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AUTHOR Crowell, Doris C.; Au, Kathryn
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ABSTRACT

Written responses to comprehension exercises related to basal reading materials were collected from 23 first graders and rated on a scale extending from no comprehension to application or extension of information beyond the story. Results indicated that most first graders in the group were able to answer detail questions but were unable to integrate and extend ideas from a story. Even the best students in the class only occasionally answered correctly at the more difficult levels. Results are interpreted as indicating that the development of reading comprehension cannot be separated from the development of more general thinking and problem-solving skills. (Author/AA)

The Development of Reading Comprehension in First Grade Children

Doris C. Crowell

Kathryn Au

Kamehameha Early Education Program

Doris C. Crowell

KEEP

1850 Makuakane St.

Honolulu, Hawaii 96817

(808) 842-8301

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CROWELL, DORIS C., and AU, KATHRYN The Kamehameha Schools

The Development of Reading Comprehension in First Grade Children

Assumes a developmental sequence for auditory and reading comprehension. Written responses to comprehension exercises related to basal reading materials were collected from 23 first graders and rated on a scale extending from no comprehension, to understanding of details, then ideas or sequence, then integration of ideas within the story to application or extension of information beyond the story. Interobserver reliability using percentage of agreement among three raters was established at 80% or above for all five levels of comprehension in both questions and children's answers.

Results showed that while most first graders in our group were able to answer detail questions quite well, and idea questions perhaps half of the time, they were usually unable to integrate and extend ideas from a story. Even the best students in the class only occasionally answered correctly at the highest levels.

Within a larger framework it is clear that the development of reading comprehension cannot be separated from the development of thinking and problem-solving skills in general. Reading is one arena, and usually the most important one, in which this training should take place.

The Development of Reading Comprehension in First Grade Children

Doris C. Crowell

Kathryn Au

Kamehameha Early Education Program

A study designed to increase reading comprehension skills in the first grade at the Kamehameha Early Education Program (KEEP) assumed a developmental sequence in the acquisition of understanding of connected text. This sequence is reflected in both auditory comprehension and reading comprehension. Children move along a continuum from 1) no comprehension, 2) attention to details, 3) sequence or combination of details, to 4) integration of ideas within the story, and 5) to the highest level of comprehension: application of information from the story. This continuum is readily converted to a scale used to categorize children's responses to comprehension exercises.

At the lowest point (level five) in the scale of comprehension development, the child gives no indication that he has understood the selection read. He may give an incorrect answer to a question or make no response at all.

At the next point (level four), the child indicates that he has grasped details from the story. He is able to name characters and at least one event in a story, and he can answer yes-no questions on details or single incidents from the story.

One step higher on the scale (level three) the child understands

ideas in the story. He can recall interrelationships among details and a sequence of events. He can also make interpretations and inferences, although he cannot elaborate or explain them.

Still higher on the scale (level two) the child can integrate the various elements in the story into a structure not necessarily given by the story itself. He can make interpretations and inferences and back them up with reasons. He can summarize a story, give the main idea, and use facts within a story to predict logical consequences and explain his prediction. In all of this, he still operates within the context of the story.

Finally, at level one, the child shows that his understanding of the story extends beyond what is actually given in the text. He can relate the information in the story to other stories or events and can change his ideas on the basis of new information. He shows imagination or creativity and may go in a new direction, using the story information as his starting point.

Points within the scale are compatible in concept with models of comprehension developed by Frederiksen (1972) and Frase (1972). The common assumption of these models and our own is that one begins at the level of some elemental unit, and that units are then combined and recombined into increasingly complex networks for better understanding.

Procedure: Twenty-three students from the first grade class at KEEP participated in the study. Three children from the class were not included because they were candidates for special education and required special instructional services. Most of the children were from low-income urban families. The reading achievement of children from this population has been characterized by significantly lower scores in comprehension than in word recognition skills. These children were assigned to one of three homogeneous reading groups of approximately equal size. Each group received approximately 20 minutes of reading instruction daily. The basal program for all was the Ginn 360, supplemented with materials from the Holt Basic Reading series and Houghton-Mifflin. During the course of most of their reading lessons or during the work periods that followed immediately, children wrote responses to one or more questions based on the seleccion they had read. These written responses constituted the data for the study.

Each question was scored according to the highest level of response it demanded. Level of answer was based on the accuracy and adequacy of the child's response to the question. In level of functioning, the child was given credit for showing knowledge of the selection read, regardless of the question.

Accurate scoring of questions and responses was not possible without careful examination of the stories themselves. The exact wording of the story often had to be considered. If the wording showed that the answer had to be inferred, the question was given

a higher rating.

Interobserver reliability using percentage of agreement among three raters was established at 80% or above for all five levels of comprehension, for level of question, level of answer, and level of functioning.

Results and Discussion: When the results for all three reading groups are considered together, the greatest number of questions, 56.14%, were asked at level 4. This was followed by 24.58% at level 3, 11.29% at level 2, and 7.97% at level 1. Since level 4 questions required the least effort to answer, as many as six could be asked in a given lesson, whereas only one higher level question could usually be asked because of the amount of thought and writing required. While the percentages are based on the number of questions asked, they do not necessarily give an accurate indication of the amount of time devoted to questions at any level.

In Table 1, breakdown by reading groups shows sharp differences in the types of questions assigned.

Table 1

Percent of Questions Asked at Each Level

	1	2	3	4
Group 1	6.06%	18.18%	36.36%	39.39%
Group 2	11.68%	5.19%	18.18%	64.93%
Group 3	8.47%	0.0	0.0	91.52%

Because questions were made up and assigned by the classroom teacher, the distribution probably reflects her judgment of the level of questions children in each group were able to answer, given the selection assigned in their texts.

In examining the results for level of answer, it seems that the three groups were able to answer level 4 questions with the same degree of accuracy, responding correctly about 75% of the time. At level 3, Groups 1 and 2 continued to perform well, with 67..70% of the responses by Group 1 being correct, and 56.70% of the responses by Group 2. While the performance of the two groups is comparable up to this level, there is a marked difference at level 2. The performance of Group 1 dropped to 12% and 1.1% accuracy at the 2 and 1 levels, while children in Group 2 generally were unable to respond correctly. Group 3 showed the same pattern as Group 2, at least at level 1.

Table 2

Percentage of Correct Answers

for All Levels of Question by Reading Groups

	1	2	3	4
Group 1	1.1%	12.0%	68.0%	76.0%
Group 2	0.02%	0.0	57.0%	77.0%
Group 3	0.0	---	---	76.0%

These results show that while most first graders at KEEP are able to answer detail questions quite well, and idea questions perhaps half of the time, they are usually unable to ir -erate and

extend ideas from a story. Even the best students in the class only occasionally answer correctly at the highest levels. It apparently is a great deal more difficult to answer at level 2 than at level 3. Perhaps questions are basically either of a higher or lower order, that is, they either require abstract thinking or simple recall of concrete information. Levels 1 and 2 are subcategories of higher order questions while levels 3 and 4 represent lower order questions.

When questions of various levels are asked, the results show that level of functioning is somewhat higher than level of answer, but substantially so only at level 4. Differences between level of answer and level of functioning might be due to the child's inability to understand the exact meaning of the question. At level 4, for example, the child may understand that some detail is called for but not precisely which one. Because this discrepancy is not as evident at level 3 and above, it cannot be determined whether failure to respond correctly is due to not understanding the question, the difficulty of the task, or some other factor.

The level of functioning of Groups 1, 2, and 3 was compared at the various question levels, as shown in Table 3. Group 1 was found to make more responses at the level of the question and fewer responses at levels lower than that of the question. For example, for level 3 questions, 69.06% of Group 1's answers are that same level, while only 15.16% are at the 4 and 15.74% at the 5 levels. With Group 2, percentage of answers at level 3 are lower, (56.79%), but higher at levels 4 and 5, 20.61% and 22.68% respectively.

Results for level of functioning can also be considered apart from level of question although level of question does impose many constraints.

Clear differences between groups were found. In Group 1 the majority of responses were at level 4, 47.30%, with 34.60% at level 3, 7.0% at level 1 and 2.80% at level 2. Basically, the children in this group were moving from level 4 to level 3 functioning, with a few occasionally able to perform at higher levels. With Group 2 the picture is quite different. Here 70.50% of the responses are at level 4, with only 13.72% at level 3, and fewer than 1% of the responses at levels 1 and 2. These children were largely performing at level 4 and may sometimes answer at level 3, but they do not make higher level responses. Group 3 performed only at level 4. The percentage of level 5 responses is nearly the same for all groups, between 14% and 16%, a relatively constant and seemingly high percentage for totally inappropriate responses.

Table 3

Percentage of Responses at Each Level of Functioning to Specified Level of Questions

Level of Functioning		Level of Question 1	2	3	4
1	G1	11.11	0.0	0.0	0.0
	G2	1.92	0.0	0.0	0.0
	G3	0.0	0.0	0.0	0.0
2	G1	9.52	11.34	0.0	0.0
	G2	1.92	0.0	0.0	0.0
	G3	2.94	0.0	0.0	0.0
3	G1	44.44	35.05	69.06	0.0
	G2	23.07	50.0	56.70	0.0
	G3	0.0	0.0	0.0	0.0
4	G1	20.63	31.95	15.16	90.02
	G2	71.15	50.0	20.61	83.33
	G3	91.17	0.0	0.0	83.65
5	G1	14.28	21.64	15.74	9.97
	G2	1.92	0.0	22.68	16.66
	G3	2.94	0.0	0.0	16.34

Within a larger framework, it is clear that the development of reading comprehension cannot be separated from the development of thinking and problem-solving skills in general. With many disadvantaged children, for whom continued formal training in these skills is desirable throughout the primary school years, reading should be viewed as one arena, and usually the most important one, in which this training should take place.