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THE UNIVERSITY OF OKLAHOMA

GRADUATE COLLEGE

A STUDY TO DETERMINE THE EFFECTS OF PRE-READING COMPREHENSION AND POST-READING COMPREHENSION OF BLACK HIGH SCHOOL SENIORS

A DISSERTATION

SUBMITTED TO THE GRADUATE FACULTY

in partial fulfillment of the requirments for the degree of

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BY

ELIZABETH ANN HOLMES

Norman, Oklahoma

1971

A STUDY TO DETERMINE THE EFFECTS OF PRE-READING COMPREHENSION AND POST-READING COMPREHENSION OF BLACK HIGH SCHOOL SENIORS

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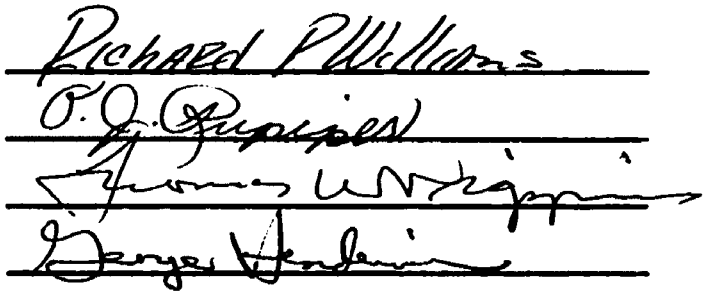

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ABSTRACT

A STUDY TO DETERMINE THE EFFECTS OF PRE-READING COMPREHENSION AND POST-READING COMPREHENSION OF BLACK HIGH SCHOOL SENIORS

By
Elizabeth Ann Holmes

Major Professor
Richard P. Williams

The purpose of this study was to investigate the difference between the level of comprehension black high school seniors bring to the reading of English prose and the level of comprehension they achieve from actual reading.

In April of the 1970-71 school year, 120 seniors at Douglass High School were administered a pre and post test treatment of twenty-five questions over five reading selections to ascertain their comprehension before and after reading.

The null hypotheses stated that there was no significant difference in pre-reading comprehension and post-reading comprehension of black high school seniors as a total group, by instructional levels and by sex.

The results justified rejecting the null hypotheses at the .05 level of significance as there was significant difference between pre and post reading comprehension of black high school seniors in a total group, in instructional levels and by sex.

On the basis of the results the following recommendations were made:

1. Future research be conducted to clarify and supplement the findings of this study with subjects from an integrated high school and with subjects who have all black teachers.

2. The present study be replicated in different school districts and in different states to ascertain answers to the following questions:

   a. How consistent are high school teachers in their methods in teaching comprehension skills?

   b. How much effect does the race of the teacher have on student achievement?

3. Future research to determine the level of pre and post comprehension of high school students be conducted in other subject areas.

4. Classroom teachers extend their efforts to include a method of determining what pre-reading comprehension their students possess in order to structure programs to strengthen the overall reading area.

5. Future research to determine if black high school students need more exposure to diversified multi-ethnic and multi-cultural reading materials that will serve to broaden their experiences and contribute positively to the development of their pre-reading comprehension, which in turn improves their overall reading ability.

6. Curriculum and method be designed to make teaching and learning more effective for individual students through special programs of intellectual stimulation and enrichment thereby improving pre-reading comprehension and developing more effective comprehension skills.

ACKNOWLEDGMENTS

The writer wishes to express her sincere appreciation to Professor Richard P. Williams, Chairman of the doctoral committee, for his patience, guidance and encouragement which were invaluable throughout the process of this investigation. The writer also wishes to express appreciation to the other members of the committee for their encouragement and support which contributed greatly to the completion and success of the investigation. These members are Professors Omer J. Rupiper, Thomas W. Wiggins and George Henderson.

The writer expresses her sincere appreciation to the principal, staff and students of Douglass High School for their cooperation and assistance in this investigation.

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CHAPTER I

During the past decade the importance of reading in American life has been re-emphasized and has attracted the attention of a broad cross section of citizens. Heilman wrote that while there were differences of opinion as to what should be done in reading instruction in American schools there was general agreement that existing instruction was not adequate for the educational goals of our schools and our society.[1] The importance of reading ability to the mastery of all subject matter areas was reaffirmed. Reading instruction ceased to be a matter of only local school and community concern and was viewed broadly as relating to the National Welfare. The federal government, which had previously offered substantial support for science, mathematics

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[1]Arthur W. Heilman. Principles and Practices of Teaching Reading. Columbus, Ohio, Charles E. Merrill Co., 1967, p. 1.

and foreign language education, began to channel support into research and teacher training in reading. Reading is so important that we demand a degree of success from all children in this area. Smith and Dechant state the fact that there can be no simple but adequate definition of reading and emphasize that as teachers we may choose to use a broad comprehensive definition of the term.[2] They define reading as interpretation of the printed page. In the process of interpretation the reader relates graphic symbols to his own fund of experience. They further point out that:

> Reading is the key to success in school, to the development of out of school interest, to the enjoyment of leisure time, and to personal and social adjustments. Reading helps the student in his adjustment to his age mates, to become independent of parents and teachers to select and prepare for an occupation, and to achieve social responsibility. As our culture becomes more complex, reading plays an increasingly greater role in satisfying personal needs, and in promoting social awareness and growth.[3]

Burton reiterates that the American citizen of today cannot avoid reading even if he wanted to.[4] Americans read for assistance in the vital concerns of

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[2]Henry P. Smith and Emerald Dechant. Psychology of Teaching Reading. Englewood Cliffs, New Jersey: Prentice-Hall Inc., 1961, p. 213.

[3]Ibid., p. 214.

[4]Dwight L. Burton. "Heads Out of the Sand." Teaching Reading in High School (Editor, Robert Karlin). New York: Bobbs Merrill Co., 1969, p. 2.

everyday life and much of this reading is not easy. Reading is universally recognized as the most important area of the curriculum. Many people accept the importance of the subject, many approaches are used in the teaching of reading, however, Heilman points out that it is difficult to understand why, with all the available written material on reading and all the efforts expended in teaching it that there is no universally accepted definition of reading.[5] Everyone who reads is sure he know what reading is. It is only when he attempts to put his understanding into a definition that his ambiguity becomes important. Ruth Strang defined reading as much more than word pronunciation, it is more than word recognition, it is more than getting the meaning of individual words. It is the complex process of getting the meaning of words in combination and knowing what the author is trying to communicate--"What is the author saying to me?"[6] More specifically Strang describes reading as follows:

> Reading builds on experience.
> Reading is one form of experience.
> Reading is a method of learning.[7]

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[5]Arthur W. Heilman. Principles and Practice of Teaching Reading. Columbus, Ohio: Charles E. Merrill Co., 1967, p. 310.

[6]Ruth Strang and Dorothy Bracken. Making Better Readers. Boston: D. C. Heath and Co., 1957, p. 50.

[7]Ibid., p. 51.

The reading process involves: seeing the words clearly, recognizing their meaning, understanding sentences, paragraphs and the passage as a whole. Appraising ideas critically; seeing relations among them; using these ideas in various ways, as in the solution of practical problems. Edgar Dale says reading is a process of getting meaning from the printed page by putting meaning into the printed page.[8] Reading taste and ability are always tethered to past experience. But reading itself is one way of increasing this capital fund of past experience. Reading, therefore, according to Dale, must be seen as more than saying the word, more than seeing the sentences and paragraphs. Good reading is the way a person brings his whole life to bear on the new ideas which he finds on the printed page. It is reading the lines, reading between the lines and reading beyond the lines. Williams describes reading as a process in which the reader brings meaning to the printed page in order to reorganize the structure of his thinking to increase comprehension.[9]

This important process called reading, though difficult to define, does receive to a large extent, at least,

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[8]Edgar Dale. "How to Improve Your Vocabulary." The News Letter. Columbus, Ohio: Ohio State University, 1958. p. 7.

[9]Richard P. Williams. "Predicting Comprehension Gains of College Freshmen." Journal of Reading Behavior. National Reading Conference, Athens, Georgia: University of Georgia, 1970, p. 166.

a consensus in the belief that the acquisition of a series of skills is essential to the development of reading ability. Comprehension is one of these basic skills. Yaokim describes comprehension as follows:

> Comprehending reading matter involves the correct association of meanings with word symbols, the evaluation of meanings which are suggested in context, the selection of the correct meaning, the organization of ideas as they are read, the retention of these ideas, and their use in some present or future activity.[10]

Edwards points out that continuous development toward greater reading proficiency is a process with many phases, the goal of which is the comprehension of ideas.[11] Success in the process depends on adequate motivation, a substantial background of concepts, word-perception skills, and the ability to reason one's way through smaller idea elements and to grasp, as a whole, the meaning of a larger unitary idea.

Comprehending from reading is a very complicated process. The factors which influence and determine comprehension are unlimited. Most authorities agree that one of the most important determiners of comprehension is the background knowledge that the reader brings to the printed

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[10]Gerald A. Yaokim. "The Development of Comprehension in the Middle Grades." Current Problems of Reading Instruction, Seventh Annual Conference of Reading, University of Pittsburgh Press, Pittsburgh, 1951, p. 28.

[11]Thomas J. Edwards. "Oral Reading in the Total Reading Process." The Elementary School Journal. October, 1957, p. 36.

page. The comprehension process is in essence an interaction between the printed page (stimulus) and the reader's habits, knowledge and background. Teachers believe this idea and work with students with the objective being to "teach them on the instructional level where they find them and helping them progress as far as they can based on the student's mental assessment," but do teachers really know where the student's instructional level is, how much do students already know, how much pre-reading comprehension do they have and how much comprehension do they have after reading a selection?

With the above discussed definitions of reading and comprehension being considered and the urge to know what students already know before they read the questions arise, how does previous knowledge and experience influence comprehension and how does the actual reading of a printed passage influence comprehension? How much comprehension does the reader bring to the printed page before reading and how much comprehension does the reader take from the printed page after reading?

These questions give impetus and motivation for this study.

Statement of Problem

How much pre-reading comprehension and how much post-reading comprehension do black high school seniors exhibit? Would black high school seniors make significant gains in comprehension after reading a selected passage or is comprehension the same before and after reading a selected passage?

Purpose of the Study

The purpose is two-fold:

1. To contribute knowledge to the area of reading research.

2. To investigate the difference between what comprehension black high school seniors bring to the reading of English prose and the level of comprehension they achieve from actual reading.

Theoretical Background

Holmes, Singer, Ruddell, Goodman and Rystrom as reviewed in the literature have presented models of comprehension. Authorities agree that none of these examples can be considered a pure model as comprehension is a vague and complex process; however, the model presented by Guilford (1959) can be adjusted and adapted to the teaching of paragraph comprehension. Guilford's model is called "Three Faces of Intellect."

Smith adapts this model to the teaching of paragraph comprehension as follows:[12]

> Levels of intellectual products appear on the vertical dimension, beginning with the unit, then classes of units, next, relationships among classes, systems of relationships, etc. The horizontal dimension presents another order labelled "Contents," beginning with the figural

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[12]Donald E. P. Smith. "Reading Comprehension: A Proposed Model." The Ninth Yearbook, The National Reading Conference for College and Adults. Ft. Worth, Texas. Texas Christian University Press, 1960, p. 21.

(Implication) Implications	Implications	
(Transformation) Application	Applications	
(System) Paragraph	Conclusions resulting from: logical order temporal order spatial order	Main idea: as topic sentence as implied
(Class) Sentence Similarity and Differences	Contrast: of subject of intent	Comparison: of subject of intent
(Unit) Sentence	Literal Meaning	Implied Meaning
	Convergent (Deductive) Thinking	Divergent (Inductive) Thinking

Fig. 1--A Model of Reading Comprehension[13]

> and ending with the behavioral. The third dimension presents now familiar ways of thinking about thinking, operations labelled cognition (roughly cognition), memory, divergent and convergent thinking, and evaluation.

He further states the "application of this framework to the reading process does a little damage both to Guilford and to the reading skills, but with a little bending, twisting, and trimming we can get them into the same bed."

Fitting this model to comprehension, Smith first states, we need consider only the semantic content since we are dealing with verbal communication in people. We now have two dimensions. The vertical dimension remains faithful to Guilford's model with the exception of "Relations" for which there appears to be no appropriate reading skill. On the horizontal dimension, note the deletion of cognition, memory and evaluation:[13]

> 1. When we read, we seldom merely cognize material. Word recognition and skimming seem to come close to Guilford's meaning, but we usually do something to a sentence when we comprehend it. The doing tends to occur in either a divergent way (e.g., "That sentence reminds me of . . .") or a convergent way (e.g., "Oh, he said we seldom merely cognize . . .").
> 2. Memory, in its usual sense, goes beyond comprehension at this moment. Therefore, it appears to be one step removed. (1) "Memory" has begun to take on new meanings in psychological thinking. One of these meanings derives from the concept of reverberatory activity, the continuous firing of a neuron

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[13] Ibid., p. 23.

circuit or network over a period of time. This activity appears to account for ability to comprehend sentences. The first words or phrases in a sentence remain active until the whole sentence is read. Thus, all words and phrases are active simultaneously leading to the development of a new complex, the main idea of the sentence. With slow reading or brief reverberatory activity, no complex can develop. In this same sence, adequate "Memory" is necessary for comprehension.

3. Evaluation nicely fits our usual concept of critical reading; what one decides about the validity of the material after one has understood it.

Note that comprehension operates at several levels as required by the complexity of the material. The unit is considered to be the sentence, classes to be the grouping of sentences as similar or contrasting in subject and intent, and the system to be the paragraph. A convergent thinking style will then be most suitable for comprehension of literal meanings, for determining differences and for drawing a conclusion from an orderly sequence of sentence ideas. The orders tend to be logical, temporal (time order) or spatial. Note that a conclusion is simply a kind of main idea usually appearing at the end of a paragraph. Its primary difference from a main idea is that it may be deduced, that is it may be determined by the sequence which precedes it.

A divergent style of thinking best fits implied meanings, the noting of similarities and the ability to induce or infer a main idea which is implicit in the paragraph.

If the foregoing analysis is correct, we must conclude that comprehension skills are scarce. Any and all "skills" presented in the usual textbook discussion of comprehension must be encompassed by the few just described, namely: (1) interpreting, (2) getting main ideas, (3) drawing conclusions, and (4) factual recall. This is a conclusion similar to others that have been reached in numerous factor studies of reading comprehension.

Null Hypotheses

1. There is no significant difference between pre-reading comprehension and post-reading comprehension of black high school seniors.

2. There is no significant difference between pre-reading comprehension and post-reading comprehension of black male high school seniors.

3. There is no significant difference between pre-reading comprehension and post-reading comprehension of black female high school seniors.

4. There is no significant difference between pre-reading comprehension and post-reading comprehension in high level, in average level and in low level English classes by black high school seniors.

5. There is no significant difference between pre-reading comprehension and post-reading comprehension of black male and black female high school seniors.

Definition of Terms

The following definitions of the designated terms were used in this study:

1. Reading Comprehension: The skill of recognizing the meaning of a printed selection exhibited by the ability to correctly answer questions pertaining to the selection.

2. Pre-Reading Comprehension: The skill of recognizing the meaning of a printed passage before reading the passage; the amount of meaning recognition brought to the printed page.

3. Post-Reading Comprehension: The skill of recognizing the meaning of a printed passage after reading the passage; the amount of meaning recognition taken from the printed page.

4. Black High School Seniors: Negro students who have completed 24 approved units of credit and are now enrolled in the twelfth grade.

5. Unit of Credit: A semester of work (eighteen weeks) in a particular course.

6. Reading Selections: Five printed passages reproduced from English textbook.

7. Comprehension Check Sheet: A list of multiple choice questions that call for interpretation, factual recall or generalization.

8. High Level English Classes: English classes composed of students who have maintained a grade point average of 3.00 to 4.00 in three years of English classes.

9. Average Level English Classes: English classes composed of students who have maintained a grade point average of 2.00 to 2.99 in three years of English classes.

10. Low Level English Classes: English classes composed of students who have maintained a grade point average of 1.99 and below in three years of English classes.

Delimitations of the Study

Several delimitations must be considered when interpreting the data presented in the study:

1. The study is limited to pre and post reading comprehension of high school seniors enrolled in an all black high school in Oklahoma City.

2. The investigation involved 120 students using five printed selections from English textbooks, with five questions for each selection making a total of twenty-five questions referred to as comprehension checks.

3. In the collection of data the extraneous variables of age and intelligence quotient scores are not considered.

4. The test items used are limited to those five selections rated by the panel of English teachers as being representative of selections appropriate for checking comprehension of Douglass High School students. These test items were taken from the Modern English in Action, Twelve, text, published by D. C. Heath and Company in 1965 and used by all three levels of English classes.

Summary

The complexity and variety of comprehension skills and the need and desire to check the comprehension of high school seniors, particularly black high school seniors have been discussed as an introduction to the study in this chapter. The purpose, hypotheses and the problem have all been stated in Chapter I.

The remaining information to be presented in the manuscript will be presented as follows:

Chapter II: A review of pertinent and related literature. This review to be divided into literature dealing with comprehension in general and comprehension of disadvantaged black students.

Chapter III: Design and Methodology to be implemented in data collection for this problem area.

Chapter IV: Presentation and analysis of data collected.

Chapter V: Summary of findings, conclusions and recommendations based on collected data.

CHAPTER II

REVIEW OF THE LITERATURE

As stated in Chapter I the purpose of the study was to investigate the difference between what comprehension black high school seniors bring to the reading of English prose and the level of comprehension they achieve from actual reading.

Hence the investigator feels it necessary to present a review of pertinent and related literature on the topic of comprehension; literature dealing with comprehension in disadvantaged black students.

The review is presented as follows:

A. Reading Comprehension in General
    1. Percepts
    2. Concepts
    3. Verbals
B. Disadvantaged Black Students and Comprehension
    1. Problems
    2. Programs

A. Reading Comprehension in General

Smith and Dechant point out that comprehension is one of the basic skills necessary for effective reading.[1]

They list the following mechanical skills as components of the overall skill of comprehension:

1. Ability to associate meaning with the graphic symbol.
2. Ability to understand words in context and to select the meaning that fits the context.
3. Ability to read in thought units.
4. Ability to understand units of increasing size: the phrase, clause, sentence, paragraph, and whole selection.
5. Ability to acquire word meanings.
6. Ability to select and understand the main ideas.
7. Ability to follow directions.
8. Ability to draw inferences.
9. Ability to understand the writer's organization.
10. Ability to evaluate what is read: to recognize literary devices and to identify the tone, mood, and intent of the writer.
11. Ability to retain ideas.
12. Ability to apply ideas and to integrate them with one's past experience.

They further state that there are a number of reasons for our concern with reading comprehension. For one thing, we know that it is highly related to academic grades. We should expect this to be true because intelligence and vocabulary skills are basic determinants of school achievement. They also correlate highly with comprehension.

However, comprehension and reading performance are related in still other ways. Fairbanks found that poor

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[1]Henry P. Smith and Emerald Dechant. Psychology of Teaching Reading. Englewood Cliffs, New Jersey. Prentice Hall, Inc., 1961, pp. 213-214.

readers made an average of 5.8 oral errors per 100 words, but that good readers made only 2.1 errors per 100.[2] More relevant is the fact that in 51 per cent of the cases the errors of the poor readers tended to change the meaning, but the errors of the good readers never did. The good readers also corrected their own errors, more often than did the poor readers. This indicates that the basic problem of the poor reader is lack of comprehension.

Numerous studies have been conducted to clarify and verify the concept of comprehension. Those studies that emphasize the amount of comprehension gains a particular group of subjects exhibit are pertinent to this study. In addition to comprehension gains, there are studies that provide theoretical background for a study, such as this. These studies present comprehension models. Singer, for example, has considered substrata factors which are associated with a reader's speed and power.[3] Ruddell has been more interested in examining ways in which aspects of general language behavior, such as reading, writing, speaking

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[2]Grant Fairbanks. "The Relation Between Eye Movements and Voice in the Oral Reading of Good and Poor Silent Readers." Psychological Monographs, 48 (No. 3, 1937), p. 78.

[3]Harry Singer. "Substrata-Factor Reorganization Accompanying Development in Speed and Power of Reading at the Elementary School Level." Office of Education Cooperative Research Project. No. 2011, 1965.

and listening, are interrelated.[4] Goodman, who referred to his model as a "flow chart," dealt with the types of mental processing used by a reader.[5] While each of these models, says Rystrom, considered an important dimension of the comprehension process, no one of them can be readily translated into strategies which a classroom teacher might use in teaching a child to read more effectively.[6] The Rystrom model, presented in "Toward Defining Comprehension--A First Report" suggests that comprehension can be defined as six different skill areas:[7] vocabulary (the child must know the meaning of a particular word as it is used in a particular context); syntax (the child must know the meaning of a particular syntactic structure as it is used in a particular context); item recall (the child must remember a specific statement, or group of statements, from what he reads); item sequence (the child must remember the order in which a series of events occurred within what he read); interpretation (the child must be able to infer an unstated

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[4]Robert B. Ruddell. "Psycholinguistic Implications for a System of Communication Model." Psycholinguistic and the Teaching of Reading. (Edited by K. S. Goodman and J. T. Fleming) Newark, Delaware: International Reading Association. 1969, p. 310.

[5]Kenneth S. Goodman. "A Flow Chart of Goodman's Model of Reading." Unpublished document (Mimeographed) Wayne State University.

[6]Richard C. Rystrom. "Toward Defining Comprehension--A First Report." Journal of Reading Behavior, Vol. 2. Winter, 1970, p. 56.

fact from specific information he has read); and evaluation (the child must be able to determine the degree to which a story is consistent with itself and/or with the real world). This model is an initial step in assisting teachers to determine what they will teach a child in the comprehension program.

The literature includes a few selected studies that deal with comprehension gains in contrast to studies concerned with how to develop comprehension. Preston presented comprehension items (but not the reading passages) of the Cooperative English Test to college freshmen and 77 per cent of the subjects achieved scores better than chance.[8] Imers, Rothney, and Bear reported that Opthalm-O-Graph reading comprehension scores of college students were almost as high when the comprehension test on a given passage was taken before the passage was read as after it was read.[9] Shores writes:[10] Most important of all to both reading comprehension and speed are those factors that relate the reader to the material he is reading--

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[8]R. C. Preston. "Ability of Students to Identify Correct Responses Before Reading." Journal of Educational Research. Vol. 58 Dec. 1964, pp. 181-183.

[9]H. A. Imus and others. An Evaluation of Visual Factors in Reading. Hanover, New Hampshire: Dartmouth College, 1938 p. 66.

[10]J. Harlow Shores. "Dimensions of Reading Speed and Comprehension." Elementary English. Vol. 45, January, 1968, pp. 23-28.

the background of experience he has for this material, his purpose for reading it, his interest in the field and especially in the part of it about which he is reading, his mental set, with respect to this job and to this material, his familiarity with the peculiarities of style and phraseology of this author, and his field, whether these new concepts are compatible with or contrary to those he already holds.

Smith described how students respond to multiple choice items.[11] As presently prepared, one choice is usually too broad, one is too narrow, one is irrelevant and one is correct. Research as reported by the 16th chapter of the Handbook on Educational Research presents research in the area of comprehension under the section of Teaching Meaning. This section emphasizes that word recognition is a preprquisite to reading, but it does not guarantee understanding. Comprehension requires knowledge not only of the meaning of words but of their relationships in sentences, paragraphs, and longer passages. It involves understanding of the intent of the author and may go beyond literal recorded facts to hidden meanings or implications. As with identification-recognition, the exploration of meaning may be multi-sensory. Holmes listed vocabulary-

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[11] D. E. P. Smith. "Clay Models in the Reading Business; Starting and Improving College Reading Programs." Yearbook of National Reading Conference. Milwaukee, Wisc. The National Reading Conference, 1959, p. 164.

in-context, intelligence, and perception of verbal relations in reading.[12] Accordingly, this is concerned with (1) percepts (sensations and images), (2) concepts (symbolization of meanings), (3) verbals (standardization of symbols) and (4) relationships of verbalized concepts (multiple-meanings, denotation, connotation, figurative language, grammar-syntax).

Percepts

Although perception is extremely complex and its relationship to reading incompletely understood. certain definitions and relationship must be considered if the process of comprehension in reading is to be understood sufficiently to enable teachers to improve the process. The materials of thinking (in contrast to the processes) are the instruments of meaning, according to Russell,[13] and are "sensations, images, percepts, memories, concepts, and generalizations." Although the materials of thinking may be considered separately, thinking remains an entity.

Sensations have been extensively explored by psychologists. For the present discussion, the following explanation of sensation will suffice: Each of the senses is susceptible to stimulation by factors within and outside the body. The stimulation generates electrical impulses

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[12] J. A. Holmes, The Substrata-Factor Theory of Reading. Berkeley, Calliffornia Book Co., 1953.

[13] D. H. Russell. Children's Thinking. Boston: Ginn and Co., 1956, p. 69.

which result in the appropriate sensation in the cortical area. Difference in order of stimulation is produced by frequency modulation in impulse. The sensation, being a product of multisensory stimulation, is a product of degree of sensory affectation and ratio of involved senses. Organized patterns of sensations forms percepts.

"A percept may be defined as what is known of an object, a quality, or a relationship as a result of sensory experience," states Russell.[14] A percept may be considered to be the organized pattern of sensations at any given moment. Since sensations may be present from various senses, the percept may be a product of multisensory stimulation. Many explanations of percept development have been offered. Psychologists agree that percepts are learned, but the method of learning is open to question. Two widely accepted theories are discussed by McConnell.[15] The first theory is synthetic, holding that percepts are formed through association of stimulus and response until this relationship is learned. The second theory is analytic, holding that the learner reacts first to a vague pattern, then to parts of the pattern, and finally integrates a new pattern. In either case, perception is the process whereby sensations are apprehended and reorganized.

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[14] Ibid., p. 66.

[15] T. R. McConnell. "Introduction: The Purpose and Scope of the Yearbook." (Ed., N. B. Henry). Yearbook of National Social Studies Education, 1942, Vol. 41, Part II, pp. 3-13.

While much experimentation has been done on sensation and perception, only conclusions relative to how pupils learn meaning through reading are pertinent here. Briefly, they are as follows:

> 1. Only direct experience in building percepts will assure the successful building of concepts. No meaning can result without a foundation of direct experience.[16]
> 2. The learner will do what he "perceives" as being done; thus imitation is important in learning to read just as it is in other learning.
> 3. Various studies have demonstrated that part of a stimulus pattern may eventually evoke the whole pattern. Thus cue reduction is important in reading.
> 4. Where a stimulus pattern is complex, some analysis of stimulus relationships seems to aid perception.
> 5. The importance of giving a child many types of associated sensory experience seems evident, but only if a child sees the relationships involved. Many simple percepts, such as those of number of form, can be improved with practice.[17]
> 6. Some clear, integrated pattern is imperative if the child is to have a memory of the percept at some future time, points out Gray[18] and Russell.[19]

Concepts

Many writers have discussed the nature, development, and importance of concepts. Concepts emerge from percepts and memories. In forming concepts, the individual does not

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[16]Mary D. Serra. "How to Develop Concepts and Their Verbal Representation." Elementary School Journal. 1953, Vol. 53, pp. 275.

[17]Eleanor Gibson. "Improvement in Perceptual Judgements as a Function of Controlled Practice or Training." Psychological Bulletin. 1953, Vol. 50 p. 401.

[18]Lilliam Gray. "Making It Their Own." N.E.A. Journal, 1951 Vol. 40, p. 405.

[19]D. H. Russell. Children's Thinking. Boston: Gin. 1956, p. 67.

usually distinguish clearly between percepts and memories. One definition of a concept is "A symbolic response to the members of one group or class of stimulus patterns." Since the definition indicates no action for the teacher, the following illustration may serve that purpose: A unification of a unique shape, odor, and color forms a pattern in a learner's mind. The pattern acts as a symbol for that class of objects. It may be organized on various levels of complexity, and the complexity increases with experience. The pattern is always symbolized, sometimes verbalized, but the existence of the pattern is revealed by the individual's behavior toward the class of objects.[20] The usual symbol is a word. Using the word "orange" as an example, we see that a child distinguished the fruit by the characteristic color, odor, shape. The symbol he uses for unified characteristics is the word "orange." A rose is a characteristic color, form, and odor. "Democracy" may serve as another example. The child attached the symbol to certain procedures, countries, values.

Research on concept development was summarized by Smoke,[21] Vinacke,[22] and Russell.[23] Each of them noted

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[20]Mary C. Serra. "How to Develop Concepts and Their Verbal Representations." Elementary School Journal. 1953. Vol. 53, p. 276.

[21]R. L. Smoke. "Concept Formation, Encyclopedia of Psychology. (Ed. P. L. Harrison) New York: Philosophical Library, 1946, pp. 97-100.

[22]W. E. Vinacke. "The Investigation of Concept Formation." Psychological Bulletin, 1954, Vol. 48, pp. 1-31.

[23]D. H. Russell. "The Dimensions of Children's Meaning Vocabularies in Grades Four Through Twelve." Education. Berkeley: University of California Publishers. 1954, Vol. 11, pp. 315-414.

the importance of concept development. Russell stated that the completeness and clarity of a child's concepts are the best measure of his ability to learn.[24] It is obvious that concepts develop frequently and easily in human beings. When attempts are made to establish a sequence of development, however, it becomes apparent that concepts have many dimensions. Therefore, a linear sequence of development is difficult to establish. Russell described the process thus:[25] "They seem to move along a continuum from simple to complex, from concrete to abstract, from undifferentiated to differentiated, from discrete to organized, and from egocentric to more social." In the development of understanding of relationships among members of a class, the sequence appears to be: the idea or order, of classification, and of hierarchy.

While the concensus is that concepts are formed by the complementary processes of abstraction (in the sense of "taking from") and generalization, attempts to demonstrate such formation have resulted in single-facet experiments on multiple-facet phenomena. Experiments to show the multidimensionality of concept development have been infrequent.

Piaget, perhaps the best known investigator of concept development, has supplied a partial answer to the question of what meaning for children lies behind the symbol

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[24] D. H. Russell. Children's Thinking. Boston: Ginn. 1956, p. 248.

[25] Ibid., p. 249.

in such areas as number, time, space, and scientific phenomena.[26] In one of a series of studies, Heidbreder worked with college students in a memory situation in which subjects were required to evolve nine concepts--three concrete objects, three spatial and three number.[27] Students were divided into two groups, the first working with pictorial materials, the second with typewritten materials. Verbal definition of a concept was considered as proof of learning. Heidbreder observed that concepts were more easily evolved from pictorial material and that a concept was frequently applied correctly when the subject was unable to define it verbally. For pictorial material, concepts of concrete objects were mastered with least difficulty and those of number with greatest difficulty. No consistent order of difficulty was discernible with verbal material. An investigation by Wenzel and Florry confirmed Heidbreder's findings.[28]

Amen studied the reaction of nursery school children to picture material. She found three major patterns of

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[26] J. Piaget. The Language and Thought of the Child. (Translated by M. Gabain) New York: Harcourt Brace, 1932, p. 11.

[27] Edna Heidbreder. "A Study of Evolution of Concepts." Psychological Bulletin, 1934, Vol. 31, p. 673.

[28] Bernice Wentzel and Christine Flurry. "Sequential Order of Concept Attainment." Journal of Exceptional Psychology. 1948. Vol. 38, pp. 547-557.

interpretation: (1) simple identification, (2) description in terms of overt activity, and (3) psychological inference. The first pattern of interpretation was characteristic of two-year-olds, the last of four-year-olds.[29]

Welch, from experimental evidence, suggested the following levels of abstraction:[30] Level one--concrete object such as "this dog"; Level two--collie; Level three--dog; Level four--animal; Level five--living substance; Level six--substance.

Curti, considering development from percept through concept, suggested the following levels of conceptualization:[31] (1) presymbolic state, in which the infant reacts to objects; (2) preverbal symbolic state, in which the child has an idea but not the concept (he says "mama" to the door through which she has passed); (3) implicit generalization state, in which the idea of a class is there, but it is vague (the child says "horsie" to most four-legged creatures,

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[29]E. A. Amen. "Individual Differences in Apperceptive Reaction: A Study of the Responses of Preschool Children to Pictures." Genet: Psychological Monographs, 1941, Vol. 23, pp. 319-385.

[30]L. Welch. "A Behaviorist Explanation of Concept Formation." Journal of Genetic Psychology, 1947, Vol. 71, pp. 201-251.

[31]Margaret Curti. "Child Development: X Concepts." Encyclopedia of Educational Research, Revised Edition. (Edited by W. S. Montoe) New York: Macmillan, 1950, pp. 175-177.

and some with two legs); (4) explicit generalization state, in which the child forms fragmentary but true concepts.

Lorge and Feifel investigated successive stages of concept development in children as revealed by their verbal responses to the vocabulary test of Form L of the Revised Stanford-Binet Scale.[32] Responses were classified as synonyms, description, explanation, demonstration (repetition, illustration, and inferior explanations were included here), and error. Subjects were 900 pupils 6 to 14 years of age. Results revealed that no particular type of response was exclusively found on a particular age level, but that younger children made more frequent use of description, demonstration, and inferior explanation. Older children employed synonyms and explanation. Younger children saw words as concrete ideas and emphasized an isolated aspect of them rather than categorical or class features. Their descriptions were more personal than symbolic.

Other than sequence, what developmental characteristics of concepts are worthy of consideration from the viewpoint of instruction and learning? Because understanding of specific words and phrases is basic to understanding a paragraph or chapter, a few further factors in concept development may be mentioned.

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[32] I. Lorge and H. Feifel. "Qualitative Differences in the Vocabulary Responses of Children." Educational Psychology. 1950. Vol. 41, pp. 1-17.

Concrete concepts, concerned with objects and their functions, are probably the first to be acquired and are basic to the formation of other concepts stated Carner and Sheldon.[33] Objects can be examined and manipulated; therefore direct experience with objects seems vital in early stages of concept development. The more direct the experience, the greater the learning, points out Serra.[34] It follows that the school must not prevent sensory investigations.[35] Most concept development requires a background of experience and the immediate and personal will be learned first.[36] The integration which results in concept formation is an outcome of sensory impression muscular activity, motor manipulation, and problem-solving.[37] No one can give the learner his concepts;[38] he must construct them actively, out of his own experiences.[39] Teachers who

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[33]R. L. Carver and U. D. Sheldon. "Problems in the Development of Concepts Through Reading." Elementary School Journal. 1954, Vol. 55, pp. 226-229.

[34]Mary C. Serra. Op. Cit., p. 275.

[35]Lou LaBrant. "The Larger Context: Setting." Reading Teacher, 1958, Vol. 11 pp. 234-238.

[36]Guy L. Bond, and Eva B. Wagoner. Teaching the Child to Read (3rd Ed.) New York: Macmillan, 1960, p. 33.

[37]D. H. Russell. Children's Thinking. Op. Cit., p. 249.

[38]Op. Cit., p. 34.

[39]W. A. Brownell and G. Hendrickson. "How Children Learn Information, Concepts, and Generalizations." Yearbook of National Social Studies Education. 1950, Vol. 49, pp. 92-128.

watch children examine and manipulate objects, plants, animals and machines should realize the potential value of such experience in learning.[40] Concepts learned solely from textbooks are often only superficially understood because direct experience is not usually involved, states Diederich.[41]

Concept development in children is primarily a product of intelligence. It is not experience but the ability to profit from experience which largely determines concept development, points out McCullough.[42] Although at times the relationship between concept development and chronological age seems to be closer than that between concept development and mental age.[43]

Vicarious experience is important in the development of concepts. Although direct experience is vital as a foundation for other experiences, it is not, after the initial foundation has been laid, necessarily the best

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[40]T. L. Harris. "Making Reading an Effective Instrument of Learning in the Content Fields." Yearbook of National Social Studies Education. 1948, Vol. 47, Part 2, pp. 116-135.

[41]P. B. Diederich. "Relationships Among Experience, Language and Reading." In Reading in Relation to Experience and Language. Supplementary Education Monograph, 1944, p. 12.

[42]Constance McCullough. "Implications of Research on Children's Concepts." Reading Teacher, 1959, p. 100.

[43]D. H. Russell. Children's Thinking. Boston: Ginn, 1956, p. 18.

experience for concept development. It is impossible to develop all needed concepts by direct experience alone.[44] Picture interpretation, oral language, dramatization, demonstration, and experimentation all have their place in the development of concepts.

In some reading lessons, three-dimensional pictures using stereoscopic color transparencies can stimulate learning, states Feldman, Merrill, and MacGinitie,[45] and two-dimensional motion pictures are of value in concept development, relates Harris.[46] Gorman found that films and film-readers aided primary grade children in understanding concepts which had previously caused difficulty.[47] Teachers found films valuable in building a common background of experience for readers in the second grade.[48] The film appeared to define new words to the

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[44]Mary C. Serra. "How to Develop Concepts and Their Verbal Representation." Elementary School Journal. 1953, p. 53.

[45]Shirley C. Feldman and others. "An Effective Aid for Teaching Reading." The Reading Teacher. 1960, p. 208.

[46]T. L. Harris. "Making Reading an Effective Instrument of Learning in the Content Fields." Yearbook of National Social Studies Education, 1948, p. 116.

[47]H. Gorman. "Adventure with Film Readers, How Motion Pictures Plus Correlated Film Story Books Help Young Readers Read." Educational Screen. 1951, p. 13.

[48]Paul Witty and J. P. Fitzwater. "An Experiment with Films, Film Readers and the Magnetic Sound Track Projector." Elementary English, 1953, pp. 232-241.

extent that little discussion was required for clear understanding.

Flat pictures have been used extensively to build concepts. They may serve to reinforce the spoken explanation or dramatization, or they may be used alone.[49] Dolch suggested five ways in which pictures may aid growth of understanding. The observer sees (1) new things which are just variations of phenomena formerly observed (an animal which differs in color from that previously seen); (2) new combinations of that which has been understood already (the howdah is a combination of the familiar box on the familiar elephant); (3) more of the familiar (by longer or more frequent study); (4) something previously overlooked (object or relationship, such as size comparison of previously observed horse and rider); (5) the completely new (by having someone call it to his attention).[50] Further, Dolch suggested techniques for teaching with pictures:[51] (1) Pictures must be studied, not given a cursory glance; (2) A slow reading habit must be formed for reading pictures; (3) A habit of exploration must be

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[49] I. H. Anderson and W. F. Dearborn. The Psychology of Teaching Reading. New York: Ronald Press, 1952, p. 18.

[50] E. W. Dolch. "Reading Pictures." Eleventh Yearbook. Claremont College Reading Conference, 1946, pp. 183-186.

[51] Ibid., p. 186.

established, so that the picture is examined piece by piece; (4) A habit of discussing pictures must be formed, or the child will look at but not think of what he sees.

Relief maps, maps, charts, diagrams, and other representation which do not contain identifiable pictorial elements can aid in concept development.[52] Examination of research on the ability of children to interpret such illustrative material led Malter to conclude that no one has thoroughly investigated the ability of children of various ages to identify pictured objects, to read graphs, or to read maps.[53] Wagner came to similar conclusions concerning the map-reading ability of sixth-grade children. Although vicarious methods of concept building are of great value, they run greater risk of permitting misinterpretation than does direct experience.[54] A child's concept of a train from a picture may be very different from that which he builds from the real object. Experience combining pictured objects with the objects pictured can aid perception and concept formation. Osburn, Huntington

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[52] T. L. Harris. "Making Reading an Effective Instrument of Learning in the Content Fields." Yearbook of National Social Studies Education. 1948, p. 116.

[53] M. S. Malter. "Children's Ability in Reading Diagrammatic Materials." Elementary School Journal, 1948, p. 98.

[54] Louise D. Wagner. "Measuring the Map Reading Ability of Sixth Grade Children." Elementary School Journal. 1953, p. 338.

and Meeks worked with kindergarten children in an effort to build concepts of relationships among objects. The relationships taught were:[55] A is smaller than B, A is part of B, A belongs with B, A is made of B, A is a kind of B, A is the opposite of B. No control group was used, but the children made scores on reading readiness tests which showed gains superior to average as a result of this training.

Teachers can aid concept development by controlling the environment. Brownell and Hendrickson stated that readiness for learning in any area was maintained by providing a graded series of experiences.[56] A child needs help when the patterns are complex. He must combine previously acquired concepts, word meanings, and direct experience to extend meaning. The child employs, or may be helped to employ, naming, counting, measuring, discriminating, abstracting, and generalizing. His thinking may be inductive, deductive, creative, or a combination of these if the teacher provides the appropriate experiences.[57] The child must build concrete concepts, chronological concepts,

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[55]W. J. Osburn and others. "The Language of Relativity as Related to Reading Readiness." Journal of Educational Research. 1946, pp. 611-612.

[56]W. A. Brownell and G. Hendrickson. "How Children Learn Information, Concepts and Generalizations." Yearbook of National Social Studies Education. 1950, p. 92.

[57]D. H. Russell. Children's Thinking. Boston: Ginn. 1956, p. 27.

spatial concepts, numerical concepts, and social concepts.[58] The teacher must learn to listen for evidence of existing concepts and concept errors, then perform two duties:[59] (1) identify and clarify types and degrees of experience children possess, and (2) enrich and extend experiences essential to new learning. This can be done by providing an abundance of experience which is varied rather than repetitive and by attempting to control the emotional factors associated with the experiences.

Verbals

"In all probability, an inadequate vocabulary is the greatest single cause for failure to read with comprehension, in either general or technical fields" states Cole.[60] Concepts are symbolized, but the symbols are frequently not verbals. Verbals are usually considered to be those standardized oral and written symbols which form the vocabulary of a language. "Reading is concerned with verbalized concepts . . . Through general agreement, certain sounds, symbolized in writing by certain combinations

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[58] R. L. Carver and U. D. Sheldon. "Problems in the Development of Concepts Through Reading." Elementary School Journal. 1954, p. 226.

[59] T. L. Harris. "Making Reading an Effective Instrument of Learning in the Content Fields." Yearbook of National Social Studies Education. 1948, p. 129.

[60] Luella Cole. The Elementary School Subjects. New York: Rinehart, 1946, p. 40.

of letters, are called 'words,' and certain meanings are attached to certain words. The question is simply whether a child is aware of, and in accord with, the common agreement concerning each word."[61] As Pei indicated, in English the written language follows the spoken language, symbolizing sounds or words.[62] Learning to read is easier if the learner is aware of this relationship.

An even more important relationship is that between meaning and written symbols. Many writers have stated that reading is primarily for meaning and that the reading process is one of obtaining meaning from printed symbols. Saale stressed the relationship between previous knowledge and symbols.[63] Anderson and Dearborn acknowledged that meaning rests on experience, that meaning comes through empathy, through response to the symbols rather than the symbols themselves, and that the job of the teacher is to make the child's experiences verbal through reading.[64]

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[61]Mary C. Serra. "How to Develop Concepts and Their Verbal Representations." Elementary School Journal. 1953, p. 275.

[62]M. Pei. The Story of Language. Philadelphia: Lippincott. 1949, p. 28.

[63]C W. Salle. "The Reading Method of Acquiring Vocabulary. Journal of Educational Research. 1943, p. 457.

[64]I. H. Anderson and W. F. Dearborn. The Psychology of Teaching Reading. New York: Ronald Press, 1952, p. 18.

Similar opinions have been expressed by others (Eberhart,[65] and Gates[66]). Cole considered the difficulty experienced by the child, in accepting written words as representatives of realities, to be the basic difficulty in learning the first few words.[67]

Before proceeding with discussion of verbals, we should mention three considerations:

1. The "meaning vocabulary" and "concept knowledge" of a child are not necessarily the same.[68] Serra noted the tendency of investigators of children's concepts to regress to meanings which children have of words. Russell resolved the dilemma by suggesting that if total word knowledge is considered--depth and breadth--the result must differ but slightly from the knowledge of the concept represented by the symbol.[69] It is possible that there is always a concept symbol prior to the verbal symbol.
2. Investigators and educators make a distinction between a word in context and the same word in isolation, implying that meaning is more easily derived from a word in context. It is probably safe to assume that a word is <u>always</u> in context, not necessarily heard or seen in context, but at least understood to be in context. Many problems of investigating word meaning are resolved if such a position is accepted. For example, Anderson and Dearborn explained that in attempting to read

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[65] W. Eberhart. "Discovery of Meaning: Childhood's Greatest Adventure." <u>Educational Research Bulletin</u>, 1945, p. 152.

[66] Arthur I. Gates. <u>The Improvement of Reading</u> (3rd Ed.) New York: Macmillan, 1950, p. 111.

[67] Luella Cole. <u>The Elementary School Subjects</u>. New York: Rinehart, 1946. p. 41.

[68] Mary C. Serra. "How to Develop Concepts and Their Verbal Representation." <u>Elementary School Journal</u>, 1953, p. 276.

[69] D. H. Russell. "The Dimensions of Children's Meaning Vocabularies in Grades Four Through Twelve." University of California Publisher's <u>Education</u>. 1954, p. 315.

an experience chart, the child has the previously experienced activity as context to aid his word-recognition and comprehension.[70] To an experienced reader, the text supplied context or his memory supplies context, but both are dependent upon previous experience.[71]

3. Reading involves deriving meaning from a symbol of a symbol, since the printed word usually represents for the child not the concrete object, but the oral symbol of the concrete object.[72]

Research on "verbals" has also been concerned with the following problems. (1) Total meaning vocabulary (where a word is considered to have but one meaning): (a) measures of vocabulary, (b) size of vocabulary, (c) methods of building vocabulary; (2) Breadth and depth of vocabulary: (a) multiple meanings, (b) implied meaning, e.g., denotation-connotation, figures of speech; (3) Word order: (a) grammar and syntax, punctuation, (b) contractions, initials, formulas; (4) Verbalism.

Attempts to measure segments and estimate totals of children's vocabularies have been numerous during the past 75 years. Among the summaries of this research are those of McCarthy,[73] Russell,[74] and Dale and

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[70] I. H. Anderson and others. The Psychology of Teaching Reading. New York: Ronald Press, 1952, p. 18.

[71] Ibid., p. 19.

[72] Op. Cit., p. 19.

[73] Dorothea McCarthy. "Language Development in Children." In L. Carmicheal (Ed.) Manual of Child Psychology. New York: Wiley Press. 1946, pp. 476-581.

[74] D. H. Russell. "The Dimensions of Children's Meaning Vocabularies in Grades Four Through Twelve." University of California Publishers. Education. 1954, pp. 315-414.

Reichert.[75] Such sources indicate that teachers can distinguish among a child's understanding, speaking, reading, and writing vocabularies.

Research workers should know some of the problems involved in measuring vocabulary, methods which have been found effective for measuring vocabulary, and sources of word lists used in vocabulary estimates.

Two problems in measures of children's vocabularies are that (1) they are measures of limited samples of vocabulary from which the true vocabulary can only be estimated; and (2) invesitigators cannot agree as to what evidence indicates that the word is "known" by the child.[76] Russell concluded that measure of children's vocabularies were usually confined to simple recognition of a synonym in a multiple-choice situation. Kelley, from research on a number of methods of measuring children's knowledge of word meaning, concluded that matching and multiple-choice tests correlated most highly with pupil ability to use words in sentences.[77] Hurlburt, working with

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[75]Edgar Dale and D. Reichert. Bibliography of Vocabulary Studies (Rev. Ed.) Columbus: Bureau of Educational Research. Ohio State University, 1957.

[76]Op. Cit., p. 318.

[77]V. H. Kelley. "Experimental Study of Certain Techniques for Testing Word Meanings." Journal of Educational Research, 1933, p. 277.

pupils in Grades 9 and 11, concluded that recall and recognition techniques must both be used to measure precise knowledge of word meaning.[78] His research showed a limited number of common factors in results of the two measures. In his study, recall was measured by sentence completion, recognition by multiple choice questions; words were selected from Roget's Thesaurus.

Reasons for lack of agreement among these studies are perhaps suggested by LaBrant, who maintained that a young child has one meaning for each word and cannot conceive of it as having another.[79] LaBrant considered language to be always but partially learned--words are partially pronounced, partially understood--and held that, at best, words have the meaning implied by the context in which they were learned. It is important that the teacher not believe or impart the idea that what is known by the child is total learning. As to errors in estimates of a child's vocabulary, McCullough listed factors which affect children's vocabularies:[80] socioeconomic status, television viewing,

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[78]D. Hurlburt. "The Relative Value of Recall and Recognition Techniques for Measuring Precise Knowledge of Word Meanings--Nouns, Verbs, Adjectives." Journal of Educational Research. 1954, p. 561.

[79]Lou LaBrant. "The Larger Context: Setting." The Reading Teacher. 1958, pp. 234-238.

[80]Constance McCullough. "Implications of Research on Children's Concepts." The Reading Teacher. 1959, pp. 100-107.

experience background, intelligence, sex. Since it is difficult to know the relative influences of these factors for any group of children, the validity of any sample of children must be considered.

Some studies have been made of the measures of vocabulary that have been used. Kelley analyzed standard vocabulary tests and isolated 26 item forms which were in use at that date.[81] Larrick suggested the following methods for estimating the size of children's vocabularies:[82] (1) counting different words used in a natural oral-language situation, (2) counting different words used in a natural written-language situation, (3) counting different words in a free-association situation, (4) counting different words in a stimulus-response situation, (5) estimating vocabulary from words recognized on a selected list. The most current list of standard vocabulary tests is to be found in Buros.[83] The two most commonly used lists for estimate of total vocabulary are a random sample from an abridged dictionary and a sample from The Teacher's Word Book.[84]

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[81] V. H. Kelly. "Techniques for Testing Word Meaning Knowledge." Elementary English Review. 1932, pp. 102-105.

[82] Nancy Larrick. "How Many Words Does a Child Know?" Reading Teacher, 1953, pp. 100-104.

[83] O. K. Buros (Editor). Fifth Mental Measurements Yearbook. Highland Park, New Jersey. Gryphon. 1959.

[84] E. L. Thorndike and I. Lorge. The Teacher's Word Book of 30,000 Words. New York: Bureau of Publishers Teachers College, Columbia University. 1944.

How large are children's vocabularies? It is not surprising that this question is difficult to answer when one considers the difficulties encountered in estimating them. Different samples, different sampling situations, an adequate number of samples, methods of evaluating meaning--each contributes a problem in obtaining evidence on the size of children's vocabularies. There have been many studies and many opinions. The weight of research and opinion seems to support somewhat smaller numbers than the estimate by Smith of 24,000 words for the total vocabulary of the average first-grade pupil,[85] and by Seashore and Eckerson of 155,000 words for the vocabulary of the average college student.[86] These estimates are based on recognition of synonyms in a multiple-choice situation. Most other estimates, based on different methods of sampling, are lower.

Of what value is such knowledge to teachers? Perhaps most obvious is the fact that the reading vocabulary requirements of children are very small in comparison to total vocabulary. Perhaps the value of such evidence lies in

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[85] Mary K. Smith. "Measurement of the Size of General English Vocabulary Through the Elementary Grades and High School." Genetic Psychology Monographs. 1941, pp. 311-345.

[86] R. H. Seashore and L. D. Eckerson. "Measurement of Individual Differences in General English Vocabularies." Journal of Educational Psychology. 1940, pp. 14-38.

suggesting other questions which should be answered by research: Has television increased the total meaning vocabularies of children? Are children given opportunity to use the extensive oral vocabularies which they apparently possess or could possess and which could be used as an indirect means of extending meaning vocabularies? Are teachers continuously extending their own meaning vocabularies?

What methods have been used to build children's meaning vocabularies? The methods used to build children's concepts also apply to children's meaning vocabularies. The only distinction between the two situations is that, in vocabulary building, only words can constitute the symbol to complete the concept. Direct experience, experiences with film and still pictures, and conversation to clarify meaning can all be used in conjunction with the word symbols for which meaning is to be built. Gates[87] and Anderson and Dearborn demonstrated the values of direct experience in clarifying meaning;[88] Dolch did the same for pictures;[89] Myers, for listening and conversation with pictures and

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[87]Arthur I. Gates. The Improvement of Reading. (3rd Ed.) New York: Macmillan, 1950, p. 112.

[88]I. H. Anderson and W. F. Dearborn. The Psychology of Teaching Reading. New York: Ronald Press, 1952, p. 19.

[89]E. W. Dolch. "Reading Pictures." Eleventh Yearbook, Claremont College Reading Conference. 1946, p. 184.

models;[90] Reid, for film;[91] Cole,[92] Gates,[93] Serra,[94] and McCullough[95] for language activities. It is reasonable to hypothesize that teachers help build vocabulary to the degree that they listen carefully for clues to errors in word meaning, ask questions which reveal the extent of the meaning of words to children, insist that children use words accurately, and write and speak so that children obtain accurate oral and written information concerning words.

In analyzing the development of meaning in words, Dolch distinguished four separate processes:[96] (1) expanding vocabulary without increasing meaning (adding nutrition as a synonym for food), (2) obtaining new meanings from old meanings (sharper distinctions such as nutrition for

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[90] G. C. Myers. "Reading to Babies and Young Children." Education. 1957, p. 576.

[91] Florence Reid. "Films Provide a Rich Source of Vocabulary Study." Journal of Educational Research. 1958, pp. 617-623.

[92] Luella Cole. The Elementary School Subjects. New York: Rinehart, 1946. pp. 40-41.

[93] Arthur I. Gates. The Improvement of Reading (3rd Ed.) New York: Macmillan. 1950, pp. 316-318.

[94] Mary C. Serra. "How to Develop Concepts and Their Verbal Representations." Elementary School Journal. 1953, pp. 275-285.

[95] Constance McCullough. "Implications of Research on Children's Concepts." Reading Teacher, 1959, pp. 100-107.

[96] E. W. Dolch. "Vocabulary Development." Elementary English. 1953, pp. 70-75.

food that builds and sustenance for food that sustains), (3) undergoing new experiences that yield new meanings, (4) learning incidental vocabulary (from discussion and reading).

Turning to expansion of vocabulary in reading, specifically, investigators recognize three ways in which vocabulary is built in relation to reading: (1) wide reading, (2) direct instruction, and (3) incidental instruction in building meaning vocabulary.

Wide reading is universally recommended as a method of building vocabulary. To consider one example, Alm stated:[97] "The best single means of increasing one's vocabulary is, of course, to read widely." However, most experimental evidence in support of wide reading is indirect, merely indicating that vocabulary and comprehension are closely related. Dunkel concluded that ability to determine precise meaning was related to ability to read with comprehension.[98] Research by Hunt[99] and Reed and

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[97] R. S. Alms. "Teaching Reading Is Our Business." English Journal. 1957. p. 14.

[98] H. B. Dunkel. "Testing the Precise Use of Words." College English. 1944, pp. 386-389.

[99] J. T. Hunt. "The Relation Among Vocabulary Structural Analysis and Reading." Journal of Educational Psychology. 1953. pp. 193-202.

Pepper[100] yielded approximately the same result.

Direct research on the value of reading in increasing meaning vocabulary has yielded disappointing results. Traxler found that mere reading did not appear to build the vocabulary of high school pupils.[101] Sachs revealed substantially the same with college freshmen.[102] There was a low correlation between frequency of appearance of a word in assigned reading and percentage of correct definitions. Perhaps one reason for the discouraging result is to be found in the reading situation presented to the pupil. Many teachers and pupils believe that it is possible to learn unfamiliar context and new vocabulary from the same reading. It is obvious that if the context is unknown, it cannot furnish clues to unfamiliar words. Wide reading in a familiar context containing some unfamiliar words is necessary to build meaning vocabulary.

Strang conducted an exploratory study of the characteristic reactions of high school and college students

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[100] J. C. Reed and R. S. Pepper. "Interrelationship of Vocabulary, Comprehension and Rate Among Disabled Readers." Journal Experimental Education. 1957, pp. 333-337.

[101] A. E. Traxler. "Improvement of Vocabulary Through Drill." English Journal. 1938, pp. 491-494.

[102] H. J. Sachs. "The Role of Meaning in Reading." Fifteenth Yearbook Claremont College Reading Conference. 1950, pp. 19-33.

to unfamiliar words in context.[103] Students were asked to keep detailed records of their procedures and to evaluate the effectiveness of the procedures. Among the procedures reported by the students were the following: ask someone in the immediate vicinity; use the dictionary; guess, then use the dictionary; use context; use affixes and roots (if the student had a foreign language background); use small words in the larger unknown word; use memory association; use a combination approach. Strang concluded that the students had only a vague notion of the types of context clues or techniques for using them to ascertain the meaning of a word; that even mature readers had small success in using roots or affixes; that serious inadequacies in one of the most important aspects of reading were revealed; that unsystematic or casual word study had little value.

Hovious suggested a simple plan for teachers to use in any subject where pupils were required to read material containing unfamiliar words.[104] The plan was twofold. The teacher marked the essential words before assigning the reading and then presented them, anchoring them to the pupils' experience through demonstrations, visual aids, discussions, contrasts, and implications.

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[103]Ruth M. Strang. "How Students Attack an Unfamiliar Word." English Journal, 1944. pp. 88-93.

[104]Carol Hovious. "What Words Mean." Clearinghouse, 1945. pp. 403-407.

Saale reviewed research indicating that amplification of reading material helps students obtain meaning from context.[105] The extensive reading which results from amplification enables students to gain the background of information needed to learn word meaning from context. This suggests that it may be helpful to expand materials by use of teacher's and students' writing.

Werner and Kaplan investigated the processes underlying acquisition of word meaning through context.[106] Twelve series of six sentences each were constructed using artificial words embedded in sentences. A reader arrived at the meaning of an artificial word by progressing through sentences which increased in definiteness of clues. An example was the artificial word corplum and the six phrases: (1) A _____ may be used for support. (2) _____ may be used to close off an open space. (3) A _____ may be long or short, thick or thin, strong or weak. (4) A wet _____ does not burn. (5) You can make a _____ smooth with sandpaper. (6) The painter uses a _____ to mix his paint. When the sentences were submitted as exercises for children between the ages of 8 and 13, results were as follows: (1) Correctness

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[105] C. W. Saale. "The Reading Method of Acquiring Vocabulary." Journal of Educational Research, 1943, pp. 457-464.

[106] H. Werner and Edith Kaplan. "The Acquisition of Word Meanings: A Developmental Study." Monographs of Social Research in Child Development. 1950, 15, No. 51.

was closely related to conventionalization of word meaning used in a given context. (Thus if a child gave a "correct" meaning for an artificial word, it showed his power of logic, his experience. and his mastery of the English language.) (2) For pupils to succeed in these exercises, it was necessary for them to realize that words have a relatively stable and self-contained meaning apart from any sentence. (3) Meaning was expressed through linguistic media. (Lack of grammar or syntax made it difficult for a pupil to distinguish the lexical entity of a word.) (4) For pupils to succeed, it was necessary for them to discover that a verbal symbol could stand for object, situation, or relationship, and could vary from instances where there was a direct relation between symbol and referent (as in onomatopoetic words) to those where relation of symbol to referent was indirect.

Heavey studied word meaning in newspaper contexts and formulated the following procedure for use by pupils in acquiring meanings:[107] (1) Guess the meaning from context. (2) Obtain the pronunciation from the dictionary. (3) Name the part of speech. (4) Compose an original sentence using the word. Ragle worked with eleventh- and twelfth-grade pupils, using contemporary magazines and newspapers. Pupils

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[107]Regina Heavey. "High School Students Build Vocabularies." Reading Teacher. 1954, pp. 229-231.

were asked to record words encountered in context and to consult the dictionary for meaning. Ragle claimed that his procedure increased student interest in word meaning, especially when the students were asked to locate, in contemporary reading, unknown words which had occurred in literature assignments.[108]

McCullough, from a review of research on word study in context, concluded that pupils must be helped to understand that context clues extend beyond the sentence in which the unknown word appears. In some cases the nature of an entire book must be understood in order to understand the specific meaning of an unknown word used in a specific setting in the text. McCullough listed context clues which should be taught by teachers as follows: (1) experience clues, (2) comparison-contrast clues, (3) synonym clues, (4) summary clues, (5) definition clues, (6) clues of familiar expression, and (7) presentation clues (word order).[109]

A number of writers have discussed difficulties in communication which arise because of meaning which lies in the broader-context of written materials. Although research has not been conducted here, all of these writers stress

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[108] J. W. Ragle. "Something Old, Something New, Something Borrowed--A Vocabulary Program." English Journal. 1956, pp. 208-211.

[109] Constance McCullough. "What Does Research Reveal About Practices in Teaching Reading?" English Journal. 1958, pp. 475-490.

the importance of teaching students to observe closely, to study the text to obtain meaning from the broader context. Smith stressed the need to observe words with miltiple and changing meanings, trends in word formation (such as the tendency to add endings and beginnings to old words to produce new words), and invented words.[110] The teacher needs models, illustrations, discussions, films, and exhibits to clarify these words. LaBrant listed clues in the context which supply meaning with reference to such factors as the time and setting of the writing.[111] Such "setting" clues may be famous names, methods of transportation, building, clothing, methods of food storage, or occupations that are mentioned in the piece of prose. She suggested that junior high school teachers might ask pupils when and where the story occurred and then have the pupils answer the questions by a search for context clues.[112] Cook discussed the same topic, stressing close observation of very difficult clues such as the use of idioms.[113]

Since comprehension of the ideas expressed is often the chief outcome of the reading act, it may be repeated

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[110] Nila B. Smith. "Reading: Concept Development." Education. 1950, pp. 548-558.

[111] Lou LaBrant. "The Larger Context Setting." Reading Teacher. 1958, pp. 234-238.

[112] Ibid., p. 232.

[113] Luella Cook. "Language Factors Involved in Interpretation." Reading Teacher. 1959, pp. 152-157.

that the teacher can help pupils work for comprehension in two main ways. The previous sections dealt with the perception and comprehension of words, phrases, and sentences. Discussion here is based on the concept of comprehension in terms of the reader's purposes. There are obviously over-lapping concerns. For example, in reading sentences or paragraphs the pupil may be skimming to get some specific facts (purpose) and he may be reading social studies materials (content). By the time the child has reached the primer or first-reader level of reading ability, he may need the teacher's suggestions about efficient ways of reading one sentence in contrast to reading a whole story (unit of material), reading a paragraph for main idea rather than specific details (purpose), and distinguishing between factual and fictional materials (content). Despite this overlapping of types of comprehension in reading, there may be some value in presenting samples of the research or practice in each of the three main divisons as a guide to the research worker who wishes to study problems of teaching children engaged in specific reading activities. As in the case of other kinds of teaching, research on teaching reading must always take into account each of the specific ends toward which teaching and learning are aimed.

As suggested above in the discussion of comprehension of various verbal units, the teacher who is concerned with comprehension in terms of purpose has clear direction from

research that specific reading techniques vary with purpose. The child who reads carefully for detailed recall is not necessarily the child who reads best for the main idea of a passage, and the child who recognizes clearly the sequence in a chapter in a history textbook is not necessarily the one who masters his facts in a chapter on science. From some of the studies of eye movements reported by Buswell, Judd, and others around 1920, there is evidence that the poor reader goes about various reading tasks in the same inflexible way, whereas good readers adapt their rate and method to the purpose at hand. In an early study, Pressey and Pressey concluded that a good silent reader of one type of material may be an average or poor reader of other material.[114] Later, Shores and Husbands found that speed of reading depends upon both the purpose of the reader and the characteristics of the printed materials.[115] These investigators and others, such as Fay, give strong support to the idea that reading is not a unitary skill.[116] The capable teacher is the one who helps children recognize

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[114]Luella C. Pressey and S. L. Pressey. "A Critical Study of the Concept of Silent Reading Ability." Journal of Educational Psychology. 1921, pp. 25-31.

[115]J. H. Shores and K. L. Husbands. "Are Fast Readers the Best Readers?" Elementary English. 1950, pp. 52-57.

[116]L. C. Fay. "The Relationship Between Specific Reading Skills and Selected Areas of Sixth Grade Achievement." Journal of Educational Research. 1950, pp. 541-547.

various purposes for reading and then gives them opportunities to improve their abilities to read for these somewhat distinct and separate purposes. The question of which specific abilities to develop is answered in various sections below after a few references have been made to general studies of comprehension.

Johnson summarized studies of comprehension up to the middle 1940's and found comprehension related to characteristics of the reader and readability of the materials.[117] She believed that most tests of comprehension are measures of "word knowledge and recall of facts" and do not evaluate higher level comprehension abilities.[118] In a much quoted study, Davis factor-analyzed the results of nine reading tests and found such components of reading ability as word knowledge, verbal reasoning, and ability to focus on specific statements, to use context, and to determine the author's purpose.[119] In a later analysis of the same data using Spearman's unidimensional method of analysis, Thurstone found that the intercorrelations of test results could be accounted for by a single common factor which the

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[117] Marjorie S. Johnson. "Factors in Reading Comprehension." Educational Administration and Supervision. 1949, pp. 385-406.

[118] Ibid., p. 386.

[119] F. B. Davis. "Fundamental Factors of Comprehension in Reading." Psychometrika. 1944, pp. 185-197.

termed simply "reading ability" and concluded that we need further evidence about "the components of the complex that we call reading ability."[120]

Another type of study more closely related to classroom situations was made by Bell with fifteen-year-olds in Scotland.[121] He found that comprehension questions ranged from easy to difficult as follows: (1) questions of direct reference, whose answers can be found in the text in the same words; (2) questions of indirect reference whose answers can be found in the text in slightly different words; (3) questions demanding easy inferences that are not stated in the text but can be inferred from it and may range from easy to difficult; (4) comprehension involving qualifying phrases such as "largely," "alone," "chief," "only," "full," and similar words; and (5) questions demanding difficult inferences with emphasis on ideas rather than words. This order may differ somewhat with younger children. A study by Keneally illustrated just how difficult it may be to acquire skills like grasping the main idea and organizing a passage.[122] By controlling the relative

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[120] L. L. Thurstone. "Note on a Reanalysis of Davis Reading Tests." Psychometrika. 1946, p. 188.

[121] H. Bell. "Comprehension in Silent Reading." British Journal of Educational Psychology, 1942, pp. 47-55.

[122] Katherine G. Keneally. "A Study of the Relative Order of Difficulty of Several Types of Study Skills." Master's Thesis. Boston University, 1939.

difficulty of passages, she found that only the following percentages of a group of sixth-graders performed various tasks correctly:

Task	Percentage Correct
1. Supplying minor ideas in an outline which lists the major ideas.	65
2. Selecting the statement which best summarizes a paragraph.	50
3. Putting a list of topics in the sequence in which they occur.	39
4. Matching headlines or topics with paragraphs.	23
5. Supplying major topics in an outline in which minor ideas are given.	16
6. Writing original headlines or topics for paragraphs.	10

The studies by Bell and Keneally indicate that when teachers ask different kinds of questions about the same passage, pupils will find some types of questions more difficult than others. McNaughton found that the written responses of seventh-graders to selections containing concrete historical materials could be categorized on five levels:[123] (1) copied facts, (2) qualified facts, (3) concrete concepts, (4) abstract concepts, and (5) generalizations. In free responses about the most important ideas in a passage, the pupils tended to

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[123] A. H. McNaughton. "The Ability of Seventh Grade Children to Infer Meaning and to Generalize From Two Selections of Written History Materials." Unpublished doctoral dissertation. University of California, Berkeley, 1960.

answer at the level of facts and concrete concepts. When given further chances to answer other questions, they responded more at the level of abstract concepts and generalizations. The kind of question asked is an important determiner of the level of children's responses to reading materials.

Smith reviewed eleven studies showing that different reading purposes are used in different subject-matter fields and that specialized reading skills can be improved with direct instruction.[124] What are some of the specific skills related to the reader's purpose? Some fifteen purposes have been identified, four of which are discussed below.

Reading for the main idea is a skill often acquired, in part, in the first grade. It is sometimes used by children and adults in casual reading, such as going over the newspaper when one is not deeply concerned with the news items. Pupils practice the skill when the teacher asks them, "Tell in one sentence what the paragraph is about" or "Choose the best title for the story." McCullough showed that children can grasp the main idea of story material as early as the readiness level.[125] Although there was a positive relationship among skills in different

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[124]Nila B. Smith. "Utilizing Reading Opportunities in the Entire Curriculum." Education, 1952. pp. 579-589.

[125]Constance McCullough. "What Does Research Say About Practices in Teaching Reading?" English Journal, 1958, pp. 475-490.

types of reading at the second and fourth grades, there was some evidence the children tested were better at reading for specific facts than at reading for main idea or drawing conclusions. Broening, in analysis of the reading abilities of a large group of secondary school students, concluded that reading to grasp the central idea is based on three skills:[126] (1) noting key words and topic sentence as clues; (2) differentiating between main points and supporting details; and (3) knowing the meaning of relational words such as but, therefore, and consequently.

Reading for sequence is the skill that often begins in first grade with the ability to follow the main events of a story, an ability also related to reading readiness.[127] Children may be encouraged to check word clues such as then, next, or after some time in establishing sequence. Adults reading a continued story in a magazine employ skills in remembering sequence. In school, the skill is needed in reading social studies, in following the plot of a story, and in outlining in many areas.[128]

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[126] Angela Broening. "Abilities Which Contribute to Effective Reading." Education. 1941, pp. 11-17.

[127] Arthur I. Gates, Guy L. Bond, and D. H. Russell. Methods of Determining Reading Readiness. New York: Bureau of Publishers, Teachers College, Columbia University, 1939, p. 23.

[128] E. L. Thorndike. "The Teaching of English Suffixes." Teachers College of Contributive Education. 1941, No. 847.

Reading to follow directions is a skill that may involve detailed reading, but it seems to require an additional factor of translating printed symbols into some sort of action. As such it may also involve sequence, as in the steps for conducting an experiment or making a cake. Although many teachers spend much of their school day giving directions a psychology of direction giving has not been developed. Some studies of listening ability have dealt with such factors as interference and redundacy, but little help is available to teachers in the use of printed directions.[129] Many children acquire some of these abilities in following work book directions and the requirements of study-type exercises. This type of reading is probably close to the reading of verbal problems in arithmetic, which is discussed below. Carroll has shown that reading directions improves with specific practice.[130]

Reading to draw conclusions is the reading skill that may be defined as picking up ideas explicitly stated by the author, rearranging them as needed, and coming to some fresh or original generalization about them. It occurs,

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[129]C. I. Hovland. "Effects of the Mass Media of Communication." In G. Lindsey (Ed.) Handbook of Social Psychology. Cambridge, Mass.: Addison-Wesley. 1959. pp. 1062-1103.

[130]R. P. Carroll. "An Experimental Study of Comprehension in Reading, with Special References to the Reading of Directions." Teachers College Contributive Education. 1926, No. 245.

for example, when children take the actions of a character in a story--what others say about him, what he says--and come to some conclusion about the kind of person he is. Such reading is sometimes described as problem-solving, especially when the problem is presented to the child by other persons or circumstances, or it may be included under the broader label of "creative reading" discussed below. Clark analyzed some of the skills needed by sixth-graders in reading as a basis for predicting various outcomes and found they could be taught successfully in the form of self-explanatory materials. He found a correlation of .52 between general comprehension ability and scores on his experimental test of ability to predict.[131]

B. Disadvantaged Black Students and Comprehension

Downing points out that reading is often defined as the ability to obtain meaning from printed symbols.[132] This functional definition underscores the contribution made to reading instruction by content area teachers who provide systematic instruction in the use and

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[131] C. M. Clark. "Teaching Sixth-Grade Students to Make Predictions from Reading Materials." Unpublished doctoral dissertation, University of California, 1958.

[132] Gertrude L. Downing. "Classroom Activities for Children Without: Secondary Grades." Reading for Children Without: Our Disadvantaged Youth. Compiled by Millard H. Black and Gertrude Whipple. Newark, Delaware: International Reading Association. 1966, pp. 27-37.

interpretation not only of textual materials, but maps, globes, graphs, charts, tables and diagrams. In almost every aspect of the curriculum there is need for developing pupil ability to comprehend both verbal and non-verbal symbols: because of this every teacher should be aware of the necessity for such instruction. Downing suggests specific procedures for developing comprehension of our disadvantaged youth:[133]

1. Question pupils' understanding on three levels:
   - Literal:
     How old was Benjamin Franklin at the time of this story?
     (Answer is stated directly in the text)
   - Interpretative:
     About how many years ago did these events occur?
     (Date of the story is given. Pupils must estimate elapsed time)
   - Evaluative:
     Why do you think Ben was interested in inventing things?
     (Pupils must infer from text and interpret in terms of their own experience)
2. Guide pupils in identifying main ideas through the use of well-written paragraphs of content in all the subject areas. At first, let pupils choose appropriate paragraph headings from a list; later, have them develop their own.
3. Ask pupils to number a jumbled list of events in sequential order after having read a short narrative passage.
4. Let pupils classify familiar events under cause and effect headings, using relevant material such as social studies content.
5. Provide opportunities to judge facts and to predict outcomes by: Having pupils draw

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[133] Ibid., pp. 27-37.

conclusions from observations in a science demonstration; stopping the reading of a narrative before its conclusion and allowing pupils to guess the denouement; and leading pupils to suggest alternative actions in evaluating current events.

6. Motivate careful reading for understanding by designing well-written directions to be followed for craft and shop activities. Simple paper and pencil puzzles whose solutions rely upon sequential following of written instructions also may be used to develop careful reading.

Teachers who enter the secondary schools are in the main accustomed to thinking and planning in terms of pupils who possess the necessary competencies in communication and who are receptive to specific learning experience in a given content area. Most teachers are dismayed when faced with groups of culturally different adolescents whose language skills are underdeveloped and whose receptivity to the customary curricular offerings is marginal. Many intercity schools are putting forth special effort to provide programs to help these culturally different children. In some areas teachers of high school English improve the reading skills of students without by changing the curriculum.[134]

What chance has the pupil from a low socio-economic environment to succeed in the typical college-oriented English program? How meaningful will Milton, Shakespeare,

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[143]Gertrude Whipple. "The Culturally and Socially Deprived Reader." The Underachievers in Reading. Compiled and edited by H. Alan Robinson. Supplementary Educational Monographs. No. 92, Chicago: University of Chicago Press. 1962, pp. 129-135.

Chauser, or Shelley be to him? How much interest will he evidence in reading The House of Seven Gables, The Last of the Mohicans, or Thanatopsis? Pupils who are described as being "culturally disadvantaged" do not know what the school assumes that they know, nor have they the many different reading skills--and the attitudes toward reading and its various purposes--that they must have to be successful with the content of the average high school English curriculum.

During a summer workshop for teachers of secondary English courses in the Detroit Public Schools, a curriculum in communication skills for slow and culturally different students was designed.[135] This curriculum was to be interesting and challenging to these pupils and would be tailored to meet their needs. A basic premise of the activity was that it would provide assurance of success for the students and emphasize the skills which are important for reading magazines, newspapers, and books of popular interest.

The skills which were stressed included conversing, discussing, analyzing mass media, keeping posted on current affairs, listening organizing, and thinking critically. Major emphasis in instruction was placed on proceeding from the concrete, rather than from the abstract.

Plans were carried out for insuring the selection

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[135] Gertrude Whipple. "The Special Needs of Children Without." Reading for Children Without: Our Disadvantaged Youth. Neward, Delaware: International Reading Association, 1966. pp. 1-10.

and availability of content which would be of interest to this particular type of student. Because of the importance of advertising in the lives of everyone, considerable attention was given to advertising appeal and consumer buying. Other kinds of content which were used included humor, managing time, managing money, improving personal appearance, developing a code to live by, and dealing with tensions, frustrations, and disappointments.

Initial evaluation of the program, based upon a single semester's experimentation, indicated that motivation for learning had been increased and that failure, dropout, absence, and tardiness had been reduced. Increase in the use of the basic skills of communication also was observed.

As part of a larger experiment to determine effective ways to interest adolescents in reading and to increase their reading skills, two high schools in underprivileged areas deliberately set out to make reading material and remedial-reading instruction accessible to those pupils whose reading skills were distinctly below average.[136]

The school officials and teachers believed that it would be possible to increase the desire of pupils to read if many books of many different levels of difficulty

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[136] Ibid., pp. 11-16.

were readily available and if sufficient time was set aside for pupils to read them in an environment conducive to reading. It was also thought that remedial reading instruction might be effectively coupled with a library program.

Reading rooms which could comfortably accommodate 80 or more students were generously stocked with a wide variety of books. Some of these were in paperback, some in hard cover; some of them were easy to read, some were difficult. Students who were assigned to the program came to read twice weekly. One of the unique features of this experiment was the presence of a teacher assistant who acted as librarian, and aided pupils in selecting books according to their interests and their own assessments of their reading ability. This person had a wide background in English and literature, but had not received teacher-education. Another assistant with similar qualifications supervised programmed instruction in English one day each week. The regular teacher, released by the assistance provided, gave special help in reading and composition to the 15 or 20 students who needed it most. This specialized instruction was conducted in a nearby classroom. Each student's compositions were kept in an individual folder and referred to by the teacher during individual help to make the student aware of his progress.

Informal evaluation indicated that under this program the students read more books than ever before. This is a very gratifying finding inasmuch as an increase in the amount of reading tends to increase reading ability.

Today all aspects of reading instruction are in a state of ferment, says Helene M. Lloyd, and we who are caught up in this ferment find it difficult to separate trends from fads or to know exactly what is ahead in reading.[137] The imperative need is to improve the level of reading achievement of socially disadvantaged children.[138] Lloyd advocates eight avenues of attack in meeting the reading needs of the socially disadvantaged child. She points out that an all-out assault on the problem in New York City is being conducted by the use of eight avenues:[139]

> Avenue I - New types of tests will be developed to give a more valid picture of the disadvantaged child's capacity to learn to read.
> Avenue II - All-out efforts will be made in the years ahead to encourage language development earlier and to build necessary concepts.
> Avenue III - The development of urban-oriented materials will be accelerated.
> Avenue IV - The preservice and inservice education of teachers in the area of reading will be improved.
> Avenue V - There will be an increase in the quality and the quantity of the special personnel provided for upgrading reading in schools in disadvantaged areas.
> Avenue VI - The reading program will be stabilized, particularly in disadvantaged areas, by the use of adequate reading records.

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[137] Helene M. Lloyd. "What Is Ahead in Reading for the Disadvantaged." The Reading Teacher. Newark, Delaware: The International Reading Association, 1955. p. 471.

[138] Ibid., p. 471.

[139] Op. Cit., pp. 472-476.

Avenue VII - There will be focus on more and improved research studies in beginning reading for all children, with special emphasis on the disadvantaged.

Avenue VIII - There will be means found to stretch the school day and school year to provide the required reading instruction time for socially disadvantaged children.

What's ahead in reading? I have enumerated eight avenues so promising that they seem certain to develop into tomorrow's throughways. The important thing in this discussion, however, is not any one of these avenues, or even all of them together, but rather the assurance they offer that the situation can be corrected by people who are determined to correct it. What lies ahead in reading? Action by people who are determined.

Ruddell and Graves studied the responses of children to visual stimuli. noting the difference in error rate between one group identified as "low socio-ethnic Negro" and another group identified as "high socio-economic Caucasians."[140] When the stimulation was familiar to only the latter group, the error rate was highest among those in the former group. However, when the stimulation was equally unfamiliar, the error rates were not significantly different. One conclusion of this study indicates that any child will produce verbal errors when presented with unfamiliar stimulation. The stimulation of the denied child is nearly always unfamiliar.

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[140]Robert B. Ruddell and Barbara W. Graves. "Socio-Ethnic Status and the Language Achievement of First Grade Children." Elementary English. 1966, pp. 635-642.

Smith, in comparing the responses of two subgroups of good and poor readers in a twelfth grade to questions posed by the investigator, found that subjects whose intelligence quotients were within approximately the same range differed in success in reading, and that differences appeared to be more closely related to reading achievement than to the mental ability of the students.[141]

Covington reported that a group of pupils in grade five with lower I.Q. scores (below 100) was not specifically handicapped in what was termed "creative understanding." The conclusion drawn that: "the fact that these same low I.Q. children were reading on the average almost two years below grade level strongly suggests that students can benefit from such instruction (in creative understanding) in reading proficiency, provided, of course, that the reading level of the materials is adjusted accordingly."[142]

John conducted a study and reported findings of three socio-economic groups of Negro children.[143] Stewart raises questions about the validity of findings reported by John. This study conducted by John described verbal and classificatory

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[141]Helen K. Smith. "The Responses of Good and Poor Readers When Asked to Read for Different Purposes." Reading Research Quarterly. 1967, pp. 53-83.

[142]M. V. Covington. "Some Experimental Evidence on Teaching for Creative Understanding." The Reading Teacher. 1967, pp. 390-396.

[143]Vera P. John. "The Intellectual Development of Slum Children: Some Preliminary Findings." American Journal of Orthopsychiatry, 1963. pp. 813-832.

skills of three socio-economic groups of Negro children. Stewart is concerned that some of the instruments used in John's study (he cites the Peabody Picture Vocabulary Test and the Lorge-Thorndike Intelligence Test) contain only standard English linguistic forms and are based upon middle-class heuristic styles:[144] Stewart suggests that John's findings might merely indicate "little more than differences in language forms and heuristic styles in her three groups." Baratz believes it imperative that innercity Negro children should be taught to read using materials written in "the child's own language."[145] Problems involved in the construction and use of such materials are discussed by Stewart and Goodman. Goodman believes that materials based on non-prestigious dialect would be rejected by leaders in the speech community.[146] Such materials are, however, already being prepared by Baratz and tried out in

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[144]W. A. Stewart. "On the Use of Negro Dialect in the Teaching of Reading." In Joan C. Baratz and R. W. Shuy (Eds.) Teaching Black Children to Read. Washington, D.C. Center for Applied Linguistics, 1969. pp. 156-219.

[145]Joan C. Baratz. "Teaching Reading in a Negro School." In Joan C. Baratz and R. W. Shuy (Eds.) Teaching Black Children to Read. Washington, D.C.: Center for Applied Linguistics, 1969, p. 92.

[146]Kenneth S. Goodman. "Dialect Barriers to Reading Comprehension." In Joan C. Baratz and R. W. Shuy (Eds.) Teaching Black Children to Read. Washington, D.C.: Center for Applied Linguistics, 1969, pp. 14-28.

Washington, D. C. The students in this study are the disadvantaged. Robert J. Havighurst states that disadvantaged is a relative term.[147] When we speak of a child as being socially disadvantaged, we mean that he has a disadvantage relative to some other child for some kind of social life. It means also disadvantaged for living competently in an urban, industrial and democratic society. A child who is handicapped in the task of growing up to lead a competent and satisfying life in the American Society. Whipple states: We know that culturally disadvantaged children have not been deprived of their capacities to grow intellectually.[148] Their limitations relate to culture rather than intelligence.[149] These children are educable.[150] But great numbers of culturally disadvantaged children develop attitudes of frustration and hopelessness as early as the first grade. They stop trying to learn. Many girls soon become inert, many boys, aggressive; and children of both sexes develop into behavior cases. No wonder that large numbers of disadvantaged children drop out of school as quickly as they can, most of them to join the ranks of the unemployed.

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[147]Robert J. Havighurst. "Who Are the Socially Disadvantaged?" The Journal of Negro Education. 1964, pp. 210-217.

[148]Gertrude Whipple. "The Special Needs of Chidlren Without." Reading for Children Without--Our Disadvantaged Youth. Newark, Delaware: International Reading Association, 1966, pp. 1-10.

[149]Ibid., p. 11. [150]Ibid., p. 12.

Millard H. Black asked: Who is the educationally or culturally disadvantaged child? What are his characteristics? What are some of the factors of his environment which affect his educational achievement?[151] The answers vary from state to state, from city to city. One southern governor in January, 1964, declared that 20 per cent of the citizens of his state can neither read nor write, that 50 per cent of the state's young people fail to complete high school. The disadvantaged child is of no single race or color: poverty, delinguency, failure to achieve the goals established by the main stream of society are shared by peoples of all colors and national origins. Riessman characterized the deprived individual thusly:[152] He (a) is relatively slow at cognitive tasks, but not stupid; (b) appears to learn most readily through a physical, concrete approach (often is slow, but may be persistent when the content is meaningful and valued); (c) often appears to be anti-intellectual, pragmatic rather than theoretical; (d) is traditional, superstitious, and somewhat religious in a traditional sense; (e) is from a male-centered culture, except for a major section of the Negro subculture; (f) is inflexible and not open to reason about many of his beliefs

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[151]Millard H. Black. "Characteristics of the Culturally Disadvantaged Child." The Reading Teacher. 1965, pp. 465-470.

[152]Frank Riessman. The Culturally Deprived Child. New York: Harper and Row Publishers, 1962, pp. 10-12.

(morality, diet, family polarity, and educational practice are examples of these beliefs); (g) feels alienated from the larger social structure, with resultant frustration; (h) holds others to blame for his misfortunes; (i) values masculinity and attendant action, viewing intellectual activities as unmasculine; (j) appreciates knowledge for its practical, vocational ends, but rarely values it for its own sake; (k) desires a better standard of living, with personal comforts for himself and his family, but does not wish to adopt a middle-class way of life; (l) is deficient in auditory attention and interpretation skills; (m) reads ineffectively and is deficient in the communication skills generally, has wide areas of ignorance, and often is suggestible, although he may be suspicious of innovations.

In assessing some of the strengths of this group of children, Riessman describes them as:[153] (a) being relatively free of the strains which accompany competitiveness and the need to establish oneself as an individual; (b) having the cooperativeness and mutual aid which marks an extended family; (c) being free of self-blame; (d) enjoying other members of the family and not competing with them; (e) having the security deriving from an extended family and a traditional outlook; (f) enjoying games, music, sports, and cars.

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[153]Frank Riessman. "The Overlooked Positives of Disadvantaged Groups, Journal of Negro Education. Vol. 33, 1964. pp. 225-231.

The following factors, reflecting the conclusions of many persons who have studied the causes and results of cultural disadvantage, are believed by Dr. Newton S. Metfessel to be operative in the lives of children from disadvantaged homes:[154]

> Culturally disadvantaged children understand more language than they use; use a great many words with fair precision, but not those words representative of the school culture; frequently are crippled in language development, learn less from what they hear; generally have had little experience in receiving approval for success in tasks; generally are unaware of the ground rules for success in school, generally are placed at a marked disadvantage by timed test situations and they must be helped to accommodate themselves to an adult role which is unfamiliar to them.

The children for whom we have special concern in this study are "children without." Children without come from families without. Such families crowd the inner sections of large cities. The families lack sufficient resources to provide the basic needs of food, clothing, and shelter. They live in crowded substandard housing without enough space for play, reading, and study. The children do not have stable family ties. Many come from one-parent homes. Others have frustrated parents who move about looking for work they can't find. The children receive little personal attention. Physical handicaps are much more common among

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[154]Newton S. Metfessel. Unpublished research, Center for the Study of the Education of Disadvantaged Youth. University of Southern California, 1964.

children without than among children with. Children without more often suffer from eye defects, hearing loss, and neurological problems. They are more subject to malnutrition and disease. Many have never had the services of a doctor, and fewer have had dental care. These children are seriously retarded in language development. The language they hear at home is often a special dialect different from standard English. Children without do not have sufficient vocabularies to express their ideas. They are unable to carry on connected discourse when they enter first grade because they have mainly heard imperative and partial sentences at home. They use incorrect word forms and immature sentence structure and cannot elaborate their ideas. Their language deficiency, in turn, dwards their power to think, reflect, and imagine.

The constricted lives of these children have prevented them from acquiring the concepts needed in school. Most of their parents are indifferent to the ultimate values of education, and have not instilled in them a desire to learn. Because of the noisy, crowded homes, the children have developed the habit of ignoring sounds, and by school age they are markedly deficient in listening skills. They have short attention spans. Their aspirations are low and they seek immediate satisfactions rather than distant goals.

What are the characteristics of a disadvantaged area? We can round out the description of our culturally disadvantaged

children by citing some characteristics of a large area in Los Angeles County, which appears to be similar to the characteristics of other very low income areas. Agencies which are seeking to ameliorate cultural disadvantage state that in this area: (a) the percentage of broken homes is almost three times that of the total county; (b) family income is 25 per cent below the county median; (c) population density is approximately double that of the entire county; (d) housing is substandard, and continues to decline in quality; (e) the school dropout rate is 2.2 times as large as the average of the city; and (f) youth delinquency rates are higher in almost all offense categories than for the county generally.[155]

The subjects in this study come from areas similar to those described in the literature and can be classified as children without, the disadvantaged youth.

Summary

A review of literature has been presented dealing with comprehension in general including a. skills, b. concept development, c. percepts, and verbals; in addition literature presented reviewec conprehension and disadvantaged black students organized to show the problem of comprehension with disadvantaged black students and the types of materials and programs in current use to foster effective

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[155]Millard H. Black. "Characteristics of the Culturally Disadvantaged Child." The Reading Teacher. 1965, pp. 465-470.

development of comprehension skills. This review presents a picture of the over all problem area of reading comprehension and more specifically the problem of reading comprehension of disadvantaged black students, then moves into materials and programs being tried with these students giving rise to the arousal of curiosity as to how much reading comprehension black students possess. This review sets the stage for this investigation dealing with a pre and post test designed to ascertain the level of comprehension of black high school seniors.

CHAPTER III

METHODOLOGY AND DESIGN

This study was conducted at Douglass High School in Oklahoma City which has a total enrollment of approximately 1,350 black students. Of this total enrollment 350 are seniors. The study was designed to:

1. Randomly select from the three levels of English classes, high, average and low, forty seniors from each level making a total of 120 subjects for the study.

2. Use five reading passages and 25 questions from twelfth grade English texts for testing comprehension. These passages and questions were the ones rated by an eleven-member panel of English teachers as appropriate to test comprehension of the subjects.

From a staff of 64 teachers, eleven teach English. Ten English teachers are white, all but one are females, ten hold bachelor's degrees and the one black holds a Master's degree in English. The Administration of this high school consist of the principal, two assistant principals and three counselors, all of whom are Blacks. The principal and vice-principals are male while two of the counselors are female.

Douglass High is considered a Title I school as determined by Federal guidelines of the Department of Health, Education and Welfare (two-thirds of the students come from families whose income falls between three and five thousand dollars a year).

The investigator was aware that in this study, as in all problems of research, extraneous variables such as physical, mental and social factors are operative. In order to exercise as much control as possible over these variables the status of the health and mental capacities of the subjects was ascertained from available school records. Each subject's folder was checked for available data on health, mental capacity and socio-economic data. The test used by the school system to check eyes is the Snellen Chart and this test was administered by the school nurse. From the folders it was ascertained that all but five subjects had normal vision and the five who had been tested as having sub-normal vision had been referred and were wearing corrective glasses prescribed by their doctors at the time of the testing. None of the subjects had a hearing defect as stated by Nurses reports in permanent folders, as a result of Beltone Audiometer tests administered by the school nurse.

Sixteen subjects included in the study had family incomes that would take them out of the range of the Title I Category. Three subjects were school teachers' children, one the child of a policeman, and the others were children

of Federally connected families: FAA, Tinker Field, and the U. S. Post Office.

However, it is the belief of the investigator that the subjects who deviated above or below the norm were too few to cause any significant results in the data as Douglass High School has been federally designated as a Title I school. This designation is based on the income of two-thirds of the total student body and it would be most unlikely that the majority of the top one-third would fall within the range of the 120 subjects in this study. Since the investigator was aware that these variables could be present there was the above discussed effort made to see that the groups of subjects were homogenized as nearly as possible.

Selection of Subjects

Of the 1,350 students enrolled at Douglass, 350 are seniors. The 120 seniors used in this study were chosen randomly from all seniors enrolled in English classes at the school. Assignment to English classes is on the basis of the grade point average maintained in all English courses during previous high school years. There are three levels of English instruction: high, average and low, based on grade point averages ranging from 3.00-4.00, 2.00-2.99, and 1.99 and below respectively.

For this study forty students from each level have been chosen. The subjects in this study would be classified

as the disadvantaged, the children without, as described in Chapter II and characterized by the following: (1) Being no stranger to failure and to the fear that continued failure engenders; (2) Knowing the fear of being overpowered by teachers who are ignorant of the culture and mores of their society, and who may not expect success of them; (3) Fearing lack of recognition and understanding from teachers whose backgrounds are totally dissimilar; (4) Experiencing misinterpretation on the part of teachers who fail to recognize students' efforts to achieve or to accommodate themselves to demands which are basically alien.

Selection of Test Items

The study was designed to use five reading selections taken from twelfth grade English books and rated by English teachers as appropriate to ascertain comprehension gains of the students.

Twenty-five selections chosen from the twelfth grade English text were submitted to a panel of English teachers in order that they could select the five most typical and appropriate for checking the comprehension of senior students enrolled at Douglass.

Reading material used was from Modern English in Action, Twelve. Modern English in Action, Twelve (1965) was developed in response to the pressing challenge of the modern world. It has grown out of a rethinking of the English program in

this rapidly changing period. It seeks to take the best of the new and relate it to the time-tested materials of the past. This book was designed as a comprehensive survey of English language skills.[1]

The decision to construct the test rather than use a standardized instrument for measuring comprehension was supported by the work of W. E. Coffman reported in School and Society, 1965, Vol. 93, pp. 430-433. Coffman discussed the use of standardized tests with the denied child. He suggests that test validity be determined for each group tested.[2] Coffman's work is entitled "Developing Tests for the Culturally Different."

It was believed by the investigator that this material would make a more valid test as the students were more likely to have some pre-reading comprehension of it rather than bring in a standardized set of comprehension paragraphs about which the students have no pre-reading comprehension as they have never been exposed to this type of material. This decision was supported by the work of Ruddell and Graves, reported in Elementary English, 1968, Vol. 45, pp. 635-642. The authors studied the responses of children to visual stimuli, noting the differences in error rate between one group identified as "low socio-ethnic

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[1]Henry Christ. Modern English in Action, Twelve. Boston: D. C. Heath and Co., 1965, pp. v.

[2]William E. Coffman. "Developing Tests for the Culturally Different." School and Society, 1965, p. 431.

Negro" and another group identified as "high socio-economic Caucasion." When the stimulation was familiar to only the latter group, the error rate was highest among those in the former group. However, when the stimulation was equally unfamiliar, the error rates were not significantly different. One conclusion of this study indicates that any child will produce verbal errors when presented with unfamiliar stimulation.[3] The stimulation of the denied child is nearly always unfamiliar.

Rationale

Sheldon states that the basic goal of all reading is comprehension.[4] If the pupil has not understood, he has not read. The rationale for the selection of items to measure reading comprehension was based on this concept and required that the items measure systematically skills of interpretation, factual recall, and generalization.

These three areas were considered broad enough to encompass various aspects of comprehension, pointed out by Hildreth[5] and Carter[6] such as:

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[3]R. B. Ruddell and Barbara Graves. "Socio Ethnic Status and the Language Achievement of First Grade Children." Elementary English, 1968. p. 636.

[4]William B. Sheldon. Basic Reading Series, Teacher's Manual. Dallas: Allyn and Bacon, Inc., 1968. p. 8.

[5]Gertrude Hildreth. "Reading Methods for the English Language." The Reading Teacher. 1961, p. 76.

[6]Homer Carter and others. Teaching Individuals to Read. Boston: D. C. Heath and Co., 1962, p. 104-107.

1. Locating main ideas.

2. Recalling the sequence of story development.

3. Making inferences and judgments.

4. Recalling significant details.

5. Classifying ideas and themes.

6. Use of context clues.

7. Interpreting, mood, setting, character, and plot development.

Method of Testing

Each student was provided a copy of selections with a separate sheet for comprehension check. There were two copies made of each comprehension check sheet in order that the students could first take a pre-test check before reading the selection; second, take a post-test check after reading the selection.

The comprehension check sheets were coded with BR for before reading and AR for after reading.

The English teachers were provided with a list of those students who were to be used in the study. All students were sent to the auditorium during the second time block of the school day to take the five tests.

The procedure used with the students was as follows:

1. Explained the nature of the task (to answer the questions about the selections before and after reading the selection).

2. Comprehension check sheets for all five selections passed out to all students. Directions on each sheet

instructed the subjects to answer the five multiple choice items and return the comprehension sheets to the front desk when all five were completed.

3. Copies of the five selections with a comprehension check sheet attached to each selection was given to the students with directions to read the selection and then complete the comprehension check following the selections. Students were instructed to proceed in this manner until all five selections were read and comprehension checks completed for each selection. When the student finished he was instructed to return to the classroom. Students were allowed to proceed at the rate of their own ability and no time limit was involved.

Method of Analysis of Data

The data collected in this study has been analyzed by the computation of t tests. The underlying assumptions of the t test are:[7]

> 1. The observations must be independent. That is, the selection of any one case from the population for inclusion in the sample must not bias the chances of any other case for inclusion, and the score which is assigned to any case must not bias the score which is assigned to any other case.
> 2. The observation must be drawn from normally distributed populations.
> 3. These populations must have the same variance (or, in special cases, they must have a known ratio of variances).

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[7]Sidney Siegel. Nonparametric Statistics for the Behavioral Sciences. New York: McGraw Hill Co., 1956. p. 18.

4. The variables involved must have been measured in at least an interval scale, so that is is possible to use the operations of arithmetic (adding, dividing, finding means, etc.) on the scores.

5. The means of these normal and homoscedastic populations must be linear combinations of effects due to columns and/or rows. That is, the effects must be additive.

The data under analysis met these assumptions and two kinds of t tests were used. The first three hypotheses were tested by the use of a t test for the significance of the difference between two means for correlated samples. The formula:[8]

$$t = \frac{\Sigma D}{\sqrt{[N\Sigma D^2 - (\Sigma D)^2] /(N-1)}}$$

The degrees of freedom used for the first hypothesis with this formula were 119 and the degrees of freedom used with the second and third hypotheses were 66 and 52 respectively.

The fourth and fifth hypotheses were tested with a t test for significance of the difference between two means for independent samples. The formulas:[9]

$$S^2 = \frac{\overset{N_1}{\Sigma X^2} - (\Sigma X)^2/N_1 + \overset{N_2}{\Sigma^2 X^2} - (\Sigma X)^2/N_2}{N_1 + N_2 - 2}$$

$$t = \frac{\overline{X}_1 - \overline{X}_2}{\sqrt{S^2/N_1 + S^2/N_2}}$$

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[8] George A. Ferguson. Statistical Analysis in Psychology and Education. New York: McGraw-Hill, Co., C. 1966, p. 170.

[9] Ibid., p. 168.

For testing of the fourth hypothesis 39 degrees of freedom were used as there were 40 subjects in each level tested whereas in the fifth hypothesis 66 degrees of freedom were used for males and 52 degrees used for females. The fifth hypothesis which had to do with sex differences used 118 degrees of freedom as there were 67 male and 53 female used in the study.

Summary

The design and methodology used in the study and rationale for this method of approach have been presented. This chapter gives a detailed discussion on the underlying assumptions of the t tests, the characteristics and qualifying elements of the students who compose the study, a brief description of the physical plant and administrative structure of Douglass High School as well as the composition of the English Department. A brief discussion of test selections with method and procedure used in the construction of the implement followed by detailed presentation of the testing procedure concludes reiterated information in design and methodology chapter.

CHAPTER IV

ANALYSIS OF DATA

The purpose of this study was to investigate the difference between what comprehension black high school seniors bring to the reading of English prose and the level of comprehension they achieve from actual reading. This purpose was served by using twenty-five questions based on five reading selections chosen by a panel of English teachers as those selections representative of the type of reading done by black high school seniors. These five selections were used to test the pre-reading comprehension and the post-reading comprehension of 120 black high school seniors at Douglass High School.

The data collected was analyzed by the use of t tests. The level of significance was set at .05 for testing the null hypotheses.

The first null hypothesis was stated:

There is no significant difference between pre-reading comprehension and post-reading comprehension of black high school seniors. This hypothesis was based on the scores of all the seniors taking the test. The total score for all

black high school seniors taking the test was 1486 on the pre-comprehension test and 1960 on the post-comprehension test (See Table No. 1). These scores show a difference of 474 and a t of 13.846 (See Table No. 1).

TABLE 1

TOTAL RESULTS OF ALL SUBJECTS ON PRE-TEST AND POST-TEST*

	Pre-Test	Post-Test	Difference	
Subjects 1-120	X_1	X_2	D	D^2
Sum	1486	1960	474	3256
Mean	12	16	4	

*t = 13.846

The number of degrees of freedom associated with this value of t is 119. For 119 degrees of freedom we require a t of 1.980 for significance at the 5 per cent level. The observed value of t is well above this, and the difference between means is significant.

The second null hypothesis stated:

There is no significant difference between pre-reading comprehension and post-reading comprehension of black male high school seniors. This hypothesis was tested with the total scores of all male subjects in the study. The data was correlated data and the total scores from the pre-test were 853 and from the post-test 1,040, with a difference

of -187. The mean for the pre-test was 12.7 and for the post-test 15.5. The total number of males in the study was 67. The number of degrees of freedom associated with this value of t is 66. For 66 degrees of freedom we require a t of 2.000 for significance at the 5 per cent level. The observed value of t is 6.877 which is well above the required level and the difference between means is significant. We can justifiably agree that pre-reading comprehension is different from post-reading comprehension in black male high school seniors (See Table No. 2).

TABLE 2

TOTAL RESULTS OF ALL MALE SUBJECTS ON PRE- AND POST-TESTS*

	Pre-Test	Post-Test	Difference	
Subjects 67 males	X_1	X_2	D	D^2
Sum	853	1040	187	1250
Mean	12.7	15.5	2.8	

*t = 6.877

The third tested null hypothesis stated:

There is no significant difference between pre-reading comprehension and post-reading comprehension of black female high school seniors. The data was analyzed using the t test for significance with correlated data. There were 53 black female high school seniors with a total pre-reading comprehension

score of 633 and a post-reading comprehension score of 920. The mean for the pre-test was 12 and the post-test 17. The observed value of t was 12.602 with 52 degrees of freedom. For 52 degrees of freedom we require a t of 2.000. The above value is well above this level and we can justifiably argue that there is a significant difference between the comprehension of black female high school seniors before they read and the comprehension of black female high school seniors after they read (See Table No. 3).

TABLE 3

TOTAL RESULTS OF ALL FEMALE SUBJECTS ON PRE- AND POST-TESTS*

	Pre-Test	Post-Test	Difference	
Subjects 53 Females	X_1	X_2	D	D^2
Sum	633	920	287	2063
Mean	11.9 (12)	17.3 (17)	5.4 (5)	

*t = 12.602

The fourth stipulated hypothesis stated:

There is no significant difference between pre-reading comprehension and post-reading comprehension in high level, in average level and in low level English classes by black high school seniors. The total number of subjects in each level, high, average, and low, was 40 students respectively.

The total score for the high level group on pre-reading comprehension was 518 and the post-reading comprehension score was 672 with a mean for pre-reading of 12 and post-reading mean of 16. The t score obtained between the two means was 9.500 with 39 degrees of freedom. For 39 degrees of freedom a t of 2.021 is required for significance at the .05 level. The obtained t is well above this requirement and the difference between pre- and post-reading comprehension of black high school seniors in high level English classes is significant (See Table 4).

TABLE 4

TOTAL RESULTS OF ALL SUBJECTS IN HIGH LEVEL ENGLISH CLASSES ON PRE- AND POST-TESTS*

	Pre-Test	Post-Test	Difference	
Subjects 40 Seniors	X_1	X_2	D	D^2
Sum	518	672	154	1096
Mean	12	16	4	

*t = 9.500

The total score for the 40 subjects in the average level group on pre-test was 489, on post-test 653 with a pre-test mean of 12 and a post-test mean of 16. The t obtained was 7.300 with 39 degrees of freedom. The t required for significance at the .05 level with 39 degrees of freedom is 2.021. As the obtained value of t was well

above this score it is safe to argue that the pre-reading comprehension of black high school seniors in average level English classes is significantly different from the post-reading comprehension (See Table 5).

TABLE 5

RESULTS OF ALL SUBJECTS IN AVERAGE LEVEL ENGLISH CLASSES ON PRE- AND POST-TESTS*

	Pre-Test	Post-Test	Difference	
Subjects 40 Seniors	X_1	X_2	D	D^2
Sum	489	653	174	1108
Mean	12	16	4	

*t = 7.300

The total score for the 40 subjects in low level English classes was 479 on pre-test and 635 on post-test with a pre-test mean of 11.9 and a post-test mean of 15.8. The obtained t score was 7.311 with 39 degrees of freedom. The required value of t for significance at the .05 level with 39 degrees of freedom is 2.021. As the obtained t value is well above this required score there is justification to say that the pre-reading comprehension of black high school seniors in low level English classes is significantly different from the post-reading comprehension scores (See Table 6).

TABLE 6

TOTAL RESULTS OF ALL SUBJECTS IN LOW LEVEL ENGLISH CLASSES ON PRE- AND POST-TESTS*

	Pre-Test	Post-Test	Difference	
Subjects 40 Seniors	X_1	X_2	D	D^2
Sum	479	635	156	1052
Mean	11.9 (12)	15.8 (16)	3.9 (4)	

*t = 7.311

In comparing the high level and average level pre-reading comprehension scores a t of 1.050 was obtained, however with 78 degrees of freedom as used in this comparison a t value of 1.980 is required for significance at the .05 level. The difference between the two means is not significant. We must accept the null hypothesis that there is no significant difference between the pre-reading comprehension of black high school seniors in high level English classes and average level English classes (See Table 7).

In analyzing the difference between the means of post-reading comprehension of black high school seniors in high level and average level English classes yield a t of .544 with 78 degrees of freedom. For significance at the .05 level with 78 degrees of freedom a t of 1.980 is necessary. As this was not obtained the null hypothesis

is accepted and there is no significant difference between post-reading comprehension of black high school seniors in high level English classes and average level English classes (See Table 8).

TABLE 7

TOTAL RESULTS OF ALL SUBJECTS IN HIGH LEVEL VERSUS AVERAGE LEVEL ENGLISH CLASSES ON PRE-READING COMPREHENSION*

	High	Average
N	40	40
ΣX	518	489
$\bar{X}$	12.9	12.2
ΣX^2	1794	6235

*S^2 = 9.52
t = 1.050

TABLE 8

TOTAL RESULTS OF ALL SUBJECTS IN HIGH LEVEL VERSUS AVERAGE LEVEL ENGLISH CLASSES ON POST-READING COMPREHENSION*

	High	Average
N	40	40
ΣX	672	653
$\bar{X}$	16.8	16.3
ΣX^2	11942	11197

*S^2 = 15.24
t = .544

The difference between the mean of the pre-reading comprehension scores of students in high level and low level English classes yield a t value of 1.332 with 78 degrees of freedom. For the t value to be significant with 78 degrees of freedom a t value of 1.980 is necessary. This obtained t value is below the necessary t value for significance, hence the null hypothesis is accepted and there is no significant difference between pre-reading comprehension of black high school seniors in high and low level English classes (See Table 9).

TABLE 9

TOTAL RESULTS OF ALL SUBJECTS IN HIGH LEVEL VERSUS LOW LEVEL ENGLISH CLASSES ON PRE-READING COMPREHENSION *

	High	Low
N	40	40
ΣX	518	479
$\bar{X}$	12.9	11.9
ΣX^2	7194	6085

*S^2 = 10.70
t = 1.332

Data analysis of post-reading comprehension means for high and low level English classes yield a t value of 1.108 with 78 degrees of freedom. This t value is not high enough to be significant as a t value of 1.980 for 78 degrees is necessary for significance at the .05 level. Hence we must accept the null hypothesis that there is no

significant difference between post-reading comprehension scores of black high school seniors in high and low level English classes (See Table 10).

TABLE 10

TOTAL RESULTS OF ALL SUBJECTS IN HIGH LEVEL VERSUS LOW LEVEL ENGLISH CLASSES ON POST-READING COMPREHENSION*

	High	Low
N	40	40
ΣX	672	635
$\overline{X}$	16.8	15.8
ΣX^2	11942	10515

*S^2 = 13.93
t = 1.108

The null hypothesis which states that there is no significant difference between pre-reading comprehension of black high school seniors in average and low level English classes must be accepted as computation of the two mean scores yield a t value of .401 which is not significant. For t to be significant at the .05 level with 78 degrees of freedom the t value must be 1.980 (See Table 11).

Statistical computation of the difference between the means of the post-reading comprehension of black high school seniors in average and low level English classes yield a t score of .570. For t value to be significant at the .05 level with 78 degrees of freedom the t value must

be 1.980. Hence the null hypothesis is accepted and there is no significant difference between the post-reading comprehension scores of black high school seniors in average and low level English classes (See Table 12).

TABLE 11

TOTAL RESULTS OF ALL SUBJECTS IN AVERAGE LEVEL VERSUS LOW LEVEL ENGLISH CLASSES ON PRE-READING COMPREHENSION*

	Average	Low
N	40	40
ΣX	489	479
$\overline{X}$	12.2	11.9
ΣX^2	6235	6085

*S^2 = 7.76
t = .401

TABLE 12

TOTAL RESULTS OF ALL SUBJECTS IN AVERAGE LEVEL VERSUS LOW LEVEL ENGLISH CLASSES ON POST-READING COMPREHENSION*

	Average	Low
N	40	40
ΣX	653	635
$\overline{X}$	16.3	15.8
ΣX^2	11197	10515

*S^2 = 12.45
t = .570

The fifth stipulated null hypothesis was stated: There is no significant difference between pre-reading comprehension and post-reading comprehension of black male and female high school seniors.

Computation of the difference between means of pre-reading comprehension of black male and black female high school seniors yielded a t score of 1.476 with 118 degrees of freedom. For a t value to be significant at the .05 level the value must be 1.980 as the obtained value is below the necessary t value there is no justification for rejecting the null hypothesis. Based on this data there is no significant difference between pre-reading comprehension of black male high school seniors and black female high school seniors (See Table 13).

TABLE 13

TOTAL RESULTS OF MALE SUBJECTS VERSUS FEMALE SUBJECTS ON PRE-READING COMPREHENSION*

	Male	Female
N	67	53
ΣX	853	633
$\bar{X}$	12.7	11.9
ΣX^2	11441	7973

*S^2 = 8.42
t = 1.476

The analysis of data collected as to the difference between post-reading comprehension of black male high school seniors and black female high school seniors yielded a t score of 2.763 with 118 degrees of freedom. For t to be significant at the .05 level the value must be 1.980 with 118 degrees of freedom. The t value yielded was above the required value hence the null hypothesis was rejected and data proves there is a significant difference between post-reading comprehension of black male high school seniors and black female high school seniors (See Table 14).

TABLE 14

TOTAL RESULTS OF MALE SUBJECTS VERSUS FEMALE SUBJECTS ON POST-READING COMPREHENSION*

	Male	Female
N	67	53
ΣX	1040	920
$\bar{X}$	15.0	17.0
ΣX^2	17144	16510

*S^2 = 13.05
t = 2.763

Summary

Collected data has been presented and findings analyzed showing statistical significance at the 5 per cent level and rejection of the first three null hypotheses. From the collected and analyzed data the only null hypothesis accepted was the one dealing with differences between instructional levels,

which stated there is no significant difference between pre-reading comprehension and post-reading comprehension of black high school seniors in high level, in average level and in low level English classes. The significant differences occurred between pre- and post-reading comprehension of the total group regardless of sex or instructional level of English classes.

CHAPTER V

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

Summary

The problem involved in this study was stated: How much pre-reading comprehension and how much post-reading comprehension do black high school seniors exhibit? Would black high school seniors make significant gains in comprehension after reading a selected passage or is comprehension the same before and after reading a selected passage?

The purpose of the study was two-fold:

1. To contribute knowledge to the area of reading research.

2. To investigate the difference between what comprehension black high school seniors bring to the reading of English prose and the level of comprehension they achieve from actual reading.

The specific null hypotheses tested in this investigation were stated thusly:

1. There is no significant difference between pre-reading comprehension and post-reading comprehension of black high school seniors.

2. There is no significant difference between pre-reading comprehension and post-reading comprehension of black male high school seniors.

3. There is no significant difference between pre-reading comprehension and post-reading comprehension of black female high school seniors.

4. There is no significant difference between pre-reading comprehension and post-reading comprehension in high level, average level and low level English classes.

5. There is no significant difference between pre-reading comprehension and post-reading comprehension of black male and black female high school seniors.

In order to obtain data to test these null hypotheses 120 students were tested over twenty-five questions to ascertain the level of comprehension before reading the selections on which the questions were based and then tested over these twenty-five questions after reading the selections on which the questions were based. No differentiated effort was used in the testing session. All subjects were tested under the same conditions. The subjects were randomly chosen from the three instructional levels of English classes, high, average and low, of the senior high school from which the population was drawn.

Data was analyzed by t tests; correlated t tests for comparison of pre- and post-test results simultaneously and independent t tests for comparison of pre-test data between groups and sex and post-test data between groups and sex.

A positive and statistically significant difference was found between pre-reading comprehension and post-reading comprehension for all the subjects, for all male subjects, for all female subjects and for all instructional levels of English classes, high, average and low. The null hypotheses pertaining to this data were rejected and it was ascertained that there is a significant difference between pre-reading comprehension and post-reading comprehension of black high school seniors regardless of sex or instructional level.

The hypotheses which sought to ascertain differences between pre-reading comprehension of the different instructional levels and the post-reading comprehension of the different instructional levels was accepted as well as the hypothesis which sought to ascertain if there was a significant difference between pre-reading comprehension of male high school seniors and female high school seniors, or between post-reading comprehension of male and female high school seniors. Hence the significant differences in the study were found to be between pre-reading comprehension and post-reading comprehension regardless of instructional level or sex.

Conclusions

As a result of the testing of the null hypotheses pertaining to differences between pre-reading comprehension and post-reading comprehension a significant difference was ascertained. The data supplied justification for stating

that black high school seniors have significantly higher levels of comprehension after reading than before reading printed material. This statement leads one to think that this could be one of the important factors in the overall picture of the reportedly low reading achievement of black students, as the authorities in the field consider reading as getting meaning from the printed page in proportion to the amount of meaning brought to the page. The amount brought to the page can be equated as pre-reading comprehension and as this study ascertained the pre-reading comprehension of these black high school seniors is significantly different from the post-reading comprehension, hence more effective development of pre-reading comprehension will automatically raise the level of post-reading comprehension and ultimately raise the level of reading ability in general. Considering the results of this study in this framework the following conclusions were drawn.

1. Black high school seniors, who are the finished products of the public schools and have already been exposed to all the system has to offer in reading, possess significantly limited pre-reading comprehension and depend heavily on actual reading of materials for information and understanding.

2. Black high school seniors collectively, in special instruction groups and by sex, possess significantly more information after reading than they possess before reading.

3. Black high school seniors' pre-reading comprehension and post-reading comprehension differences are not indicative of their instructional level grouping nor the sex of the students but the significant difference between pre- and post-reading comprehension is consistently different in each group and with both male and female seniors.

4. Black male high school seniors do not exhibit any significantly greater degree of development in comprehension before reading an article or after reading an article than do black female high school seniors.

5. Black high school seniors in high level, average level or low level English classes show no significant differences in their pre-reading comprehension when compared by instructional levels.

6. Black high school seniors in high level, average level or low level English classes show no significant differences in their post-reading comprehension when compared by instructional levels.

These conclusions give rise to the following generalizations, if black high school students are to raise their comprehension levels and by so doing raise their reading ability:

1. Black high school students need extensive opportunities to extend their experiences farther and farther beyond their immediate neighborhoods. Enrichment

and extension of experiences has proven to contribute favorably to developing more effective reading skills, hence these opportunities will serve to improve pre-reading comprehension and by so doing raise the level of post-reading comprehension.

2. Black high school students need programs to reinforce and strengthen their comprehension skills and by so doing improve their reading ability.

3. Black high school students need more opportunities to learn in an environment tailored to their special needs, built on their strengths and implemented to overcome their weaknesses.

Recommendations

Based on the analysis of the data in this study that supported the rejection of the null hypotheses and presented evidence to justify the idea that there is significant difference between pre-reading comprehension and post-reading comprehension of black high school seniors and in congruity with the afore-stated conclusions and generalizations, the following recommendations are offered:

1. Future research be conducted to clarify and supplement the findings of this study with subjects from an integrated high school and with subjects who have all black teachers.

2. The present study be replicated in different

school districts and in different states to ascertain answers to the following questions:

a. How consistent are high school teachers in their methods, procedures and approaches in teaching comprehension skills?

b. How much effect does the race of the teacher have on student achievement?

3. Future research to determine the level of pre- and post-comprehension, be conducted in other subject areas.

4. Classroom teachers extend their efforts to include a method of discovering what pre-reading comprehension their pupils possess in order to use this information in structuring programs to strengthen the overall reading areas.

5. Future research to determine if black high school students need more exposure to diversified multi-ethnic and multi-cultural reading materials that will serve to broaden their experiences and contribute positively to the development of their pre-reading comprehension, which in turn improves their overall reading ability.

6. Designers of high school curricular of those schools that deal with disadvantaged black youths be aware that the real test of the quality of the educational program is the extent to which the disadvantaged minority learns to read; this is the ultimate test of success and authorities have concluded that by this yardstick the overwhelming

majority of schools which service the disadvantaged must be adjudged as failures.

Summary

This final chapter summarizes the findings and on the basis of these findings presented the conclusions drawn and presented five recommendations to be implemented in attempts to find solutions to the problems of reading comprehension of black high school seniors.

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APPENDIX A

APPENDIX A

TEST SELECTIONS WITH COMPREHENSION CHECK SHEETS

Selection No. 1

The Making of a Dictionary

How is a reliable dictionary compiled? How are words selected for inclusion? What mysterious authority is the last word on questions of definition, spelling, usage, and pronunciation? You are . . . All of you who speak and write the English language help contribute to the dictionary. The dictionary makes no rules; it merely records what it finds.

For years preceding the writing of a good dictionary, editors and assistants read widely and assiduously in newspapers, magazines, and books. On index cards, or "citation slips," they record quotations from speeches, articles, novels, and other sources. Each quotation is chosen to illustrate a particular use of a word or expression.

When the time comes for writing definitions, the cards are extracted from the file. There are many examples of different uses of each word . . . in a variety of contexts or situations. Then an experienced scholar and writer bases his definitions upon the uses of the word. A much-used word may have twenty or more definitions. Other editors check and recheck the definitions. Other information about the word is added--for example, spelling and pronunciation. At last the word with all its related information appears in the completed dictionary.

Does the staff relax? Not at all, for working with language is a never-ending job. The staff begins all over again, because a living language changes constantly. While you are reading this, some words are slowly disappearing from the language. Some old words are turning up in new dress. New words are being born. Perhaps at this very moment a scientist, a television announcer, or a writer is

using a word for the first time. If it survives, the staff of the dictionary will know about it, for the dictionary must reflect these changes.

No. 1 Code _____

COMPREHENSION CHECK

NAME_____ AGE _____ SEX _____

The Making of a Dictionary

DIRECTIONS: Circle the letter preceding the correct answer:

1. How is a reliable dictionary compiled?
   By:
   a. some mysterious authority
   b. all of you who speak and write the English language
   c. copying other languages

2. Before compiling a dictionary editors and assistants read:
   a. other dictionaries
   b. groups of word lists
   c. widely and assiduously in newspapers, magazines and books

3. Definitions of words used in the dictionary are based upon:
   a. the uses of the word
   b. the length of the word
   c. the number of syllables in the word

4. Citation slips are used to:
   a. list people for citations
   b. cite passages to use in the dictionary
   c. record quotations from speeches, articles, novels and other sources

5. Once a dictionary is completed the staff never relaxes because:
   a. they are too tired to relax
   b. a living language changes constantly
   c. they are people who have nervous energy

Selection No. 2

The SAT Test

Mental abilities, like physical skills, are the product of practice, instruction, and growth over a long period of time. It follows that advice on how to prepare for the SAT would probably best be given to students early in life: observe the world about you and think about what you see; read widely and thoughtfully; do your lessons conscientiously.

Sitting up late the night before to collect assorted bits of information will not help you to prepare for the SAT. You will not be asked who wrote what or when a war was fought. Instead, you will be given information and asked to reason with it. It will be more to your advantage to come to the SAT well rested--and in plenty of time.

No student should spend money on special tutoring for the SAT. The collective evidence of seven recent studies of coaching for the SAT confirms this statement. Intensive drill, either on the verbal or the mathematical section, is likely to yield but insignificant gains in verbal and mathematical scores. Since college admissions are based on the total record of the student, his high school performance as well as his test scores, it is quite unreasonable to believe that such small differences would improve his chances. A student would just as profitably spend his time and effort in independent review of mathematics and in reading a few good books.

There is also very little reason to take the SAT just for practice. Research studies show that your scholastic aptitude does not increase significantly with practice on test taking. To take the SAT for practice, therefore, will cost you a considerable amount of time and money for very little, if any, gain in score.

No. 2 Code _____

COMPREHENSION CHECK

NAME_____ AGE_____ SEX_____

The SAT Test

DIRECTIONS: Circle the letter preceding the correct answer:

1. According to authorities the SAT is:
   a. a physical examination
   b. a college admissions blank
   c. a test of verbal and mathematical ability

2. The authorities suggest that:
   a. cramming for the SAT will improve performance
   b. drill on the SAT is a waste of time
   c. coaching for the SAT will increase chances for college admission

3. According to the authorities, the best preparation for the SAT is:
   a. promptness
   b. practice
   c. reading, observation and thinking

4. These authorities view mental abilities as:
   a. static and unchanging
   b. products of practice, instruction and growth over a long period of time
   c. the same in all people

5. Best advice for success on the SAT would be:
   a. get a good night's sleep and be relaxed
   b. get in a good cramming session before taking the test
   c. observe the world around you, read widely and do your lessons conscientiously

Selection No. 3

The Polestar

If you look due north, you will see a bright star which does not change its relative position in the sky. All other stars and constellations sweep through the sky in huge circles; only the polestar, Polaris, seems to remain constant because it is so close to the celestial pole. If you train your camera on this star and leave the shutter open most of the night, your film will show series of partially complete concentric circles. The circles will be made by the stars as they seem to move through the sky. Polaris, which is the tip of the Little Bear, or Little Dipper, will be closest to the center.

Polaris was not always the polestar. Because of an astronomical phenomenon called "the precession of the equinoxes," the polestar changes through a cycle of about 26,000 years. In 3000 B.C. the polestar was in the constellation of the Dragon. Then for a great many years there was no bright star near the north celestial pole. According to some authorities the great explorations of several hundred years ago were made possible by the approach of the bright star Polaris to the north celestial pole, so that navigation by stars became easier. Polaris will reign for a time and then give way to other stars. In 2,500 years the polestar will be one of the stars in the constellation Cepheus. But the wheel will turn full circle. In 26,000 years Polaris will once again be the "pivot of the sky" after stars in Cygnus, Lyra, and Hercules have had their turn.

No. 3 Code _____

COMPREHENSION CHECK

NAME_____AGE_____SEX _____

The Polestar

DIRECTIONS: Circle the letter preceding the correct answer:

1. From astrology we may conclude that the polestar 26,000 years ago was:
   a. Polaris
   b. in Cepheus
   c. in the Dragon

2. Polaris is a star in the constellation:
   a. Cygnus
   b. the Little Bear
   c. the Dragon

3. From our knowledge of geography we may infer that the stars seem to sweep nightly through the sky because of:
   a. the earth's rotation on its axis
   b. the precession of the equinoxes
   c. the sun's position in the sky

4. From astrology we may conclude that navigators relied a great deal upon:
   a. the position of Cepheus
   b. a bright polestar
   c. the altitude of the sun and moon

5. Which of the following statements is not true:
   a. The polestar is the pivot around which the sky seems to turn.
   b. The Little Dipper and the Little Bear are the same.
   c. There has always been a bright polestar.

Selection No. 4

A Character Sketch

With his sharp nose, red at the tip, and his thin, pinched lips he always looked as though he were raging inwardly; and he was concise in his speech to the point of rudeness. All his time off duty he spent in his cabin with the door shut, keeping so still in there that he was supposed to fall asleep as soon as he had disappeared; but the man who came in to wake him for his watch on deck would invariably find him with his eyes wide open, flat on his back in the bunk, and glaring irritably from a soiled pillow. He never wrote any letters, did not seem to hope for news from anywhere; and though he had been heard once to mention West Hartlepool, it was with extreme bitterness, and only in connection with the extortionate charges of a boarding house. He was one of those men who are picked up at need in the ports of the world. They are competent enough, appear hopelessly hard up, show no evidence of any sort of vice, and carry about them all the signs of manifest failure. They come aboard on an emergency, care for no ship afloat, live in their own atmosphere of casual connection amongst their shipmates who know nothing of them, and make up their minds to leave at inconvenient times. They clear out with no words of leave-taking in some God-forsaken port other men would fear to be stranded in, and go ashore in company of a shabby sea chest, corded like a treasure box, and with an air of shaking the ship's dust off their feet.

No. 4 Code _____

COMPREHENSION CHECK

NAME_____ AGE_____ SEX_____

A Character Sketch

DIRECTIONS: Circle the letter preceding the correct answer:

1. This is the description of:
   a. a member of nobility
   b. a seaman
   c. a clerk

2. The person described may be characterized in general as:
   a. cheerful
   b. happy one moment, sad the next
   c. irritable

3. A good quality ascribed to this person is:
   a. steadfastness
   b. loyalty
   c. competence

4. He:
   a. has a minimum relationship with people
   b. has violent likes and dislikes
   c. is intensely loyal toward a few people

5. When he leaves, it is:
   a. with regret
   b. without farewells
   c. expected

Selection No. 5

Passage from Shakespeare's Troilus and Cressida

Time hath, my lord, a wallet at his back,
Wherein he puts alms for oblivion,
A great-siz'd monster of ingratitudes:
Those scraps are good deeds past, which are devour'd
As fast as they are made, forgot as soon
As done: perseverance, dear my lord,
Keeps honour bright: to have done, is to hang
Quite out of fashion, like a rusty mail
In monumental mockery. Take the instant way;
For honour travels in a strait so narrow
Where one but goes abreast: keep, then, the path;
For emulation hath a thousand sons
That one by one pursue: if you give way,
Or hedge aside from the direct forthright,
Like to an enter'd tide they all rush by
And leave you hindmost;
Or, like a gallant horse fall'n in first rank,
Lie there for pavement to the abject rear,
O'errun and trampled on: then what they do in present,
Though less than yours in past, most o'ertop yours;
For time is like a fashionable host
That slightly shakes his parting guest by the hand,
And with his arms outstretch'd as he would fly,
Grasps in the comer: welcome ever smiles,
And farewell goes out sighing. O! let not virtue seek
Remuneration for the thing it was;
For beauty, wit,
High birth, vigour of bone, desert in service,
Love, friendship, charity, are subjects all
To envious and calumniating time.

No. 5 Code _____

COMPREHENSION CHECK

NAME_____ AGE_____ SEX_____

Passage from Shakespeare's Troilus and Cressida

DIRECTIONS: Circle the letter preceding the correct answer:

1. Good deeds are:
   a. devoured but not forgotten
   b. devoured and forgotten
   c. forgotten only after a long period

2. To keep a name foremost, one must:
   a. fall in the first rank
   b. persevere
   c. be trampled on

3. The rusty mail is:
   a. a symbol of death
   b. unfashionable
   c. actually made of monumental stone

4. "Take the instant way" means:
   a. "do something glorious now"
   b. "find a way out of a difficult situation"
   c. "follow a new leader"

5. If one falters in the quest for honor:
   a. thousands mourn
   b. there are always others to take up the quest
   c. he enjoys blessed release

APPENDIX B

APPENDIX B

RESULTS OF ALL SUBJECTS ON PRE- COMPREHENSION AND POST-COMPREHENSION TESTS

RESULTS OF ALL SUBJECTS

High*

	Name	Sex	Pre-Test	Post-Test
1.	Ray	M	7	16
2.	Richard	M	14	21
3.	Brenda	F	9	7
4.	Bessie	F	4	10
5.	Frankie	M	14	20
6.	Gerald	M	18	20
7.	Linda	F	12	19
8.	Charles	M	20	23
9.	Darlene	F	8	15
10.	Blake	M	18	16
11.	Vernita	F	12	22
12.	Deborah	F	14	19
13.	Janice	F	17	21
14.	Billy	M	13	11
15.	Claudette	F	14	16
16.	Eloise	F	14	15
17.	Dorita	F	10	12
18.	Fran	F	14	19
19.	Kathryn	F	12	16
20.	Anita	F	16	21
21.	William	M	18	15

HIGH--Cont.

	Name	Sex	Pre-Test	Post-Test
22.	Annette	F	15	17
23.	Dwight	M	14	20
24.	James	M	15	20
25.	Glena	F	9	21
26.	Sandra	F	15	18
27.	Wilhemina	F	11	13
28.	Beverly	F	14	21
29.	Darlise	F	12	19
30.	Debra	F	7	14
31.	Hugh	M	9	13
32.	Marita	F	16	18
33.	Vickie	F	13	19
34.	Neville	M	8	5
35.	Sheila	F	15	21
36.	Donneta	F	13	18
37.	Melvin	M	9	13
38.	Dean	M	13	18
39.	Samuel	M	15	16
40.	Wayne	M	17	14
		TOTAL	518	672

*1-40--High Level

Average Level English**

41.	March	M	11	17
42.	Ranson	M	11	14
43.	Leonard	M	9	10
44.	Denise	F	12	19
45.	Rocky	M	8	11
46.	Kathryn	F	17	23
47.	Pierce	M	15	19
48.	Dardie	F	11	21

AVERAGE--Cont.

	Name	Sex	Pre-Test	Post-Test
49.	Claude	M	18	16
50.	Bolding	M	16	13
51.	Valerie	F	10	17
52.	Jennifer	F	12	15
53.	Sheila	F	15	12
54.	Tracy	M	14	16
55.	Robert	M	13	16
56.	Carolyn	F	9	18
57.	Charles	M	13	18
58.	Don L.	M	11	15
59.	Doris	F	10	21
60.	Kenneth	M	11	9
61.	Gloria	F	11	17
62.	Reuben	M	15	15
63.	Helen	F	9	14
64.	Howard	M	15	23
65.	Roger	M	13	18
66.	Carl	M	12	19
67.	Reginald	M	9	12
68.	David	M	15	23
69.	Furdessa	F	11	12
70.	Jacquetta	F	12	18
71.	Joyce	F	16	20
72.	Lee	M	11	13
73.	Wayne	M	16	15
74.	Chappie	F	14	20
75.	Sidney	M	11	17
76.	Horace	M	10	12
77.	Crump	M	13	20
78.	Henry	M	12	14
79.	Darrell	M	8	11

AVERAGE--Cont.

	Name	Sex	Pre-Test	Post-Test
80.	Jane	F	10	20
		TOTAL	489	653

**41-80 Average Level

Low Level English***

81.	Alfred	M	8	18
82.	Ivory	M	9	8
83.	Davy	M	15	19
84.	Wanda	F	8	14
85.	Levi	M	13	15
86.	Raymond	M	13	14
87.	Dee	M	14	21
88.	Faye	F	13	19
89.	Joetta	F	12	17
90.	Willie	M	14	15
91.	Robin	F	12	17
92.	Sheri	F	12	17
93.	Regina	F	10	16
94.	Leon	M	14	15
95.	Andrew	M	12	13
96.	Prentice	M	13	20
97.	Roy	M	17	18
98.	Scott	M	14	16
99.	Robert	M	17	17
100.	Ronald	M	11	14
101.	Jerome	M	10	19
102.	Alice	F	12	21
103.	Elmo	M	8	17
104.	Frank	M	15	16
105.	Nita	F	9	18
106.	Charlene	F	8	18

LOW--Cont.

	Name	Sex	Pre-Test	Post-Test
107.	Alberta	F	10	18
108.	Joni	F	11	17
109.	Seth	M	14	18
110.	Bruce	M	7	8
111.	Christopher	M	7	11
112.	Rosie	F	13	14
113.	Marta	F	18	19
114.	Winie	M	15	14
115.	Jerry	M	10	13
116.	Hawk	M	7	8
117.	Banner	M	12	10
118.	Stevie	M	16	18
119.	Henry	M	16	18
120.	Delinda	F	10	17
		TOTAL	479	635

***81-120 Low Level

GRAND TOTAL 1486 1960

APPENDIX C

APPENDIX C

RESULTS OF ALL MALE SUBJECTS ON PRE- AND POST-TESTS

Male

Subjects	Pre-Test X_1	Post-Test X_2
1.	7	16
2.	14	21
3.	14	20
4.	18	20
5.	20	23
6.	18	16
7.	13	11
8.	18	15
9.	14	20
10.	15	20
11.	9	13
12.	8	5
13.	9	13
14.	13	18
15.	15	16
16.	17	14
17.	11	17
18.	11	14
19.	9	10
20.	8	11
21.	15	19
22.	18	16

MALE--Cont.

Subjects	Pre-Test X_1	Post-Test X_2
23.	16	13
24.	14	16
25.	13	16
26.	13	18
27.	11	15
28.	16	18
29.	15	15
30.	11	9
31.	15	23
32.	13	18
33.	12	19
34.	9	12
35.	15	23
36.	11	13
37.	16	15
38.	11	17
39.	10	12
40.	13	20
41.	12	14
42.	8	11
43.	8	18
44.	9	8
45.	15	19
46.	13	15
47.	13	14
48.	14	21
49.	14	15
50.	14	15
51.	12	13
52.	13	20

MALE--Cont.

Subjects	Pre-Test X_1	Post-Test X_2
53.	17	18
54.	14	16
55.	17	17
56.	11	14
57.	10	19
58.	8	17
59.	15	16
60.	14	18
61.	7	8
62.	7	11
63.	15	14
64.	10	13
65.	7	8
66.	12	10
67.	16	18
TOTAL	853	1040

APPENDIX D

APPENDIX D

RESULTS OF ALL FEMALE SUBJECTS ON PRE- AND POST-TESTS

Female

Subjects	Pre-Test X_1	Post-Test X_2
1.	9	7
2.	4	10
3.	12	19
4.	8	15
5.	12	22
6.	14	19
7.	17	21
8.	14	16
9.	14	15
10.	10	12
11.	14	19
12.	12	16
13.	16	21
14.	15	17
15.	9	21
16.	15	18
17.	11	13
18.	14	21
19.	12	19
20.	7	14
21.	16	18
22.	13	19

FEMALE--Cont.

Subjects	Pre-Test X_1	Post-Test X_2
23.	15	21
24.	13	18
25.	12	19
26.	17	23
27.	11	21
28.	10	17
29.	12	15
30.	15	12
31.	9	18
32.	10	21
33.	11	17
34.	9	14
35.	11	12
36.	12	18
37.	16	20
38.	14	20
39.	10	20
40.	8	14
41.	13	19
42.	12	17
43.	12	17
44.	12	17
45.	10	16
46.	12	21
47.	9	18
48.	8	18
49.	10	18
50.	11	17
51.	13	14
52.	18	19
53.	10	17
TOTAL	633	920