

How Children's Interests Affect Their Critical Thinking Ability

**LESTER E. BROWN
ELLEN COOK**

The different reading interests of boys and girls can affect the outcome of critical thinking tests. Likewise, the sexual orientation of the material does influence performance.

RECENT educational literature has accentuated the awareness of the potential impact the type of material given a child may have on his or her ability to read. A question suggested by this research is: Are there differences in the reading interests of boys and girls which can affect the results of critical thinking tests?

Presumably a boy will be more alert when he reads materials that appeal to him and consequently will score higher when tested on such material. The same might be true of girls. If this assumption is true, then allowance should be made in providing appropriate materials on a sexual basis if one of the school's main goals is the development of critical thinking.

Advisory Committee for the Research Reports: John M. Kean, Professor of Education, University of Wisconsin, Madison; and James Raths, Chairman, Department of Elementary Education, University of Illinois, Urbana.

According to a study conducted by Norvell a little over a decade ago, the reading interests of children do vary. He surveyed 24,000 children in grades 3 to 6 and found that boys preferred adventurous action, physical struggle, human characters, heroism, and patriotism. The boys disliked romantic love, sentiment, and girls or women as leading characters.

The girls were interested in lively adventure, home and school life, human characters, domestic animals and pets, romantic love, sentiment, and mystery. The girls disliked violent action, boys and girls younger than the reader (except babies), and fierce animals.

Norvell's study also revealed that sex differences in children's interests appear early. Further, the study indicated that although girls enjoy many boys' books, boys rejected almost all girls' books.¹

¹ Nila Banton Smith. *Reading Instruction for Today's Children*. Englewood Cliffs, New Jersey: Prentice-Hall, Inc., 1963. pp. 409-10.

A study conducted by Groff at a later date seemed to confirm Norvell's identification of reading interests of children. Groff also was interested in determining whether these interests affected scores on tests of critical reading ability.

He found that there was no significant difference between boys and girls in their ability to recall facts about any type of material to which they were subjected. However, when the children were requested to engage in selected critical thinking processes in response to these stories in which they could recall facts, a significant difference occurred between boys and girls on the basis of their interests.²

The one main limitation of Groff's study was that he did not delineate the critical thinking skills being measured in his study.

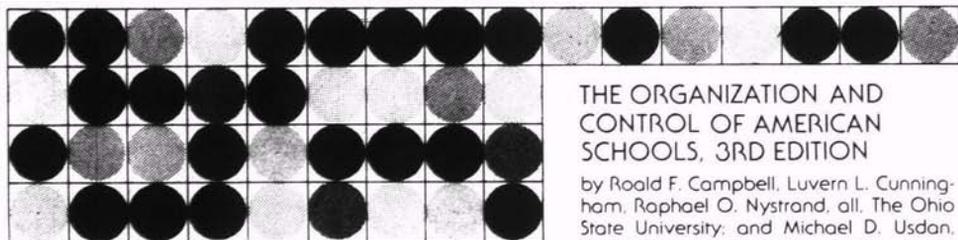
² Patrick J. Groff. "Children's Attitudes Toward Reading and Their Critical Reading Abilities in Four Content-Type Materials." In: Martha L. King et al. *Critical Reading*. Philadelphia: J. B. Lippincott Co., 1967. pp. 370-75.

His treatment of critical thinking as a global behavior has been criticized by several experts in this field. The purpose of this study was to determine whether or not the interests suggested by Norvell and confirmed by Groff affected the performance of children on materials designed to measure specific critical thinking skills.

Definition of Skills

1. *Relevant versus nonrelevant.* This particular skill is defined as the ability "to analyze social situations and problems adequately . . . distinguishing between those facts which have a bearing upon the solution and those that do not." One should ask, "Does this statement define, illustrate, or bear upon the problem?"³

³ Lester E. Brown and Marilyn Hallman. *A Teacher's Guide to Developing Critical Thinking in the Elementary School*. Downers Grove, Illinois: Institute for Educational Research, 1970. p. 4.



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2. *Drawing inferences.* This skill can be defined as going beyond the actual spoken or written statements, and identifying the unstated implications or inferences.⁴

Validity of the Instrument

The type of validity established for this study was content validity. One important factor to be considered was the control of vocabulary. The material was derived from a basal, second grade reader which was used throughout the cooperating school district. It was ascertained that the students had previously read the stories. Therefore, they were quite familiar with the vocabulary and the basic facts. To further negate the effect of reading ability as a significant factor on the critical thinking scores, the tests were read orally to the children while they read them silently.

Secondly, the tests were submitted to a specialist in critical thinking. This specialist reported that the tests did measure the skills of distinguishing between relevant and nonrelevant and drawing inferences. After determining their validity, these tests were administered.

Procedures

Measurements. The subjects of this study were 68 second grade children (34 girls and 34 boys). These second graders were given test questions in two areas of critical thinking: (a) distinguishing relevant and nonrelevant material, and (b) drawing inferences. Both of these critical thinking

⁴ *Ibid.*, p. 28.

Source of variation	Sums of squares	Degrees of freedom	Mean square	F	P
Total	173.6176	135			
<i>Between subjects</i>	93.1176	67			
Sex	1.4411	1	1.4411	1.0375	N.S.
Error	91.6765	66	1.3890		
<i>Within subjects</i>	80.5000	68			
Tests	30.1176	1	30.1176	41.8998	(.01)
Tests × sex	2.9413	1	2.9413	4.0920	(.05)
Error	47.4411	66	.7188		

Table 1. Relevant Versus Nonrelevant

Source of variation	Sums of squares	Degrees of freedom	Mean square	F	P
Total	906.9926	135			
<i>Between subjects</i>	75.9926	67			
Sex	.0073	1	.0073	.0063	N.S.
Error	75.9853	66	1.1513		
<i>Within subjects</i>	831.000	68			
Tests	.8896	1	.8896	.0754	N.S.
Tests × sex	51.2427	1	51.2427	4.3422	(.05)
Error	778.8677	66	11.8010		

Table 2. Drawing Inferences

skills were tested with questions from each story.

Analysis of the data. The statistical procedure used in this study was a Two-Factor Mixed Design: Repeated Measures on One Factor. The subjects were compared in general ability and they were also compared to determine whether boys performed better on boy-interest questions and girls better on girl-interest questions.

Results

The inferences that can be drawn from the collected data are as follows:

1. There was no significant difference between boys and girls as far as the ability to engage in critical thinking as measured by the test of relevancy versus nonrelevancy. The finding of no significant difference in ability to do critical thinking between boys and girls is congruent with the literature in that area. These findings indicate that the null hypothesis that there is no significant difference between the ability of second graders to perform selected critical thinking skills as measured by the test of relevancy versus nonrelevancy must be accepted.

2. The significant differences in the

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tests seem to indicate that the material of the tests actually did vary as far as sexual orientation was concerned. This finding is congruent with those of Groff even though he did not delineate the skills he attempted to measure.

3. No significant difference was found between boys and girls as far as ability to engage in critical thinking as measured by the test of drawing inferences. Therefore, the null hypothesis was accepted; that is, there is no significant difference between the ability of second graders to perform selected critical thinking skills as measured by the test of drawing inferences.

4. The significant difference found in the area of tests x sex leads to the rejection of the second null hypothesis; there is no significant difference between the ability of children to perform selected critical thinking skills regardless of the sexual orientation of the material. The main finding of this study rests on the rejection of the null hypotheses and therefore indicates a significant difference between performance and the sexual orientation of the material.

Conclusions

1. The difference in reading interests of boys and girls can represent an intervening variable which affects the outcome of critical thinking tests given to a group including both boys and girls. Therefore, teachers need to be cognizant of this relationship between interest and performance when teaching or testing for critical thinking.

2. The number of subjects was limited. Therefore, it would perhaps be valuable to have this study replicated with a larger group and also multigrade level children to determine at what point the sexual orientation of the material does influence performance. □

—LESTER E. BROWN, Assistant Professor, Illinois State University, Normal; ELLEN COOK, Social Studies Department Chairman, Carrollton-Farmers Branch Independent School District, Texas.

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