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The Effect of Semantic Interference on a Black Child's Reading Comprehension

By

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A.B. (University of San Francisco) 1970
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DISSERTATION

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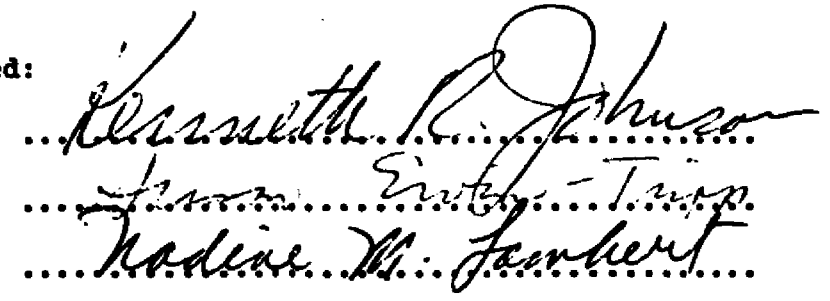

Committee in Charge

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THE EFFECT OF SEMANTIC INTERFERENCE ON A BLACK CHILD'S READING COMPREHENSION

I. Introduction

This study will investigate the phenomenon of the diverse meanings of words that exist between the Black and White cultures and the effect of such words on the speed of response and the comprehension of reading for the Black child. For the purpose of this study, words will be divided into two categories: Category I, those words which have the same meaning for both dominant White and Black culture members (i.e., the word chair); Category II, those words which have different -- or multiple or diverse -- meanings for dominant White and Black culture members (i.e., the word Fox means a 4-legged, small canine animal for Whites, but the word fox means a pretty girl for Blacks.) The reading materials used in school frequently use words in both categories. Words in Category II, however, cause confusion in the interpretation and speed of reading for the Black child when these words appear in reading materials in a particular context (that is, when a Category II word "makes sense" interpreted either as a Category I or II

word.) The confusion is a result of the Black child being unsure of which interpretation to give to Category II words. Thus, when the Black child encounters a Category II word, his reading interpretation and speed are affected because he does not know or he is unsure of how to interpret the word -- in terms of the Category I or Category II criterion. Some additional examples of Category I and II words are as follows:

Category I: car, rug, sky, pencil, horse, apron, stove, rose, tree, street

Category II: bear, piece, natural, ride, hammer, screw, blood, spade, ace, hoe

Objective of the Study

The objective of the study was to determine the effect of semantic interference on a Black child's interpretation of words that met Category II criterion, i.e., the effect on the response speed and comprehension of words when Category II words (those words which have different or multiple meanings for dominant White and Black culture members) are included in reading materials (interpretation means "meaning," and comprehension means "understanding"). The study examined different age levels in which this phenomenon might occur. This study attempted to determine whether the semantic interference began in the earlier grades (3rd or 6th); whether it apexed in the 9th grade, or continued to rise; or tapered off in the later grade, 12th. Furthermore, there was a need to explore the speed of the child's response. This study

attempted to indicate which interpretation, dominant culture meaning (Category I, i.e., those words which have the same meaning for both dominant White and Black culture members) or Black culture meaning (Category II), has the most influence in affecting reading comprehension.

Oftentimes, the Black child might be confused as to which meaning, Category I or Category II, to apply to the passage; thus, the Black child may take a few seconds longer to answer questions about the reading passage. In addition, the Black child might be attempting to second guess the teacher, author, examiner or whoever.

Definition of Terms

There is a need to define particular terms that will be used repeatedly throughout this study. These terms are: semantic interference, Category I words, Category II words, response speed, reading comprehension and inversion. The term semantic interference was coined by the present author to refer to words or phrases that have different or diverse meanings for a particular cultural group (in this case the Black culture) and when the meanings of such words and/or phrases "interfere" with the intended meaning in a particular reading context. For example, "That car is heavy" in the White and Black cultures means that the car weighs hundreds of pounds; in the Black culture, the sentence can also mean the car is well designed and looks good.

Words employed in the reading passages for this research

project met two criteria: Category I and Category II. Category I words are those words which have the same meaning for both dominant White and Black culture members; for example, the word pencil. Category II words are those words which have different or diverse meanings for dominant White and Black culture members; for example, the word hammer means a tool for the White culture but the word hammer means a woman for the Black culture member.

Response speed refers to the length of time it took the subject to respond to the question once it was completely stated. Reading comprehension refers to the understanding that the subject gained from the reading material that he or she read.

Inversion "is to make any word of denigration used by the power group take on shades of meaning known only to the inverter. (Holt, 1972, p. 154)" What this means is that one group, particularly the Black group, gives the opposite or inverse meanings to words; for example, the word bad in the dominant White culture means something unpleasant but in Black culture bad means something good or impressive.

Hypotheses

The purpose of the present study was to further examine semantic interference in a Black child's reading with particular focus on the average response speed and the age of the student. It was hypothesized:

(1) that within each grade the Black students would

apply a Black cultural interpretation to the reading passage with multiple meaning words for the Black student more often than would the White student;

(2) that there would be a significant difference ($p < .05$) in the interpretation of the reading passage with multiple meaning words for the Black child in grades 3 and 6, in favor of the 6th grade;

(3) that there would be a significant difference ($p < .05$) in the interpretation of the reading passage with multiple meaning words for the Black child in grades 9 and 12, in favor of the 9th grade;

(4) that the mean response speed for the Black students would be slower than the mean response speed for the White students on the reading passage with multiple meaning words for the Black child at each grade level;

(5) that the mean response speed for 6th and 9th grade Black students would be slower than that of 3rd and 12th grade Black students on the reading passage with multiple meaning words for the Black child; and,

(6) that there would be no difference in the interpretation and in the mean response speed on the reading passage with words that meet Category I criterion across all grades for both Black and White students.

II. Review of Literature

Background

The patterns of communication for Black and White cultures evolved from the different life styles which have existed between the Black and White cultures through the centuries For centuries, the White culture in America was that of the slave-owner and the Black culture was that of the slave. The experiences on all levels -- political, educational, economical, religious, social, etc. -- were diverse. Although the two cultural groups were speaking the same language (English), different life and cultural experiences of Black Americans gave new associations or diverse meanings to some words and phrases. Since Whites and Blacks have different cultural experiences, it follows that Blacks and Whites sometimes label the same concept differently. The problem is caused by the fact that both groups use the same words to label different concepts.

The different cultural experiences of Blacks caused a distinct vernacular or linguistic system to develop, particularly, in the area of interpreting lexical items. Blacks felt a need to communicate effectively among themselves without being understood by Whites, yet at the same time speaking in the presence of Whites so as not to bring penalty upon themselves. For example, the word bear connotes an

an "animal" to the White culture; it also connotes an "animal" or an "ugly woman" to the Black culture. If two Black men, in the presence of a group of White people, were talking about how ugly a White woman in the group was, they might say, "Did you see that bear?" This is an example of a Category II word.

Although different life styles (cultural differences, i.e., music, art, family interaction, effects of social, political and educational institutions on the people, etc.) need not impede communication, they do cause distinct mental sets to be formed. It is through one's particular mental set that one interprets materials presented. Cain (1971) states, "Comprehending a passage entails a mental process which is controlled in part by the organization of the words themselves and in part by the 'mental set, interests, or purpose of the reader.' (p. 154)" Entwisle (1970) states that "the same life conditions that foster dialect differences would be presumed to lead to semantic differences. (p. 126)"

Semantic differences out of necessity had their inception during the slave era. Compelled to speak the language of the slave master, the slave found it necessary to develop ways of cummunicating that would not cause negative repercussions to him.

> Blacks clearly recognized that to master the language of whites was in effect to consent to be mastered by it through the white definitions of caste built into the semantic/social system. (Holt, 1972, p. 154)

Because of the constant threat of being killed or severely

punished if heard talking about escape or freedom:

> . . . the Negro slaves were compelled to create a semi-clandestine vernacular. The slaves made up songs to inform one another of, say, the underground railroads activity. When they sang "Steal Away," they were planning to steal away to the North not to heaven. (Brown, 1972, p. 135)

As time progressed, "physical enslavement" was replaced by "psychological enslavement" where language, both written and spoken, played a major role; that is, not being able to speak or write Standard English, Blacks were denied jobs, denied access to institutions of higher learning and so forth). Blacks were being segregated, stereotyped and denied inalienable rights guaranteed by the Constitution. Holt (1972) has stated that:

> Many blacks took the material of stereotyped utterances and used it to their own advantage. Words and phrases were given reverse meanings and functions changed. Whites, denied access to these semantic extensions of duality, connotations, and denotations that developed within black usage, could only interpret the same material according to its original singular meaning. White interpretation of the communication event was quite different from that made by the other person in the interaction, enabling blacks to deceive and manipulate whites without penalty. This protective process, understood and shared by blacks, became a contest of matching wits, the stake in the game being survival with dignity. This form of linguistic querrilla warfare protected the subordinated, permitted the masking and disguising of true feelings, allowed the subtle assertion of self, and promoted group solidarity. (p. 154)

Examples of the inverse usage of words would be: (1) <u>bad</u> -- in the dominant White culture it means "disagreeable, unpleasant or unfavorable;" whereas in Black culture it means "extraordinarily good or impressive;" and, (2) <u>nigger</u>

-- in the dominant White culture is a derogatory and degrading term about Black people; however, in the Black culture it is a word of affection, admiration and approval (e.g., "You're my kind of nigger."), as well as a word of negative connotation which has the same meaning as that of the White culture and which Black people would apply universally to any person who acts in a degrading way.

Today, in effect, Whites are still denied the access to these semantic extensions of duality. Blacks give some words a distinct Black cultural meaning which is oftentimes descriptive, colorful, expressive and different from the connotation given by the White culture. When Whites begin to use the same words that are commonly used in the Black culture, Blacks oftentimes find it necessary to change the words and/or meanings in order to preserve some words that are distinctly related to Black culture. Whites can't use these words with the same meaning because they have no equivalent experience to generate the concepts Blacks are labeling (these would be Category II words). Blacks change the words and/or meanings in order to maintain group solidarity and identity and also because Whites use the words inappropriately by changing the intonation and diction. Expressions like, "Something else," "All right," "Tell it like it is," "Right on," and "That is cool," etc. lost their flair and frequency of use in the Black culture because Whites adopted these phrases and used them inappropriately; that is, they changed the diction, intonation

and the connotation.

Literature

Of the extensive research on Black Dialect, the major areas of concentration have been on: (1) structural differences, phonological and syntaxical deviations from Standard English; (2) verbal communication, i.e. the style of communication; and, to a lesser extent, (3) semantics, i.e. the meaning that the child attaches to the word. The thrust of researchers such as Baratz (1970), Labov (1970), Stewart (1970) and Johnson (1970) has been in the direction of establishing the viability, legitimacy and acceptability of Black Dialect.

Black Dialect is a variety of Standard English that systematically deviates in phonology and grammar, with diverse or different meanings of words and phrases from Standard English. In regards to grammar, some of the deviations are (Baratz, 1970; Johnson, 1970; Labov, 1970; Bailey, 1969) --

1. verb agreement
   SE: He has a pencil.
   BD: He have a pencil.
2. substitution of them for those
   SE: Give me those books.
   BD: Give me them books.
3. use of the copula is obligatory
   SE: He is a bad boy.
   BD: He a bad boy.
4. omission of the agreement sound for third person singular, present tense verbs
   SE: He walks to the store often.
   BD: He walk to the store often.

5. the use of "be" to express habitual action

SE: He is working.

BD: He be working.

6. negative inversion SE: No one knows.

BD: Don't nobody know.

7. negative concord SE: You're not going to heaven.

BD: You ain't goin' to no heaven.

8. dummy it for standard there SE: There is no heaven.

BD: It ain't no heaven.

9. oftentimes the lack of time information in verbs

SE: He is there now.

BD: He be there now.

SE: He will be there soon.

BD: He be there soon.

SE: He was there yesterday.

BD: He be there yesterday.

In reference of phonology, some of the most frequently encountered deviations are (Johnson, 1970):

1. Simplication of final consonant clusters. The last consonant sound is often omitted in words ending in consonant clusters. For example, hold-hol; rift-rif; past-pas; disk-dis. In addition, leaving off final consonant sound causes black pupils to form plurals for some words in a nonstandard way; for example, desks-desses; tests-tesses.

2. R-lessness. Words like door, store, floor, and four are pronounced like . . . dough, stow, flow, and foe.

3. L-lessness. Words like toll and call are pronounced like . . . toe and caw.

4. Substitution of the sound represented in writing by the letter d for the sound represented in writing by the letters (voiced) th at the beginnings of words. Words like this, that, those, the are pronounced . . . dis, dat, dose, da.

5. Substitution of the terminal sound represented in writing by the letter f for sound represented in writing by the letters (voiceless) th. Words like with, mouth, path are pronounced . . . like with, mouth, path are). wif, mouf, paf. (p. 157).

Blacks have developed a unique style of communication which includes words and phrases such as "shucking," "copping a plea," "running it down," "rapping," and "signifying" which have Black cultural meanings -- that is, the meanings of these words or phrases are not known by other cultural groups. Through accommodation many Blacks have become adept at concealing emotions. Blacks have developed a way of manipulating words in a persuasive manner:

> Among whites his behavior had to conform to /the restricted role and status assigned him/, and he was constantly reminded to "keep his place." He learned that before white people it was not acceptable to show feelings of indignation, frustration, discontent, pride, ambition or desire; the real feelings had to be concealed behind a mask of innocense, ignorance, childdishness, obedience, humility and deference. (Kochman, 1972, p. 219)

"Shucking" means:

> To accomodate "The Man," to use the total orchestration of speech, intonation, gesture, and facial expression for the purpose of producing whatever appearance would be acceptable. It was a technique and ability that was developed from fear, a respect for power, and a will to survive. (Kochman, 1972, p. 219)

"Copping a plea" is a technique used to get out of a compromising situation:

> When one "cops a plea" he acclaims the superiority of another and makes an appeal for pity, mercy or some other form of sympathy. Whether this appeal is authentic or merely a play on one's sympathies and ego is virtually impossible to determine by someone who is unfamiliar with the styles of verbal behavior prevalent among American Blacks. (Abraham and Gay, 1972, p. 204)

> "Rapping" while used synonymously to mean ordinary conversation, is distinctively a fluent and lively way of talking which is always characterized by a high degree of personal style. To one's peer group, rapping may be descriptive or narration, a colorful rundown of some past event. (Kochman, 1972, p. 242)

"Running it down" means:

> To communicate information in the form of an explantion, narrative, giving advice, and the like. (Kochman, 1972, p. 254)

"Signifying" describes:

> The language behavior that . . . attempts to "imply, goad, beg, boast by indirect verbal or gestural means." (Kochman, 1972, p. 256)

In regards to semantics, there are differences in word meanings (i.e., semantic extensions of duality, connotations and denotations). Examples of the varied meanings are: (1) Hawk -- Category I, means a carnivorous bird, whereas the Category II meaning is the cold wind, as well as, a bird; (2) "That's cool." -- Category I, means that something is lacking in warmth, whereas Category II it means that something is "fine, okay or going well;" (3) Vine -- Category I, means a plant, whereas in Category II, it means a suit of clothing; (4) Tough -- Category I, means something strong or firm, whereas in Category II, it means something is very nice or unfortunate; (5) Cut -- Category I, means an open wound or

or to slice something, whereas in Category II, it means a record; (6) Box -- Category I, means a container, whereas in Category II, it means a stereo; (7) Piece -- Category I, means a part of a whole, whereas in Category II, it means a gun; (8) Cracker -- Category I, means a thin crisp bakery product or something that makes a crackling noise, whereas in Category II, it means a derogatory expression describing a White person; (9) Blood -- Category I, means a life nourishing fluid that circulates in the body, whereas in Category II, it means a Black man; (10) Jet -- Category I, means an aircraft, whereas in Category II, it means a Black magazine.

Relevant Research

The differences between Standard English and Black Dialect have been studied in terms of phonology, grammar and communication styles which lead to the assumption that a semantic difference must exist. In order to determine the magnitude of this difference, methods such as word (free) association and the cloze procedure have been used. When the two methods have been used in comparative studies between Black and White subjects, the effort has been to determine how closely the lower class Black child approximates the middle-class White child's language. In the present study, the effort was to explore the way Black students interpret reading materials in order to find out which understanding -- dominant culture understanding or Black culture understanding -- occupies the foremost position in the child's mind. Probably because of

methodological complexities involved in this kind of research, the area of semantic interference in a Black student's reading comprehension has not been explored.

The cloze procedure . . .

> Involves deleting every n-th . . . word in a language transcript, then having a decoder population attempt the replacement of the deleted items. To the extent that they are successful in naming such replacements, the decoders are gauged as capable of approximating the language habits of the original encoders. (Williams and Wood, 1970, p. 141)

The words that are replaced are assumed to reflect the child's understanding of the language sample. In an experiment using the cloze procedure, Williams and Wood (1970) examined the problem of social class differences in word predictability in two sets of subjects, middle-class and lower-class subjects. All the subjects were junior high school Black students. The subjects were referred to as "encoders," those students who provided language samples, and "decoders," those students who attempted word replacement in the language samples. Both groups served in the conditions of encoder and decoder. The results indicated that the middle-class decoders were more capable than the lower-class decoders in word replacements of the lower-class and middle-class encoders language sample. In other words:

> The lower-class children could not approximate the language of the middle-class children as well as the middle-class children could approximate the lower-class children's language. (p. 147)

The authors felt that the lower-class students did not

have the linguistic abilities of the middle-class students.

Peisach (1965) used the cloze procedure in an analysis of children's comprehension of teacher and peer speech. The children were from different social backgrounds, and they were Black and White students who composed two groups: 64 first-grade and 127 fifth-grade public school children. The groups were designated as SES I (lower-class Black and White) and SES III (middle-class Black and White). The results showed that when I.Q. was controlled, there was no difference in the children's comprehension of the teacher's speech. In the comprehension of peer speech, the SES I subjects did as well as the SES III subjects on lower-class and Black children's speech, but SES I subjects did more poorly than SES III subjects on middle-class and White children's speech. The results suggest that social class appears to be a more relevant factor than race, age or sex in affecting performance on this type of language comprehension task.

An underlying assumption of the cloze procedure is that the encoder and decoder are attaching the same connotative and denotative meanings to the words and are receiving the same kind of contextual clues from the reading materials. Because a child assimilates words according to his experiences, the meanings attached to certain words will elicit a semantic cue. This semantic cue will cause a lower-class Black child to respond in a fashion different to that of a middle-class White child.

Entwisle and Greenberger (1969) investigated racial differences in semantic systems and in linguistic development of grade school children. The subjects were urban, first, third, fifth grade, Black and White children; and suburban, first and third grade, White children. The children were asked for associations (i.e., the child was asked to give the first word that he thought of in response to a standard set of stimulus words -- free associations) to 96 stimulus words representing the several form classes (nouns, adjectives, verbs, pronouns, adverbs).

The results indicated that through the grades 1, 3 and 5 the inner-city Black children were slightly behind the inner-city White children in the evolution of word-association responses along a syntagmatic (noun-verb, adjective-noun, etc.) - paradigmatic (noun-noun, adjective-adjective, etc.) continuum when both were of the same measured I.Q. The syntagmatic - paradigmatic shift means that:

> Instead of giving as responses words that follow the stimulus word in a sentence (begin--"to cry"), as children advance in age they give as responses more words that could replace the stimulus word in a sentence (begin--"start"). (Entwisle, 1970, p. 128)

In regards to the syntactic-paradigmatic shift, suburban children were behind the average I.Q. inner-city child at first grade but were advanced at third grade. At the first grade level, there were negligible differences between inner-city Black and White students for syntagmatic responses. First-grade

inner-city Black children produced fewer paradigmatic responses than inner-city White children, but more paradigmatic responses than suburban White children. The authors noted that if a stimulus word elicited an entirely different set of associations in White children from those it elicits in Black children, the stimulus word can be considered to mean two different things; thus, the cognitive role of words is vastly different for the Black and White child.

Carter (1972) employed a new method of assessing semantics. In a pilot study he queried whether there was semantic interference in a Black child's reading. Sixteen 7th and 8th grade students were asked to read a passage written in Standard English. Half of the subjects (4 Blacks, 4 Whites) read a passage that could only be interpreted in a dominant culture way, whereas the other half of the subjects (4 Blacks, 4 Whites) read a passage that could be interpreted in both a Black cultural way as well as in a dominant culture way. All subjects were asked the same set of questions about what the passage meant. There were significant differences ($p < .001$) between the interpretation of the two reading passages and between the two racial groups. The results supported the author's hypothesis that in a passage of polysemous words, i.e., words which are polysemous for Black Dialect speakers, there would be more semantic interference with a Black Dialect speaker than with a Standard English speaker. The Black Dialect speakers produced significantly more Black cultural

interpretations for the reading passage that had both a Black culture and a dominant culture interpretation.

The patterns of communication for Black and White cultures evolved from the different life styles which have existed between the Black and White cultures through the centuries. The literature surveyed in this study shows that Black and White children differ in their linguistic systems (i.e., in phonology and grammer) (Baratz, 1970; Johnson, 1970; Labov, 1970; Bailey, 1969), in their communication styles (Kochman, 1972; Abraham and Gay, 1972), and in the way that they interpret reading materials (Carter, 1972). Peisach (1965) and Entwisle and Greenberger (1969) found that the different cultural experiences between Black and White children elicited different interpretations of some words. The literature reviewed thus indicates that the way people interprete words and/or phrases is influenced by their different cultural experiences. It is the intention of the present study to examine the effect of semantic differences or semantic interference in a Black child's reading comprehension at different age levels and to see if a semantic interference affects the Black child's response speed.

III. Method

Subjects

The subjects in this study were 160 third, sixth, ninth and twelfth grade students who came from San Francisco Bay Area schools. The subjects were divided equally into four grade groups. The subjects in each grade group were divided into equal numbers of Black and White students. The experimental group was composed of 80 Black students who spoke Black Dialect and who came from predominantly Black public schools, lower-class socioeconomic status. Black students, particularly those who come from the lower-class socioeconomic status and have been labeled culturally disadvantaged, have been routinely assumed to be speaking Black Dialect. The control group was composed of 80 White students who spoke Standard English and who came from predominantly White, private schools and middle-class socioeconomic status. All students (both White, middle-class and Black, lower-class) were selected by school personnel. Reading scores were obtained for each student, Black and White.

Reading Achievement Data

The investigator searched the cumulative records on each pupil in order to obtain the latest reading test scores. Reading achievement measures were obtained from the standar-

dized tests given by the two types of school -- public and private. The public schools (where the 80 Black students attended) administered the Iowa Test of Educational Development (12th grade), the Comprehensive Test of Basic Skills (9th grade) and the Cooperative Primary Test (3rd and 6th grades). The private schools (where the 80 White students attended) administered the Stanford Achievement Test (9th and 12th grades, parochial school) and the Comprehensive Test of Basic Skills (3rd and 6th grades).

Because the schools used different tests and different score reporting practices, the scores were translated to percentiles and in turn to T-scores. The T-score distribution had a mean of 500 and a standard deviation of 100. The procedure to transform the scores to T-scores provided a normalized standard score measure by which to compare relative level of reading achievement across schools.

Instruments

Each subject was given a short story to read orally and was asked questions about the story. The story was written in two versions, both in Standard English. One version, Form I, had words that met Category I criterion; that is, the story included words that had the same meaning for both the Black and White child. These words connoted only the dominant, White culture meaning. The alternate version, Form II, had polysemous words; that is, words that had both a Black cultural and a dominant White cultural meaning for the Black

child (Category II criterion).

Third and sixth grade students were given a shorter story of less complex reading level to read because of their younger age and shorter retention ability. The Form I version was:

- -

Insert Reading Passage 1 about here.

- -

The Form II version was:

- -

Insert Reading Passage 2 about here.

- -

Ninth and twelfth grade students were given the following Form I passage to read:

- -

Insert Reading Passage 3 about here.

- -

The Form II passage was:

- -

Insert Reading Passage 4 about here.

- -

A multiple choice questionnaire, written in Standard English, was used to test interpretation and comprehension of both Forms I and II of the story.

- -

Insert Questionnaires 1 and 2 about here.

- -

The length of time that it took the subject to respond to the

examiner's questions indicated the speed of the subject's response. A stopwatch calibrated in tenths of a second was used to record the speed of the subject's response. All subjects were asked the questions orally.

Procedure

The examiner administered the form and questionnaire to each subject individually. Half of the subjects in each group were given Form I, the other half Form II. In order to account for any reading ability differences that may have existed between the students, the analysis of the data (analysis of covariance) adjusted the scores to control for any differences. Even though the 3rd and 6th grade subjects were given a shorter reading passage than the 9th and 12th grades subjects, the instructions were the same. The students were told: "I want you to read aloud these paragraphs as quickly as you can. I will ask you some questions about what you have read and I will time your response. Answer the questions orally as quickly as you can." After the subject read the paragraphs, the subject was then told: "Now I will ask you some questions about what you have read. Answer the questions orally as quickly as you can." The stopwatch timing of the response started as soon as the examiner had completed reading the question and stopped when the subject gave an answer. This was done to obtain response time for each question and the mean response time of each student.

Analysis of Data

It was hypothesized:

(1) that within each grade the Black students would apply a Black cultural interpretation to the reading passage with multiple meaning words for the Black student more often than would the White student;

(2) that there would be a significant difference ($p < .05$) in the interpretation of the reading passage with multiple meaning words for the Black child in grades 3 and 6, in favor of the 6th grade;

(3) that there would be a significant difference ($p < .05$) in the interpretation of the reading passage with multiple meaning words for the Black child in grades 9 and 12, in favor of the 9th grade;

(4) that the mean response speed for the Black students would be slower than the mean response speed for the White students on the reading passage with multiple meaning words for the Black child at each grade level;

(5) that the mean response speed for 6th and 9th grade Black students would be slower than that of 3rd and 12th grade Black students on the reading passage with multiple meaning words for the Black child; and,

(6) that there would be no difference in the interpretation and in the mean response speed on the reading passage with words that meet Category I criterion across all grades for both Black and White students.

For the primary hypotheses about differences between Black and White students on the frequency of Category I and Category II responses, multivariate analysis and univariate analysis with nested design were employed. For hypotheses 1 and 6, the contrasts of interest were the between Black and White student differences within each form. This basic design was used once for each grade. The analysis strategy can be diagrammed as below:

- -

Insert Figure 1 about here.

- -

For example, in the 3rd grade the Black and White students were compared within Forms I and II. The analysis of covariance with nested design was also employed to adjust the Category I and II responses to the student's initial reading level.

For hypotheses 2 and 3, to determine if differences existed between grades 3 and 6 and between 9 and 12, the multivariate analysis and univariate analysis with nested design examined the between race differences within forms and the between grade differences within both races and forms. The analysis of covariance was also utilized to adjust the Category I and Category II responses to the student's initial reading level.

For hypotheses 4, 5 and 6, since the types of response to the questionnaire were mutually exclusive (i.e., the student had to select either a Category I, Category II or neutral

response to each question), and since there could not be Category I and Category II type answers for each subject, the mean response speed was calculated for the two treatment groups on each form. The mean response speed for Forms I and II between the races were graphed to give a visual depiction of the general speed differences that existed.

IV. Findings

To determine the effect of semantic interference in Black students' reading comprehension, 80 Black students (the experimental group) were compared with 80 White students (the control group) in grades 3, 6, 9 and 12. The mean number of Category I (dominant White cultural interpretation) and Category II (Black cultural interpretation) responses on Form I (single meaning words) and Form II (multiple meaning words) were calculated. For the 3rd and 6th grades, the maximum number of responses on each form was four, and for the 9th and 12th grades the maximum number was nine. The mean reading score for the students on each form was also calculated. See Table 1.

- -

Insert Table 1 about here.

- -

Third Grade Students

It was hypothesized that 3rd grade Black students would apply a Black cultural interpretation to the reading passage with multiple meaning words for the Black student more often than would the White students; and that there would be no difference in the interpretation on the reading passage with words that meet Category I (dominant White cultural interpre-

tation) criterion for both Black and White students.

In regard to the 3rd grade students on Form I (single meaning words), the two groups gave relatively the same number of Category I (dominant White cultural interpretation) responses (Blacks - 3.2 and Whites - 3.3) but the Black students gave an increased number of Category II (Black cultural interpretation) responses (Blacks - .7 and Whites - .4). On Form II, the Black students elicited fewer Category I (dominant White cultural interpretation) responses (Blacks - 2.8 and Whites - 3.6) and more Category II (Black cultural interpretation) responses (Blacks - 1.0 and Whites - .2).

- -

Insert Figures 2 and 3 about here.

- -

Within the Black subjects on Forms I (single meaning words) and II (multiple meaning words), the subjects gave more Category I (dominant White cultural interpretation) responses on Form I (Form I - 3.2 and Form II - 2.8) and more Category II responses (Black cultural interpretation) on the Form II (Form I - .7 and Form II - 1.0) as shown in Figure 4.

- -

Insert Figure 4 about here.

- -

Within the White subjects, there was a slight increase in Category I (dominant White cultural interpretation) responses on Form II (Form I - 3.3 and Form II - 3.6) and a slight

increase in Category II (Black cultural interpretation) response on Form I (Form I - .4 and Form II - .2) as illustrated in Figure 5.

- -

Insert Figure 5 about here.

- -

To determine whether or not differences as seen in the above table and figures were significant, analyses of variance were calculated for the Category I and Category II responses. Analyses of covariance controlling for reading were also calculated to see it the initial reading level of the students had a significant effect on the interpretation of the two reading passages.

- -

Insert Table 2 about here.

- -

Table 2 shows the Category I and Category II responses for the Black and White subjects on both forms. Between Forms I (single meaning words) and II (multiple meaning words), there was not a significant difference between the number of Category I and Category II interpretations when the Black and White students were considered collectively. As can be seen in Table 1, the performance of the Black and White subjects on Form I was relatively the same. However, on Form II the Black subjects produced fewer Category I responses and more Category II responses than did the White subjects. Within Form

I, the analysis of variance indicates that there was a nonsignificant difference between the two groups of subjects in type of response; however, within Form II, there was a significant difference ($p < .05$) between the two racial groups in type of response. The Black students gave significantly fewer Category I responses ($p < .025$) and significantly more Category II responses ($p < .025$) than did the White subjects.

- -

Insert Table 3 about here.

- -

Table 3, the analysis of covariance, examines the effect of the initial reading level and as can be seen, reading did not alter the significant or nonsignificant response differences of the analysis of variance results between the forms or between the races.

Sixth Grade Students

It was hypothesized that 6th grade Black students would apply a Black cultural interpretation to the reading passage with multiple meaning words for the Black student more often than would the White students; and that there would be no difference in the interpretation on the reading passage with words that meet Category I criterion for both Black and White students.

The mean number of responses for the 6th grade students on the two forms is shown in Table 1. The number of Category I responses for the Black students on Form I (single meaning

words) was less than that for the White students (3.1 and 3.6 respectively) but the number of Category II responses was greater for Black students on Form I (Blacks - .7 and Whites - .1).

- -

Insert Figure 6 about here.

- -

On the reading passage with multiple meaning words (Form II), the White students produced more Category I answers than did the Black students (3.6 and 2.3 respectively) and less Category II answers (Blacks - 1.3 and Whites - .3).

- -

Insert Figure 7 about here.

- -

Within the Black students, more Category I answers were produced on the reading passage with the single meaning words (Form I) -- Form I - 3.1 and Form II - 2.3; and more Category II answers were produced on the reading passage with multiple meaning words (Form II) -- Form I - .7 and Form II - 1.3.

- -

Insert Figure 8 about here.

- -

The White students performed similarly on both forms, i.e., they produced approximately the same amount of Category I responses (Form I - 3.9 and Form II - 3.6) and approximately the same amount of Category II responses (Form I - .1 and

and Form II - .3).

- -

Insert Figure 9 about here.

- -

A multivariate analysis revealed no significant difference on the types of response between Forms I and II when both the experimental and control groups were combined.

- -

Insert Table 4 about here.

- -

However, a univariate analysis shows a significant difference ($p < .025$) in the number of Category I responses elicited on the two forms, in favor of Form I; but a nonsignificant difference in the number of Category II responses for the two forms. Further analysis revealed that within Form I there was a nonsignificant difference between the Black and White groups in the type of response. However, contrary to hypothesized, a univariate analysis did indicate that the difference in number of Category I responses between the racial groups was significant ($p < .025$), that is, the White subjects produced significantly more Category I responses than did the Black subjects. Within Form II, there was a significant difference ($p < .05$) on the type of response produced between the two groups; the Black subjects produced fewer Category I responses ($p < .025$) and more Category II responses ($p < .025$) than the White subjects.

- -

Insert Table 5 about here.

- -

The question of the effect of reading on the number of Category I or Category II answers produced is examined in Table 5. The results of the analysis of covariance were similar to those of the analysis of variance, i.e., when the Forms I (single meaning words) and II (multiple meaning words) were combined and when the two treatment groups were compared within Form II. The results of the analysis of covariance differed from those of the analysis of variance when the two treatment groups were compared within Form I, that is, there was a significant difference between the two treatment groups on Form I ($p < .05$). When the initial reading level was taken into account, the Black subjects produced fewer Category I responses ($p < .025$) and a markedly increased number of Category II responses ($p < .025$). At this point, there seems to be evidence of a Black cultural influence for the Black students because the analysis of covariance adjusted the number of responses to the initial reading level. It seems that at this age (approximately 11 - 12 years of age), the Black student is beginning to assimilate and accommodate to his own culture more. Over the years, it seems that through conditioning, the word <u>boy</u> for Black people as taken on the connotative meaning -- a Black male, thus the Black students in this study frequently interpreted the word <u>boy</u> on Form I to

mean "Black people."

Comparison Between the Third and Sixth Grade Students

It was hypothesized that there would be a significant difference ($p < .05$) in the interpretation of the reading passage with multiple meaning words for the Black child in grades 3 and 6, in favor of the 6th grade; and that there would be no difference in the interpretation on the reading passage with words that meet Category I criterion across the two grades for both Black and White students.

- -

Insert Figure 10 about here.

- -

Figure 10 illustrates the mean number of Category I and II responses on Forms I (single meaning words) and II (multiple meaning words) for the Black students. As can be seen there is relatively little difference in the number of Category I responses on Form I and there is relatively little difference in the number of Category II responses on Form II between the 3rd and 6th grade Black students.

- -

Insert Figure 11 about here.

- -

Figure 11 illustrates the mean number of responses on Forms I and II for the White students. The figure indicates that there is little difference in the type of response given on the two forms.

- -

Insert Table 6 about here.

- -

The analysis of variance indicated that within the Black students and within the White students, there was not a significant difference in type of response on Forms I (single meaning words) and Form II (multiple meaning words). In comparing the Black students to the White students on Form I, the Black students produced a significantly higher number of Category II responses ($p < .025$). Within Form II, there was a significant difference ($p < .05$) between the two treatment groups in that the Black students were lower in their production of Category I responses ($p < .025$) and markedly higher in number of Category II answers ($p < .025$).

- -

Insert Table 7 about here.

- -

The results of the analysis of covariance were similar to those of the analysis of variance except for this difference: within Form I, the Black students did not produce more Category II responses. This seems to indicate that the reading level of the student made the difference, i.e., when the reading levels are approximately equated, the cultural influence seemed not to be significant variable in the Black child's reading comprehension.

Ninth Grade Students

It was hypothesized that 9th grade Black students would apply a Black cultural interpretation to the reading passage with multiple meaning words for the Black student more often than would the White students; and that there would be no difference in the interpretation on the reading passage with words that meet Category I criterion for both Black and White students.

The maximum number of responses was nine for each form (see Table 1). The mean number of Category II responses for the Black students was lower on Form I (single meaning words) -- Blacks - 1.7 and Whites - 2.1. On Form II (multiple meaning words) there was a sharp increase in Category II answers for the Black subjects and a decrease in Category II responses for the White subjects (4.0 and 1.7 respectively).

- -

Insert Figures 12 and 13 about here.

- -

Within the Black students, the production of Category I responses was higher on the form with single meaning words (Form I - 6.6) than on the form with multiple meaning words (Form II - 4.3). The Black students seem to have more difficulty determining the appropriate interpretation of the passage with multiple meaning words, thus they produced more Category II responses on Form II.

- -

Insert Figure 14 about here.

- -

The reverse was true for the White students. On the form with multiple meaning words (Form II) they produced more Category I responses -- Form II - 6.6 and Form I - 6.1. Interestingly, the White students gave more Category II responses on the form with the single meaning words (Form I) -- Form I - 2.1 and Form II - 1.7. Possibly this was due to the race of the examiner because when the White students in this study responded to a question in which one of the multiple choice answers included the word "black," it seemed that the White students often associated this particular answer with what they thought the examiner expected to hear.

- -

Insert Figure 15 about here.

- -

The analyses of variance indicated whether the differences mentioned above were significant (refer to Table 8).

- -

Insert Table 8 about here.

- -

Across the groups there was a significant difference ($p < .025$) in the number of Category II responses produced between Forms I and II, meaning that there were significantly more Category II responses on Form II than on Form I. When comparing the

Black and White groups within Form I and within Form II, the results showed that there was a nonsignificant difference between the Black and White performances on Form I, however, on Form II, there was a significant difference ($p < .05$); the Black students produced fewer Category I answers ($p < .025$) and more Category II responses ($p < .025$) than did the White students.

Since the reading level of the Black students was much lower than that of the White students, an analysis of covariance determined whether reading was a significant variable in determining the amount of Category II responses produced.

- -

Insert Table 9 about here.

- -

The results of the analysis of covariance were similar to the analysis of variance results, that is, reading showed no significant effect in determining the amount of Category II responses produced by the Black students.

Twelfth Grade Students

It was hypothesized that 12th grade Black students would apply a Black cultural interpretation to the reading passage with multiple meaning words for the Black student more often than would the White students; and that there would be no difference in the interpretation on the reading passage with words that meet Category I criterion for both Black and White students.

The maximum number of responses was nine on each of the Forms I and II. The mean number of responses is shown in Table 1. There is little difference in the number of Category I and Category II responses produced on the form with single meaning words (Form I) and on the form with multiple meaning words (Form II) between the Black and White students.

- -

Insert Figures 16 and 17 about here.

- -

Within the Black subjects, there was little difference in the number of Category I and Category II responses on both Form I and Form II; the same was true for the White subjects.

- -

Insert Figures 18 and 19 about here.

- -

The results of the analysis of variance showed that the type of response within Form I (single meaning words), between the races was not significant and that the type of response within Form II (multiple meaning words), between the races was not significant.

- -

Insert Table 10 about here.

- -

The results of the analysis of covariance coincided with the results of the analysis of variance. Even though the reading level of the Black students was lower than that of the

White students, the student's reading ability did not significantly influence the way in which the students responded to the different reading passages.

- -

Insert Table 11 about here.

- -

Comparison Between the Ninth and Twelfth Grade Students

It was hypothesized that there would be a significant difference ($p < .05$) in the interpretation of the reading passage with multiple meaning words for the Black child in grades 9 and 12, in favor of the 9th grade; and that there would be no difference in the interpretation on the reading passage with words that meet Category I criterion across the two grades for both Black and White students.

The two grades were compared on the number of responses produced between and within the Forms I (single meaning words) and II (multiple meaning words).

- -

Insert Figures 20 and 21 about here.

- -

There was little difference in the mean number of responses produced on Form I (single meaning words) and Form II (multiple meaning words) within the Black students. The mean number of responses for the White students on Forms I and II also showed little difference.

- -

Insert Table 12 about here.

- -

The results of the analysis of variance showed a non-significant difference between forms, within each racial group. There was not a significant difference on Form I (single meaning words) between the Black and White students, but there was a significant difference on Form II (multiple meaning words) ($p < .05$). The Black students produced fewer Category I responses and more Category II reponses than did the White students. Between Forms I and II, the multivariate analysis revealed a nonsignificant difference when the responses of the two racial groups were combined but the results of the univariate analysis showed significantly more Category I responses produced on Form I ($p < .025$) and significantly more Category II responses produced on Form II ($p < .025$).

To determine if reading ability would make a difference in the type of response for the combined grades, the analysis of covariance was computed.

- -

Insert Table 13 about here.

- -

The results of the analysis of covariance differed from the results of the analysis of variance on Form II (multiple meaning words). The analysis of variance showed a significant

difference ($p < .05$) within Form II, between the races; but the analysis of covariance showed a nonsignificant difference within Form II, between the races thus indicating that when the reading abilities of the two racial groups are equivalent they do not differ in their response patterns.

Speed of the Response

It was hypothesized: (1) that the mean response speed of the Black students would be slower than the mean response speed of the White students on Form II (multiple meaning words) at each grade level; (2) that the Black students in grades 6 and 9 would take longer on the average than 3rd and 12th grade students in responding to questions about the Form II reading passage; and (3) that on the average, the Black and White students would respond at approximately the same rate when answering questions pertaining to Form I (single meaning words). The mean response time for Forms I and II were calculated (see Table 14).

- -

Insert Table 14 about here.

- -

On the average, the Black students in grades 3 and 6 were faster to respond to questions about Form II than the White students, but the Black students in grades 9 and 12 took longer.

- -

Insert Figure 22 about here.

- -

Recall that in the 3rd and 6th grades, the White students gave more Category I responses on Form II (multiple meaning words). Refer to Table 1. The time differences then seem to be a reflection of the White students responding to the race of the examiner. Even though it seemed that a dominant White cultural interpretation of the reading passage occupied the foremost position in their minds, it seems that they may have wondered what answer the examiner wanted to hear. As hypothesized the 9th and 12th grade Black students took longer on the average to answer questions about the Form II reading passage. The discrepancy, especially in the 9th grade, seems to lend support to the idea that the Black student's culture had a stronger influence on the interpretation of the reading passage with diverse meanings for the Black child. This effect was not apparent in the 12th grade although 12th grade Black students were faster, but not significantly faster, than the White students.

It was felt that (1) because peer influence (including Black cultural influence) would be stronger in grades 6 and 9 (especially in the 9th grade) and that (2) because Black students by the end of high school have generally learned to switch codes effectively (i.e., communicate in Standard English or give a dominant White cultural interpretation to words, or communicate in Black Dialect or give a Black cultural interpretation to words depending on the situation), that on the average Black students in grades 6 and 9 would take longer to

answer questions about a reading passage with diverse meanings for the Black child than would Black students in grades 3 and 12. The date of this investigation lend support to this hypothesis.

- -

Insert Figure 23 about here.

- -

Contrary to hypothesis the Black students on Form I tended to take longer, on the average, than the White students. This seemed to be due to some words such as boy and work on Form I which caused confusion for the Black students as to which meaning -- dominant White cultural or Black cultural meaning -- to apply in response to the examiner's questions.

V. Discussion

The results of this study suggest that the cultural experiences of the Black child affect the way he interprets reading materials. Since comprehension is in part controlled by the interest of the reader (Cain, 1971) and the type of life conditions that foster different patterns of communication, it follows that the Black child would interpret materials according to his primary cultural experiences. The differences between the Black culture and the White culture have stemmed from the fact that one group was the oppressed (the Black man) and the other, the oppressor (the White man). The Black people out of necessity for physical survival and the maintenance of group cohesiveness developed ways to communicating that would not cause negative repercussions to them.

Because the cultural experiences of the Black man (art, music, the effects of social, political and educational institutions, etc.) is different from that of the White man, different patterns of communication evolve such as shucking, copping a plea and rapping (Kochman, 1972; Abraham and Gay, 1972; Brown, 1972). Coupled with the different communication styles are the systematic grammatical and phonological deviations (Baratz, 1970; Johnson, 1970; Labov, 1970; Bailey,

1969), as well as the different (connotative) meanings given to many words and/or phrases (Carter, 1972).

The cultural influence should have a greater impact around age eleven or twelve because the child is becoming aware of himself and how others see him. Because the younger child (7 or 8 years of age) is not as culturally aware as the older child, it was felt that the younger Black child's understanding of a reading passage would approximate his White classmates. With the advent of puberty and the strong need for peer acceptance, the investigation predicted that the 9th grader would produce more Black Dialect interpretations of a reading passage than the 12th or 6th graders. On the other hand, the 12th grade Black student's understanding of what he reads would again approximate his White counterparts. This is because by the age of sixteen or seventeen the youth has become proficient in code switching, i.e., he is able to speak and understand both Black Dialect and Standard English -- or stated another way, he is able to interpret words both in terms of a dominant White cultural meaning and a Black cultural meaning -- depending on the situation, and he realizes that in order to obtain jobs, take tests, and so forth, he must know how to use and understand Standard English, and he must understand the interpretations given to words by the dominant White culture.

Overall, the results of the present study did indicate that the Black students produced more Black interpretation responses

and took longer, on the average, to answer questions pertaining to form II (multiple meaning words) than did the White students. Analysis of covariance showed that the level of reading achievement tended not to alter the response patterns; Black students continued to give more Black interpretation responses on Form II.

Differences in Black and White performances in school can, in part, be attributed to language differences as discussed by Johnson (1970) and Labov (1970). Differences in word meanings have resulted from differences in cultural experiences. The styles of communication for Black youth differ from that of White youths (Kochman, 1972; Holt, 1972).

The implications for education are (1) that the teacher needs to understand and not just be aware of the linguistic system that exists within the Black community; and (2) that teachers should encourage Black children to express themselves in their own language. When semantic differences arise (e.g., confusion in word meanings), the teacher and child should explore these differences without the teacher attributing a value judgment such as: "You're using the word incorrectly." In actuality, the confusion results from different cultural experiences.

One unexpected finding, possibly a limitation of the study, was that on the single meaning form (Form I), there were some multiple meaning words for both White and Black students such as the word boy. It seemed that the word boy is associated

in the minds of both White and Black students, especially Black students, to mean Black people. There was also the noticeable effort of some of the students, especially the White students, to second guess the examiner by trying to get clues from his facial expression. The examiner found it necessary to acid eye contact and to read aloud the questions while keeping the eyes directed away from the student.

Further research can substantiate the phenomenon of semantic interference in a Black child's academic progress while exploring the effect of the race of the examiner.

Appendix A

Reading Passages and Questionnaires

Reading Passage 1

Four boys put up a tent by the side of the river. They took things to eat with them. While they were away fishing, a dog came to their tent. When they returned to their tent, the boys saw the dog. The bravest boy went to the dog and gave it some sandwiches. The other boys were afraid and one of them said, "That was a terrible thing to do."

Reading Passage 2

Four brothers put up a tent by the side of the river. They took things to eat with them. While they were away fishing, a cat came to their tent. When they returned to their tent, the brothers saw the cat. The bravest brother went to the cat and gave it some bread. The other brothers were afraid and one of them said, "That was a bad thing to do."

Reading Passage 3

Two boys, Charles and Robert, reside in the country. Their small farm is located several miles outside the city boundaries. They own a barn, a vegetable garden, an apple orchard, a tractor, a scarecrow and a hound.

Early one Saturday morning while they were toiling in the garden, Charles glanced up and saw that Robert was resting from his labor. Charles said, "Hey, Robert, Work!" Several seconds later, Charles exclaimed, "Let's take the afternoon off and go to the city!" Robert said, "I don't know. I think lots of things happen in the city. That might be a dangerous thing to do!" Later that day they did decide to go to the city and stay with their aunt overnight. It was their first visit to the city in many months.

The next day while walking down a city street, Charles noticed a group of men emerge from a car. He looked at Robert and inquired, "Did you notice the fellows who got out of the car? Don't you think they look alike? It looks like they've been driving that car hard because it looks like it might be steaming." Down the street further, there was a discount store that they entered. In one section of the store, there were rows of colorful yarns, in another section there was a display of different size speakers and many other types of items. On their way out of

the discount store, they saw a package that was being prepared for delivery.

Robert and Charles had an enjoyable day and while driving home they had a lot to talk about.

Reading Passage 4

Two brothers, Charles and Robert, reside in the country. Their small farm is located several miles outside the city boundaries. They own a barn, a vegetable garden, an apple orchard, a tractor, a scarecrow and a hog.

Early one Saturday morning while they were toiling in the garden, Charles glanced up and saw that Robert was resting from his labor. Charles said, "Hey, Robert, Dig!" Several seconds later, Charles exclaimed, "Let's take the afternoon off and go to the city!" Robert said, "I don't know. I think lots of things happen in the city. That might be a bad thing to do!" Later that day they did decide to go to the city and stay with their aunt overnight. It was their first visit to the city in many months.

The next day while walking down a city street, Charles noticed a group of men emerge from a car. He looked at Robert and inquired, "Did you notice the brothers who got out of the car? Don't you think they look alike? It looks like they've been driving that car hard because it looks like it might be hot." Down the street further, there was a discount store that they entered. In one section of the store, there were rows of colorful threads, in another section there was a display of different size tubes and many other types of items. On their

way out of the discount store, they saw a box that was being prepared for delivery.

Robert and Charles had an enjoyable day and while driving home they had a lot to talk about.

Questionnaire 1

Questions for 3rd and 6th grade students.

"Now I will ask you some questions about what you have read. Answer the questions orally as quickly as you can."

1. The tent was put up by (girls relatives Black people).
   Time:
2. What came to the tent? An animal a man a car.
3. What was given away? Some horns some food some money.
   Time:
4. One of the scared fellows felt it was an (awful good easy) thing to do. Time:

Questionnaire 2

Questions for 9th and 12th grade students.

"Now I will ask you some questions about what you have read. Answer the questions orally as quickly as you can."

1. Charles and Robert are (Black people relatives dancers). Time:
2. They own (an animal a Cadillac a telephone). Time:
3. When Charles glanced up, he told Robert (to stop to lift earth to listen). Time:
4. Robert said going to the city might be a hard terrible good) thing to do. Time:
5. Who did Robert and Charles see getting out of the car? Black people twins puppets. Time:
6. The car they saw was (new overheated stolen). Time:
7. In the discount store, they saw a row of colorful (lamps clothes sewing materials). Time:
8. There was a display of different size (televisions rugs radio parts). Time:
9. Being prepared for delivery was a (container tree stereo). Time:

Appendix B

Figures

Figure 1

Multivariate Analysis with Nested Design

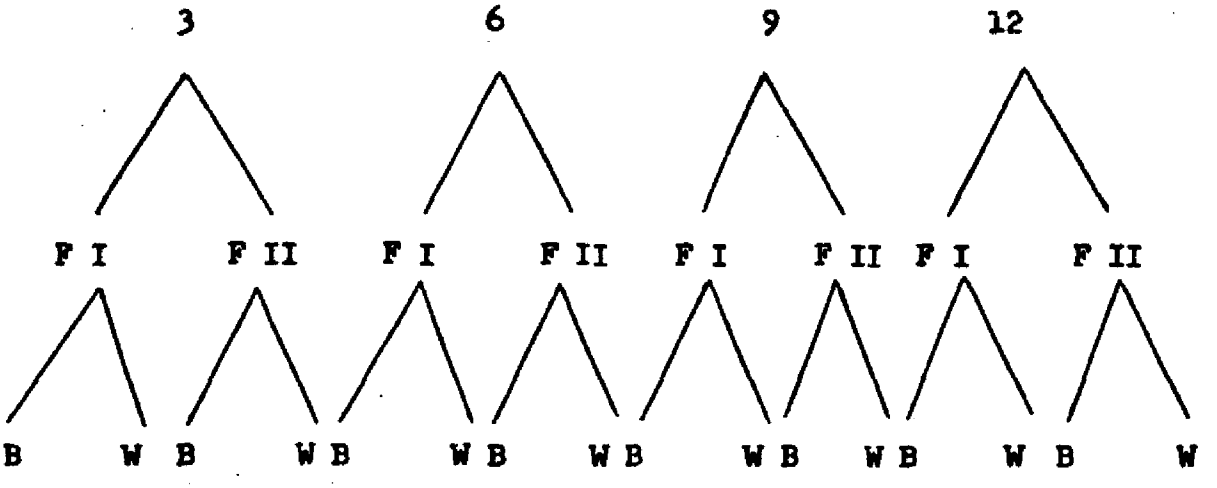


Figure 2

Mean Number of White Cultural Interpretation Responses for Third Grade

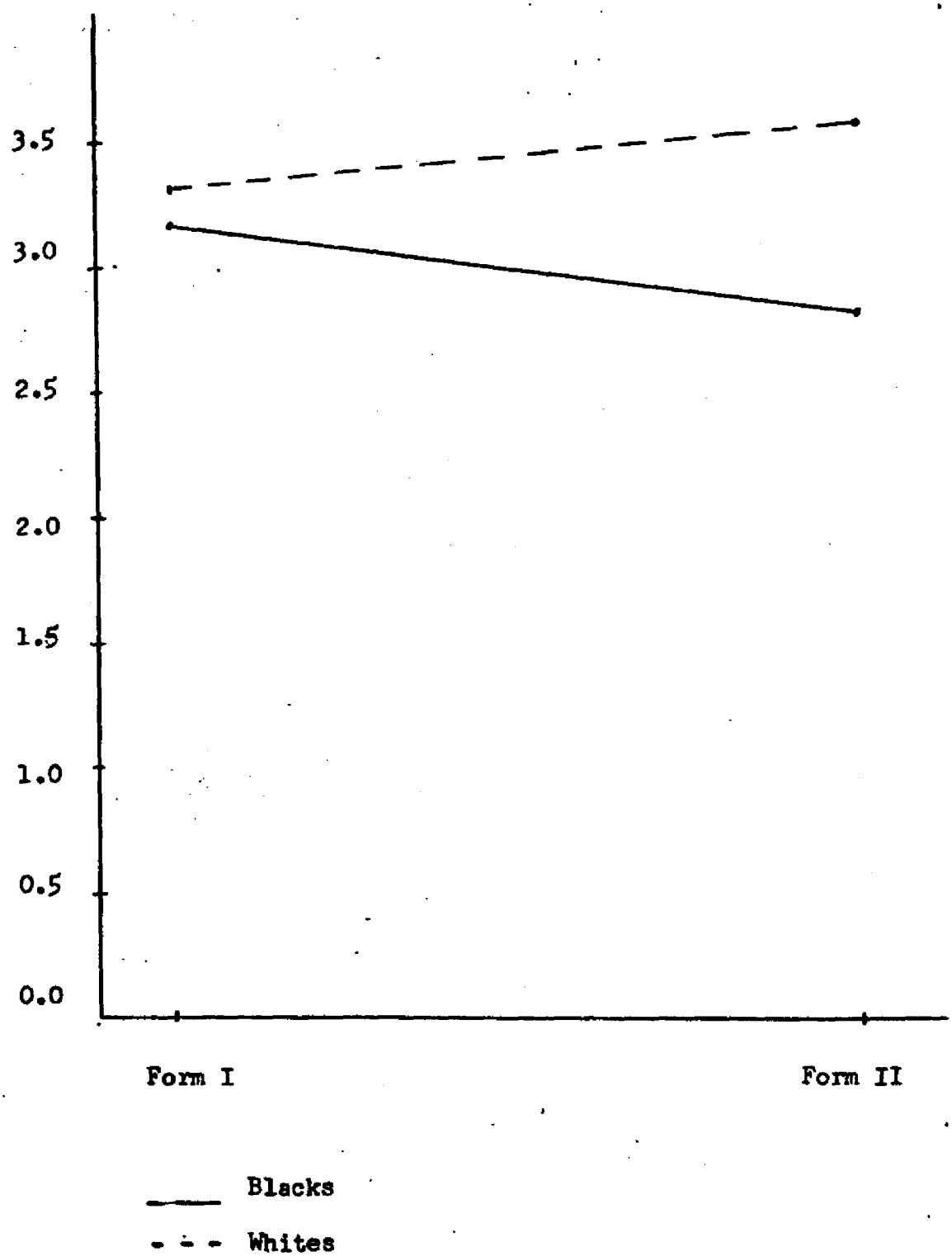


Figure 3

Mean Number of Black Cultural Interpretation Responses for Third Grade

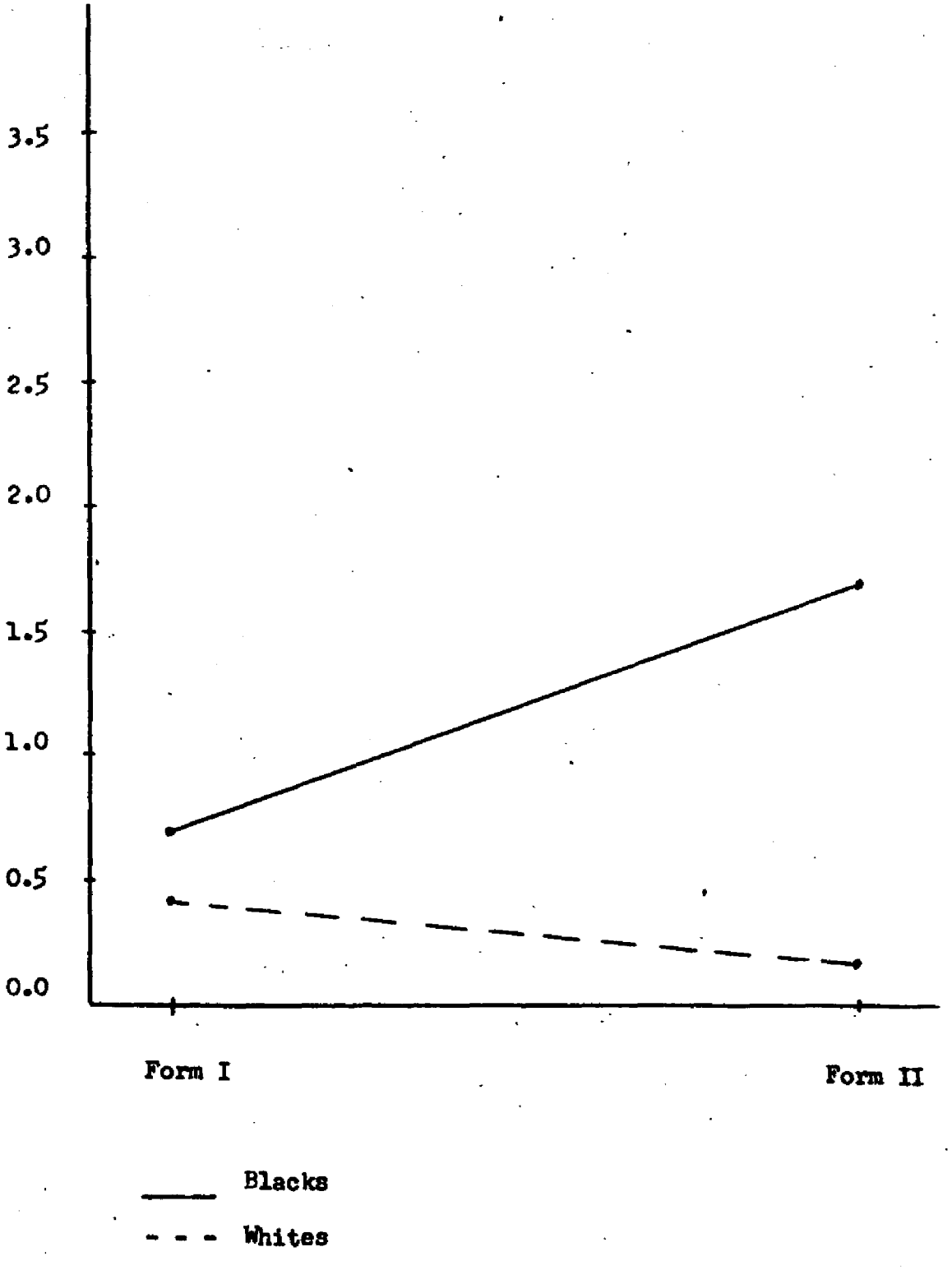


Figure 4

Mean Number of Responses on Forms I and II Within Third Grade Black Students

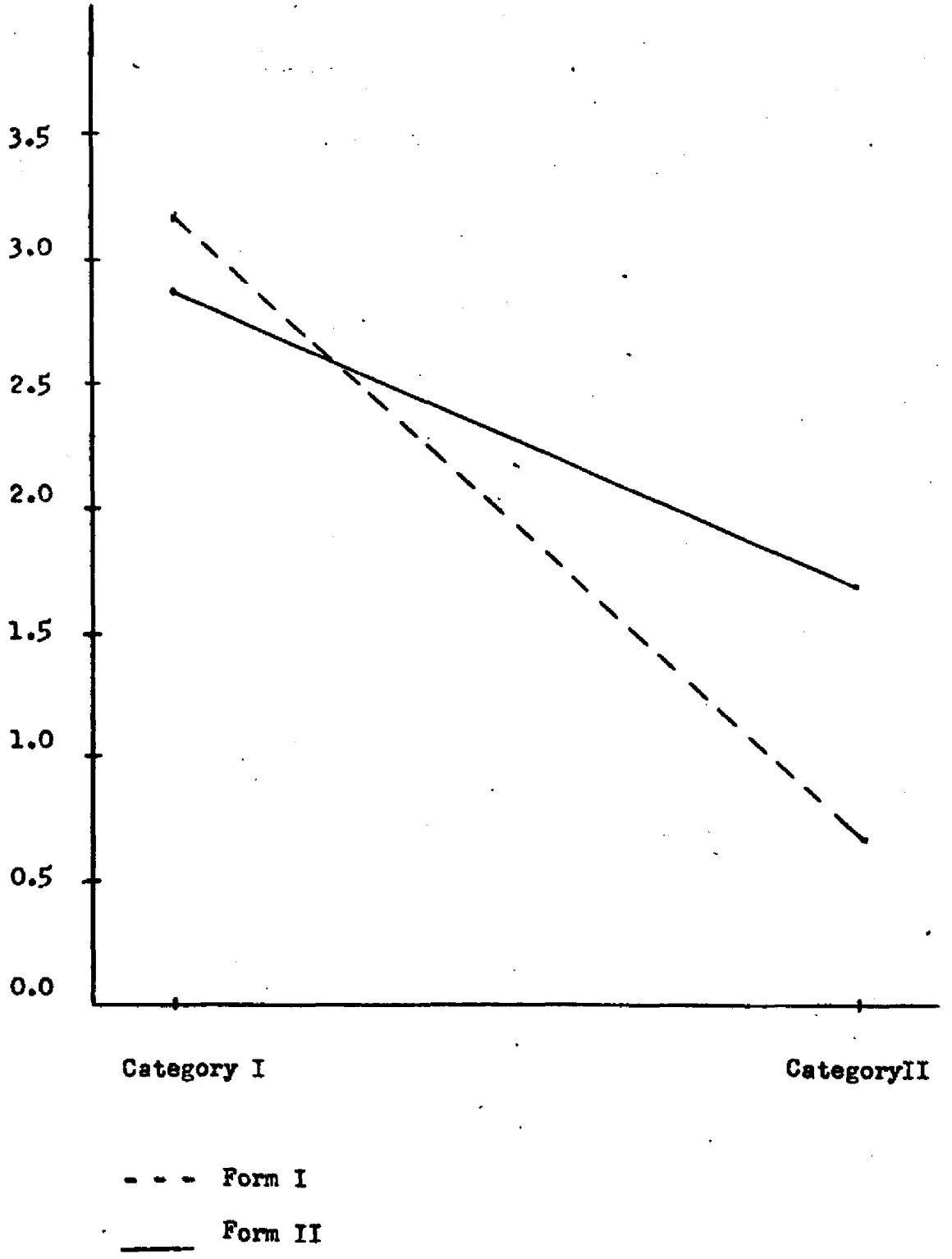


Figure 5

Mean Number of Responses on Forms I and II Within Third Grade White Students

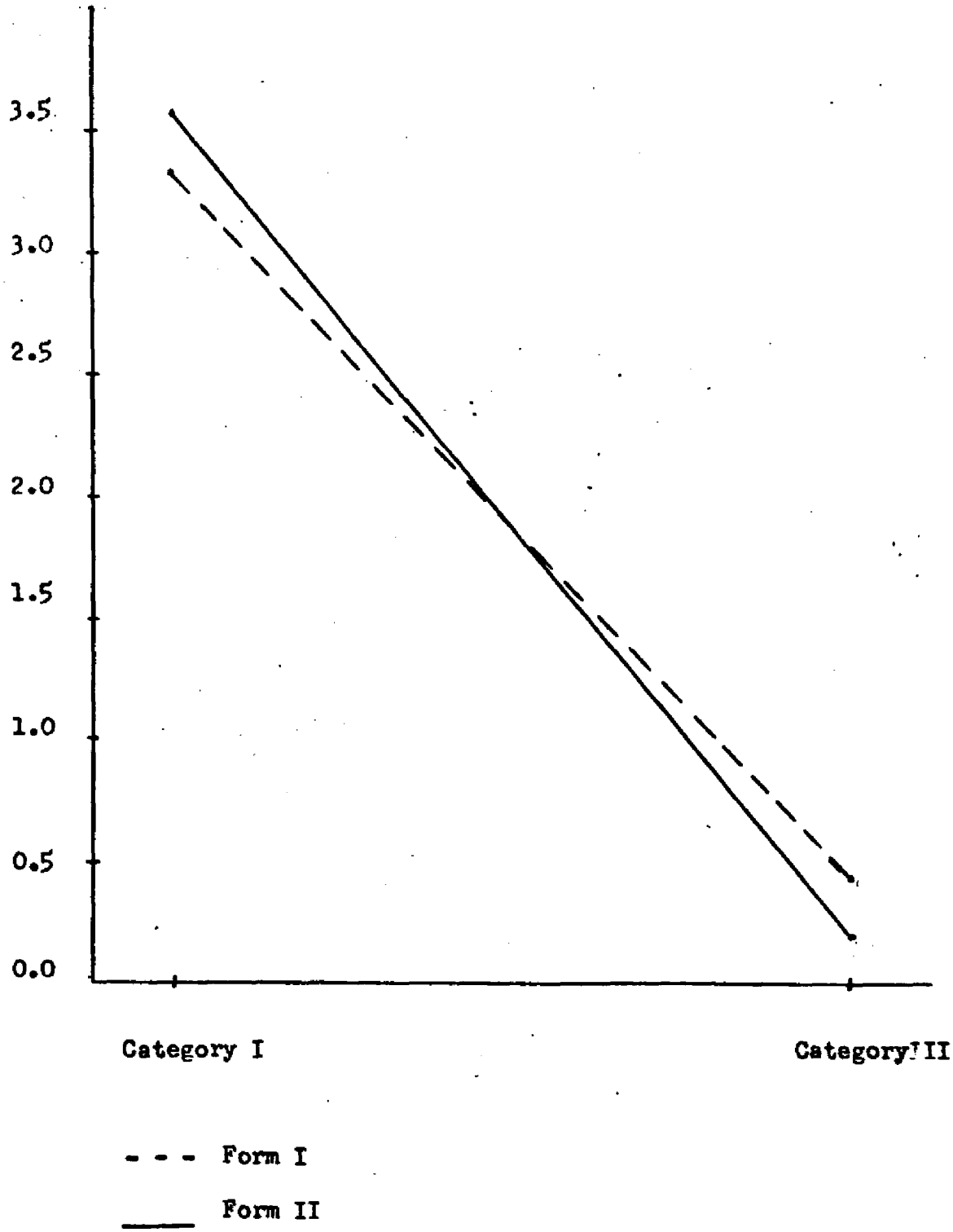


Figure 6

Mean Number of White Cultural Interpretation Responses for Sixth Grade

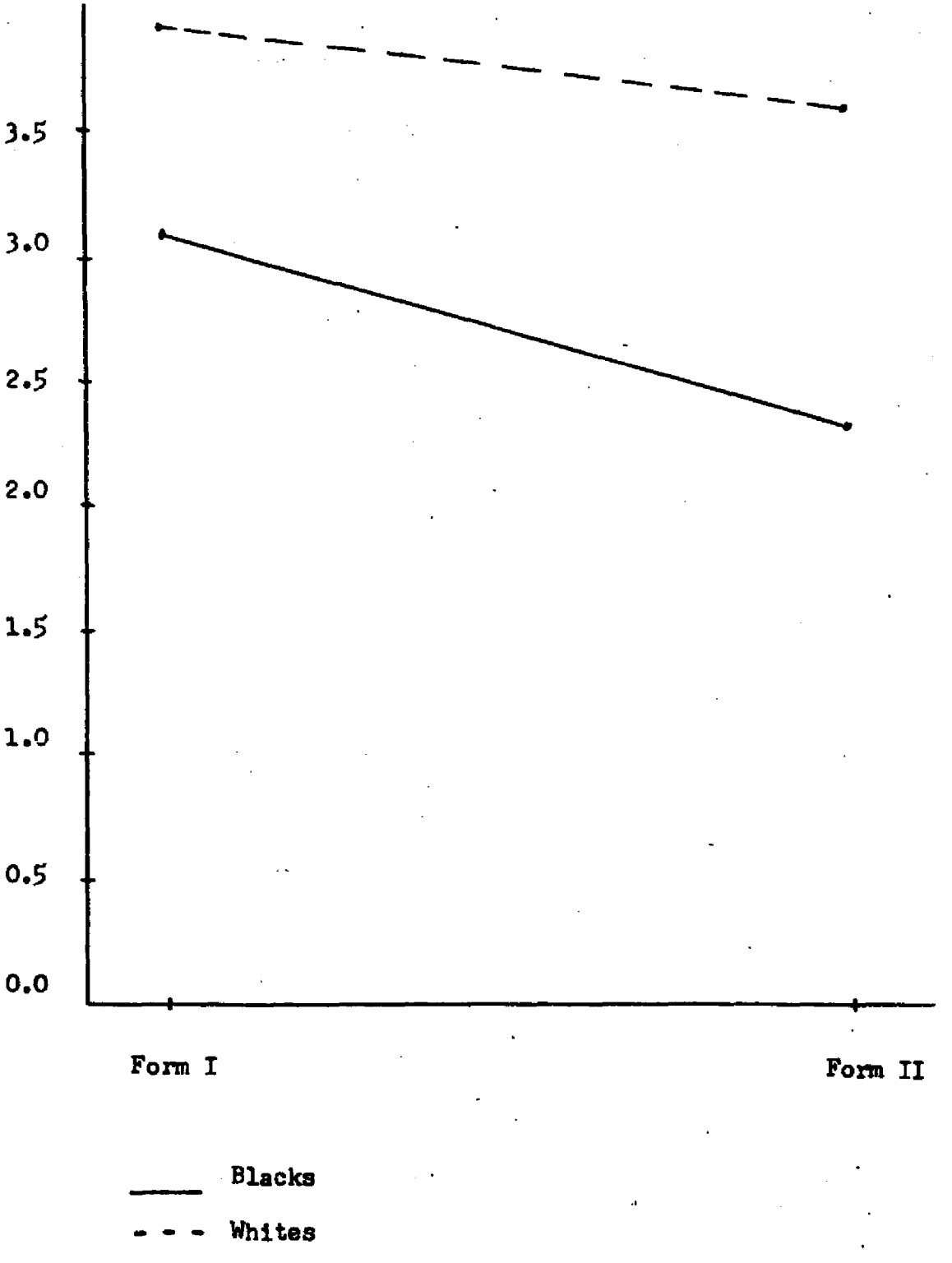


Figure 7

Mean Number of Black Cultural Interpretation Responses for Sixth Grade

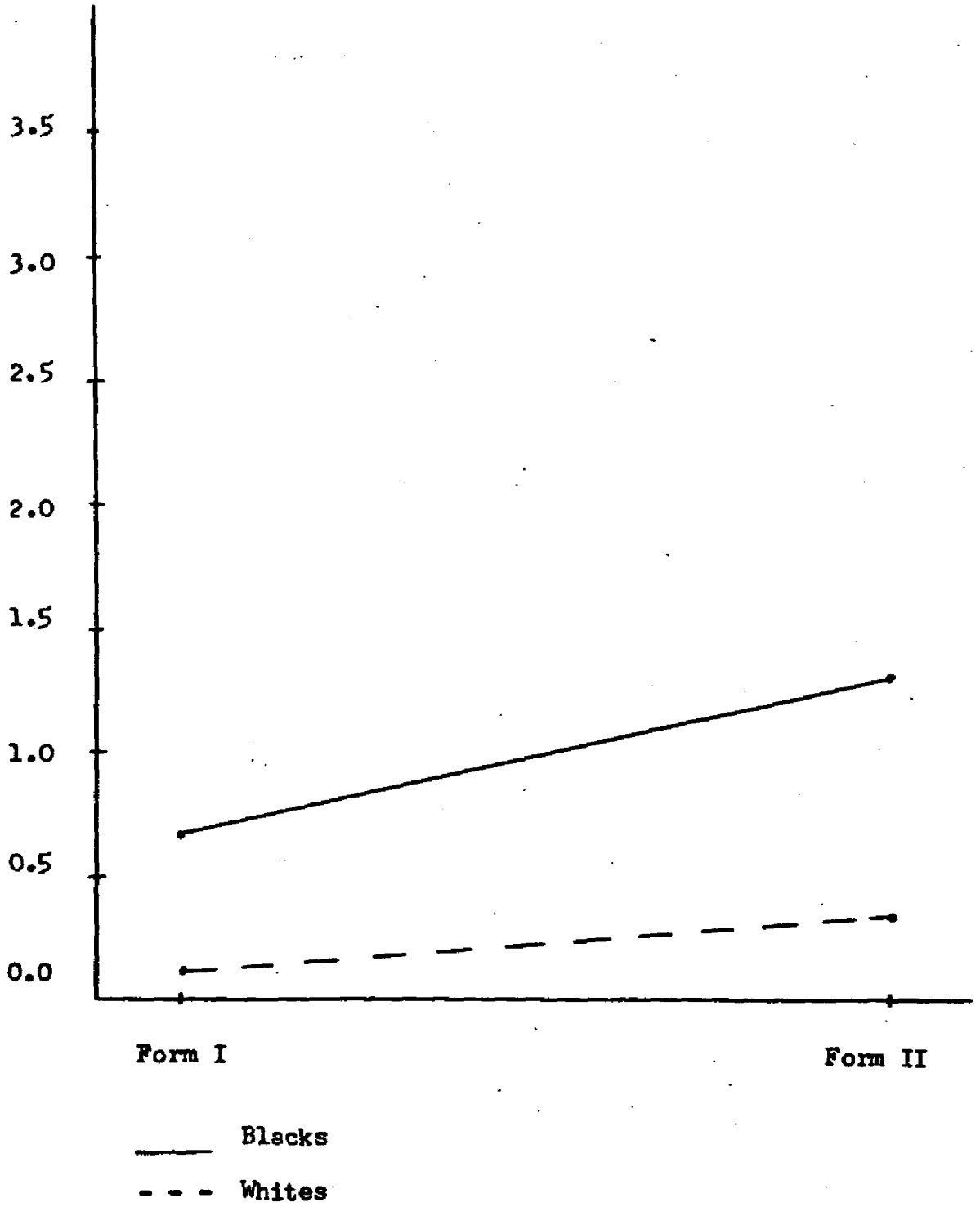


Figure 8

Mean Number of Responses on Forms I and II Within Sixth Grade Black Students

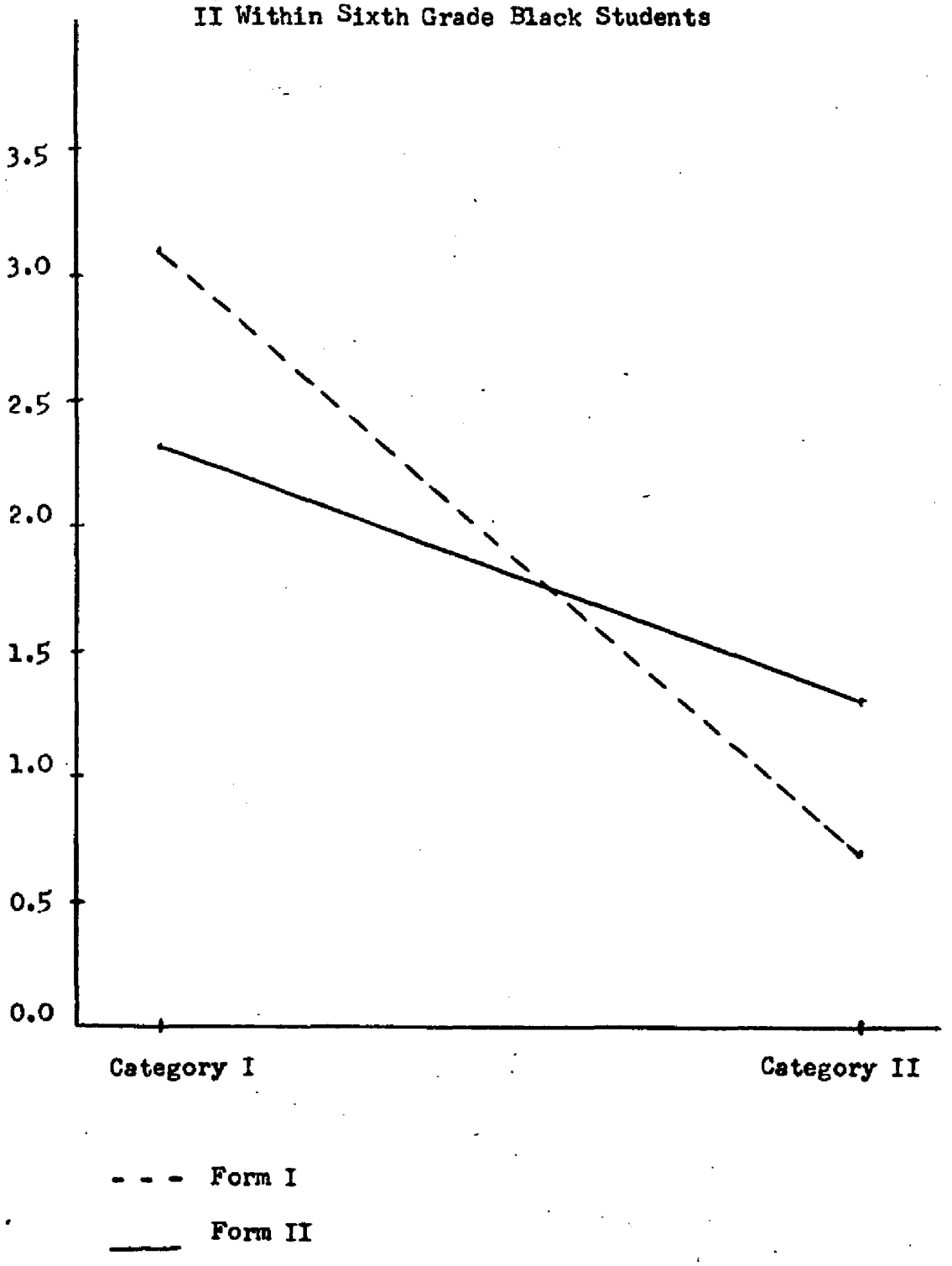


Figure 9

Mean Number of Responses on Forms I and II Within Sixth Grade White Students

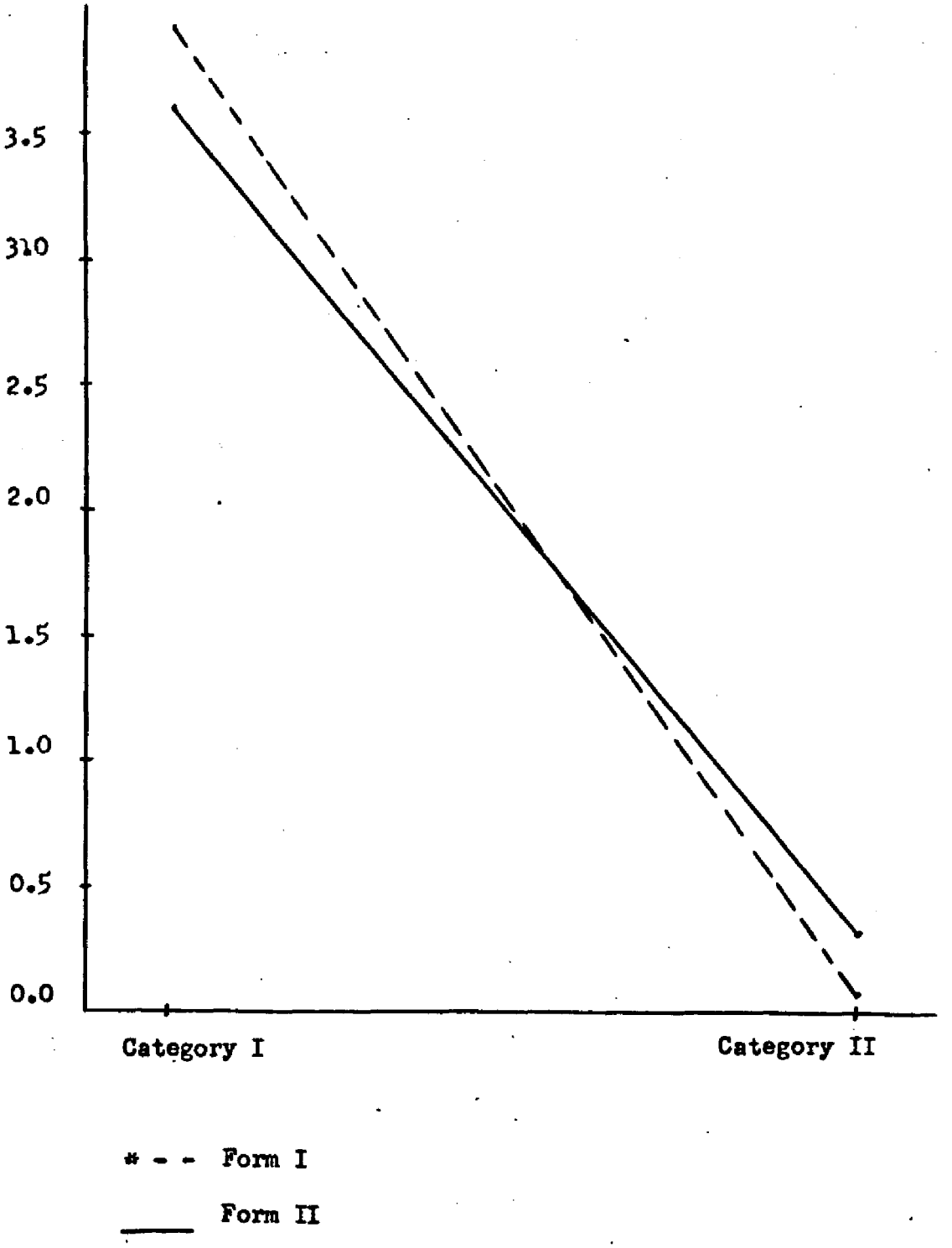


Figure 10

Mean Number of Responses for Third and Sixth Grade Black Students on Forms I and II

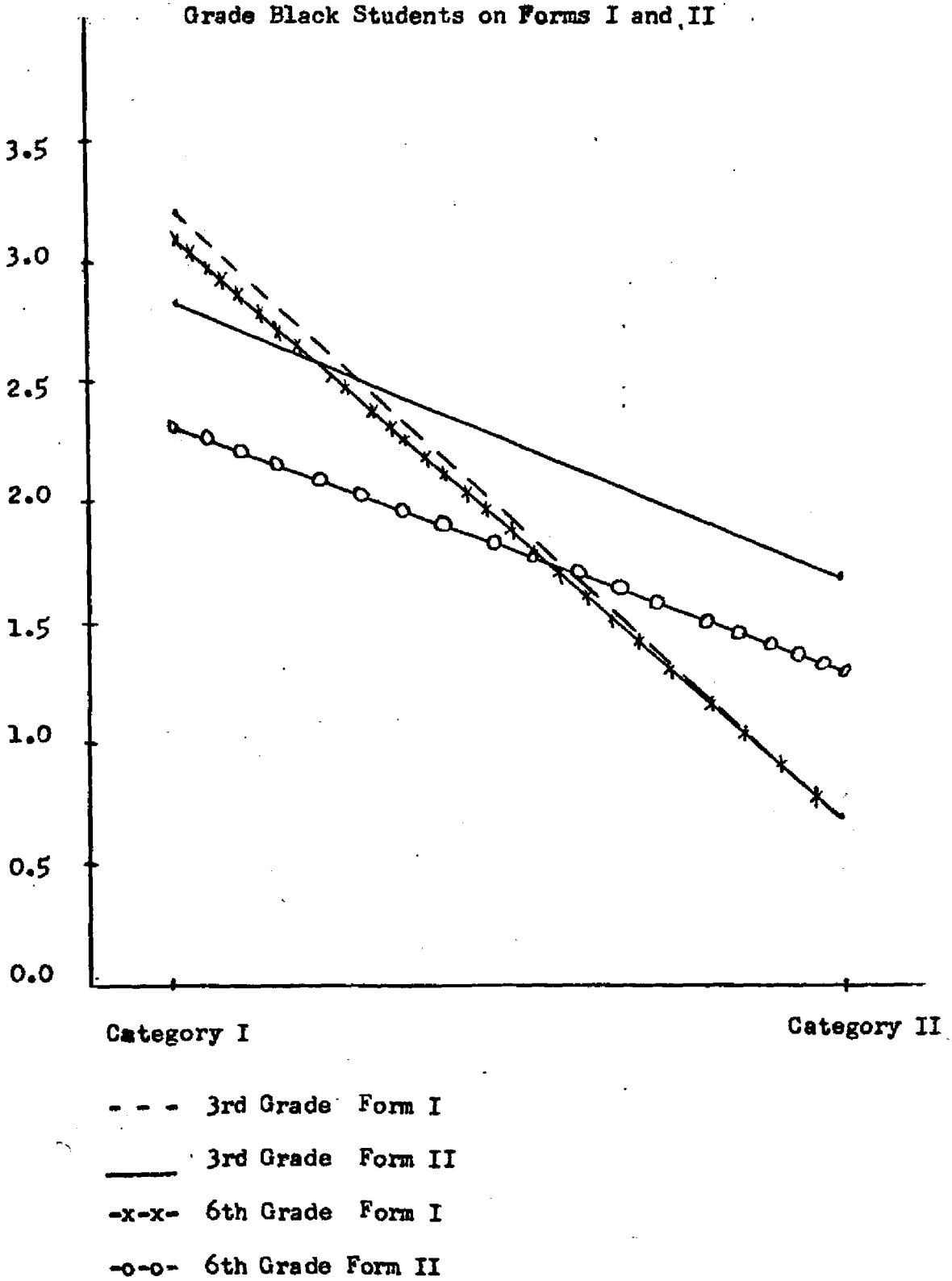
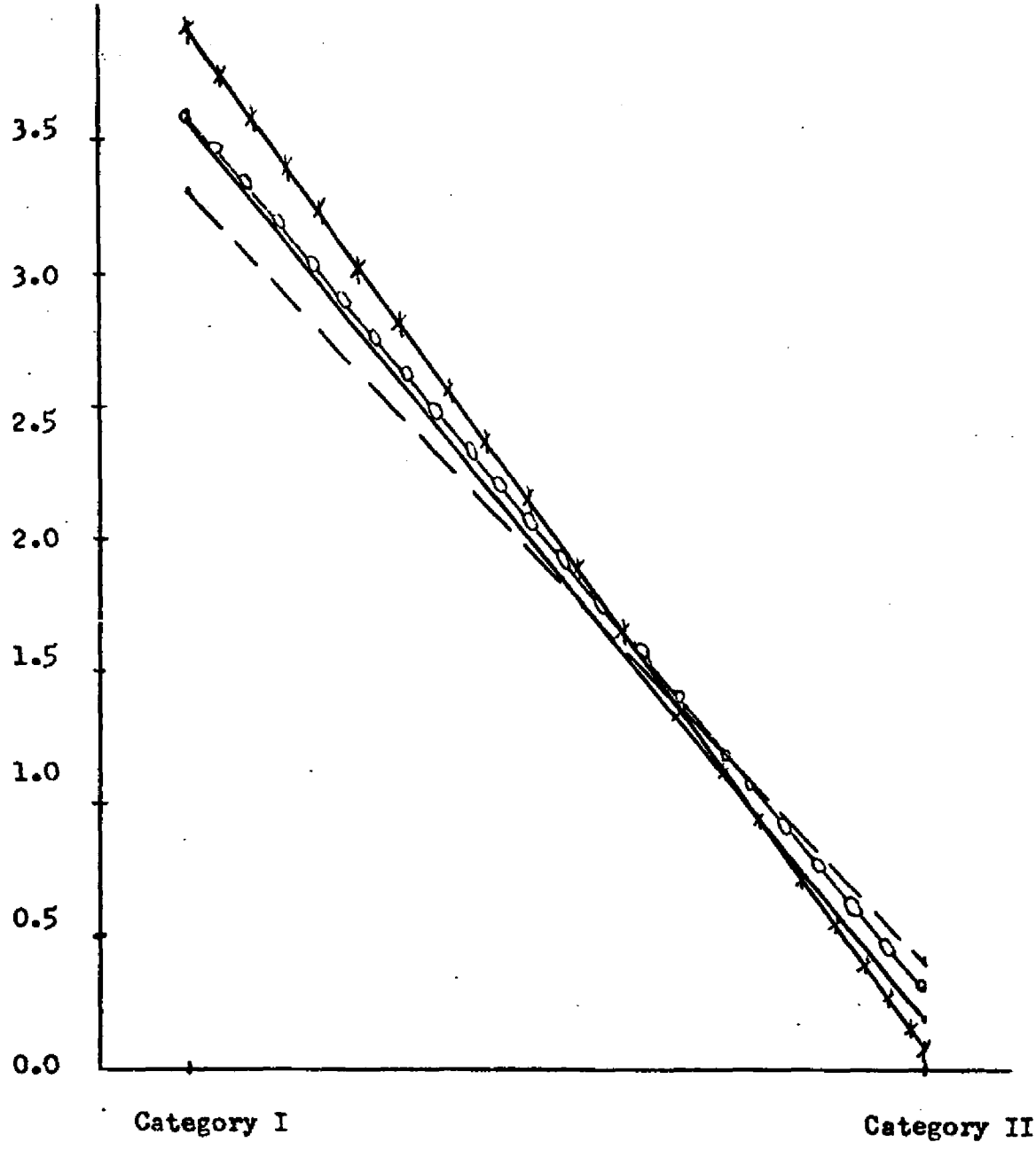


Figure 11

Mean Number of Responses for Third and Sixth Grade White Students on Forms I and II



- - - 3rd Grade Form I

____ 3rd Grade Form II

-x-x- 6th Grade Form I

-o-o- 6th Grade Form II

Figure 12

Mean Number of White Cultural Interpretation Responses for Ninth Grade

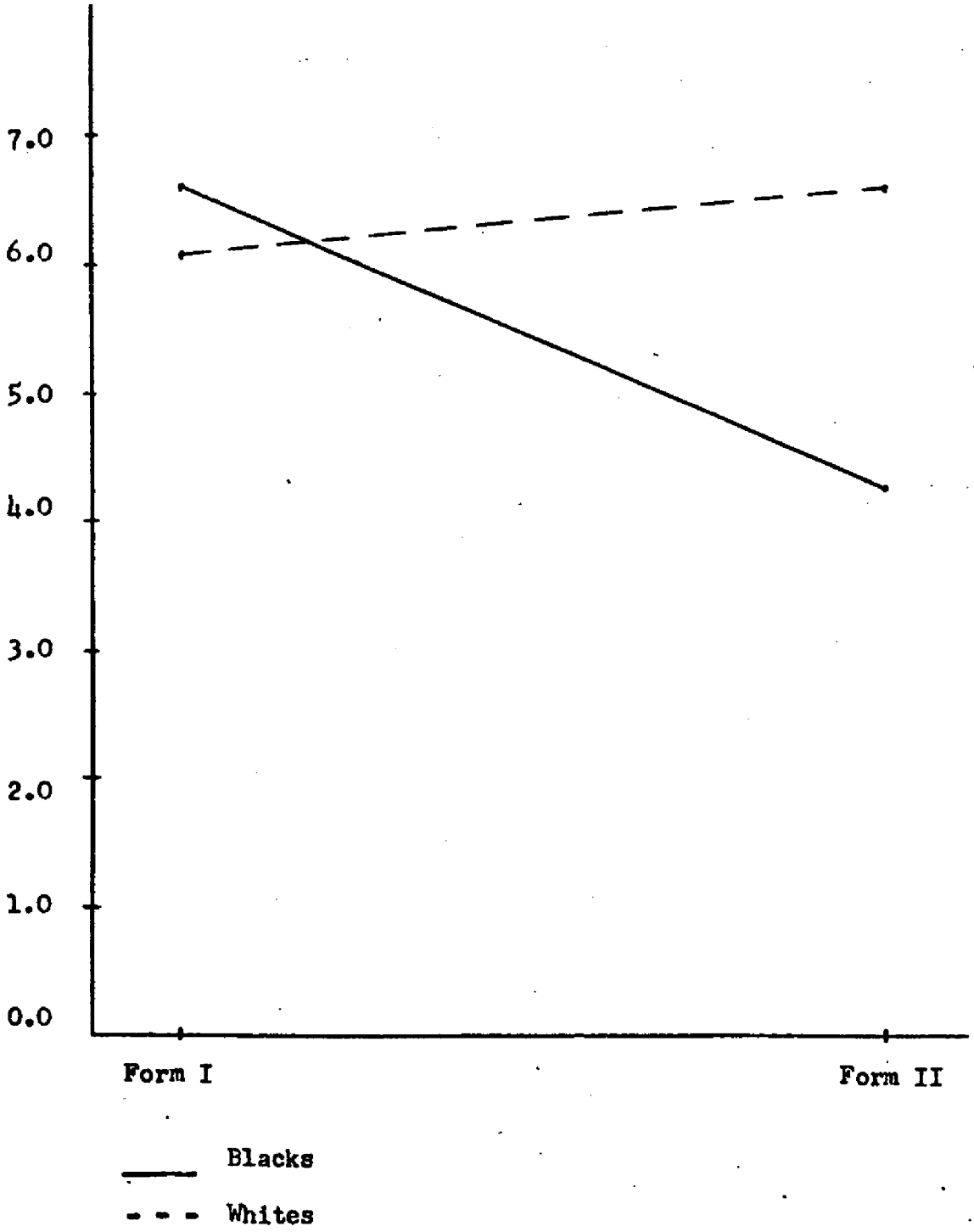


Figure 13

Mean Number of Black Cultural Interpretation Responses for Ninth Grade

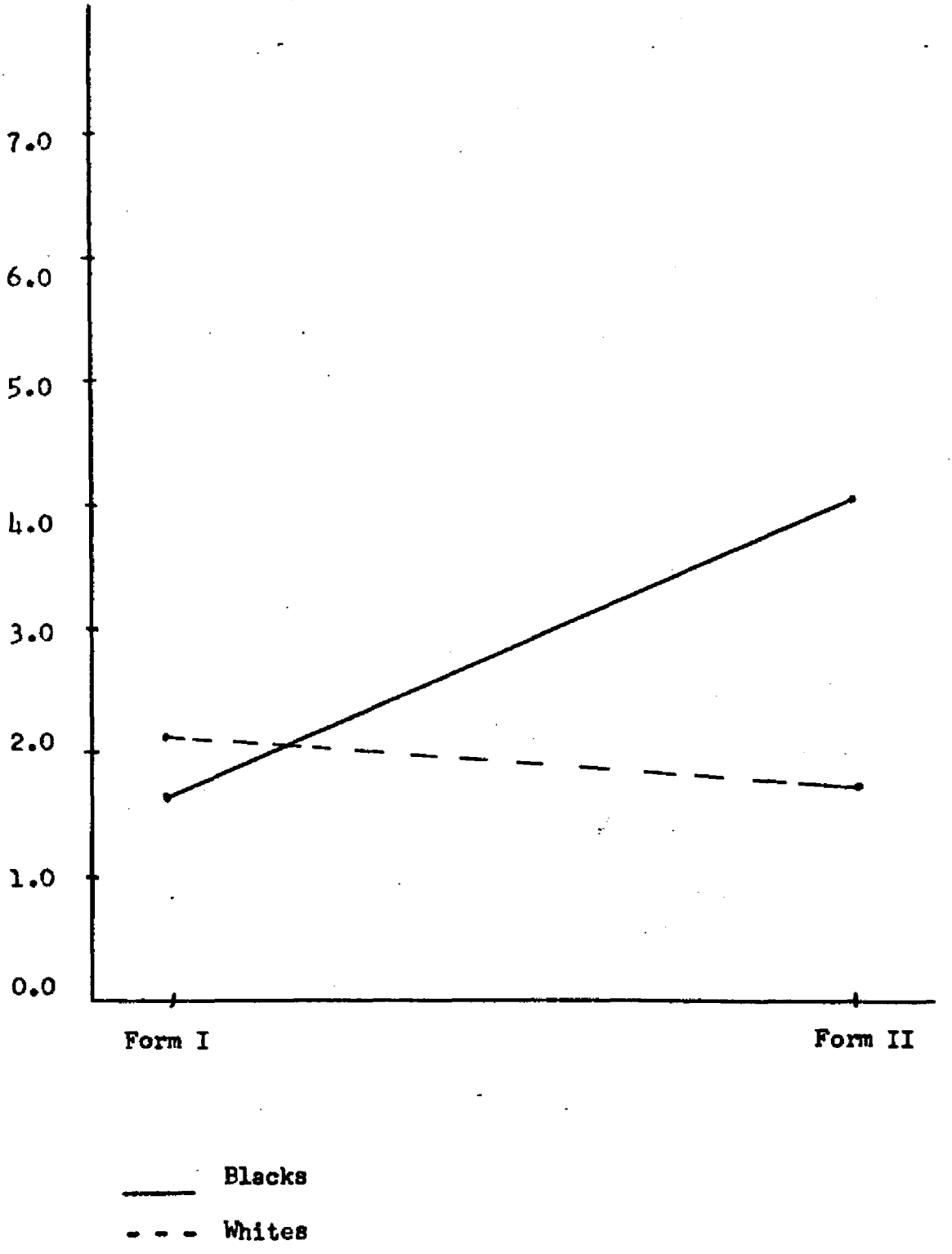


Figure 14

Mean Number of Responses on Forms I and II Within Ninth Grade Black Students

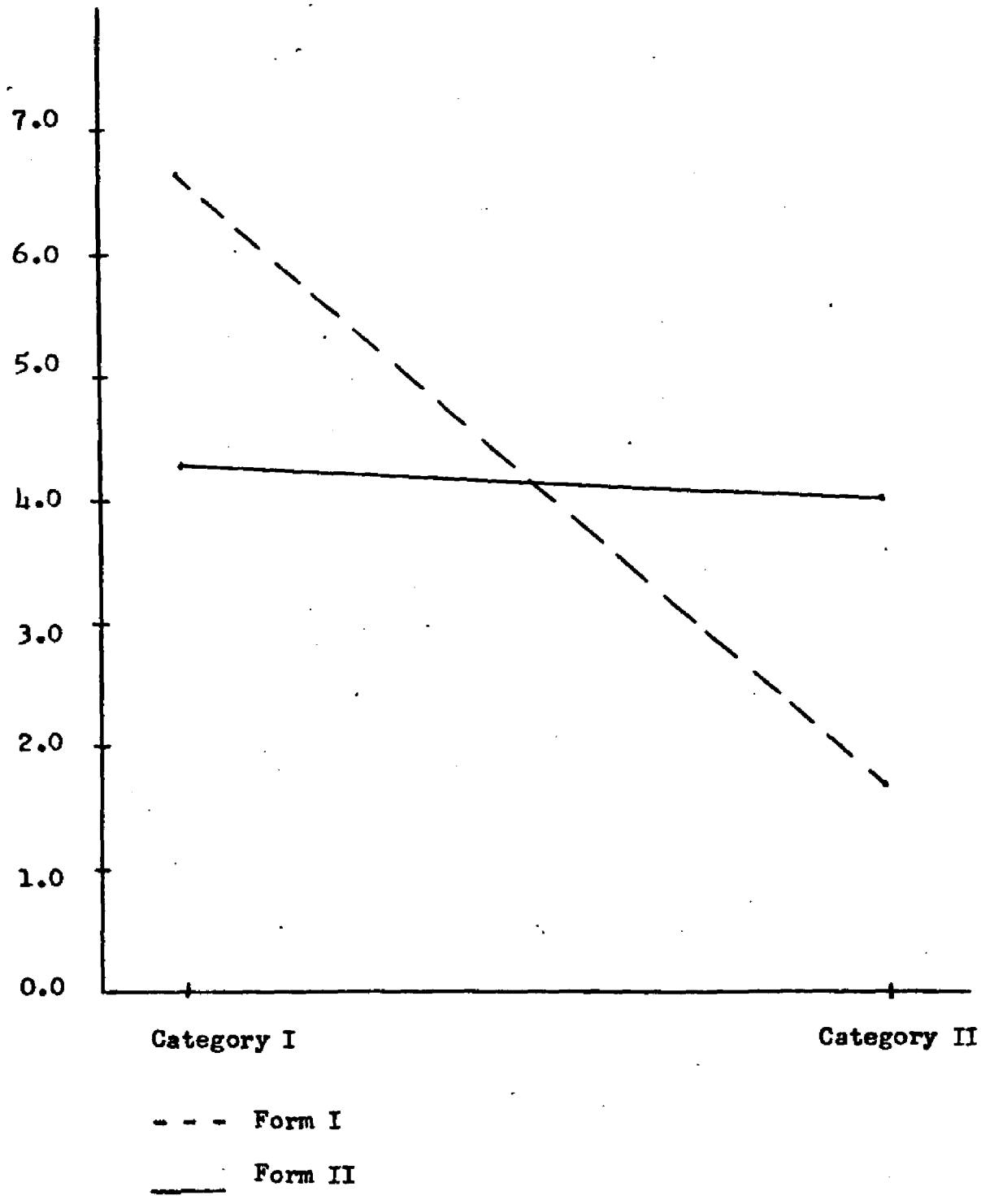


Figure 15

Mean Number of Responses on Forms I and II Within Ninth Grade White Students

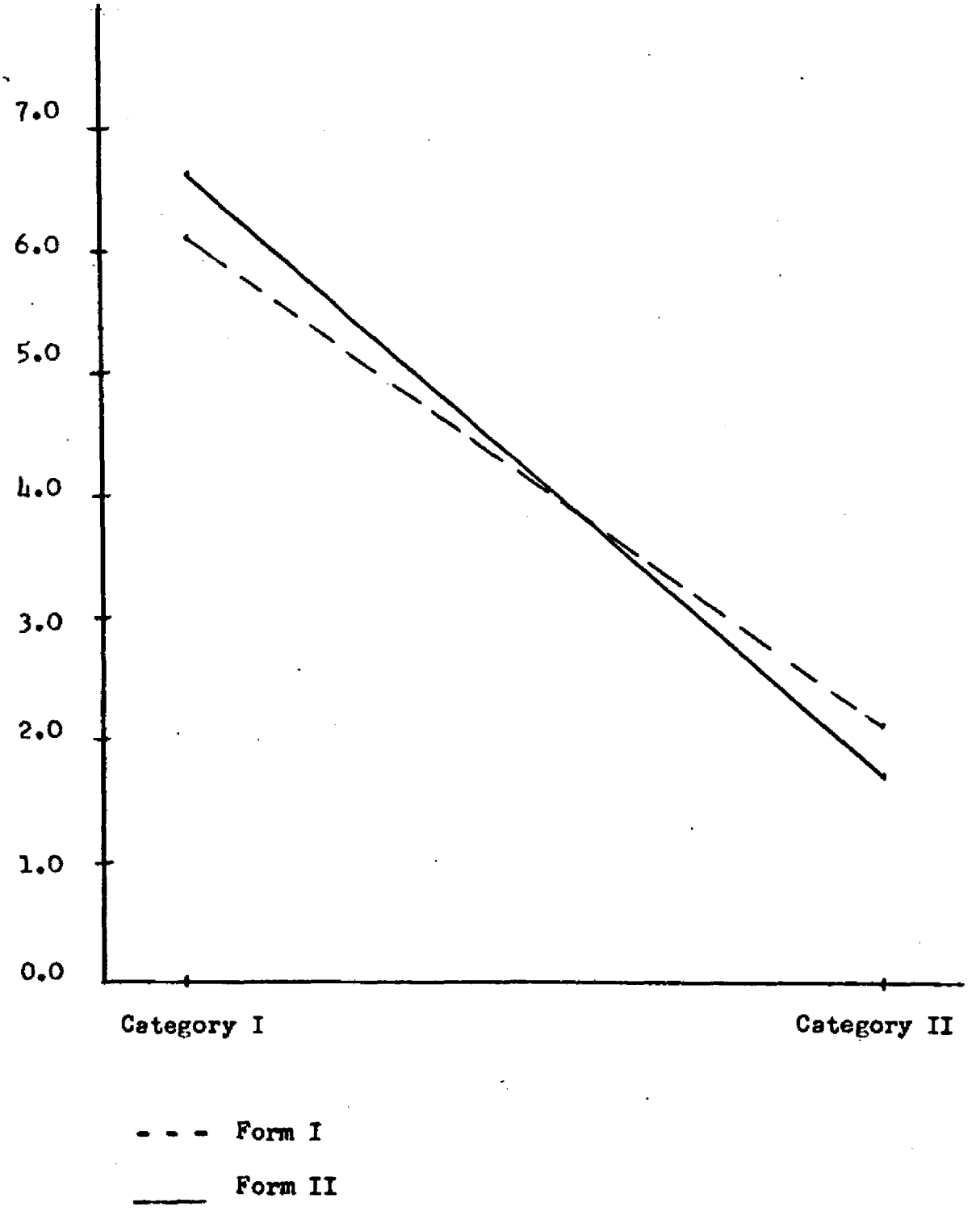


Figure 16

Mean Number of White Cultural Interpretation Responses for Twelfth Grade

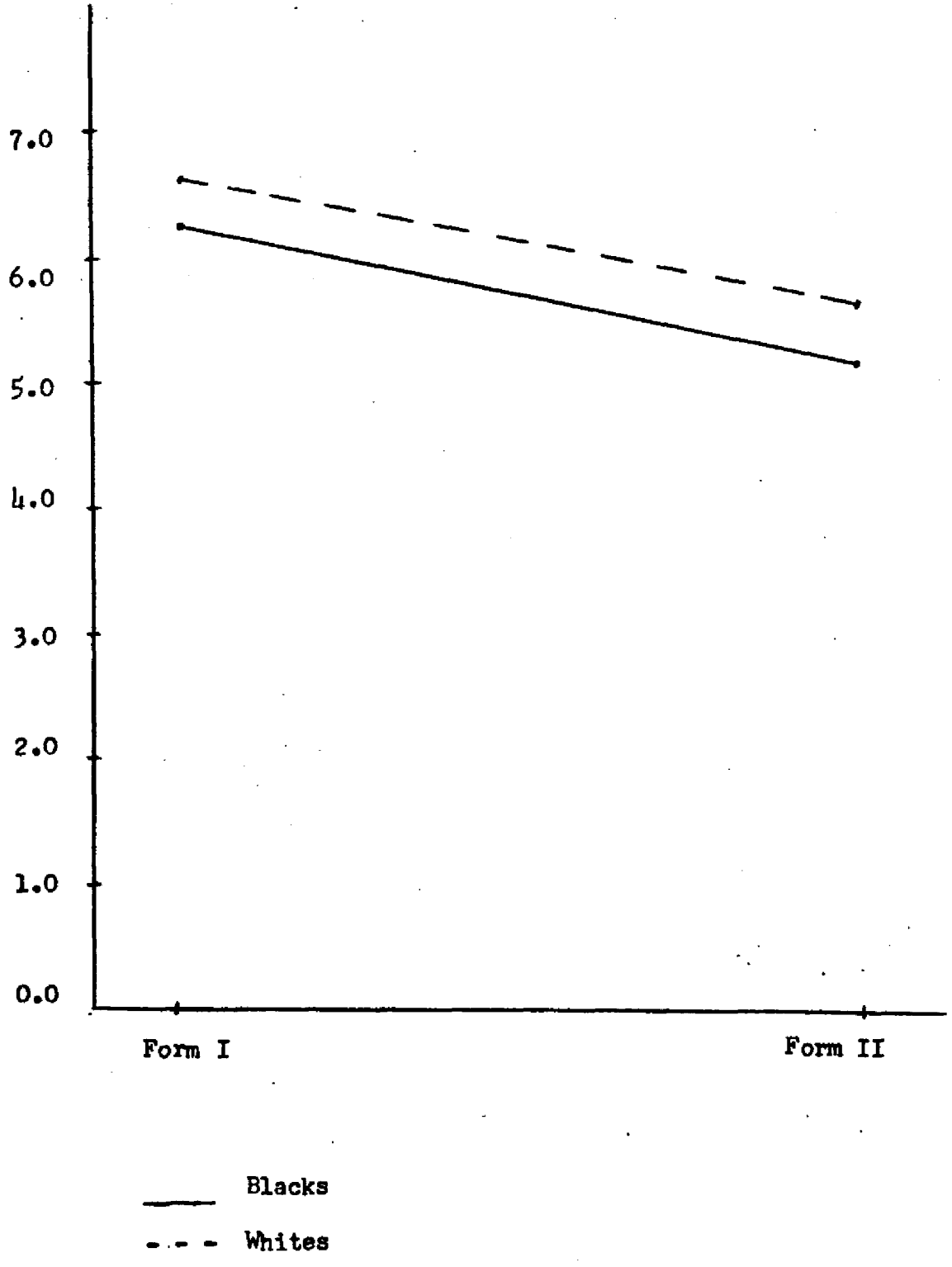


Figure 17

Mean Number of Black Cultural Interpretation Responses for Twelfth Grade

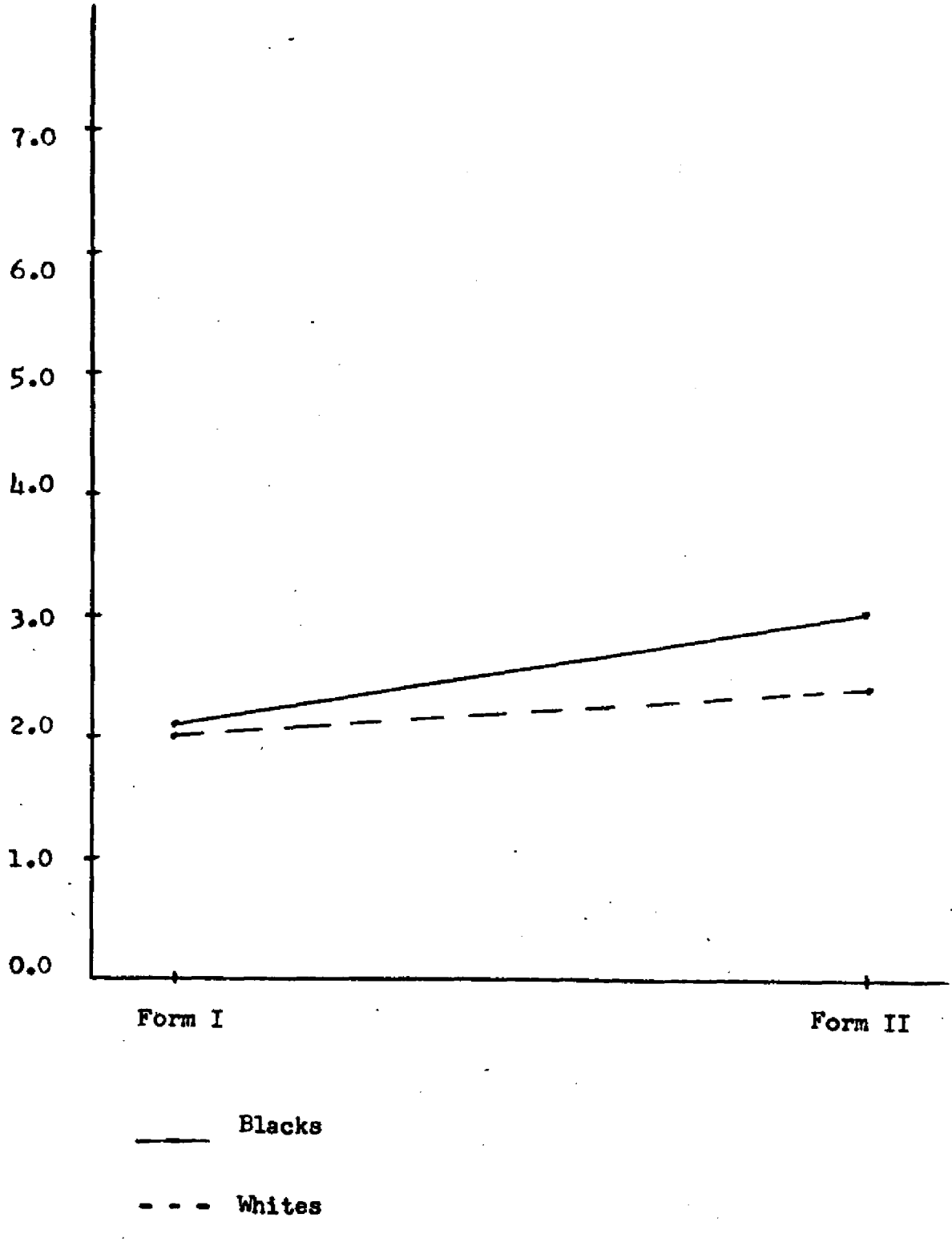


Figure 18

Mean Number of Responses on Forms I and II Whthin Twelfth Grade Black Students

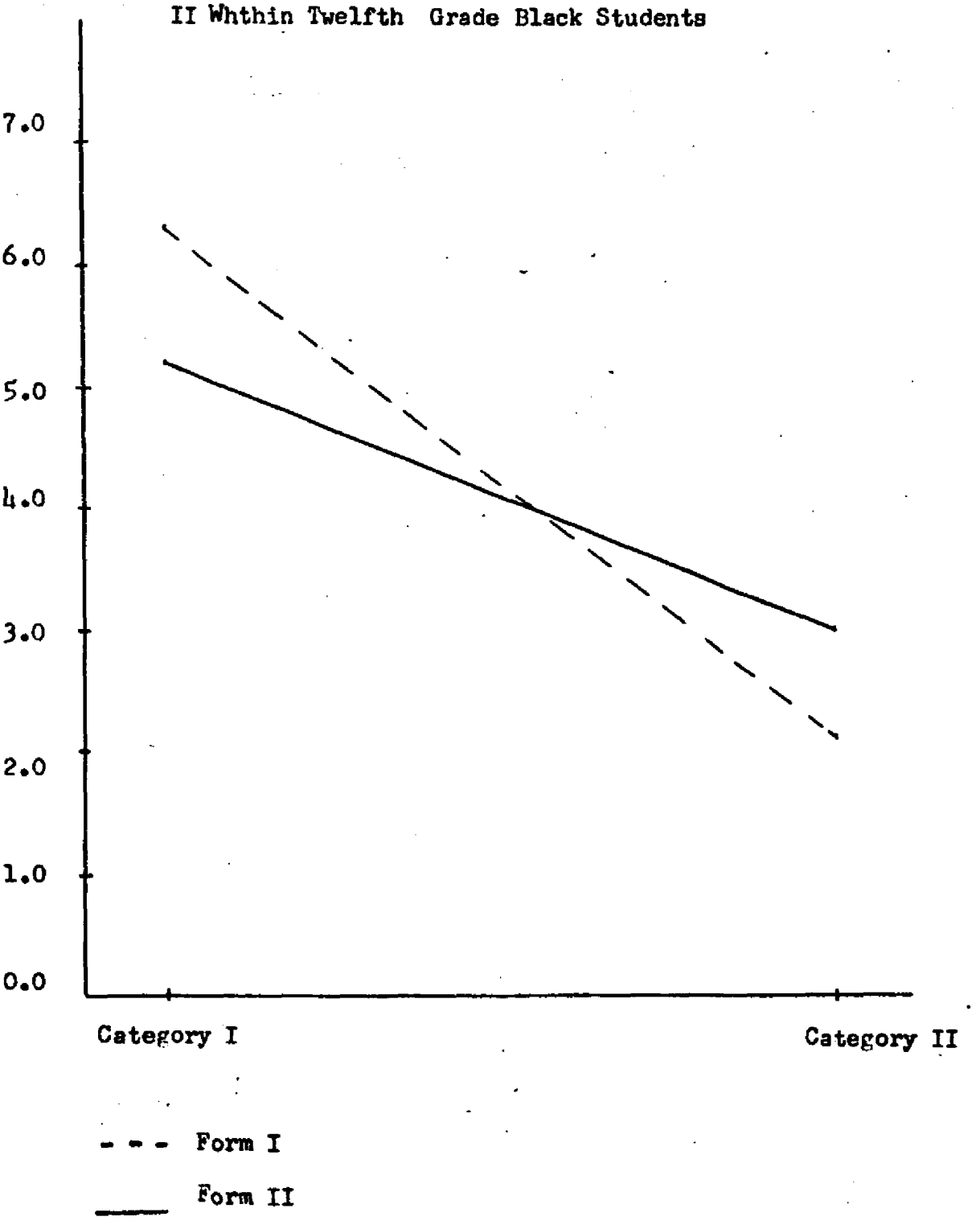


Figure 19

Mean Number of Responses on Forms I and II Within Twelfth Grade White Students

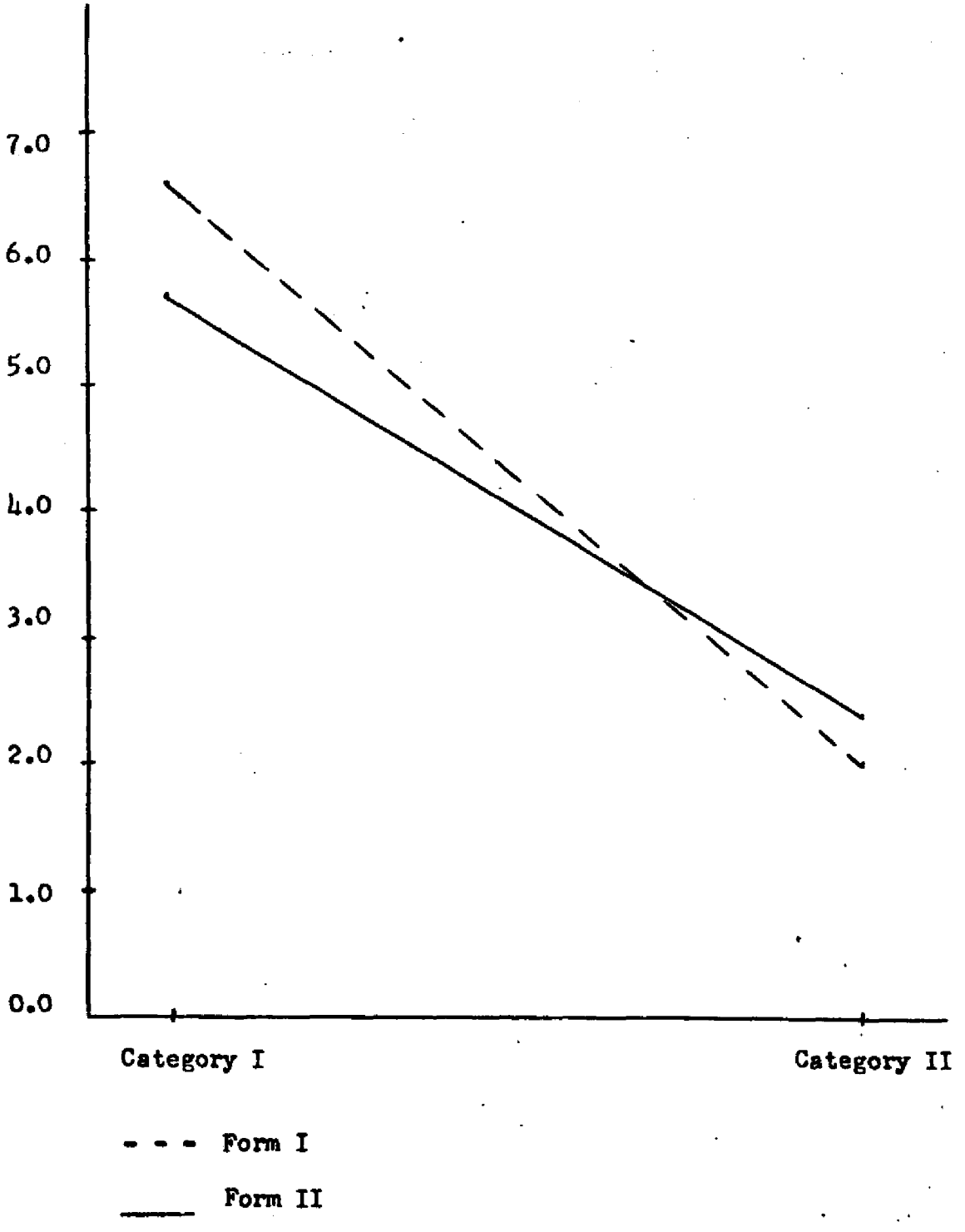
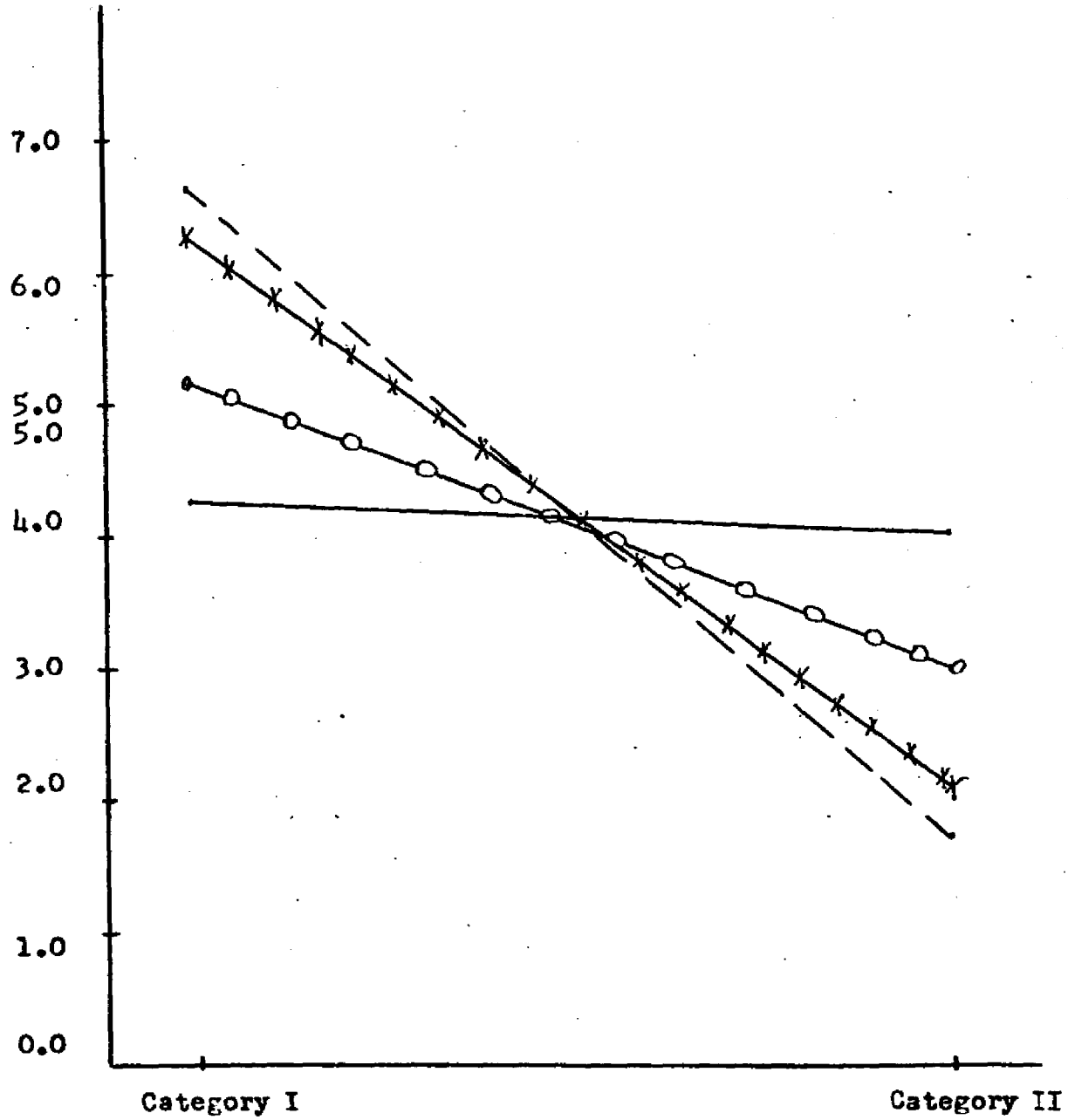


Figure 20

Mean Number of Responses for Ninth and Twelfth Grade Blacks Students on Forms I and II



- - - 9th Grade Form I

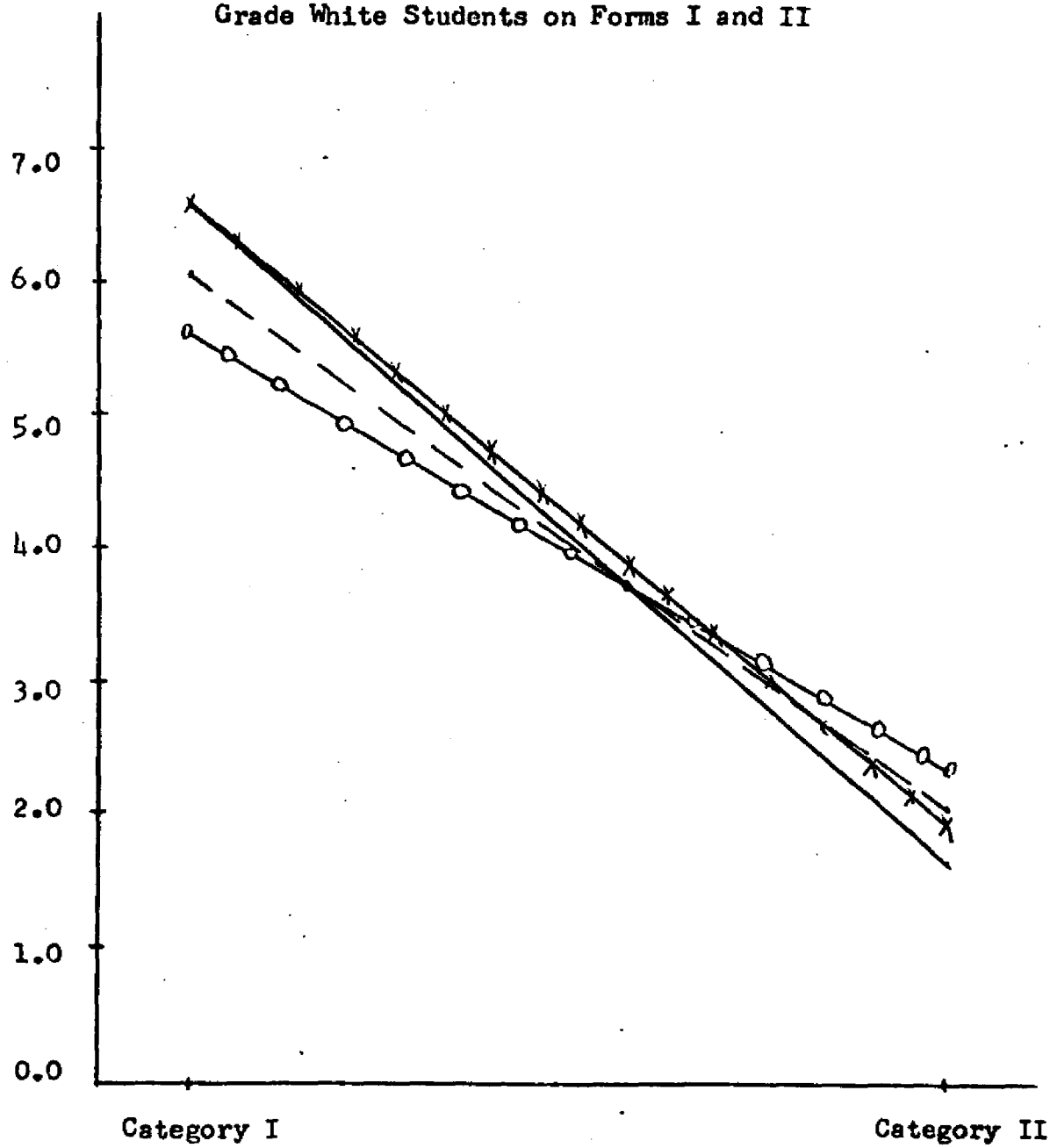
____ 9th Grade Form II

-x-x-x 12th Grade Form I

-o-o-o 12th Grade Form II

Figure 21

Mean Number of Responses for Ninth and Twelfth Grade White Students on Forms I and II



- - - 9th Grade Form I

_____ 9th Grade Form II

-x-x-x 12th Grade Form I

-o-o-o 12th Gfade Form II

Figure 22

Mean Response Speed (in Seconds) for Black and White Students in Grades 3, 6, 9 and 12; Form II

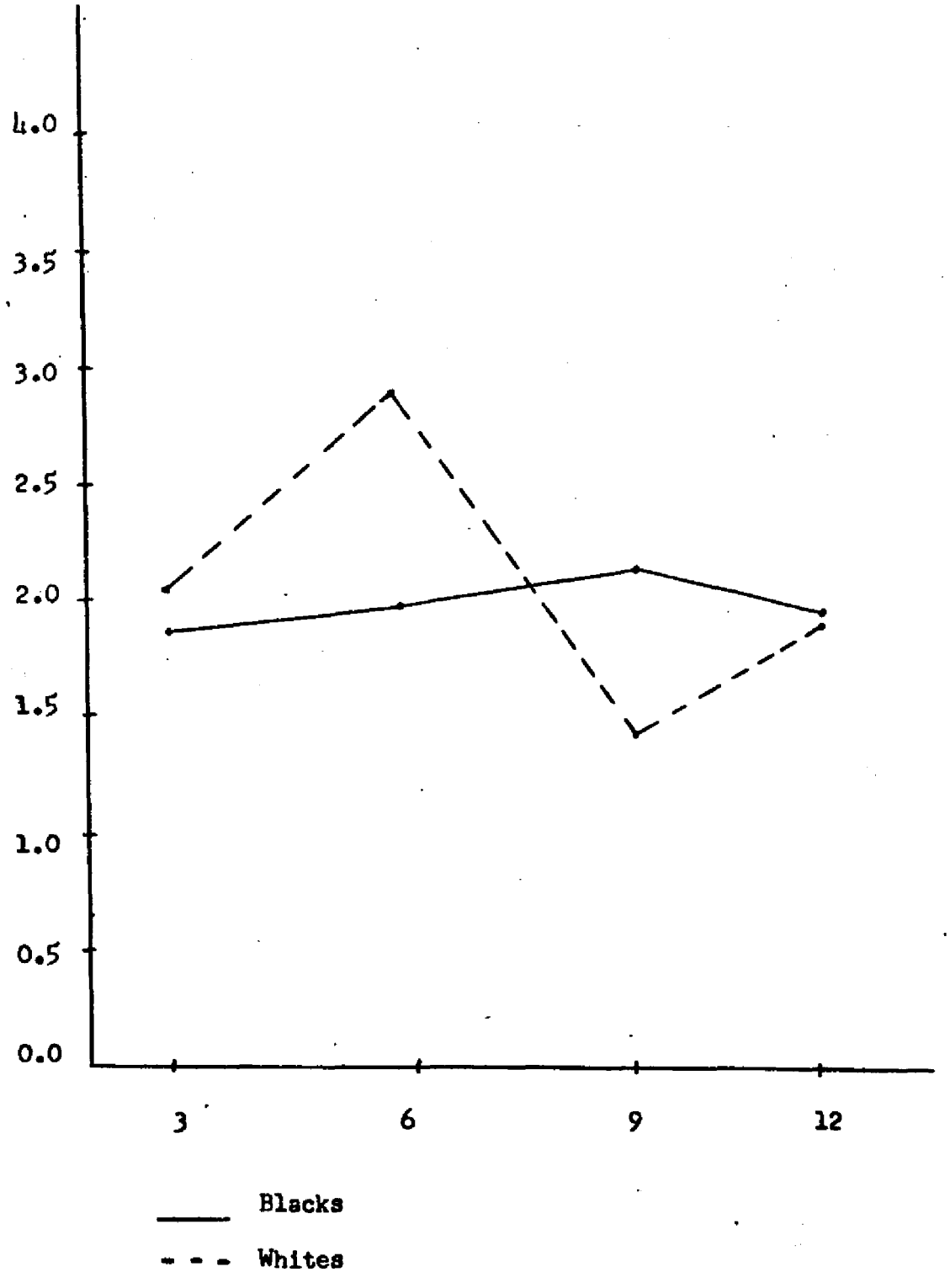


Figure 23

Mean Response Speed (in Seconds) for Black Students in Grades 3, 6, 9 and 12; Form II

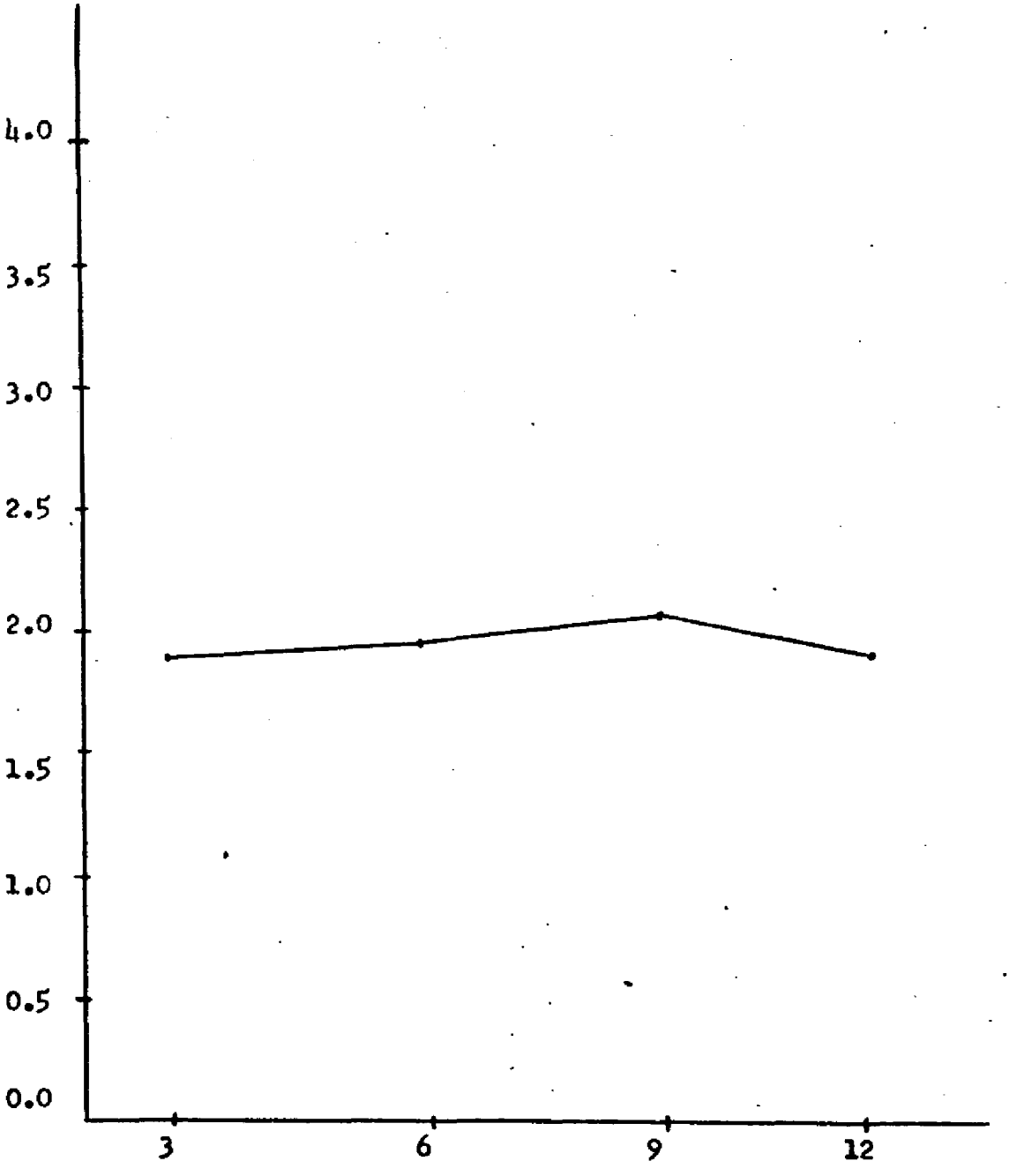
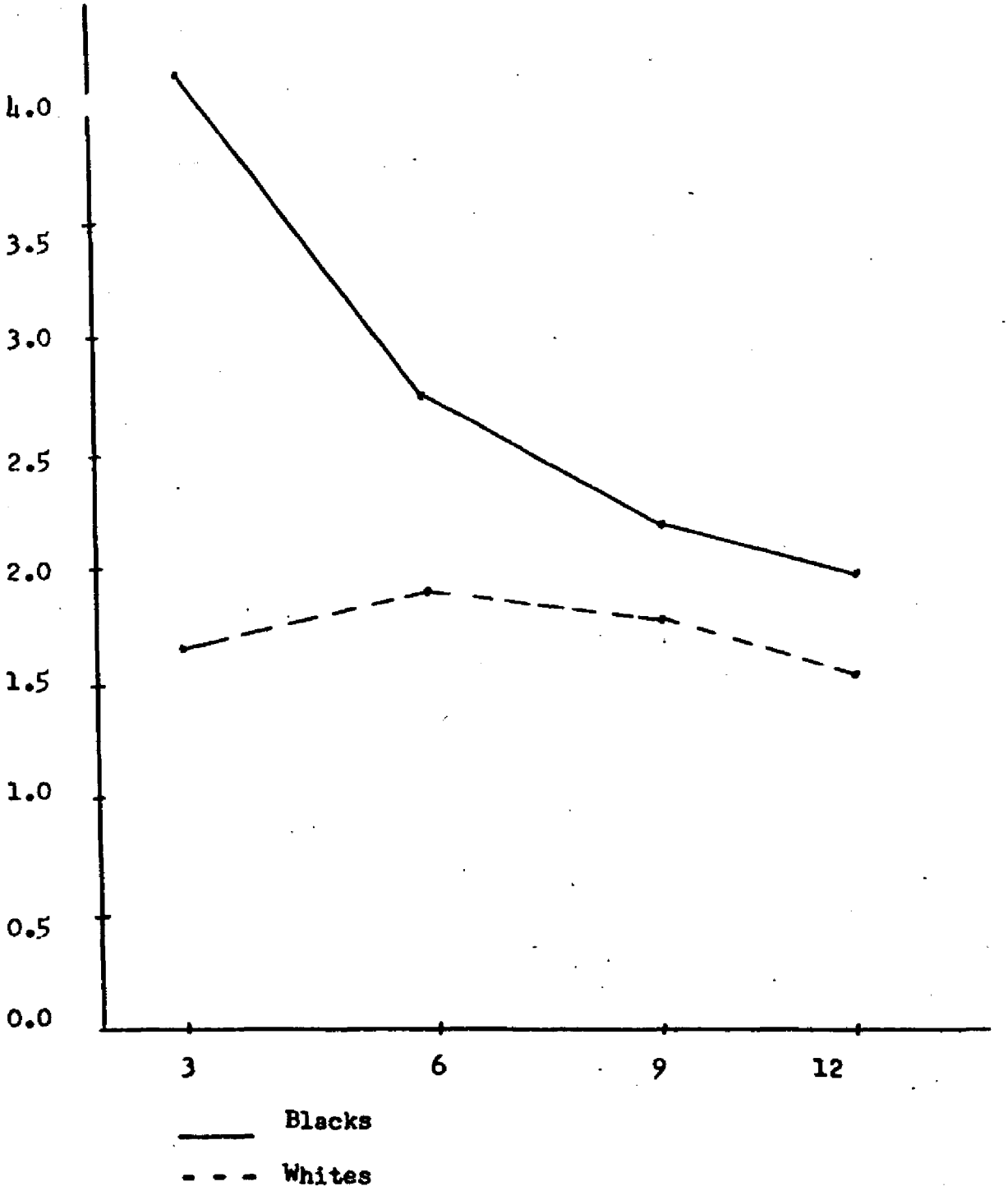


Figure 24

Mean Response Speed (in Seconds) for Black and White Students in Grades 3, 6, 9 and 12; Form I



Appendix C

Tables

Table 1

Mean Number of Dominant White Cultural and Black Cultural Responses and Reading Scores on Form I and Form II

Grade	Subjects	Form	W.C.R. * (Category I)	B.C.R. ** (Category II)	Reading ***
			Maximun No.=4	Maximum No.=4	
3	Blacks	I	3.20	.70	498.10
		II	2.80	1.70	497.80
	Whites	I	3.30	.40	521.50
		II	3.60	.20	559.40
			Maximum No.=4	Maximum No.=4	
6	Blacks	I	3.10	.70	464.20
		II	2.30	1.30	447.60
	Whites	I	3.90	.10	556.30
		II	3.60	.30	588.70
			Maximum No.=9	Maximum No.=9	
9	Blacks	I	6.60	1.70	366.40
		II	4.30	4.00	385.00
	Whites	I	6.10	2.10	567.50
		II	6.60	1.70	564.40
			Maximum No.=9	Maximum No.=9	
12	Blacks	I	6.30	2.10	455.60
		II	5.20	3.00	485.40
	Whites	I	6.60	2.00	571.40
		II	5.70	2.40	557.20

* White Cultural Responses

** BBlack Cultural Responses

*** Percentiles scores converted to T-Scores

Table 2

Analysis of Variance of Dominant White Cultural and Black Cultural Responses on Forms I and II for Grade 3

Source	df	ms	F-ratio	p<	Decision
Between Forms I and II					
White Cultural Interpretation vs Black Cultural Interpretation	2, 35	-	.043(M)*	.958	NS< .05
Within Form I					
Black vs White	2, 35	-	1.170(M)	.322	NS< .05
Within Form II					
Black vs White	2, 35	-	5.551(M)	.008	S< .05
White Cultural Interpretation	1, 36	3.200	6.509(U)	.015	S< .025
Black Cultural Interpretation	1, 36	3.200	11.406(U)	.002	S< .025
Error Within					
Form I	36	.492			
Form II	36	.281			

* M -- multivariate

U -- univariate

Table 3

Analysis of Covariance (Reading) of Dominant White Cultural and Black Cultural Responses on Forms I and II for Grade 3

Source	df	ms	F-ratio	p<	Decision
Between Forms I and II					
White Cultural Interpretation vs Black Cultural Interpretation	2, 34	-	.217(M)*	.806	NS < .05
Within Form I					
Black vs White	2, 34	-	1.015(M)	.373	NS < .05
Within Form II					
Black vs White	2, 34	-	4.338(M)	.021	S < .05
White Cultural Interpretation	1, 35	2.059	4.571(U)	.040	S < .025
Black Cultural Interpretation	1, 35	1.944	8.924(U)	.005	S < .025
Error Within					
Form I	35	.451			
Form II	35	.218			

* M -- multivariate

U -- univariate

Table 4

Analysis of Variance of Dominant White Cultural and Black Cultural Responses on Forms I and II for Grade 6

Source	df	ms	F-ratio	p <	Decision
Between Forms I and II					
White Cultural Interpretation vs Black Cultural Interpretation	2, 35	-	2.931(M)*	.067	NS < .05
White Cultural Interpretation	1, 36	3.025	5.951(U)	.020	S < .025
Black Cultural Interpretation	1, 36	1.600	3.790(U)	.060	NS < .025
Within Form I					
Black vs White	2, 35	-	3.074(M)	.060	NS < .05
White Cultural Interpretation	1, 36	3.200	6.295(U)	.017	S < .025
Black Cultural Interpretation	1, 36	1.800	4.263(U)	.046	NS < .025
Within Form II					
Black vs White	2, 35	-	8.086(M)	.001	S < .05
White Cultural Interpretation	1, 36	8.450	16.623(U)	.0003	S < .025
Black Cultural Interpretation	1, 36	5.000	11.842(U)	.002	S < .025

Table 4

Analysis of Variance of Dominant White Cultural and Black Cultural Responses on Forms I and II for Grade 6

Source	df	ms	F-ratio	p <	Decision
Error Within					
Form I	36	.508			
Form II	36	.422			

* M -- multivariate

U -- univariate

Table 5

Analysis of Covariance (Reading) of Dominant White Cultural and Black Cultural Responses on Forms I and II for Grade 6

Source	df	ms	F-ratio	p<	Decision
Between Forms I and II					
White Cultural Interpretation vs Black Cultural Interpretation	2, 34	-	2.814(M)*	.074	NS < .05
White Cultural Interpretation	1, 35	2.942	5.697(U)	.023	S < .025
Black Cultural Interpretation	1, 35	1.455	3.720(U)	.062	NS < .025
Within Form I					
Black vs White	2, 34	-	3.645(M)	.037	S < .05
White Cultural Interpretation	1, 35	3.386	6.556(U)	.015	S < .025
Black Cultural Interpretation	1, 35	2.871	7.340(U)	.010	S < .025
Within Form II					
Black vs White	2, 34	-	8.222(M)	.001	S < .05
White Cultural Interpretation	1, 35	7.534	14.588(U)	.001	S < .025
Black Cultural Interpretation	1, 35	6.507	16.641(U)	.0003	S < .025

Table 5

Analysis of Covariance (Reading) of Dominant White Cultural and Black Cultural Responses on Forms I and II for Grade 6

Source	df	ms	F*ratio	p<	Decision
Error Within					
Form I	35	.516			
Form II	35	.391			

* M -- multivariate

U -- univariate

Table 6

Analysis of Variance of Dominant White Cultural and Black Cultural Responses on Forms I and II for Grades 3 and 6

Source	df	ms	F-ratio	p <	Decision
Within Blacks					
Form I	2, 71	-	.136(M)*	.873	NS < .05
Form II	2, 71	-	1.256(M)	.291	NS < .05
Within Whites					
Form I	2, 71	-	1.975(M)	.146	NS < .05
Form II	2, 71	-	.194(M)	.824	NS < .05
Within Form I					
Black vs White	2, 71	-	2.854(M)	.064	NS < .05
White Cultural Interpretation	1, 72	2.025	4.050(U)	.048	NS < .025
Black Cultural Interpretation	1, 72	2.025	5.763(U)	.019	S < .025
Within Form II					
Black vs White	2, 71	-	12.376(M)	.0001	S < .05
White Cultural Interpretation	1, 72	11.025	22.050(U)	.0001	S < .025
Black Cultural Interpretation	1, 72	8.100	23.051(U)	.0001	S < .025
Between Forms I and II	2, 71	-	1.820(M)	.170	NS < .05
Error Within					
Form I	72	.500			
Form II	72	.351			

* M -- multivariate

U -- univariate

Table 7

Analysis of Covariance (Reading) of Dominant White Cultural and Black Cultural Responses on Forms I and II for Grades 3 and 6

Source	df	ms	F-ratio	p<	Decision
Within Blacks					
Form I	2, 70	-	.096(M)*	.908	NS< .05
Form II	2, 70	-	1.016(M)	.367	NS< .05
Within Whites					
Form I	2, 70	-	1.762(M)	.179	NS< .05
Form II	2, 70	-	.177(M)	.839	NS< .05
Within Form I					
Black vs White	2, 70	-	2.378(M)	.100	NS< .05
White Cultural Interpretation	1, 71	1.507	3.016(U)	.087	NS < .025
Black Cultural Interpretation	1, 71	1.710	4.824(U)	.031	NS < .025
Within Form II					
Black vs White	2, 70	-	9.291(M)	.0003	S < .05
White Cultural Interpretation	1, 71	7.938	15.889(U)	.0002	S< .025
Black Cultural Interpretation	1, 71	6.303	17.782(U)	.0001	S < .025
Between Forms I and II	2, 70	-	1.945(M)	.151	NS < .05

Table 7

Analysis of Covariance (Reading) of Dominant White Cultural and Black Cultural Responses on Forms I and II for Grades 3 and 6

Source	df	ms	F-ratio	p<	Decision
Error Within					
Form I	71	.500			
Form II	71	.354			

* M -- multivariate

U -- univariate

Table 8

Analysis of Variance of Dominant White Cultural and Black Cultural Responses on Forms I and II for Grade 9

Source	df	ms	F-ratio	p <	Decision
Between Forms I and II					
White Cultural Interpretation vs Black Cultural Interpretation	2, 35	-	2.907(M)*	.068	NS < .05
White Cultural Interpretation	1, 36	8.100	4.178(U)	.048	NS < .025
Black Cultural Interpretation	1, 36	9.025	5.900(U)	.020	S < .025
Within Form I					
Black vs White	2, 35	-	.313(M)	.733	NS < .05
Within Form II					
Black vs White	2, 35	-	8.402(M)	.001	S < .05
White Cultural Interpretation	1, 36	26.450	13.642(U)	.001	S < .025
Black Cultural Interpretation	1, 36	26.450	17.281(U)	.0002	S < .025
Error Within					
Form I	36	1.939			
Form II	36	1.531			

* M -- multivariate

U -- univariate

Table 9

Analysis of Covariance (Reading) of Dominant White Cultural and Black Cultural Responses on Forms I and II for Grade 9

Source	df	ms	F-ratio	p<	Decision
Between Forms I and II					
White Cultural Interpretation vs Black Cultural Interpretation	2, 34	-	2.834(M)*	.073	NS < .05
White Cultural Interpretation	1, 35	8.107	4.066(U)	.052	NS < .05
Black Cultural Interpretation	1, 35	9.050	5.751(U)	.022	S < .025
Within Form I					
Black vs White	2, 34	-	.170(M)	.845	NS < .05
Within Form II					
Black vs White	2, 34	-	3.798(M)	.033	S < .05
White Cultural Interpretation	1, 35	12.562	6.300(U)	.017	S < .025
Black Cultural Interpretation	1, 35	12.305	7.802(U)	.008	S < .025
Error Within					
Form I	35	1.994			
Form II	35	1.574			

* M -- multivariate

U -- univariate

Table 10

Analysis of Variance of Dominant White Cultural and Black Cultural Responses on Forms I and II for Grade 12

Source	df	ms	F-ratio	p <	Decision
Between Forms I and II					
White Cultural Interpretation vs Black Cultural Interpretation	2, 35	-	1.554(M)*	.226	NS < .05
Within Form I					
Black vs White	2, 35	-	.182(U)	.835	NS < .05
Within Form II					
Black vs White	2, 35	-	.397(M)	.676	NS < .05
Error Within					
Form I	36	3.894			
Form II	36	2.925			

* M -- multivariate

U -- univariate

Table 11

Analysis of Covariance (Reading) of Dominant White Cultural and Black Cultural Responses on Forms I and II for Grade 12

Source	df	ms	F-ratio	p <	Decision
Between Forms I and II					
White Cultural Interpretation vs Black Cultural Interpretation	2, 34	-	1.651(M)*	.207	NS< .05
Within Form I					
Black vs White	2, 34	-	.450(M)	.642	NS< .05
Within Form II					
Black vs White	2, 34	-	.077(M)	.926	NS< .05
Error Within					
Form I	35	3.756			
Form II	35	2.771			

* M -- multivariate

U -- univariate

Table 12

Analysis of Variance of Dominant White Cultural and Black Cultural Responses on Forms I and II for Grades 9 and 12

Source	df	ms	F-ratio	p <	Decision
Within Blacks					
Form I	2, 71	-	.256(M)*	.775	NS < .05
Form II	2, 71	-	1.230(M)	.298	NS < .05
Within Whites					
Form I	2, 71	-	.855(M)	.430	NS < .05
Form II	2, 71	-	.688(M)	.506	NS < .05
Within Form I					
Black vs White	2, 71	-	.086(M)	.918	NS < .05
Within Form II					
Black vs White	2, 71	-	4.820(M)	.011	S < .05
White Cultural Interpretation	1, 72	19.600	6.720(U)	.012	S < .025
Black Cultural Interpretation	1, 72	21.025	9.438(U)	.003	S < .025
Between Forms I and II	2, 71	-	3.091(M)	.052	NS < .05
White Cultural Interpretation	1, 72	18.050	6.189(U)	.015	S < .025
Black Cultural Interpretation	1, 72	12.800	5.746(U)	.019	S < .025

Table 12

Analysis of Variance of Dominant White Cultural and Black Cultural Responses on Forms I and II for Grades 9 and 12

Source	df	ms	F-ratio	p <	Decision
Error Within					
Form I	72	2.917			
Form II	72	2.228			

* M -- multivariate

univariate

Table 13

Analysis of Covariance (Reading) of Dominant White Cultural and Black Cultural Responses on Forms I and II for Grades 9 and 12

Source	df	ms	F-ratio	p <	Decision
Within Blacks					
Form I	2, 70	-	.639(M)*	.531	NS < .05
Form II	2, 70	-	.470(M)	.627	NS < .05
Within Whites					
Form I	2, 70	-	.843(M)	.435	NS < .05
Form II	2, 70	-	.654(M)	.523	NS < .05
Within Form I					
Black vs White	2, 70	-	.790(M)	.458	NS < .05
Within Form II					
Black vs White	2, 70	-	1.587(M)	.212	NS < .05
Between Forms I and II	2, 70	-	3.334(M)	.042	S < .05
White Cultural Interpretation	1, 71	19.126	6.633(U)	.012	S < .025
Black Cultural Interpretation	1, 71	13.709	6.271(U)	.015	S < .025
Error Within					
Form I	71	2.883			
Form II	71	2.186			

* M -- multivariate

U -- univariate

Table 14

Mean Speed of Black Cultural Interpretation and White Cultural Interpretation Responses on Forms I and II

Grade	Subjects	Form	W. C. I. * (Category I)	B. C. I. ** (Category II)	Total
3	Blacks	I	2.17 (N = 10)	6.50 (N = 7)	4.23
		II	1.74 (N = 10)	1.95 (N = 8)	1.84
	Whites	I	1.57 (N = 10)	1.84 (N = 3)	1.71
		II	1.86 (N = 10)	2.25 (N = 2)	2.05
6	Blacks	I	1.50 (N = 10)	3.65 (N = 7)	2.57
		II	1.66 (N = 9)	2.15 (N = 9)	1.91
	Whites	I	2.10 (N = 10)	1.50 (N = 1)	1.80
		II	1.08 (N = 10)	4.34 (N = 3)	2.71
9	Blacks	I	2.29 (N = 10)	2.37 (N = 10)	2.33
		II	1.82 (N = 10)	2.34 (N = 10)	2.08
	Whites	I	1.83 (N = 10)	1.64 (N = 10)	1.73
		II	1.39 (N = 10)	1.44 (N = 8)	1.42
12	Blacks	I	1.91 (N = 10)	2.06 (N = 9)	1.98
		II	1.62 (N = 10)	1.98 (N = 9)	1.80
	Whites	I	1.18 (N = 10)	1.82 (N = 8)	1.50
		II	1.74 (N = 10)	1.85 (N = 10)	1.78

* White Cultural Interpretation

** Black Cultural Interpretation

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