Total (Test)			.41	.36	.43
Male			.32	.31	.36
Female			.40	.32	.41
Recreational (Retest)				.63	.90
Male				.58	.89
Female				.61	.89
Academic (Retest)				.90	
Male					.89
Female					.90

Note: All correlations  $p < .001$ .

A series of three factorial ANOVAs, 2 (gender)  $\times$  5 (grade) were performed on ERAS-Recreational, Academic and Total scores, with scores for both administrations serving as repeated measures (Huberty & Morris, 1989). Significant gender differences were found for the Academic ( $F(1,279) = 28.50$ ,  $p < .0001$ ); Recreational ( $F(1,279) = 44.68$ ,  $p < .0001$ ); and Total ERAS scores ( $F(1,279) = 44.16$ ,  $p < .0001$ ). Nonsignificant grade effects were evidenced for all three scales, however, significant gender by grade interactions were found for the Recreational ( $F(4,279) = 4.21$ ,  $p < .01$ ) and Total scales ( $F(4,279) = 2.96$ ,  $p < .05$ ). Post-hoc examinations indicated that for both administrations of the ERAS, and across all grade levels except second, girls exhibited significantly higher Recreational and Total attitude ratings than did boys. Only at the second grade level were males and females found not to be significantly different.

### Discussion

Results of the present study indicate moderate one-year stability of children's attitudes toward reading as measured by the Elementary Reading Attitude Survey. Signifi-

cant test-retest reliabilities were evidenced for the Recreational and Academic subscales of the ERAS as well as for the Total Score of that measure. ERAS stability was also demonstrated across grade levels one through five.

Additionally, the ERAS was found to be an equally reliable measure of reading attitudes for both boys and girls, even though girls consistently expressed more positive attitudes toward reading than did boys. This result is consistent with previous research which suggests that girls tend to have more favorable attitudes to reading than boys (Greaney & Hegarty, 1987; Guthrie & Greaney, 1991; Smith, 1990). In the present study, the single exception to this trend occurred for beginning second-grade students, where girls and boys had similar reading attitudes. It is conjectured that this outcome can be attributed to a unique interaction between personal characteristics of these students and teachers, since boys' attitudes declined again the following year, although neither specific instructional program nor method could be identified which was unique to that grade level. The developmental pattern for girls was much more consistent, showing better developed reading attitudes than boys at both younger and older grade levels. Although unfortunate that the improvement in reading attitude shown by boys was temporary and not maintained for any extended period of time, we know that teachers can impact the attitudes that their students develop through the use of specific classroom techniques (Barnett & Irwin, 1994; Lehr, 1982; Wigfield & Asher, 1984). Future research should examine these strategies and techniques in greater detail.

In the early grades, boys tend to be identified more frequently than girls as problem readers (Tittle, 1986), and, on the whole, do not achieve as well as girls in reading (Bank, Biddle, & Good, 1980) and spelling (Allred, 1990). This convergence of evidence regarding young boys' difficulties in reading attitude and achievement is as problematic as the information concerning older girls' adversity in mathematics and science (Tittle, 1986). While the reading attitudes of girls, of course, should not be neglected, results of the present study suggest that educational attention should be focused on boys who appear to begin school with poorer attitudes toward reading and subsequently progress through school without showing any sustained improvement (National Center for Education Statistics, 1992).

As predicted, the finding of a significant, but moderate one-year, test-retest correlation of .43 reflects a rather substantial drop from the typical short-term, test-retest range (.70 - .90) found with most reading attitude measures, but is consistent with long-term trends for reading attitudes (Smith, 1990). Current results demonstrated high subscale correlations at each of the five grade levels, which did not vary significantly across time. On the whole, the ERAS appears to be a reliable measure of children's overall attitudes toward reading, as well as their specific attitudes toward Academic and Recreational reading. Reading teachers who utilize the ERAS may feel comfortable that the scale will provide consistent scores over periods of up to one year. Future research, however, should examine the stability of

reading attitudes over a longer time interval. Although the present findings indicated relative equality across five grade levels, a longitudinal design which follows the same cohort of students over a longer period of time, with a particular focus on possible developmental differences for boys and girls, would better address this question. Additionally, future research should investigate the differential predictability of the ERAS subscales and reading achievement. Specifically, research should explore the predictive utility of both the Recreational and Academic subscales of the ERAS, and the stability of these subscales for both boys and girls across several grade levels.

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