

**ASSESSMENT OF CONTENT TEXT DIFFICULTY  
BY ELEMENTARY AND MIDDLE SCHOOL PERSONNEL**

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Actual observation of classroom activities indicates that most teachers depend upon a single text and ditto materials to provide printed material for their students (Durkin, 1979). In the elementary school, particularly, there is a reliance on the textbook to provide the basis for activities, questions and teaching techniques. The seeming reluctance of teachers to provide supplementary materials provided a direction for study.

In a recent survey, 56 elementary and middle school teachers were asked to list five reasons they believed more supplementary materials were not used in classrooms. The responses were tallied as to frequency of occurrence. The most frequent (n=54) response was an expected one, that of not enough time to search for and prepare material. Second (n=43) was a perceived lack of material available in the schools.

Third (n=40), teachers claimed they had difficulty judging supplementary material grade levels. If this survey is representative, then perhaps it is relevant to evaluate teachers' abilities to judge relative difficulty of textual material. In an earlier study by Palmatier and Strader (1979), secondary teachers were found to be generally unable to rank passages accurately according to reading difficulty. It was of interest to the authors whether or not this finding was true of elementary and middle school personnel as well.

One hundred seventy seven people attending a summer reading workshop at East Tennessee State University were presented the task of rank ordering five 100-word passages in each of the content areas of science, social studies, language arts and mathematics.

**METHOD**

**Subjects**

The sample comprised 177 people attending a 1981 summer reading workshop at East Tennessee State University. For the study, the subjects were considered as a total group and

separately by employment category, level of students taught, administrative task, number of reading/language arts classes taken, and classroom organization. The majority of those attending were classroom teachers in the elementary grades. Most of the administrators and supervisors attending were responsible for elementary and middle school levels. Eighty-seven percent of those attending had had at least three reading courses; 36 percent had taken the course Materials for Teaching Reading which contains a readability unit.

### Procedures

Five 100-word passages were selected for each of the content areas of science, social studies, language arts and mathematics. The Spache Readability Formula (Spache, 1953), the Fry Graph (Fry, 1968), and the Dale Chall Readability Formula (Dale and Chall, 1948) were used to verify difficulty levels from third grade to eighth grade. Passages were from textbooks on the State of Tennessee Adopted Texts list.

Subjects were asked to rank order each set of passages according to reading difficulty for students. Sufficient time (20 minutes) was allotted so that all finished the task and completed the accompanying questionnaire describing categories of employment, etc.

The Statistical Package for the Social Sciences (SPSS, 1973) was used for computer analysis of the data. The parametric program portion provided frequency and percentage tabulation for each group and for the total sample on each of the twenty passages. Chi Square evaluations illustrated the associations between groups and accuracy of rankings.

### Results

Several interesting results were found upon examination of the data. Generally, participants were able to rank social studies passages most accurately—percentages for five passages ranged from 38 percent to 50 percent correct. In mathematics the lowest percentage correct on a passage was 24 and the highest was 71. Science rankings ranged from 4 percent to 58 percent correct. Of particular interest, however, were the language arts rankings. Subjects were generally unable to rank those passages correctly; passage 1-7 percent, 2-7 percent, 3-7 percent, 4-35 percent, and 5-22 percent.

Chi Square values were computed in order to test the associations between the following categories and accuracy of rankings:

1. Employment category
2. Grade levels of students taught
3. Administrative tasks (if appropriate)
4. Number of reading/language arts courses taken
5. Classroom organization

Significant associations ( $p < .05$ ) were found in seven out of twenty passages between accuracy in ranking and employment category. In only one instance was there a significant association between ranking and grade level of students taught. Five out of twenty associations were significant between administrative responsibility and ability to rank correctly. Number of reading and language arts courses taken was not significant to ranking, nor was the Materials for Reading course. Classroom organization was significant in seven out of twenty cases.

Classroom teachers were better able to rank passages than were those of other employment categories in the study. Their percentages correct were consistently higher than were those of administrators, supervisors and college students. Grade level taught was generally not a determinant of ability to correctly order passages. Elementary and middle school categories were analyzed combined and separately without significant results, and percentages correct were approximately equal.

Administrative and supervisory levels were studied with respect to subjects' abilities to rank passages. For the most part, those responsible for elementary and middle schools did better by percentage than did those responsible for system-

wide or high school levels. Number of reading/language arts courses taken by subjects was not a determinant of ability to rank, although 32 of those in the study had had more than seven courses. Eighty-seven had completed three to five courses.

Type of classroom organization was significant in that those responsible for self-contained classrooms in all cases scored higher, by percentage, than did those responsible for departmentalized or special classes. Those in the study who had completed a materials for reading course did approximately as well as did those who had not had such a course.

### DISCUSSION

While it is hazardous to generalize results to the entire population of school personnel, the authors believe that those examined are representative of school personnel in the region East Tennessee State University serves. Their training, years taught, and classroom organizations closely approximate regional data. In contrast to a study by Palmatier and Strader (1979) in which high school teachers were generally unable to rank passages, elementary and middle school teachers were able to do so with moderate success. It is interesting to note, however, that they were for the most part unable to rank language arts passages, despite many having had courses which carry readability components. It may well be that instruction in readability calculation does not carry over to the sort of "holistic" eyeball determination of relative difficulty involved in the study.

On the basis of these results, a component will be added to a control group of students in language arts block of courses. Instructors will attempt to teach students how to look for various things which raise readability levels. A follow-up study is planned to determine whether or not this training increases ability to judge relative difficulty of language arts material.

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