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Carolyn R. Fehrenbach

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Brief Report:

Gifted/Average Readers: Do They Use The Same Reading Strategies?

Carolyn R. Fehrenbach
Pittsburg (KS) State University

Abstract

The purpose of this research was to compare the reading processing strategies of gifted readers with those of average readers. A random sampling, stratified by sex and grade level, was taken from a population of 300 eighth-, tenth-, and twelfth-grade students. Subjects included 30 females and 30 males. Fourteen reading processing strategies were identified using think-aloud protocols as a measuring instrument. The strategies used significantly more by gifted than by average readers were rereading, inferring, analyzing structure, watching or predicting, evaluating, and relating to content area. The strategies used significantly more by average than by gifted readers were word pronouncing concern and summarizing inaccurately.

Although it is recognized that gifted students differ from average students in cognitive processes, only since the 1980s have studies of reading processes been extended to the gifted population (Anderson, 1986, 1983; Carr, 1984; Jackson & Cleland, 1982; Mitchell & Irwin, 1985; Wingenbach, 1984, 1982). Advances in cognitive psychology, linguistics, psycholinguistics, and language comprehension studies have offered new insights into the reading comprehension process. Recently, think-aloud protocol analysis has come into use in the study of reading comprehension (Wingenbach, 1984). Think-aloud analyses have been adapted from the procedure used by cognitive psychologists Newell and Simon (1972) to analyze problem-solving behavior. Wingenbach analyzed the textual reading processes of 20 gifted readers—5 top readers at each of four grade levels. No comparisons were made with other subgroups.

The investigation reported here employed think-aloud protocol analysis to identify reading processing strategies of gifted and average readers. This was part of a more extensive study of reading processing strategies of gifted and average students as they relate to grade level, text difficulty, and field articulation (Fehrenbach, 1987).

Method

Subjects

Fourteen middle and secondary schools from nine towns in a midwestern state were involved in the study. Thirty gifted and 30 average readers were selected as subjects from a population of 300 eighth-, tenth-, and twelfth-grade students. A random sampling procedure, stratified by sex and grade level, was used. There were 30 females and 30 males.

Students designated "gifted" in this study were identified by the state criteria for this classification: a score of 130 or more on the Wechsler Intelligence Scale for Children—Revised (WISC-R) Full Scale or Verbal; a rank of not less than the 95th percentile on national norms on two or more of the mathematics, language arts (including reading), science, and social science sections of the Iowa Test of Basic Skills (ITBS). They were also required to score at or above the 95th percentile on the reading comprehension subtest of the ITBS. The ITBS is frequently used by reading specialists in classifying good and poor readers. Although all gifted people may not be high ability readers, all of them in this study were. All of the subjects designated "gifted" were in special education (Gifted).

Average readers were identified by a rank of 40th to 60th percentile, inclusive, on the ITBS—Comprehension Subtest. Classification was further constrained by teacher verification that the score was truly representative of the student's reading level. None of the average readers had been identified as gifted by the state or local school districts.

Materials

Reading Passages

Text materials consisted of five narrative passages of approximately 180 words each selected from the Burns and Roe *Informal Reading Inventory* (Burns & Roe, 1985).

Think-aloud Protocols

Think-aloud protocols are subject verbalizations during reading which include reading aloud and verbalizing thoughts during reading. The tape-recorded protocol becomes a record of a subject's ongoing behavior and gives the investigator a picture of how the reader interacts with the text. It offers the most direct approach for gathering information and does not impose the investigator's preconceptions of reading strategies.

All of the think-aloud protocols were recorded by one investigator. Two raters read each of the 120 protocols and independently assigned the 822 responses to strategy classifications. With 99.4% agreement, responses were assigned to 14 classifications.

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Procedure

Data were collected from 60 students over a span of 4 weeks. Students were met individually in two 1-hour sessions. Each subject was read an explanation of the study and then read instructions adapted from Bryan (1986) for the think-aloud procedure. The explanation was kept brief.

In the first session, students read aloud an easy narrative passage. They were instructed to verbalize their thoughts as often as they chose and at least at points indicated by asterisks after every few sentences. Any student who did not stop to comment at least at an asterisk was asked, "What are you thinking?" In the second session, the same procedure was followed for students reading a difficult passage.

Protocols from easy and difficult passages were analyzed later and found to fall into 14 classifications:

Rereading: Subjects return to the text to read again silently or orally. Subjects may state they are rereading.

Inferring: Subjects interpret the text based on information contained within the text.

Summarizing accurately: Subjects give correct information as they summarize the text.

Using visual imagery: Subjects visualize the meaning of the text. Subjects may state that they "see" or "picture" the event discussed in the text.

Word pronouncing concern: Subjects express concern about pronouncing a word correctly or attempt to pronounce a word two or more times.

Analyzing structure: Subjects comment upon the author's arrangement of the story or analyze its content.

Identifying personally: Subjects identify personally with characters in the story or relate information to personal experience.

Watching or predicting: Subjects anticipate happenings by watching for specific information or predict what will happen next.

Summarizing inaccurately: Subjects give partially or totally wrong information as they summarize the text.

Evaluating: Subjects make a judgmental statement about information in the text.

Relating to content area: Subjects add information related to text based on content area knowledge or personal knowledge. Comments relating to the content area English, however, are classified as "analyzing structure."

Failing to understand story: Subjects state failure to understand the meaning of a clause, a sentence, or the story.

Going to another source: Subjects ask for help in pronouncing a word or state they would use a dictionary to "look up a word."

Failing to understand a word: Subjects state failure to understand the meaning of a word.

Results

Multivariate Analysis of Variance

Differences between frequencies of strategies used by gifted and average readers were analyzed using a 2 (reader ability level) x 3 (grade level) x 2 (text level) multivariate analysis of variance with repeated measures. Dependent variables, as measured by think-aloud protocols, consisted of the types and frequencies of text-processing strategies. Post hoc analyses were performed using Keppel's Tukey Procedure on variables which were determined significant by the analysis of variance.

Analysis of variance indicated a significant effect for ability level on think-aloud protocol measures of frequency of strategy use (Table 1). Gifted readers used six strategies significantly more than average readers: rereading ($F = 27.08$, $p = .020$); inferring ($F = 7.44$), $p < .009$; analyzing structure ($F = 6.40$, $p < .014$); watching or predicting ($F = 6.87$, $p < .011$); evaluating ($F = 6.81$, $p < .012$); relating to content area ($F = 4.69$, $p < .035$). Average readers used two strategies significantly more than gifted readers: word pronouncing concern ($F = 13.10$, $p < .01$); summarizing inaccurately ($F = 11.02$, $p < .002$).

Table 1

Frequency of Use of Reading Processing Strategies

	Gifted	Average
1. Rereading	118*	61
2. Inferring	92**	37
3. Summarizing accurately	47	47
4. Using visual imagery	41	21
5. Word pronouncing concern	5	53**
6. Analyzing structure	42*	10
7. Identifying personally	22	25
8. Watching or predicting	37*	10
9. Summarizing inaccurately	8	37**
10. Evaluating	28**	8
11. Relating to content area	27*	1
12. Failing to understand story	8	13
13. Going to another source	3	10
14. Failing to understand a word	5	6
Total	359	463

** $p < .05$ * $p < .01$

Discussion

Both gifted and average readers used all of the 14 identified reading processing strategies. All of the 6 strategies used significantly more by gifted readers could be called "effective" strategies. The 2 strategies used significantly more by average readers could be called "ineffective." There were in-

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dividual differences within groups. For example, only 1 of the 30 average readers related the passage read to content area knowledge (Table 1). Another average reader used just 1 strategy, "identifying personally," to the exclusion of all others and used this strategy four times while reading one passage.

These findings lead us to ask if average readers could be taught to abandon ineffective strategies and to use at least some of those strategies gifted readers so frequently employ. This is not to suggest that we try to teach average students to be gifted. But perhaps they could learn to use their abilities more efficiently. Two studies indicate that it is possible to teach techniques for compensating for the ineffective strategy "word pronouncing concern." Wittrock, Marks, and Doctorow (1975) and Marks, Doctorow, and Wittrock (1974) have reported success in teaching various techniques for dealing with unfamiliar vocabulary words.

The results of the present study suggest developing and testing teaching models of the effective strategies that gifted readers use significantly more than average readers. Pre and posttests on comprehension could assess the effectiveness of the models as they apply to average readers.

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