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ABSTRACT

Results from the first and second rounds of the reading assessment conducted by the National Assessment of Educational Progress are discussed and compared, with conclusions based on comments by a panel of six reading specialists. Changes in reading ability between the 1970-1971 and 1974-1975 school years are dependent on the age of the pupils and the type of reading required. For nine-year-olds, improvement was recorded in all reading skills, but was most noteworthy in reference skills. Black nine-year-olds improved even more dramatically than did nine-year-olds as a whole, which the panel suggested might be attributed to successful intervention programs in the primary grades. Reading ability at ages 13 and 17 changed little. Both ages improved slightly in literal comprehension but declined in inferential comprehension. Students of all ages demonstrated little difficulty in comprehending literal, straight-forward written material, but comprehension dropped off quickly as soon as the tasks became more difficult. Girls read better than did boys, at all age levels. (Author/AA)

NATIONAL ASSESSMENT OF EDUCATIONAL PROGRESS

READING IN AMERICA:

A Perspective on Two Assessments

Reading Report No. 06-R-01

October 1976

NATIONAL ASSESSMENT OF EDUCATIONAL PROGRESS
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FOREWORD

The National Assessment of Educational Progress (NAEP) is an information-gathering project that surveys the educational attainments of 9-year-olds, 13-year-olds, 17-year-olds and adults (ages 26-35) in 10 learning areas: art, career and occupational development, citizenship, literature, mathematics, music, reading, science, social studies and writing. Different learning areas are assessed every year, and all areas are periodically reassessed in order to measure change in educational achievement.

Each assessment is the product of several years' work by a great many educators, scholars and lay persons from all over the country. Initially, these people design objectives for each area, proposing specific goals that they feel Americans should be achieving in the course of their education After careful reviews, these objectives are then given to exercise (item) writers, whose task it is to create measurement tools appropriate to the objectives.

When the exercises have passed extensive reviews by subject-matter specialists and measurement experts, they are administered to probability samples from various age levels. The people who comprise these samples are chosen in such a way that the results of their assessment can be generalized for the entire national population. That is, on the basis of the performance of about 2,500 9-year-olds on a given exercise, we can generalize about the probable performance of all 9-year-olds in the nation.

The National Assessment also publishes a general information yearbook that describes all major aspects of the Assessment's operation. The reader who desires more detailed information about how NAEP defines its groups, prepares and scores its exercises, designs its samples and analyzes and reports its results should consult the *General Information Yearbook, Report 03/04-GIY.*

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ABSTRACT

The reading ability of American students has changed between the 1970-71 and 1974-75 school years. But the change is neither entirely positive nor entirely negative. Instead, the changes are highly dependent on the age of the students and the type of reading required.

- Nine-year-olds during the second assessment read significantly better than did 9-year-olds four years earlier. The improvement was recorded in all reading skills, but was most noteworthy in reference skills.

- Black 9-year-olds improved even more dramatically than did 9-year-olds as a whole. Reading specialists suggested that both increases might be attributed to successful reading intervention programs in the primary grades.

- The reading ability of 13- and 17-year-olds changed little over the four year period. Both ages recorded a slight improvement in literal comprehension, but slight decline in inferential comprehension. Thirteen-year-olds declined in their performance of reference skill items, while 17-year-olds improved on the reference skill items.

- Students of all ages demonstrate little difficulty in comprehending basic, literal, straightforward written material. But comprehension drops off quickly as soon as the reading tasks become more difficult.

- Girls continue to read better than boys at all age levels.

This report examines the implications of these and other findings of two national reading assessments.

CHAPTER 1

INTRODUCTION

Years after Marshall McLuhan announced the demise of the print culture and heralded the beginning of electronic culture, after television and films have replaced books and newspapers for many people, after high schools and colleges have substituted direct, individual experience for previous literary experiences, reading still remains an important requirement for many jobs in our society and, perhaps more important, for the attainment of many of our personal goals.

During recent years, the American people have expressed a renewed interest in the teaching of basic language skills. Books and headlines about students' inability to read or write, as well as alarming declines in scores on, for example, the Scholastic Aptitude Test (SAT), have caused widespread concern. With increasing frequency primary, intermediate, secondary and even college teachers are initiating programs to place more emphasis on reading.

This report contributes to the national discussion of reading achievement by offering data from two nationwide surveys of reading abilities, one conducted during the 1970-71 school year and one conducted during the 1974-75 school year.

The results of the two reading assessments were examined and interpreted by a panel of six reading specialists: Roger Farr, William Blanton, Carita Chapman, Diane Lapp, Wayne Otto and Robert Tierney.[1] National Assess-

[1] Roger Farr is associate dean for research and evaluation at Indiana University's School of Education as well as coeditor of *The Reading Research Quarterly* and a member of the board of directors of the International Reading Association. His many publications include *Measurement and Evaluation of Reading, What Can Be Measured, Measurement of Reading Achievement* and Forms E and F of the *Iowa Silent Reading Tests.*

William Blanton is both acting chairperson of the reading department of the College of Learning and Human Development and director of the Center for Learning, Evaluation Assessment and Research on Reading, both at Appalachian State University. He has acted as associate editor of the *Journal of Reading Behavior* and contributing editor for both *Reading Teacher* and *Reading World.* In addition, Dr.

ment participants in the panel were Frank Rivas and Susan Oldefendt. The panel began by examining the results of individual reading items, and it then proceeded to study the results of items grouped into the following categories: Literal Comprehension, Inferential Comprehension and Reference Skills.

The panel discussed each group of items by asking the following questions:

1. *How can this category be defined?*
2. *Do the skills measured in this category represent a priority objective in most reading programs?*
3. *How extensively would we expect these skills to have been developed? What change would be expected over the last four years? What differences would we expect for the various subpopulations?*
4. *How extensively have the skills in this category actually been developed?*

Subsequent discussions resulted from contrasting the answers to these four questions. By contrasting expectations with the actual results, the panel determined whether the results were unexpected or confirmed prior suppositions. By contrasting the priority of the skills with the results, the panel determined whether the results were pleasing or disappointing. By examining the results in great detail, the panel also attempted to answer the following question:

5. *What particular types of reading items seem to be especially easy or difficult for most individuals?*

Finally the group asked the most important question:

6. *What are the implications of the results for reading teachers in terms of curriculum, instructional methods and priorities?*

This report summarizes the reactions of the panel. In general, the panel felt that the assessment had significantly contributed to their understanding of the effectiveness of reading instruction. They felt that the data had implications not only for the reading teacher, but also for those involved in teacher training, curriculum development, textbook publishing, school administration and legislation pertaining to education.

They specifically noted the following strengths of the reading assessment:

1. The large national sample allows the

Blanton is coauthor of the Ginn 720 *Reading Management System* and of *POWER Reading I, II, and III.*

Carita A. Chapman has held varied positions in the Chicago Public Schools. Prior to her present position as director of the Bureau of Reading Improvement, Dr. Chapman was citywide consultant for the Centers for Learning Disabilities (reading clinics) for five years. A recipient of the 1973 International Reading Association Outstanding Dissertation Award, Dr. Chapman is presently a member of the Linguistic and Reading Committee and the Reading Research Seminar Advisory Council, both of the International Reading Association.

Diane Lapp is an associate professor of reading and language and curriculum at Boston University and is a member of the Teacher Preparation Committee of the International Reading Association. Among her publications are *The Use of Behavioral Objectives in Education, Teaching and Learning: Philosophical, Psychological, Curriculum Applications* and the Ginn 720 *Reading Management System.*

Wayne Otto is currently professor and chairman of the Department of Curriculum and Instruction as well as principal investigator and associate director of the Wisconsin Research and Development Center for Cognitive Learning, both at the University of Wisconsin at Madison. He is also the executive editor of *Journal of Educational Research*, a member of the Board of Directors of the National Reading Conference and chairman of the Studies and Research Committee of the International Reading Association. He has coauthored *Corrective and Remedial Teaching* (first and second editions), *Remedial Teaching, Teaching Adults to Read, Administering the School Reading Program, Focused Reading Instruction, Objective-Based Reading: Rationale and Guidelines, Wisconsin Design for Reading Skill Development, Merrill Linguistic Reading Program, Speedway — The Action Way to Speed Read* and *Reading Problems in Perspective* (on press).

Robert J. Tierney is presently assistant professor of reading at the University of Arizona. He has authored a number of papers and articles on reading, psychometrics and comparative education.

assessment to detect relatively small changes over a four year period.

2. The assessment examined a wide variety of reading skills by using many different types of items. Many of the items, for example, measure reading skills that are used outside the classroom, and some require open-ended rather than multiple-choice responses.

3. The assessment staff encourages cautious interpretations. For example, they insist that results for individual items be examined before results of an entire category, thus preventing misinterpretation of the category results.

4. Finally, they commended the overall design and especially the administration procedure used for assessment items.

The panel also emphasized that while the data ended to support some hypotheses and re-ute others, good research often raises more questions than it answers. The implications which they identified are to be interpreted not as statements of fact, but as hypotheses which need further testing. The reading specialists enumerated the following caveats for interpreting the results:

1. Each item represents a single, specific skill from a broad array of related skills. It is tempting but hazardous to generalize from one or two discreet bits of information to more sweeping conclusions. Although certain patterns of results may appear to emerge, the validity of any generalization must be considered in light of the number of related skills assessed and the extent to which they are representative of the generalized array of skills. Thus, attempts to generalize should be undertaken with the greatest caution.

2. Assessment data are descriptive: they do not explain why the phenomena exist. Inferences about causality are highly subjective and tentative, and should only be interpreted as the speculations of the panel.

3. The reading items have not been fully validated as actual measures of reading performance. That is, performance on these items has not been correlated with performance on other standardized instruments or with other criteria of reading skills.

4. Categorizing the reading items into three broad categories is a subjective procedure that drew some disagreement among the reading specialists.

5. Some reading skills, especially higher level reading skills like critical reading, were not assessed. Other categories of skills, though represented, were inadequately sampled.

6. Some of the items were deficient in discriminating power. On some exercises, for example, the readability levels proved to be inappropriate for the age groups to which the items were administered.

The panel concluded that the Assessment data represent an important step in a continuing effort to secure objective data for educational decision making. These data will be augmented by a third reading assessment and, hopefully, by further research.

This report presents highlights of the reading specialists' discussion for each category of reading items. The views expressed in the summary are only those of the panelists; readers are encouraged to study the results for themselves to see whether they agree with the conclusions of this panel.

CHAPTER 2

LITERAL COMPREHENSION

The assessment tested two broad categories of reading comprehension. The first category, literal comprehension, is defined as locating or remembering the exact meaning of a word, sentence or paragraph. Most literal comprehension items ask students to recognize or identify a single fact, incident or idea presented in the reading material. Literal comprehension items required students to utilize the conventions of written language as aids to comprehension and to demonstrate flexibility in adapting their rate of reading to suit the purpose and the nature of the material. Some passages required readers to scan in order to locate specific information; others required skimming for an overall impression or reading for maximum comprehension.

The following item, which measures the ability to remember a detail from a tall tale, yielded results that demonstrate the typical improvement of 9-year-olds over the four year period:

Read the story and answer the question on the next page.

My name is Gregory Gotrocks, and I live in Peoria, Illinois. I sell tractors. In June 1952, the Gotrocks Tractor Company (my dad happens to be the president) sent me to Nepal-Tibet to check on our sales office there.

Business was slow and I had a lot of time to kill. I decided to see Mt. Everest so that I could tell everyone back in Peoria that I had seen it.

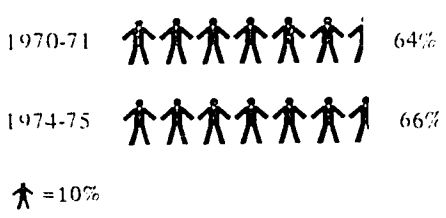
It was beautiful. I was spellbound. I simply had to see what the view looked like from the top. So I started up the northwest slope. Everyone knows that this is the best route to take. It took me three long hours to reach the top, but the climb was well worth it.

Performance on the functional literacy items, items that involve activities like reading a telephone bill or following the directions on a container of cat food, is so high that it does challenge much of what has been said about reading skills during the last four years. Students are definitely doing well — better than previously — on these kinds of items.

Why was Gregory Gotrocks sent to Nepal-Tibet?

- ⬭ To climb Mt. Everest
- ⬭ To get away from his father
- ⬭ To make his friends in Peoria jealous
- ● To check on his company's sales office
- ⬭ I don't know.

EXHIBIT 1. Percentages of Correct Responses for Literal Comprehension Item 1, "Gregory Gotrocks"



This passage and question, according to the committee, are similar to what 9-year-olds confront in the classroom. The results show a statistically significant increase in percentage of correct responses over the four year period.

The following item showed some slight decreases in achievement for 13- and in-school 17-year-olds:[1]

[1] The reading assessment gathered data on both in- and out-of-school 17-year-olds, but, for the sake of comparability to data for other age levels, only in-school data are reported here. Data for both groups of 17-year-olds can be found in the statistical summary of the second reading assessment.

Read the passage and answer the questions which follow it.

[1]There is a myth, very popular these days, that the Court is divided into "liberal" and "conservative" wings, or, as some would put it, into "activists" and those [5]who practice "judicial restraint." Labels of this kind are convenient but not accurate. Members of the Court, applying general constitutional provisions, understandably differ on occasion as to [10]their meaning and application. This is inevitable in the interpretation of a document that is both brief and general by a human institution composed of strong-minded and independent mem-[15]bers charged with a grave and difficult responsibility. But the inappropriateness of these labels becomes apparent upon even the most perfunctory analysis.

A. The author describes the Constitution as which of the following?

- ● Brief
- ⬭ Liberal
- ⬭ Specific
- ⬭ Perfunctory
- ⬭ Inapplicable to legal cases
- ⬭ I don't know.

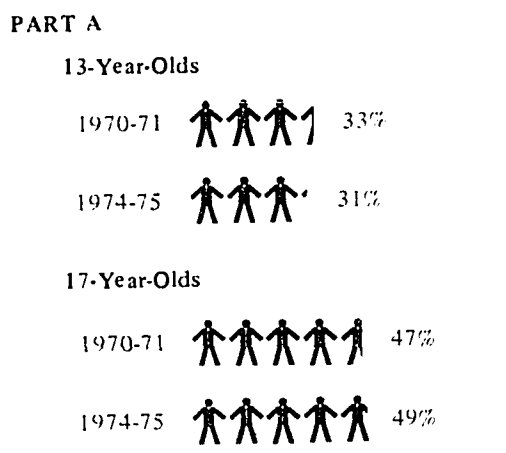
B. Who are the people with a "difficult responsibility"?

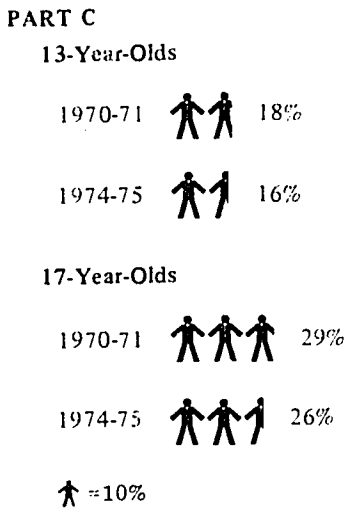
- ● The members of the Court
- ⬭ Those who analyze the myth
- ⬭ The writers of the document
- ⬭ Those who believe in the myth
- ⬭ Those who disagree with the myth
- ⬭ I don't know.

C. In line 10, what does the word "their" refer to?

- ⬭ Citizens
- ⬭ Conservatives
- ⬭ Liberals
- ⬭ Members of the Court
- ⬬ Provisions
- ⬭ I don't know.

EXHIBIT 2. Percentages of Correct Responses for Literal Comprehension Item 2, "Liberal and Conservative"





The committee noted that when items became more difficult, either as a result of lengthy, complex passages or because of questions that required some manipulation of the information, 17-year-olds and sometimes 13-year-olds performed less well than four years ago.

Roger Farr: "I think all ages are doing exceptionally well on the items that are straightforward, basic, literal; they are doing exceptionally well on very minimal kinds of literary tasks. But as soon as the tasks start to get harder (that is, as soon as the passages become longer or the questions require more manipulation), the results seem to drop off rather quickly."

Wayne Otto: "It's not that they can't read; it's that they are not willing to read. When the content is especially interesting, as in the item that included directions for performing a magic trick, or when few mental manipulations are called for, 17-year-olds seem to do very well. But any time there seems to be any kind of challenge, per-

formance decreases radically. Testing is a very unpopular activity among 17-year-olds today."

Roger Farr: "Maybe 17-year-olds just can't read well enough to complete the harder items."

Carita Chapman: "They might not have been taught or might not have learned those skills."

William Blanton: "Either hypothesis is tenable. The kids have consistently demonstrated that they can handle simple literal comprehension items. When we ask them to respond to literal comprehension items that are more complex, either they don't want to or they just can't handle it. We should also remember that performance on the functional literacy items, items that involve activities like reading a telephone bill or following the directions on a container of cat food, is so high that it does challenge a lot of what has been said in the last few years. Seventeen-year-olds are definitely doing well — better than previously — on these kinds of items."

The following item, which was administered to 9-, 13- and 17-year-olds, is one of the functional literacy items William Blanton is referring to. The item can be answered most efficiently by scanning the instructions for serving cat food:

How To Serve Meow-Wow Dinner

One 8-ounce cup per average-sized cat is the recommended daily amount.

Twice-a-day feeding is the general rule for most cats, so allow 1/2 cup for each meal.

Remember that some cats just naturally like to nibble often instead of having a full meal at one time. In this case, serve each cat a cupful of Meow-Wow Dinner once a day, allowing the cat to eat as much and as often as desired.

Until they reach three months old, feed kittens Meow-Wow Dinner wet about every four hours. Let them eat all they want.

Sometimes cats lose their appetites and do not eat for a day or two. If lack of appetite continues, it may be wise to consult a veterinarian.

Read the passage above and answer the questions below.

A. How should you feed a two-month-old kitten?

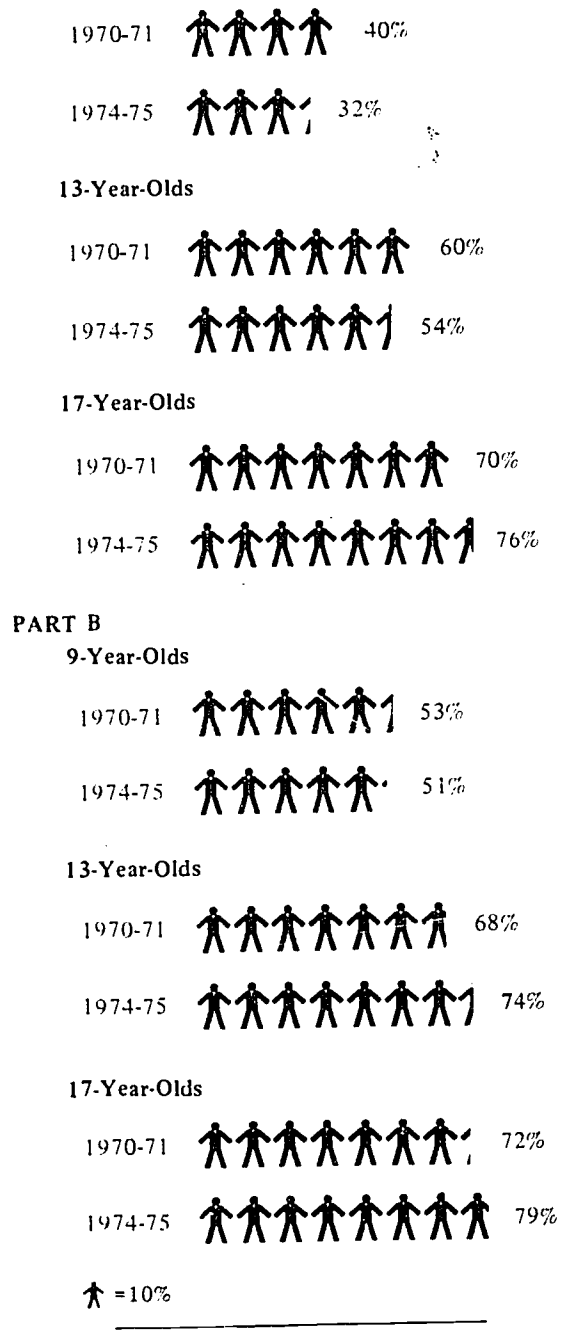
- ⬭ Feed him only dry food
- ⬭ Feed him one 8-ounce cup of food a day
- ⬭ Feed him only once in the morning and once at night
- ● Feed him wet food three or four different times a day
- ⬭ I don't know.

B. If your cat doesn't finish his bowl of food one morning, what should you do?

- ⬭ Call the veterinarian
- ⬭ Take his bowl away until evening
- ● Leave the food in the bowl for him
- ⬭ Do not feed him until the next morning
- ⬭ I don't know.

This item, which was designed to measure literal comprehension of a passage with practical application, demonstrates the slight improvement typical of 17-year-olds on the literal comprehension items. Thirteen-year-olds, who also typically improved in the literal comprehension items, demonstrated mixed results on this item. Nine-year-olds, who generally showed a signifi-

EXHIBIT 3. Percentages of Correct Responses for Literal Comprehension Item 3, "Meow-Wow Dinner"



cant increase in their ability to perform on literal comprehension items over the past four years, declined on this exercise. The reading panel speculated that the reasons for these unusual results might be that children in the primary grades are seldom asked to deal with complicated instructions, while in the high schools more emphasis is placed on functional literacy.

Diane Lapp: "In many primary classrooms, teachers just aren't asking questions like this any more. They are doing a lot more with stories and creative language experiences. Teachers don't begin teaching this kind of comprehension until the middle grades."

Robert Tierney: "Primary children no longer get experience with this kind of reading material; although it's a short piece of prose, there's a lot of data embedded in it. Today children deal largely with narrative selections."

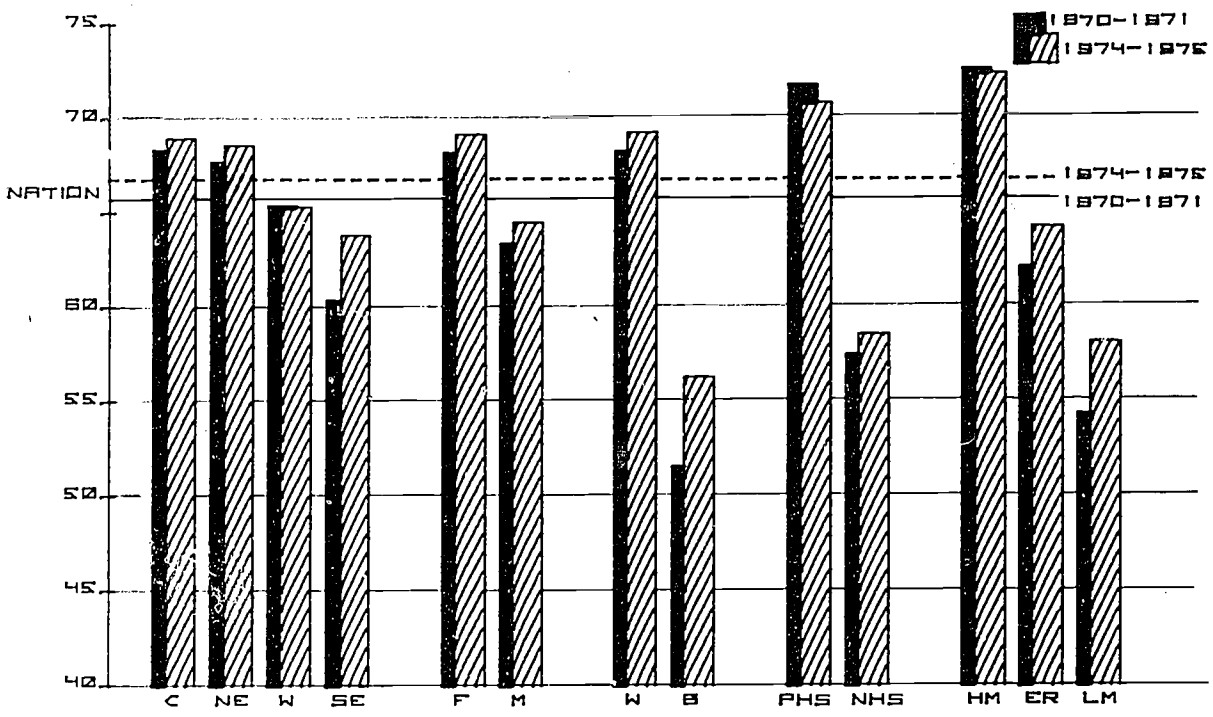
William Blanton: "The assessment shows 17-year-olds are doing better than previously on many of the functional literacy items. This trend contradicts information from other sources."

The Mean Performance Graphs

The national mean percentage of success on one category of items for each assessment is indicated by two horizontal lines across the graphs. Percentages for populations are indicated as bars — the solid bars representing performance during the 1970-71 school year and the shaded bars representing performance during the 1974-75 school year. The bars are displayed in five groups: the regions of the country (C=Central, NE=Northeast, W=West, SE=Southeast); sex (M=male, F=female); race (W=white, B=black); level of parental education (PHS=post high school, NHS=no high school); and community type (HM=high metro, ER=extreme rural, LM=low metro). The populations are defined in the appendix. Precise data can be found in the statistical report on the second reading assessment.

Average performance on all the literal comprehension items administered in both school years are displayed in Exhibits 4, 5 and 6.

EXHIBIT 4. Mean Performance for 9-Year-Olds on Literal Comprehension Items



Note: Because different sets of exercises were administered at each age level, mean percentage graphs are not comparable across age.

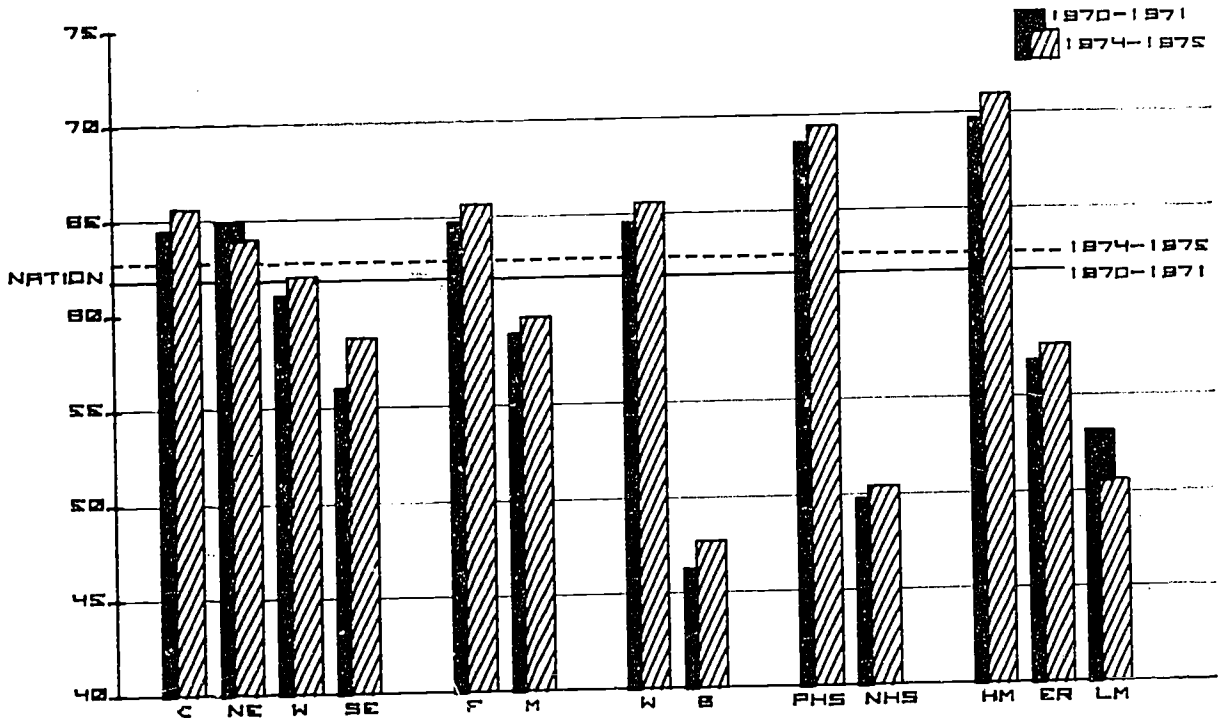
The most encouraging results occur at the 9- and 13-year-old levels, where performance on an average literal comprehension item increased by approximately 1 percentage point. Most encouraging are the results for black 9-year-olds; during the 1970-71 assessment, this group was 14 points below the national average, while during the 1974-75 assessment, the group was 10 points below the national average, which itself had shown improvement.

Roger Farr: "Nine- and 13-year-olds are doing very well — much better than I anticipated — on the items that measure basic literal comprehension. Even though the increase isn't large, over such a short period, it is statistically significant. I would hypothesize that the reason for the greater increase at the 9-year-old level is that most of the reading intervention programs have taken place in the primary grades."

Wayne Otto: "Nine-year-olds are being taught very specific comprehension skills, and those skills are the ones being tested. Older children work at broader extrapolations of these skills."

Seventeen-year-olds demonstrated a smaller increase than the other two ages — only about one quarter of a percentage point — in their performance on literal comprehension items over the four year period.

EXHIBIT 5. Mean Performance for 13-Year-Olds on Literal Comprehension Items



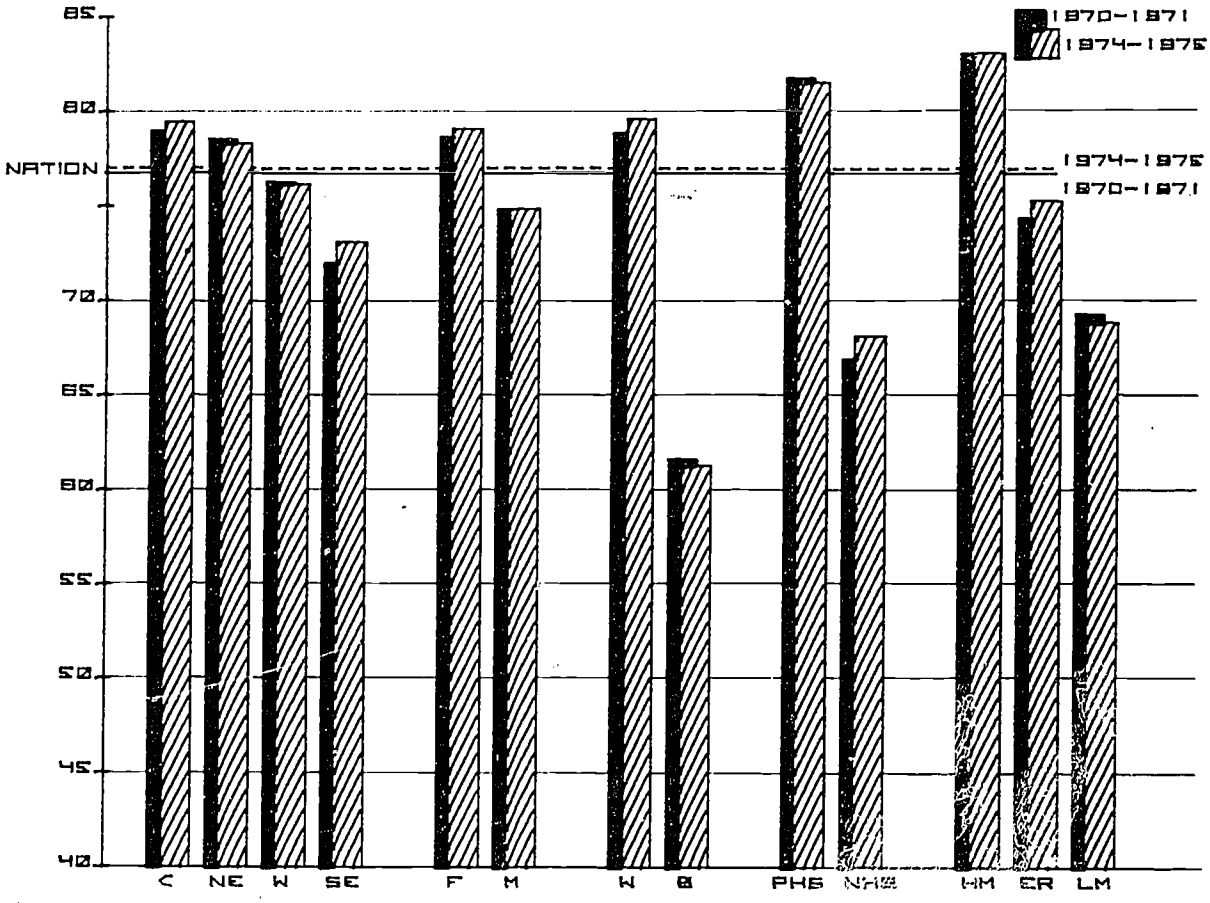
Roger Farr: "Seventeen-year-olds did improve over the four year period, but improvement was smaller than at the other ages, possibly because the increased emphasis in reading is not as strong in the upper grades."

The panel noted that females perform better on the literal comprehension items — as well as items in the other reading categories — than do males. This difference remained virtualiy unchanged at all three age levels over the four year period.

Another generalization that appears to be applicable to all three ages and all three categories of items is that students are for the most part aware of their own reading abilities. When asked to classify themselves as poor, good or very good readers, their responses correlated highly with their actual performance on the reading tasks.

Literal comprehension, while not the ultimate goal of a reading program, is the foundation upon which other reading skills must be developed. The increase in literal comprehension skills at the primary and intermediate levels is encouraging; it suggests that 9- and 13-year-olds have grasped the prerequisites of more sophisticated reading skills. The smaller increase in literal comprehension at the upper grade levels, while not large, is nonetheless encouraging.

EXHIBIT 6. Mean Performance for 17-Year-Olds on Literal Comprehension Items



CHAPTER 3

INFERENTIAL COMPREHENSION

All ages are doing exceptionally well on the items that are straightforward, basic, literal; they are doing very well on very minimal levels of reading tasks. But as soon as the tasks start to get harder (that is, as soon as the passages become longer or the questions require more manipulation), the results seem to drop off rather quickly.

A higher level reading skill, inferential comprehension requires gleaning from a passage some idea that is not explicitly stated. In inferential comprehension, a reader uses the explicit information along with his personal experiences and thinking abilities to make predictions, form generalizations, reach conclusions, make comparisons, form judgments and create new ideas.

The following test item used an advertisement in a national magazine to measure whether 13- and 17-year-olds would be able to understand the implicit message:

Here is an ad from a national magazine. Read it and complete the sentence on the next page.

As we all know, the mentally retarded can only make baskets and other simple objects like...

Computer subassemblies.
Printed circuits for electronic test sets.
Electric meters.
Automobile instrument panels.
Aircraft components.
Hospital supplies.

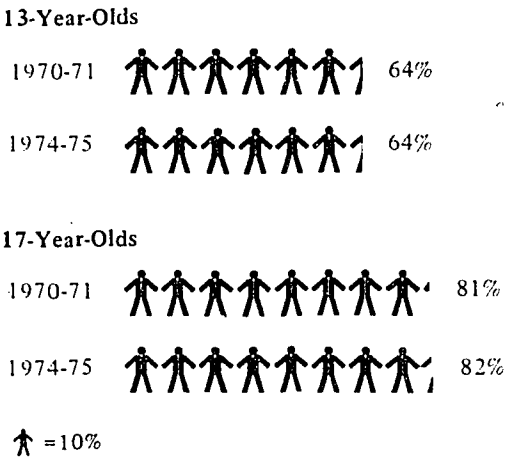
You already know that the retarded worker is generally more conscientious, loyal and punctual than the average employee.
Perhaps you have a few "simple" jobs he might do in your business.

For information about employing the retarded, write The President's Committee on Mental Retardation, Washington, D.C. 20201.

The purpose of this advertisement is to

- ● Encourage industry to employ mentally retarded people
- ○ Show how mental retardation can be reduced in the population
- ○ Indicate that mentally retarded workers are superior to other workers
- ○ Show the general public that mentally retarded people can make simple things
- ○ I don't know.

EXHIBIT 7. Percentages of Success for Inferential Comprehension Item 1, "Public Service Advertisement"



Most of the 13- and 17-year-olds were able to determine the implied meaning of the advertisement. As with many of the inferential comprehension items, change in performance over the four year period was small.

Robert Tierney noted that individuals appear to be much more capable of drawing inferences about the entire meaning of a passage than they are of making specific inferences from phrases or sentences within a passage. "Students appear to have much more trouble drawing inferences *within* a passage than drawing inferences *from* a passage. They have trouble identifying the meaning of specific word groups, while they have little difficulty identifying the overall meaning of the passage."

The following inferential comprehension item was administered to 9-year-olds:

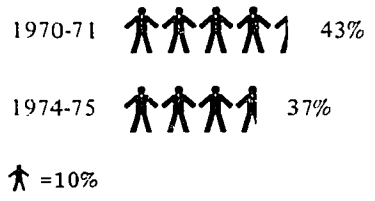
Read the story and answer the question which follows it.

In the past, flies were a lot bigger than they are now. My father used to throw rocks at them. My grandfather used to shoot them with a gun. And my great-grandfather told me it used to take five men, a dog, two horses, and sixteen cats to drag a fly out of the kitchen.

Which sentence below tells you what the author wants you to do when you read this story?

- ○ He wants you to kill flies
- ○ He wants you to buy a pet
- ● He wants you to think it is funny
- ○ He wants you to feel sorry for flies
- ○ I don't know.

EXHIBIT 8. Percentages of Success for Inferential Comprehension Item 2, "Flies"



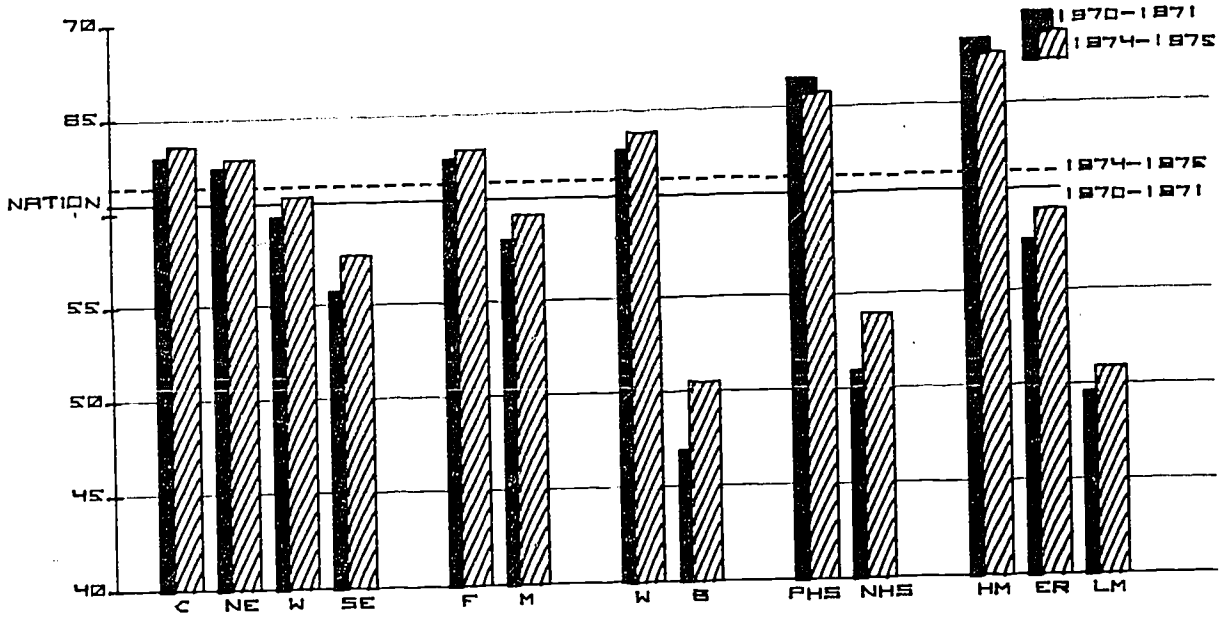
This item, on which less than half of the 9-year-olds were able to recognize the tone of a relatively complex passage, showed a decrease in the percentage of success for 9-year-olds over the four year period. Changes in the results of individual inferential comprehension items occurred in both directions so that the average percentage of success remained about the same over the four years.

Carita Chapman: "It's possible that passages like this are just too hard for 9-year-olds to understand. In addition, primary grade teachers have continued to place emphasis on factual, literal comprehension, not on the higher level comprehension skills."

Roger Farr: "Such emphasis makes sense, since we know that literal comprehension is a prerequisite for higher level skills."

The overall performance of 9-, 13- and 17-year-olds on the inferential comprehension items is illustrated in Exhibits 9, 10 and 11. While 9-year-olds tended to improve slightly over the four year period, 13- and 17-year-olds tended to show decreases on these items.

EXHIBIT 9. Mean Percentages of Success for 9-Year-Olds on the Inferential Comprehension Items



Note: Because different sets of exercises were administered at each age level, mean percentage graphs are not comparable across age.

EXHIBIT 10. Mean Percentages of Success for 13-Year-Olds on the Inferential Comprehension Items

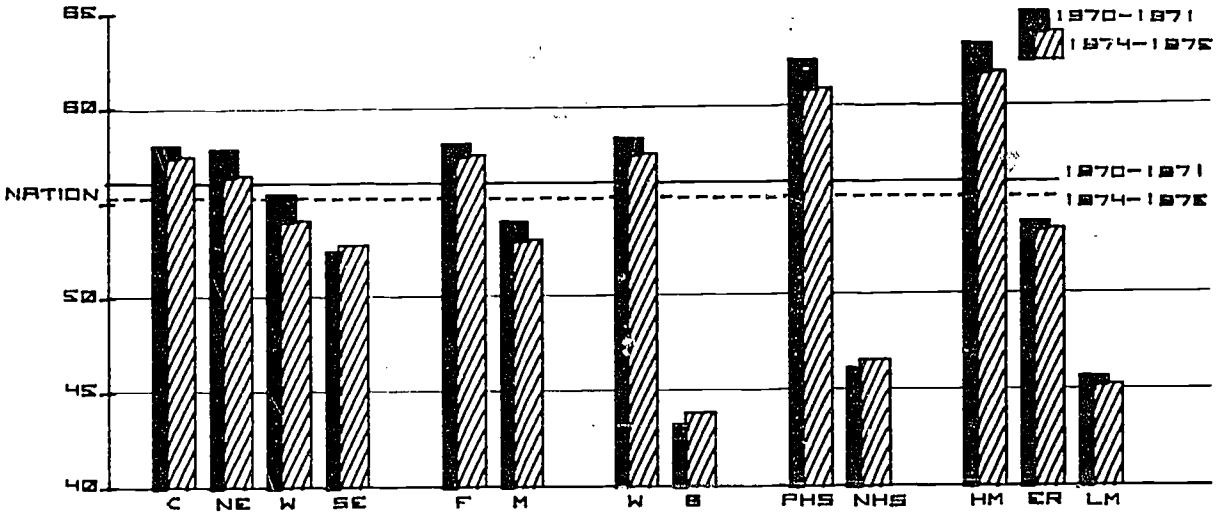
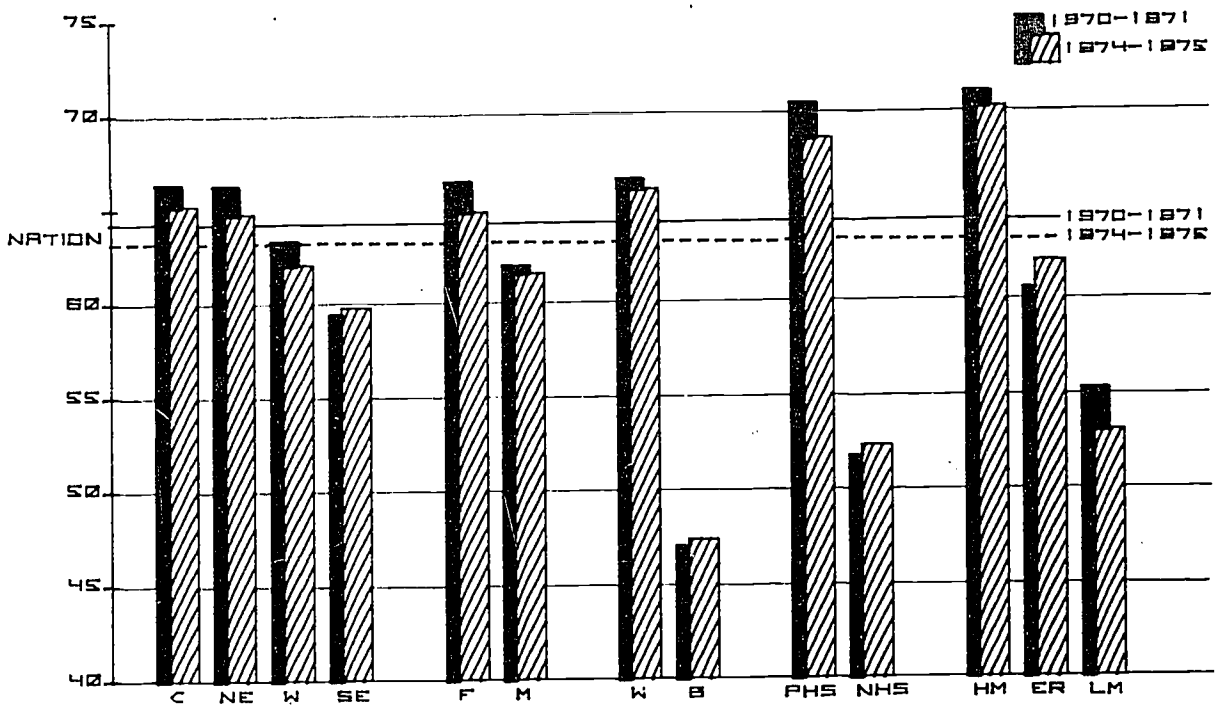


EXHIBIT 11. Mean Percentages of Success for 17-Year-Olds on the Inferential Comprehension Items



At the 9-year-old level, the significant black increase is particularly notable.

William Blanton: "The general black improvement, not only in inferential comprehension, but in reading in general, might be the result of more integrated schools, more funding to impacted areas, or of social factors outside the school. But whatever the cause, the results are encouraging."

The panelists, concerned about the declining percentages for 13- and 17-year-olds on the inferential comprehension items, speculated about the possible causes:

Roger Farr: "The decrease could be the indirect result of the emphasis on reading in the primary grades and a corresponding decrease in emphasis at the upper grades, where inferential comprehension is traditionally emphasized."

William Blanton: "The decrease could also be the result of a less traditional high school curriculum, which requires less reading and more experiential research."

Roger Farr: "The decrease might also be caused by a more negative attitude toward testing in this age group."

Diane Lapp: "Another possible cause is that secondary school curricula provide very little instruction in content area reading. But whatever the reason, we should be concerned about the declining ability to infer from reading passages."

Carita Chapman: "A lot of big-city high school personnel have already seen problems with reading ability. These data corroborate their perceptions."

The panel then summarized performance on the inferential comprehension items.

Roger Farr: "Students seem to possess inferential reading skills, but not to the extent that they possess literal comprehension skills."

Wayne Otto: "Even on the inferential items, students do best when the passages seem most relevant, most functional."

Diane Lapp: "Consequently, the curriculum must become relevant to student interests."

Results for the inferential comprehension items are not altogether discouraging. It is possible that, along with the emphasis on reading in the primary grades discussed in the previous chapter, there is a general emphasis on literal comprehension, the most basic level of reading skills. Literal comprehension skills must be emphasized as the foundation of any reading program, but the panel was unanimous in suggesting that every reading program should continue beyond the literal level of comprehension.

CHAPTER 4

REFERENCE SKILLS

Study skills are specialized skills that enable students to apply their reading behavior to solve problems. These skills help students read to learn after they have learned to read. There are four basic study skills: reference skills enable the student to find the correct resource for needed information, locational skills aid the student in finding an answer in the resource, interpretational skills are needed for the student to correctly interpret the located information and organizational skills enable the student to efficiently organize information for later use. The reading assessment measured only reference and locational skills.

The following item measured the ability of 9-year-olds to determine which source would be best to find historical information:

Where is the BEST place to find out about the Declaration of Independence?

- ⬭ An atlas
- ⬭ A comic book
- ⬭ A dictionary
- ⬬ An encyclopedia
- ⬭ A newspaper
- ⬭ I don't know.

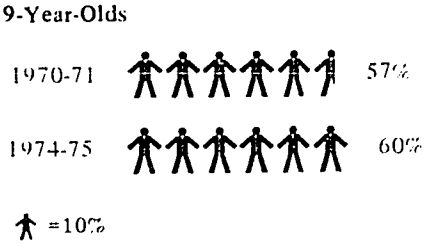
As on many of the reference skill items, 9-year-olds demonstrated significant improvement over the four year period. The primary grade children demonstrated some familiarity with reference texts like dictionaries and encyclopedias as well as an ability to use the alphabetizing skills necessary to find information in these reference books.

Nine-year-olds perform very well at the very specific, explicit reference skills tested. But 13- and 17-year-olds do not perform as well on the more general and more difficult applications expected of them.

Wayne Otto: "I'm very pleasantly surprised by the performance of 9-year-olds on the reference skill items. There is a very definite improvement over the four year period.

Roger Farr: "The only thing many 9-year-olds didn't seem to be able to handle is the use of guide words in a dictionary, but more 13-year-olds have mastered these skills."

EXHIBIT 12. Percentages of Success on Reference Skills Item 1, "Declaration of Independence"



The following item, which requires using an index for material not generally limited to classroom use, was administered to 13- and 17-year-olds:

This is a directory from a newspaper. Look at it and answer the questions which follow it.

	Page		Page
Astrology	18	Local News	15-17
Bridge	18	Movies	21
Classified	33-40	Obituaries	32
Comics	20	Radio	22
Crossword	18	Sports	25-28
Editorial	47	Television	22
Financial	29-31	Weather	12
Letters to the Editor	17	Women	41-43

A. On what page would you look for today's television schedule?

_____

B. If you wanted to check the weather forecast, on what page would you look?

_____

C. Where would you look to check on the stock averages for the day?

_____

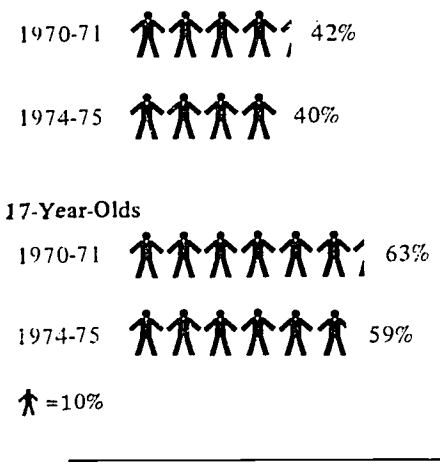
D. On what pages would you probably find beauty hints?

_____

E. Does the newspaper give information about playing bridge?

- Yes
- No
- Cannot tell from the information given
- I don't know.

EXHIBIT 13. Percentages of Success on Reference Skills Item 2, "Newspaper Index"



The decrease in the ability of 13-year-olds to correctly answer the five parts of this question was typical of their performance on the reference skill items. For 17-year-olds, who recorded a slight increase on most reference skill items, the decline on this item was unusual. The panel speculated on some of the possible reasons for decreases on this item:

Roger Farr: "Perhaps the very heavy skill instruction in the primary grade does not lead to application of the reference skills at the intermediate and upper grades."

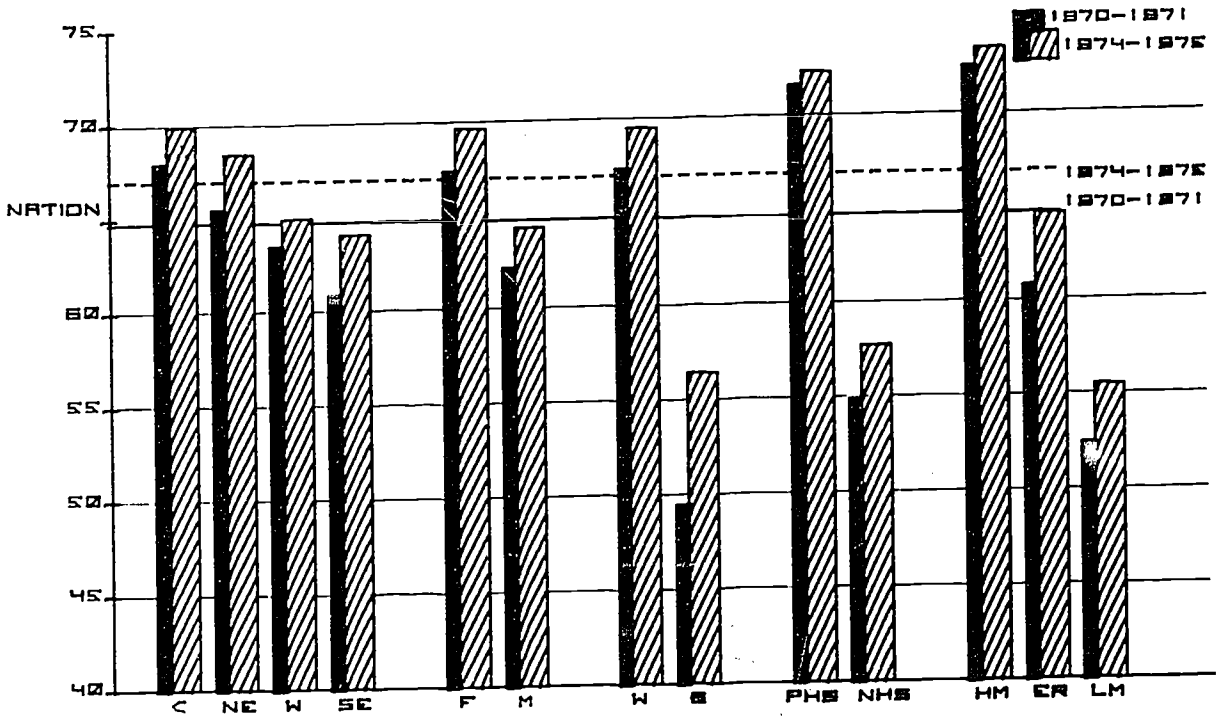
Wayne Otto: "Nine-year-olds are being taught very specific, explicit skills, and that's what is being tested. But for the 13- and

17-year-olds, t' assessment is measuring more general applications, a combination of reference skills with other reading skills, and in these areas, 13-year-olds are not doing very well."

William Blanton: "I think we are teaching a broader range of study skills, so that while the students are learning more skills, they are not learning each specific skill as well. It might well be that a child has learned 30 more skills than he would have four years ago, but has not learned each individual skill as well."

The average performance of 9-, 13- and 17-year-olds on the reference skill items are displayed in Exhibits 14, 15 and 16. Once again, the improvement of 9-year-olds was most encouraging to the panelists. Success on an average reference skill exercise increased approximately 2 percentage points over the four year period for this group. Especially notable was the increase for black 9-year-olds: 7 percentage points over the same period.

EXHIBIT 14. Mean Percentages of Success for 9-Year-Olds on the Reference Skill Items



Note: Because different sets of exercises were administered at each age level, mean percentage graphs are not comparable across age.

EXHIBIT 15. Mean Percentages of Success for 13-Year-Olds on the Reference Skill Items

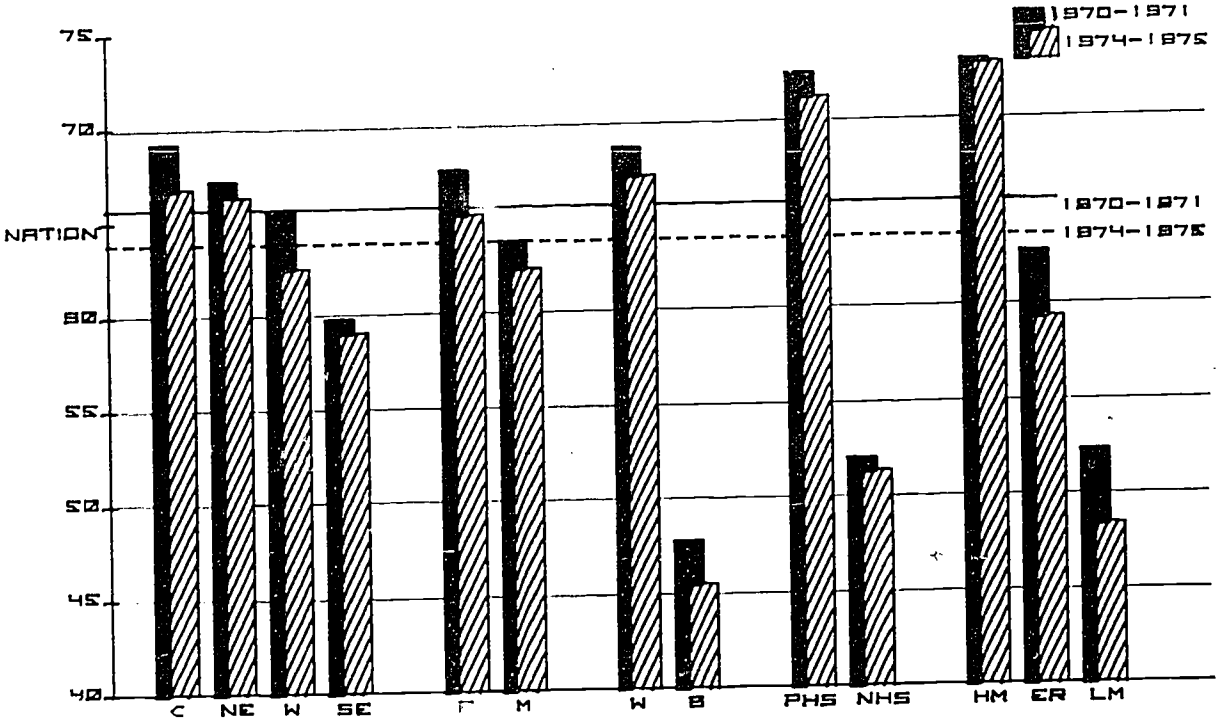
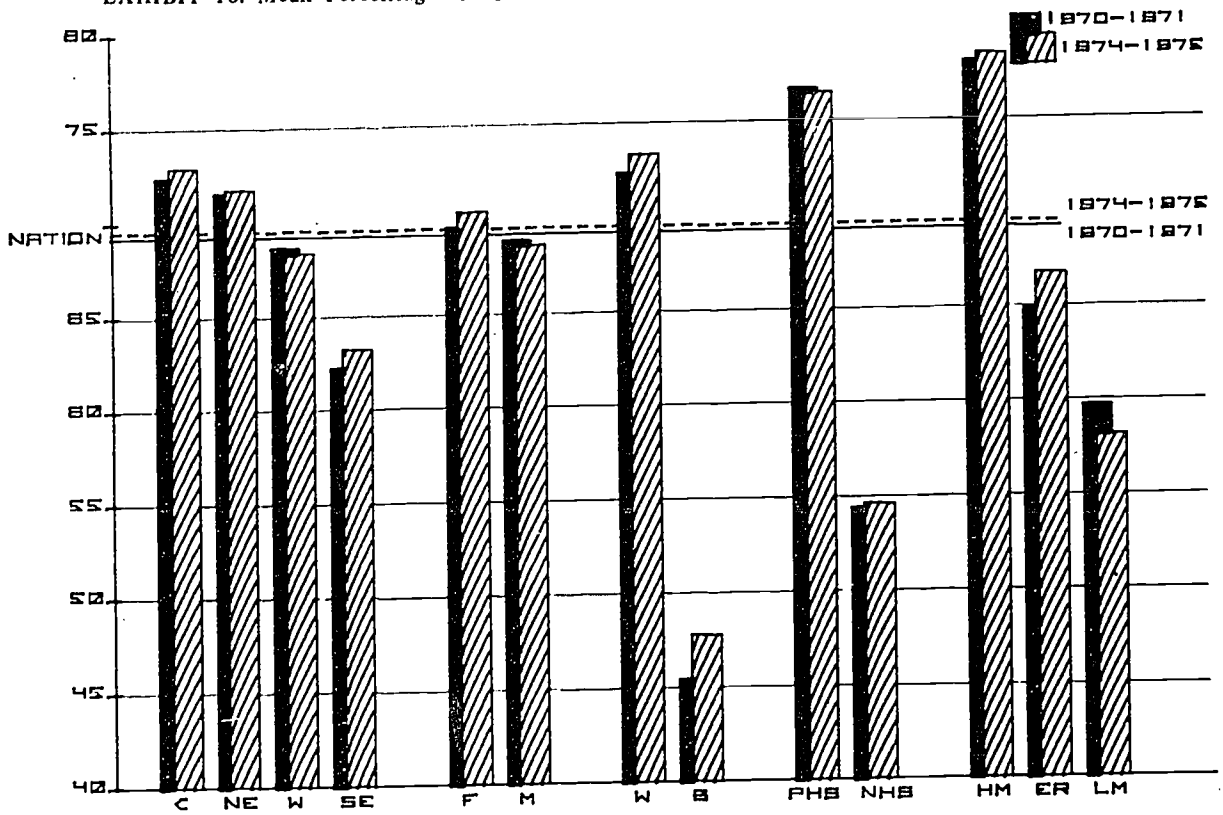


EXHIBIT 16. Mean Percentages of Success for 17-Year-Olds on the Reference Skill Items



Thirteen-year-olds recorded a statistically significant decrease of almost 2 percentage points on the reference skill items. The panelists considered this decline a cause for alarm: reference skill instruction should continue into the intermediate grades.

Seventeen-year-olds demonstrated a slight tendency to improve on the reference skill items over the four year period.

Reference skills, perhaps the most specialized of the reading skills tested by the assessment, have improved significantly at the primary school level. The panel hypothesized that the most likely explanation for this improvement is that reading intervention programs, which have been concentrated in the primary grades, have also helped improve the reference skills at this age level. Perhaps, as William Blanton suggests, schools today might teach a broader range of study skills, a fact that was not reflected in the assessment data.

Performance on reference skills is not as encouraging at the intermediate and upper levels: 13-year-olds recorded a statistically significant decrease and 17-year-olds recorded only a slight increase.

CHAPTER 5

SUMMARY AND CONCLUSIONS

The reading ability of American students has changed over the past four years, but the change is neither completely positive nor completely negative. Instead, the results are related to the age and to the type of reading required.

Two generalizations hold true across the three age levels. First, females continue to perform better than males on most of the reading items. The difference is greatest at age 17, where 3.6 points separate the mean percentages. Second, students seem to be aware of their own reading ability. When asked to classify themselves as poor, good or very good readers, the responses correlated highly with their actual performance on the reading items.

Nine-year-olds demonstrated the most dramatic improvement. The average percentage of success over all the reading items improved significantly for these youngsters; the change was greatest on the reference skill items, where the average percentage of success increased by 2.2 points, and smallest on the inferential comprehension items, where the average percentage increased by only 0.9 points. Within this age level, the most noteworthy group was the blacks, who demonstrated a significantly larger increase than the 9-year-olds as a whole in each of the three categories of reading skills. On the literal comprehension items, the average black increase was 4.8 percentage points; on the inferential comprehension items, 3.7 points; and on the reference skill items, 7.0 percentage points.

The reading panel members, who attributed the general increase in performance of 9-year-olds to the many reading intervention programs conducted at the primary level, pointed out that improvement at this level is extremely important because it supplies individuals with a foundation for further reading development. The improved scores of black 9-year-olds — which, according to the panel, might be attributed to integrated schools, greater funding in impacted areas and to social

factors outside the school — could signal progress toward equalization of educational opportunity. William Blanton added that another possible reason for the increase in black performance is that teachers have finally been convinced to respect the cultural differences of others and to build on them.

For 13-year-olds, the results are more equivocal. While 13-year-olds show a slight tendency toward improvement in the literal comprehension items, they also demonstrate a tendency to decrease in their performance on the inferential comprehension and reference skill items. Black 13-year-olds do not demonstrate the improvement that black 9-year-olds do.

Results for 17-year-olds, like those for 13-year-olds, include contradictory trends. While 17-year-olds demonstrated slight increases on the literal comprehension items and on the reference skill items, they recorded a mean decline of approximately 1 percentage point on the inferential comprehension items. Black 17-year-olds also failed to demonstrate the statistically significant improvement that black 9-year-olds did.

The panelists suggested that perhaps, along with the increased emphasis on reading in the primary grades, there has been a decreased emphasis in the intermediate and especially secondary grades.

Carita Chapman: "Nine-year-olds are doing so well because we're placing more instructional emphasis here. We espouse the idea that reading should be taught throughout the 12 grades, but we really don't teach it."

Roger Farr: "Another hypothesis is that, after being exposed to Sesame Street and other good television shows, kids are coming to school able to do more."

William Blanton: "Kindergarten is also becoming more universal. A lot of federal and state funds have been funneled toward programs at this level."

Roger Farr: "I would predict parallel trends in the third assessment — a further increase at the 9-year-old level and less dramatic changes at the higher age levels — unless we make changes in our present instructional strategy. Based on this data I'd like to see more emphasis placed on the high school reading program."

Diane Lapp: ". . . as long as greater emphasis in the high school doesn't take away emphasis from the primary grades. One of the reasons for the decrease in inferential comprehension at the 17-year-old level is that four to six years ago, there was a set curriculum in the high schools, a more tightly structured curriculum that dealt with the type of content that many of these items measure. Now, in the last four years, while there is still some of the same type of teaching going on in the high schools, kids aren't selecting those courses very often. So their familiarity with this type of material has lessened.

"I would suggest that the scores will go up — maybe not in the next four years, but in the next eight — because many high schools are moving away from the large selection of experiential courses back to those that help develop reading skills."

In general, the panelists were pleased at students' ability to master items that measured what they considered to be the straightforward reading skills so often required in daily life. They were most discouraged by the results on more difficult reading items.

William Blanton: "The assessment indicates that kids are doing much better than we expected on the survival, functional literacy items. And this does contradict most of the available information."

Finally, the panelists considered the possibility that schools are only partially responsible for the changes that occurred over the four year period.

Roger Farr: "It's important to see changes in education as only one facet of broader societal changes. What we're seeing here is kids who come to school with a relatively good background in language and reading because of the influence of television and other societal factors. And the decrease in inferential comprehension at the upper level might be due to the fact that there is a lot less emphasis placed on intellectually demanding reading in society in general, and that trend is going to continue. It's paradoxical that television can improve the language development of younger children, while it keeps older kids from reading that requires higher levels of comprehension.

"Reading is a thinking skill so deeply embedded in the culture at large that it's hard to believe that changes in school curricula alone will affect the scores."

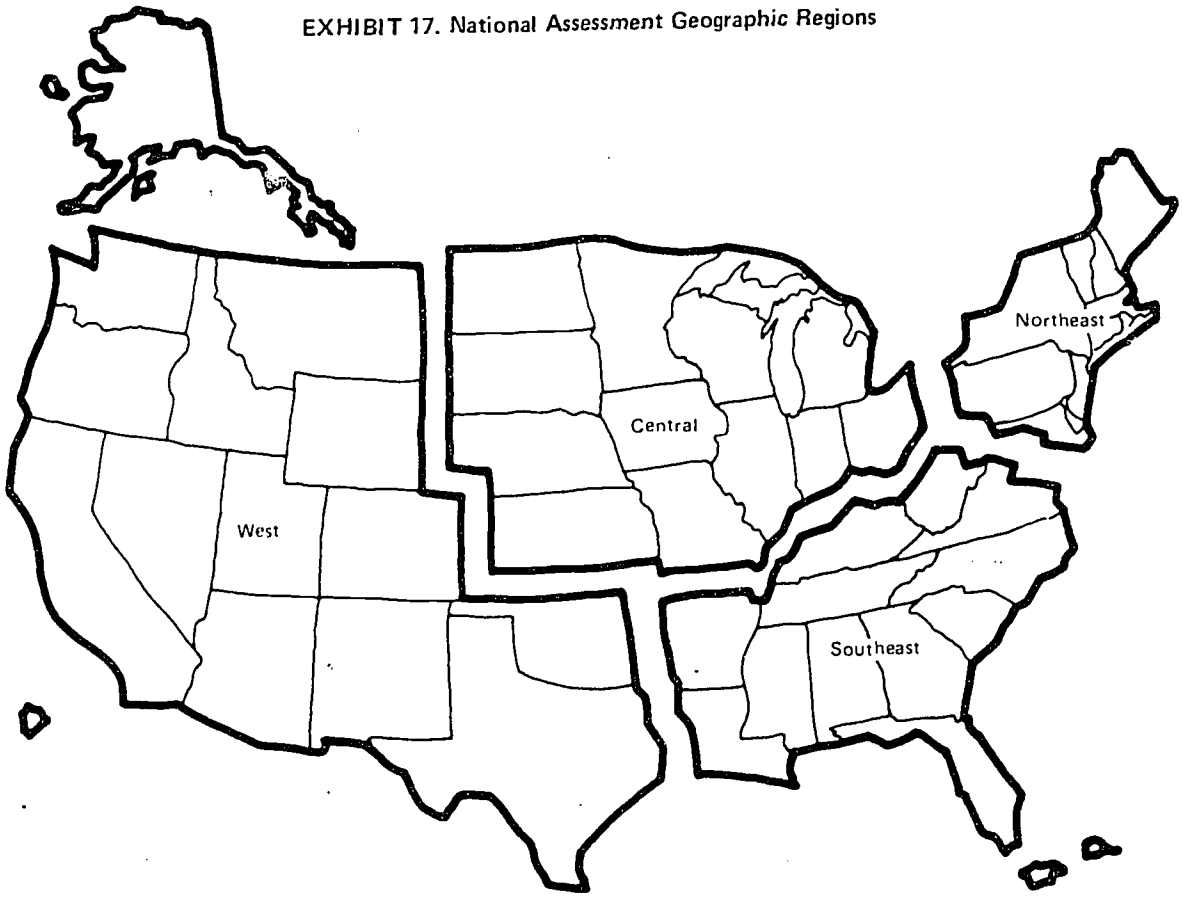
APPENDIX

DEFINITIONS OF GROUPS

The National Assessment of Educational Progress divides the national population at ages 9, 13 and 17 into various groups of people in order to provide data about certain types of schools and students. The variables used for this division are region of the country, sex, race, parental education and size and type of community. They are defined as follows:

Region. The country has been divided into four regions — Southeast, West, Central and Northeast — in order to present results for various regions relative to the national results. The states that are included in each region are shown in Exhibit 17.

EXHIBIT 17. National Assessment Geographic Regions



Sex. Results are also presented for males and for females.

Race. Currently, we present results for blacks and whites.

Parental Education. The four parental-education categories are defined by the highest level of education attained by *either* of a person's parents. The no-high-school category is comprised of all people who indicated that neither parent went to high school. The some-high-school category consists of all those who indicated that the parent with the most education attended high school but did not graduate. In the graduated-from-high-school category are all those who indicated that at least one parent graduated from high school, and in the post-high-school group are all who indicated that at least one parent received some post high school education (college, adult education courses of any kind or vocational training). Only results for the no-high-school and post-high-school groups are presented in this report.

Community Type. The groups within this variable are defined by the size of a person's community and an occupational profile of the area his or her school serves.

Low-socioeconomic urban (low metro). Areas in or around cities with a population greater than 200,000 where a high proportion of the residents are on welfare or are not regularly employed.

Extreme rural. Areas with a population under 10,000 where most of the residents are farmers or farm workers.

High-socioeconomic urban (high metro). Areas in or around cities with a population greater than 200,000 where a high proportion of the residents are in professional or managerial positions.

Data for four additional community-type groups are presented in the statistical summary.

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