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ABSTRACT

To examine the relationship between reading performance and television viewing, the state of Connecticut's third assessment of educational progress in reading included questions relating to the reading materials available in students' homes, their television viewing habits, and their attitudes toward reading. Approximately 8,000 students in grades four, eight, and eleven were tested. The results indicated that older students spent less time watching television than did younger students. In addition, the number of students reporting "enjoyment" with reading decreased with age while the number of students reporting a "dislike" of reading increased with age. Reading scores for the fourth grade students, the heaviest television viewers, were relatively unrelated to television viewing. However, for the eighth and eleventh grade students, those watching more than four hours of television a day scored lower on achievement than those watching a more moderate amount, indicating an inverse relationship between heavy television viewing and reading achievement. This may be due to the cumulative effects of television viewing, to the increase in vocational and social involvement of older students, or to the fact that students with poor reading skills continued to be heavy viewers. (HTH)

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Television Viewing and Reading Achievement

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Television's potential effects on children's reading performance have become an issue of growing concern among educators in the past several years. Recent popular publications (Larrick, 1975; Mankiewicz and Swerdlow, 1978; Winn, 1977) have attributed the decline in S.A.T. scores, auditory deficits, and wandering attention spans to the increasing use of television. Authorities (Comstock et.al., 1978) now estimate that children watch an average of 27.6 hours per week.

In contrast to the extensive research in the area of television and social behavior, relatively few empirical studies have concentrated on the relationship between television viewing and children's interest and achievement in reading. Thus far, the scientific literature has, for the most part, consisted of numerous small-scaled studies conducted in various parts of the country, with different age groups, using a variety of methodological strategies (Childers and Ross, 1973; Greenstein, 1954; Starkey and Swinford, 1974). As a result, researchers have been unable at this point to construct a developmental model which might explain the nature of the relationship between television and reading as it occurs longitudinally over the school years.

Utilizing data from a statewide assessment in reading, the current report analyzes the pattern of reading and viewing behavior of over 7500 students in grades 4, 8, and 11. By the use of comparable techniques and procedures at each grade level, broad trends regarding the potential relationship between television viewing, reading achievement, and reading attitudes can be derived from these data.

Method

The state of Connecticut conducted its third assessment of educational progress in reading in 1978-79. Modeled after the National Assessment of Educational Progress, the test was designed to determine the percentage of students, within each of the grade levels tested, who had successfully mastered certain educational skills and abilities.

A representative sample of 7,787 students from grades 4, 8, and 11 were randomly selected to participate in the assessment. In addition to age considerations, students were selected on the basis of the size of the community and its geographic region within the state.

Three assessment instruments, one for each of the grade levels involved, were designed to measure student progress in overall reading performance. These criterion-referenced,

multiple choice, tests were developed by the Reading-Study Center and the Bureau of Educational Research at the University of Connecticut in consultation with the statewide reading advisory committee.

The construction of the test instruments occurred in three stages. First, objectives reflecting key areas of reading instruction were determined: seven skill areas* were selected for the fourth and eighth graders, six, for the eleventh grade students (phonemic analysis excluded). Second, five test items in each skill area were developed to allow for a reasonable sampling of skills and abilities within one hour's time. Third, further modifications were made based on a subsequent field testing of the assessment instruments. Item difficulty information was determined to ensure that the average difficulty would be within an acceptable range. The total number of test items included thirty-five for the fourth and eighth grades, thirty, for the eleventh grade.

In addition to the reading skills items, a number of demographic, attitudinal, and general descriptive questions were also included in the assessment. These self-reported items included questions relating to the student's age, sex, number of educational reading materials (i.e. newspapers, encyclopedias, etc...) available in the home, as well as their general attitudes

*Phonemic Analysis, Context Clues, Study Skills, Main Topic, Reading for Details, Predicting Outcomes, and Critical Reading.

toward reading and their television viewing behavior.

The data for the evaluation of reading performance by specific skill areas are presented elsewhere (Technical Report, 1979). The report discussed here includes the relationships between student's television viewing behavior and their interest and achievement in reading.

Results

Cross-age comparisons of television watching indicated an inverse relationship between grade level and the amount of time spent viewing: over 53% of the fourth graders reported being heavy viewers (those who watch more than 3.5 hours a day) compared with 40% and 18% for the eighth and eleventh graders, respectively. Percentages of students watching less than one hour of television were 7% for the fourth graders, followed by 7% and 24% for the eighth and eleventh graders. These data indicate that television watching diminishes with age.

Most students involved in the assessment reported spending less than three hours per week reading for pleasure. Percentages ranged from 54% to 70%, indicating that older students appear to spend less time on reading as a leisure activity. Consistent with these results, the percentages of students reporting "enjoyment" with reading decreased with age (from

74% for fourth graders to 60% for the eleventh graders) while the percentages of students reporting a "dislike" of reading increased with age (see Table 1).

Insert Table 1 about here

Correlations were computed for the demographic variables of sex and the number of educational reading materials in the home with the total reading test score. The analysis indicated that sex did not appear to be a dominant factor with reading performance at any grade level ($r = .09, .06, .05$, for the fourth, eighth, and eleventh grades, respectively). The number of educational materials in the home was positively related to reading, however, the strength of the relationship seemed to diminish over time ($r = .28, .25, .18$).

Partial correlations, adjusting for the effects of the demographic variables, were calculated to describe the relationships between television viewing and reading at each grade level (see Table 2).

Insert Table 2 about here

The results of the analysis revealed a rather striking trend regarding television's effects on reading achievement.

Reading scores for the fourth grade students, the heaviest viewers in the sample, were relatively unrelated to television watching ($r = -.07$). However, for the eighth and eleventh graders, watching considerably less, the impact of television appeared more pronounced: distinct negative relationships between television viewing and reading achievement were found at each grade level ($r = -.19, -.17$, respectively).

Reading for pleasure was associated with achievement gains at all ages ($r = .23, .25, .28$). The strength of this factor increased at each grade level, suggesting growing importance of leisure reading for the older students.

Test scores were broken down by the number of hours viewed per week to provide further information regarding the findings between television and reading. Several interesting patterns emerged in the analysis.

Insert Table 3 about here

At the fourth grade level, differences in test scores for children watching less than one hour or more than four hours were relatively small. At the eighth and eleventh grades, however, this pattern changed: students watching more than four hours a day scored lower on achievement than those watching a more moderate amount, indicating an inverse relationship

between heavy television viewing and reading achievement.

Discussion

The results of the analysis clearly show that patterns of media preference, reading or watching television, change over time. These differences are most likely explained by age-related changes in interests, needs and opportunities, all of which influence perceptions of available time. The decline in viewing and reading at the eleventh grade level in this study, for example, probably reflects the increasing demands of high school, availability of sports-related activities as well as the onset of social and vocational involvements.

What has been of specific interest in the analysis here is how this time affects reading achievement patterns. The results suggest that the issue is complex. Partial correlations revealed significant negative relationships between reading achievement and television viewing for students at the eighth and eleventh grade level. An analysis of achievement with the amount of time spent viewing clearly indicated that low test scores were associated with more than four hours of viewing for both grade levels. However, what is less clear is why this is the case. There are educators who might conclude that these data represent evidence suggesting a cumulative effect of television over time. There are others, however, who might suggest that the data reflect a personality factor.

It is the less able students, showing little initiative, who continue to be heavy viewers in spite of the fact that their peers are finding greater challenges in social and school-related activities. Longitudinal developmental analyses which take into account achievement patterns and characteristics of viewers are needed to further explore these results.

Of equal interest is the relationship between the time spent viewing television and achievement at the fourth grade level. Only small differences in test scores were recorded for low and heavy viewers. These findings are consistent with other statewide assessments (Rhode Island, 1977a; Texas, 1978) as well as several major studies (Himmelweit et. al., 1958; Lyle and Hoffman, 1972; Schramm et. al., 1961). Schramm describes this phenomenon as a factor of mental ability, reflecting brighter children's tendency during the elementary years to do more of everything--television viewing, playing, reading etc... As they grow older, this pattern shifts, with the brighter children devoting an increasing amount of time to other media.

In summary, these results suggest that four hours of television per day bear little or no relation to effective reading during the elementary years, whereas continued heavy viewing at the junior high and high school level is associated with low achievement in reading.

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Table 1
Percent of Students Responding Per Option on
Reading and Television Viewing Variables

| <u>Variable</u> | <u>Grade Level</u> | | |
|--|----------------------------|----------------------------|------------------------------|
| | <u>Fourth</u> (N=2,776) | <u>Eighth</u> (N=2,578) | <u>Eleventh</u> (N=2,413) |
| Hours Per Day Watching T.V. | | | |
| Less than 1 hour | 7.4 | 6.6 | 23.6 |
| Between 1-4 hours | 39.9 | 53.3 | 58.0 |
| More than 4 hours | 52.7 | 40.1 | 18.4 |
| Time Per Week Spent Reading For Fun | | | |
| Less than 1 hour | 24.2 | 26.2 | 34.0 |
| Between 2-4 hours | 48.6 | 53.0 | 52.8 |
| More than 5 hours | 27.2 | 20.8 | 13.1 |
| How Much Do You Like Reading? | | | |
| I enjoy reading | 73.6 | 62.7 | 60.4 |
| I don't like it | 4.1 | 10.4 | 16.0 |
| I'm not sure | 22.3 | 26.9 | 23.6 |

Table 2
Variables that Predict Reading Performance*

| <u>Variable</u> | <u>Grade Level</u> | | |
|----------------------|--------------------|---------------|-----------------|
| | <u>Fourth</u> | <u>Eighth</u> | <u>Eleventh</u> |
| Television Viewing | -.07 | -.19 | -.17 |
| Reading for Pleasure | .23 | .25 | .28 |

*Reported in Partial Correlations, controlling for sex, and the number of educational reading materials available in the home.

Table 3

Breakdown of Test Scores by the Number of
Hours of Television Viewed per Week

| <u>Variable</u> | <u>No. of Test Items</u> | <u>Mean</u> | <u>S.D.</u> |
|-----------------------------|--------------------------|-------------|-------------|
| Fourth Grade (N=2,776) | 35 | | |
| Less than 1 hour | | 27.03 | 6.19 |
| Between 1-4 hours | | 28.00 | 5.29 |
| More than 4 hours | | 26.23 | 5.92 |
| Eighth Grade (N=2,518) | 35 | | |
| Less than 1 hour | | 25.13 | 6.70 |
| Between 1-4 hours | | 25.34 | 5.61 |
| More than 4 hours | | 22.48 | 5.95 |
| Eleventh Grade (N=2,413) | 30 | | |
| Less than 1 hour | | 24.44 | 4.19 |
| Between 1-4 hours | | 23.51 | 4.26 |
| More than 4 hours | | 21.11 | 5.15 |