

A COMPARATIVE ANALYSIS OF SPEED, AGILITY, AND ENDURANCE  
OF BLACK AND WHITE MALE STUDENTS AT WICHITA,  
BROOKS JUNIOR HIGH SCHOOL

by 6791

FRANK A. NIGRO

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Major Professor

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## INTRODUCTION

Various studies have been conducted to determine what differences exist in physical ability between Blacks and Whites. In the past, the results of such studies have varied; some authors concluded that there was little or no true difference between the racially divided groups, while others concluded that Blacks ranked superior in physical ability.

Since age is an important factor in producing fast running times, it seems apparent that fourteen-year olds would do much better than thirteen-year olds in any physical activity. The next question is whether age or race is the better basis for prediction of physical ability.

This is one such study comparing age and race. Equal sized groups of black and white students representing four different ages were studied. The 50-yard dash, 600-yard run, and a basic agility test were used as criteria to determine a dominant factor.

## PURPOSE OF THE PROBLEM

The purpose of this study was three-fold: (1) to determine how much age would affect the performance of physical activity of an individual at the junior high level, (2) to determine whether Blacks as a whole would out-perform Whites (same age groups) in physical activity, and (3) to determine which would be more significant for better running times, age or race.

### LIMITATIONS OF STUDY

Both tests took place in Brooks Junior High School, Wichita, Kansas. The latter took place in Spring 1970, and the former took place in Spring 1971. The results of findings of this test do not solidify anything. A different time or another factor could have changed the face of this report. A different time of year or even a different running test could affect the performance of the groups.

### REVIEW OF LITERATURE

It has been established that people differ in ethnic background and race; several studies have also been made to determine how they differ in physical activity. Comparisons like this have been more frequent between Caucasians and Blacks. Paul Hutinger<sup>(4)</sup>, for example, reported results supporting the conclusion that black children tend to surpass white children in a measure of speed (35 yard dash). The scores below compiled from his test give standard times.

TABLE I

	No.	Grade 4	Grade 5	Grade 6.
BLACKS	402	5.76*	5.72	5.68
WHITES	390	6.37	6.11	6.12
		<u>.61</u>	<u>.39</u>	<u>.20</u>

\* Time in seconds

Williams and Scott<sup>(8)</sup> found that a group of black infants reared in a low Socioeconomic status were substantially above average in gross motor acceleration. Hipple<sup>(2)</sup> found no difference between white and black children in reaction time or movement. Rhodes<sup>(7)</sup>, comparing black and white children from age 2 to 5 years on several tests of motor ability, found no real differences between them. Barker and Ponthieux<sup>(1)</sup>, while testing 304 boys of which 20% were Black and 80% were White, found that black boys exceeded white boys in grades 5 and 6 in physical activity. Also, while testing 304 girls, of which 20% were Black and 80% were White, they found that black girls surpassed the white significantly on four of the six measurements.

TABLE II  
CORRELATIONS BETWEEN RACE AND PHYSICAL FITNESS MEASURES\*

MEASURE OF FITNESS	BOYS (304)	GIRLS (399)
Pull-ups	-0.24 <sup>b</sup>	
Modified pull-ups		0.55 <sup>b</sup>
Sit-ups	0.10	0.19 <sup>b</sup>
40-yard shuttle run	-0.02	-0.11 <sup>a</sup>
Standing broad jump	-0.23 <sup>b</sup>	-0.06
50-yard dash	-0.40 <sup>b</sup>	-0.26 <sup>b</sup>
Softball throw	-0.33 <sup>b</sup>	-0.38 <sup>b</sup>
600-yard run walk	-0.27 <sup>b</sup>	-0.24 <sup>b</sup>

\* Taken from N. A. Ponthieux and D. G. Barker, Research Quarterly

a Indicates relationship beyond 0.05 level of confidence.

b Indicates relationship beyond 0.01 level of confidence.

Notes: Positive correlations indicated better performance by white children. Negative correlations indicate better performance by Negro children.

Landiss and Ponthieux<sup>(5)</sup> reported that Negroes tend to be superior in arm strength. Williams and Scott<sup>(8)</sup> concluded that the observed differences in motor acceleration might better be attributed to social (i.e. child-rearing) than to racial factors. Catherine Harmon<sup>(3)</sup> used Miles Reaction Time Board to obtain measurements with which to compare black and white pre-school children with respect to speed of simple reaction time. She found that the two races did not differ significantly in this variable. Adele Rhodes<sup>(7)</sup>, too, found negligible difference between black and white children on the following motor ability tests: the walking path test, the needle threading test, the three hole test, and the stylus tapping test.

#### DEFINITIONS OF TERMS

0.05 level of confidence. 95% sure there is a significance in what is being tested.

0.01 level of confidence. 99% sure there is a significance in what is being tested.

Mean. The sum of a group of scores divided by the number of scores.  
The mean is commonly called the average.

Array of Scores. Mean scores placed in order from largest to smallest.

Agility. A state of being in which a person is quick, nimble, and has ease of movement.

#### METHOD OF STUDY

Parts of the Youth Physical Fitness Test were used (50-yard dash, 600-yard run, agility test) to test all the 7th, 8th, and 9th grade boys at Brooks Junior High School, Wichita, Kansas. This test

was administered twice a year for two years to gather data used in this study. All of the boys took the test early in the fall and again late in the spring. There were two instructors in charge of each class of approximately fifty boys. Actual measurements were recorded only by the instructors.

Members of each class were given directions about the test items and a demonstration (agility test) before they performed the activity. An attempt was made to keep everything constant. Weather conditions were sometimes a problem, because the 50-yard dash and the 600-yard run, unlike the agility test, took place outdoors. In all cases the boys wore sneakers, tennis shoes, or went barefoot but were not allowed to use track shoes or use starting blocks. The sizes of the class varied, and members of the class ranged in ages from 11 to 16 years.

#### PROCEDURE

The subjects, 100 black male students and 100 white male students, who ranged in ages from 12-15 years of age, were racially separated into two groups. Each of these groups was then sub-divided into four smaller groups of equal numbers. The students were selected from the Physical Education classes of Mr. Gordon Long and Mr. E. R. Johnson, both coaches at Brooks Junior High School. The scores of three physical fitness tests (50-yard dash, agility test, and 600-yard run) were used as criteria to produce a norm.

The students were allowed to run through both the 50-yard dash and the agility test a week prior to actual testing. Upon completion of the exercise their scores were recorded. They were allowed to run through the exercise twice; if they had a better time the second time, it was used.

## TEST ITEMS AND RESULTS

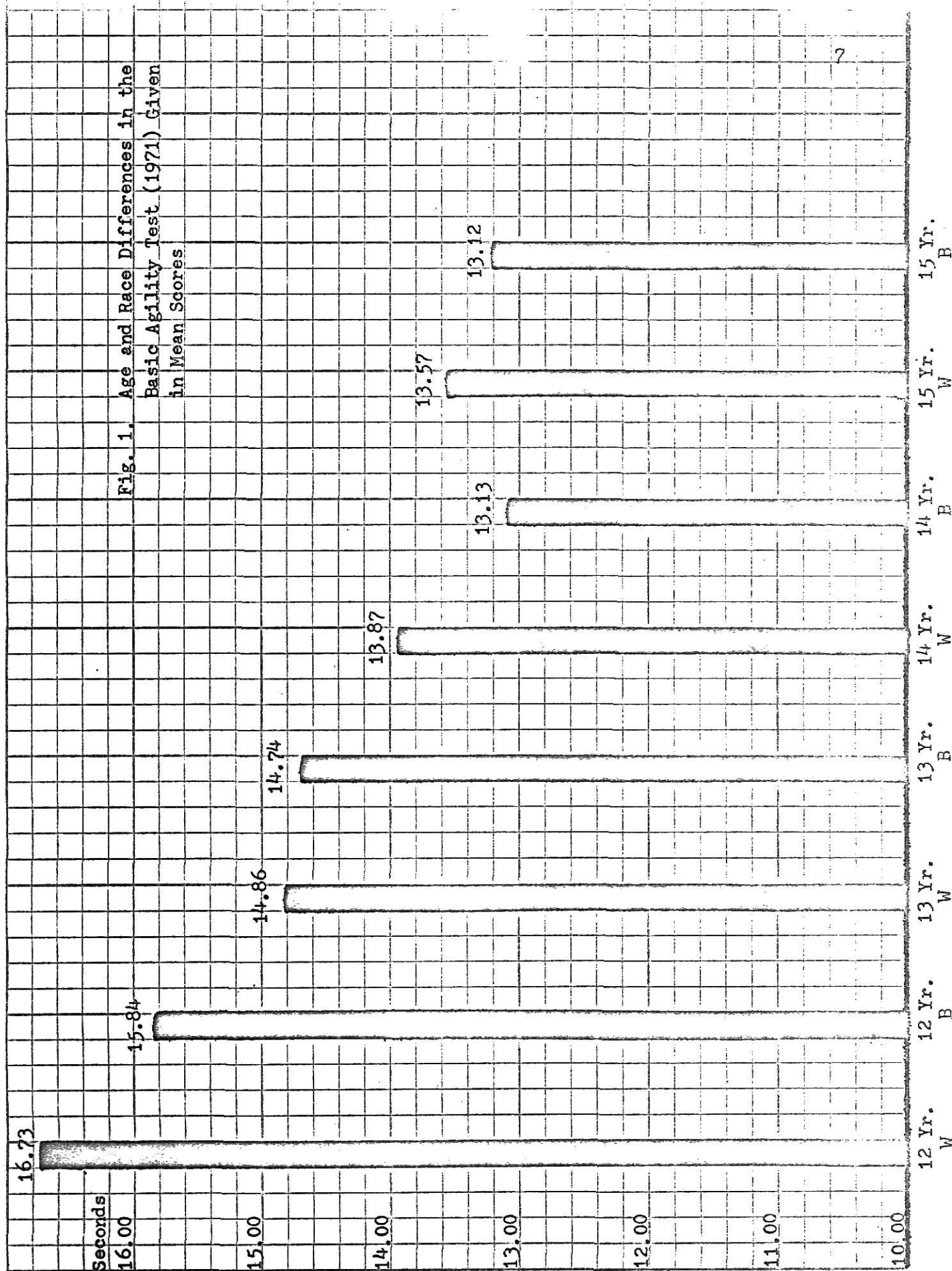
### Agility Test

The agility test was modified by both instructors for indoor use. It contained the following: starting in either a crouch or standing position, jumping over two consecutive hurdles, touching a marked spot on the gymnasium wall, running to a position directly under the parallel bars, grabbing a bar with each of his hands, and pushing himself up and over the bars for a normal dismount. The subjects recovered from this station and continued -- he crossed a hi-jump set at 2'6" (this was the only jump available), resumed his pace, vaulted over a horse set at 3'6" and finally jumped a hurdle to cross the finish line. The total length of the agility course was 145 feet. If a student failed to jump a hurdle correctly or missed any of these stations, he was disqualified and had to run over. The gym floor was marked at each station so the length was kept constant. The results from this test as shown in Figure 1 are given in mean times.\*

Thirteen-year old Blacks achieved 6% better than 12-year old Blacks. Fourteen-year old Blacks performed 11% better than 13-year old Blacks. Fifteen and fourteen-year old Blacks did not have a sig-

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\* Percentages were derived from the mean times using the lowest score as a base.



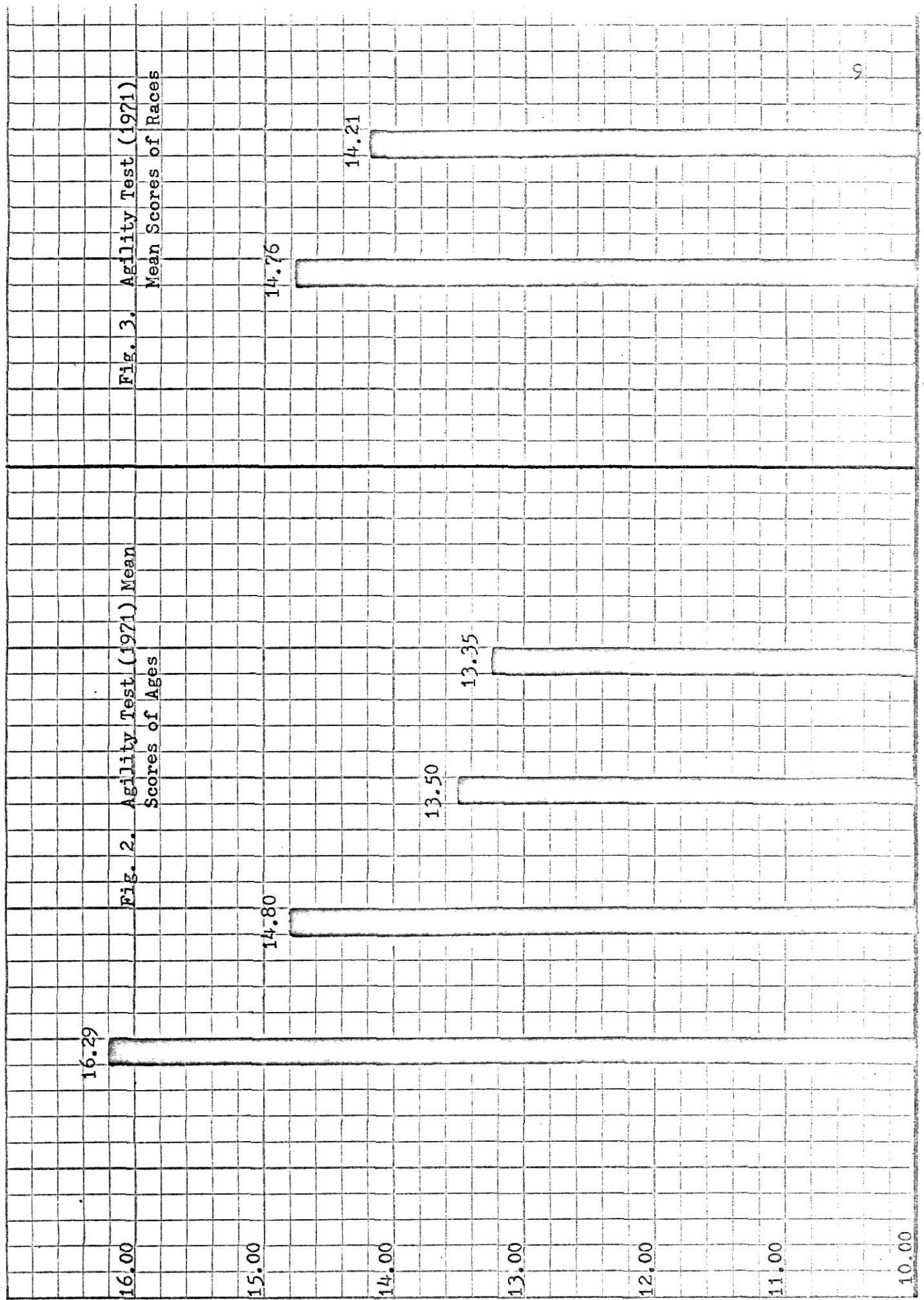
nificant difference to compute a score. Thirteen-year old Whites performed 11% better than 12-year old Whites. Fourteen-year old Whites performed 6% better than 13-year old Whites. Fifteen-year old Whites performed 2% better than 14-year old Whites. Twelve-year old Blacks performed 5% better than 12-year old Whites. Thirteen-year old Blacks and 13-year old Whites performed essentially the same. Fourteen-year old Blacks performed 5% better than 14-year old Whites. Fifteen-year old Blacks and 15-year old Whites did not have a significant difference to compute a ratio.

A comparison of age groups for the Basic Agility Test is shown in Figure 2. Thirteen-year olds performed 6% better as a group than 12-year olds. Fourteen-year olds performed 6% better than 13-year olds, and 15-year olds performed 1% better than 14-year olds.

Figure 3 separates the two groups racially. The following was observed: Blacks as a whole did 3% better than Whites.

An analysis of variance was run on the results from the Basic Agility Test (1971). The individual times were recorded to determine which variable contributed the most to individuals' performance. The results of this analysis are displayed in Table III. While race made a difference, it may be concluded from this Basic Agility Test that age was the dominant factor in producing the faster times. Race was not significant at the .05 level of confidence. However, according to the mean scores, Blacks out-performed the Whites.





L.S.D. = 0.60

L.S.D. = 0.85

TABLE III  
ANALYSIS OF VARIANCE OF MEAN TIMES FROM BASIC AGILITY TEST (1971)

Source	df	SS	MS	F
Total	199	1230.02		
Students	24	127.28	5.30	
Race	1	15.07	15.07	3.15
Age	3	280.87	93.62	19.60*
Race X Age	3	4.22	1.41	0.29
Error	168	802.56	4.77	

\* Difference significant at .01 level.

#### 50-Yard Dash

In the spring of 1971 the 50-yard dash was conducted on a dirt field adjacent to the school. The individuals' times are recorded in the Appendix and compared in Figure 4. The mean times of the 50-yard dash (1971) were compared by percentages expressed to the nearest percent.

Thirteen-year old Blacks and 12-year old Blacks did not have a significant difference to compute a score. Fourteen-year old Blacks performed 8% better than 13-year old Blacks. Fifteen-year old Blacks performed 3% better than 14-year old Blacks. Thirteen-year old Whites performed 5% better than 12-year old Whites. Fourteen-year old Whites performed 7% better than 13-year old Whites, and 15-year old Whites performed 2% better than 14-year old Whites. Twelve-year old Blacks performed 7% better than 12-year old Whites. Thirteen-year old Blacks did only 1% better than 13-year old Whites. Fourteen-year old Blacks performed 2% better than 14-year old Whites. Fifteen-year old Blacks performed 3% better than 15-year old Whites.

Fig. 4. Age and Race Differences in the  
50-Yard Dash (1971) Given in  
Mean Scores

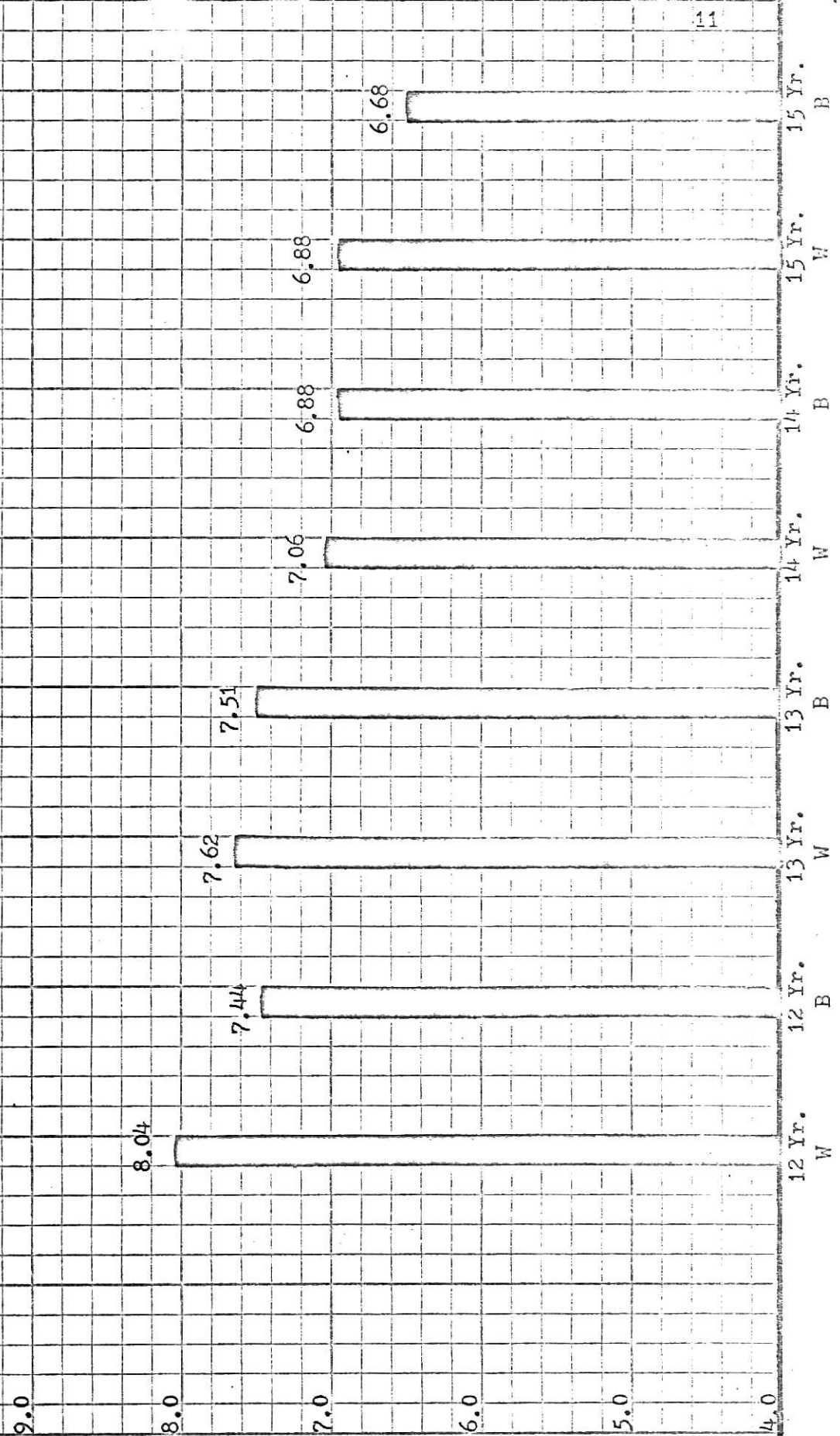


Figure 5 represents the mean scores for age groups in the 50-yard dash, and the following was noted: 13-year olds performed 7% better than 12-year olds, and 15-year olds performed 3% better than 14-year olds.

Figure 6 separates the two groups racially. The following took place in this test: the black students performed 5% better than the white students.

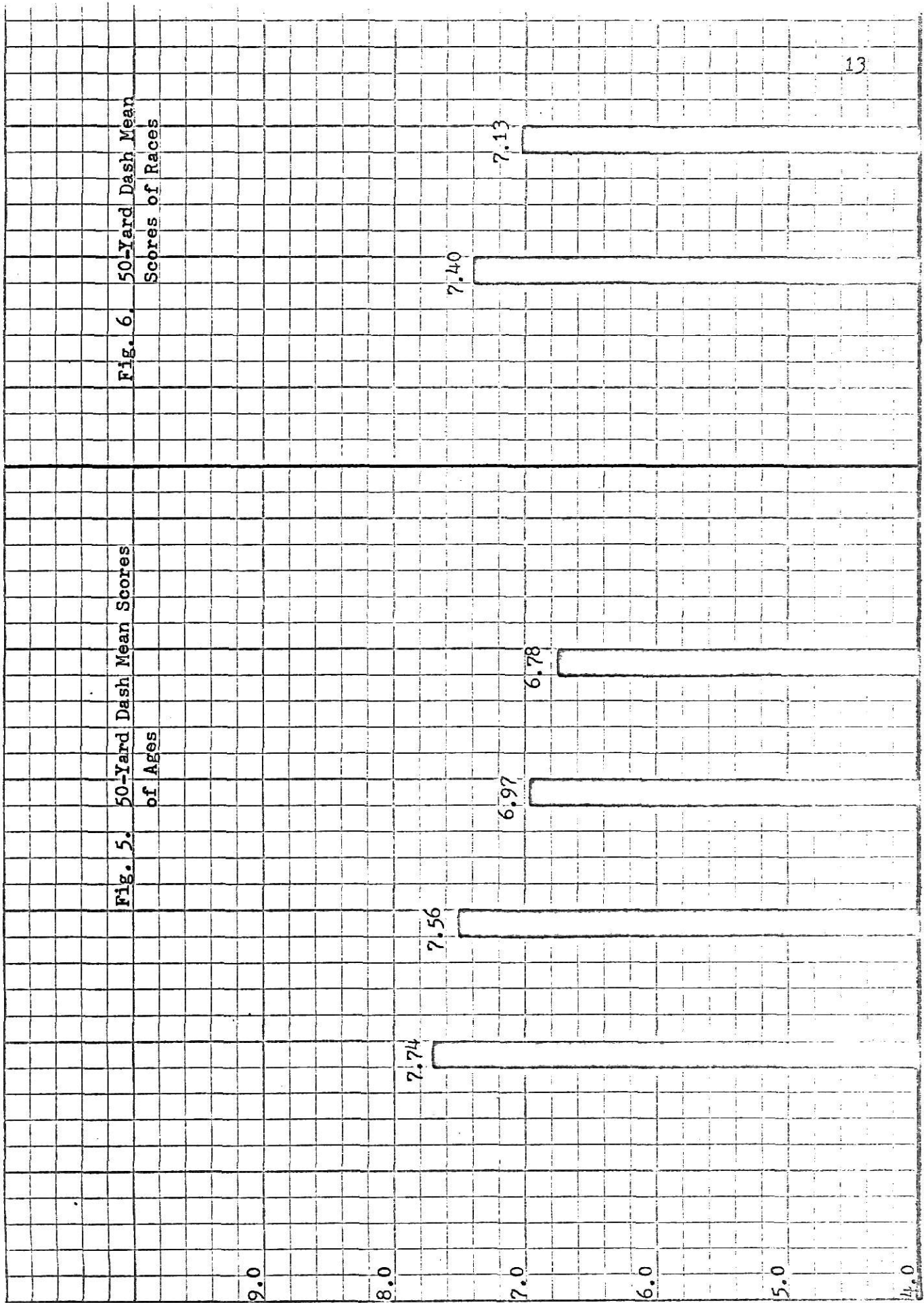
An analysis of variance was run on the results from the 50-yard dash (1971) and the individual times were recorded and compared to determine which variable contributed the most to individuals' performance. The results of the analysis are displayed in Table IV.

TABLE IV  
ANALYSIS OF VARIANCE OF RESULTS OF 50-YARD DASH (1971)

Source	df	SS	MS	F
Total	199	99.30		
Students	24	10.80	0.45	
Race	1	3.75	3.75	12.36*
Age	3	31.80	10.60	34.90*
Race X Age	3	1.89	0.62	2.05
Error	168	51.00	0.30	

\* Difference significant at .01 level.

Both age and race were significant contributors to the variation in times, but it appears that age was the dominant factor.



L.S.D. = 0.21

L.S.D. = 0.15

W

B

600-Yard Run (1970)\*

The second part of this analysis deals primarily with the same principle, the only difference being a 600-yard run rather than the basic agility test, and instead of four age groups, there were three groups of equal numbers (ages ranged from 13-15 years old). Test scores from 60 black students and 60 white students were gathered.

Results from this test are recorded in the Appendix and represented in Figure 7. The following was observed: 14-year old Blacks performed 5% better than 13-year old Blacks. Fifteen-year old Blacks did 9% better than 14-year old Blacks. Thirteen-year old Whites performed 24% better than 14-year old Whites. Fifteen-year old Whites performed 52% better than 14-year old Whites. Thirteen-year old Blacks performed 6% better than 13-year old Whites. Fourteen-year old Blacks achieved 31% better than 14-year old Whites. The scores of the fifteen-year old Blacks and Whites were not significantly different.

Figure 8 compares the mean times for the three groups in the 600-yard run. The 13-year olds did 8% better than the 14-year olds, and the 15-year olds performed 34% better than 14-year olds. Other than individuals' attitudes there is no explanation for the low scores from the 14-year olds.

Figure 9 separates the two groups racially. The results indicated that Blacks achieved 13% better than Whites in the 600-yard run.

An analysis of variance was run on the results from the 600-yard run to determine which variable contributed the most to individual performance. This analysis is displayed in Table V.

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\* Scores collected by Mr. Gordon Long, Physical Education Instructor, Brooks Junior High School, Wichita, Kansas.



162.47

160

Seconds

150

140

130

120

110

100

90

Fig. 7. Age and Race Differences in the  
600-Yard Run Given in Mean Scores

131.89

123.80

117.44

106.88

106.96

15

13 Yr.  
W

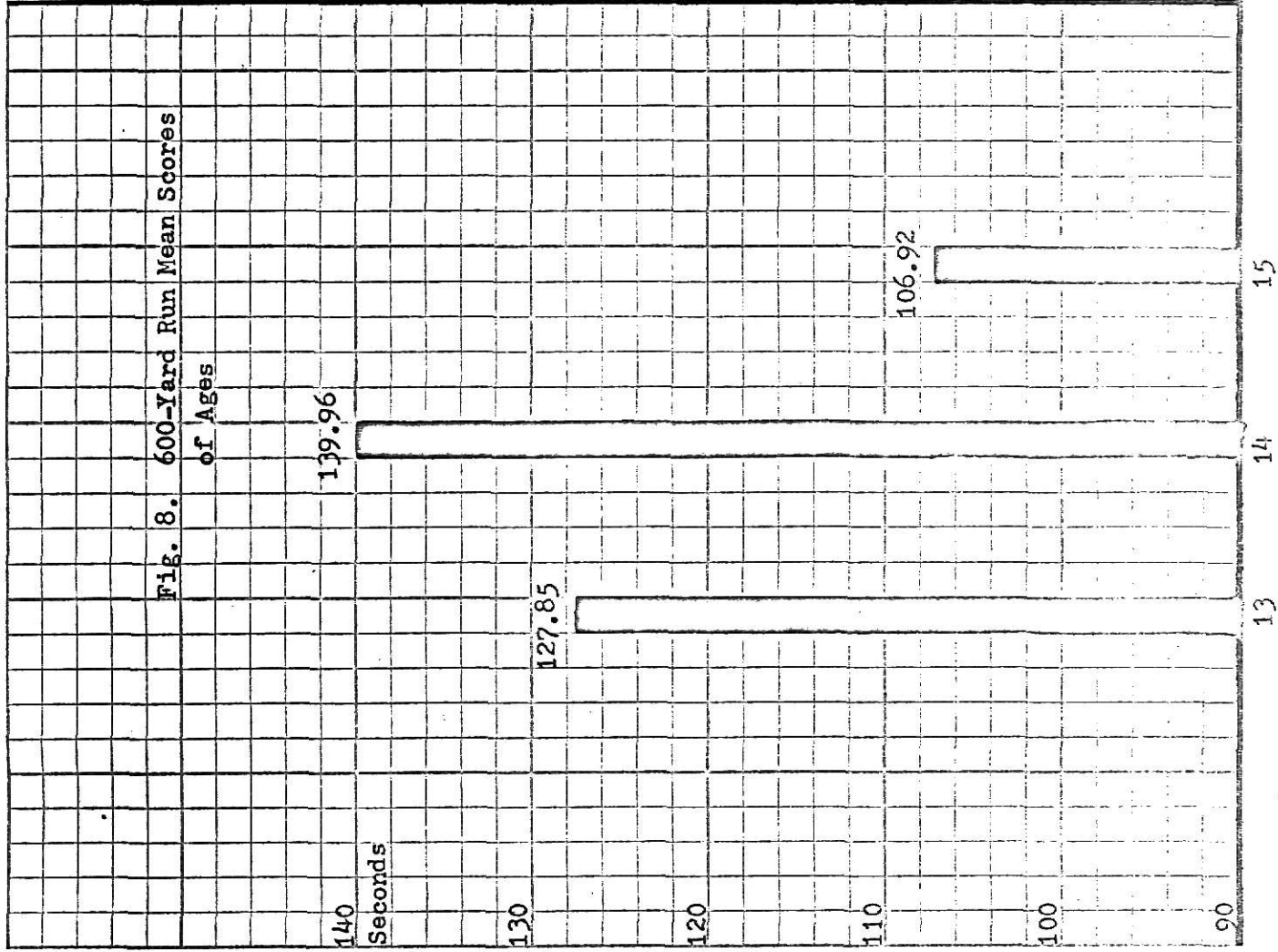
13 Yr.  
B

14 Yr.  
W

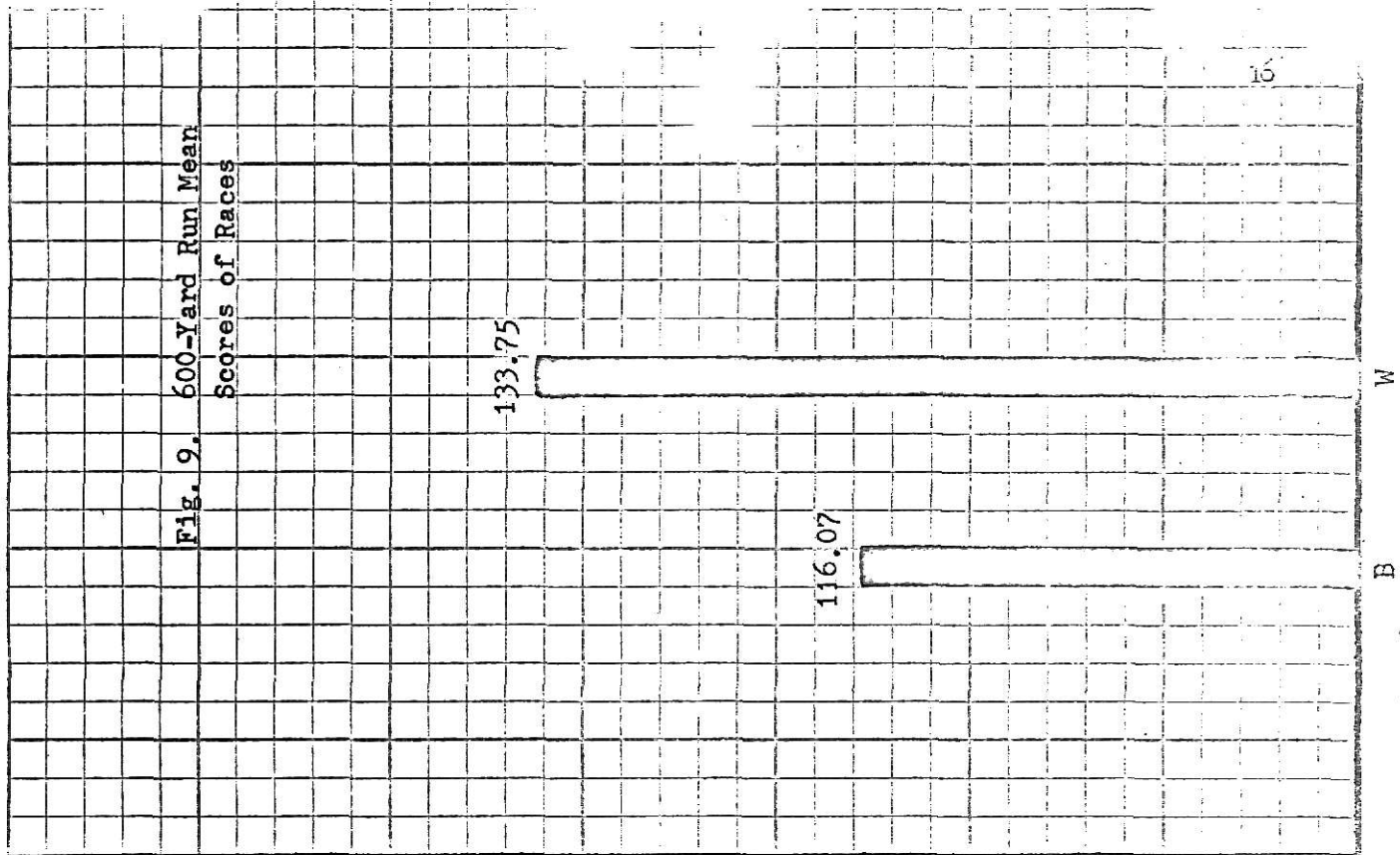
14 Yr.  
B

15 Yr.  
W

15 Yr.  
B



L.S.D. = 34.27



L.S.D. = 27.98



TABLE V  
ANALYSIS OF VARIANCE OF RESULTS OF 600-YARD RUN (1970)

Source	df	SS	MS	F
Total	119	742849.60		
Students	19	131529.24	6922.60	
Race	1	9373.94	9373.94	1.57 -
Age	2	22347.85	11173.92	1.87 -
Race X Age	2	11552.30	5776.15	0.97 -
Error	95	568046.28	5979.43	

- Not significantly different at .05 level.

According to the mean times, Blacks out-performed the Whites on this test. However, these times did not appear to be different at the .05 level of significance.

#### 50-Yard Dash (1970)\*

Figure 10 represents the results from the 50-yard dash. The scores were recorded in the Appendix and the percentages are compared below. Fourteen-year old Blacks performed 3% better than 13-year old Blacks. Fifteen-year old and 14-year old Blacks' scores were not compared because of their similarity. Fourteen-year old Whites performed 4% better than 13-year old Whites. Fifteen-year old Whites performed 6% better than 14-year old Whites. Thirteen-year old Blacks performed 6% better than 13-year old Whites. Fourteen-year old Blacks performed 6% better than 14-year old Whites. Fifteen-year old Blacks and 15-year old Whites did not have a significant difference in their scores.

\* Scores recorded by Mr. Gordon Long, Physical Education Instructor, Brooks Junior High School, Wichita, Kansas.

Fig. 10. Age and Race Differences in the  
50-Yard Dash (1970) Given in  
Mean Scores

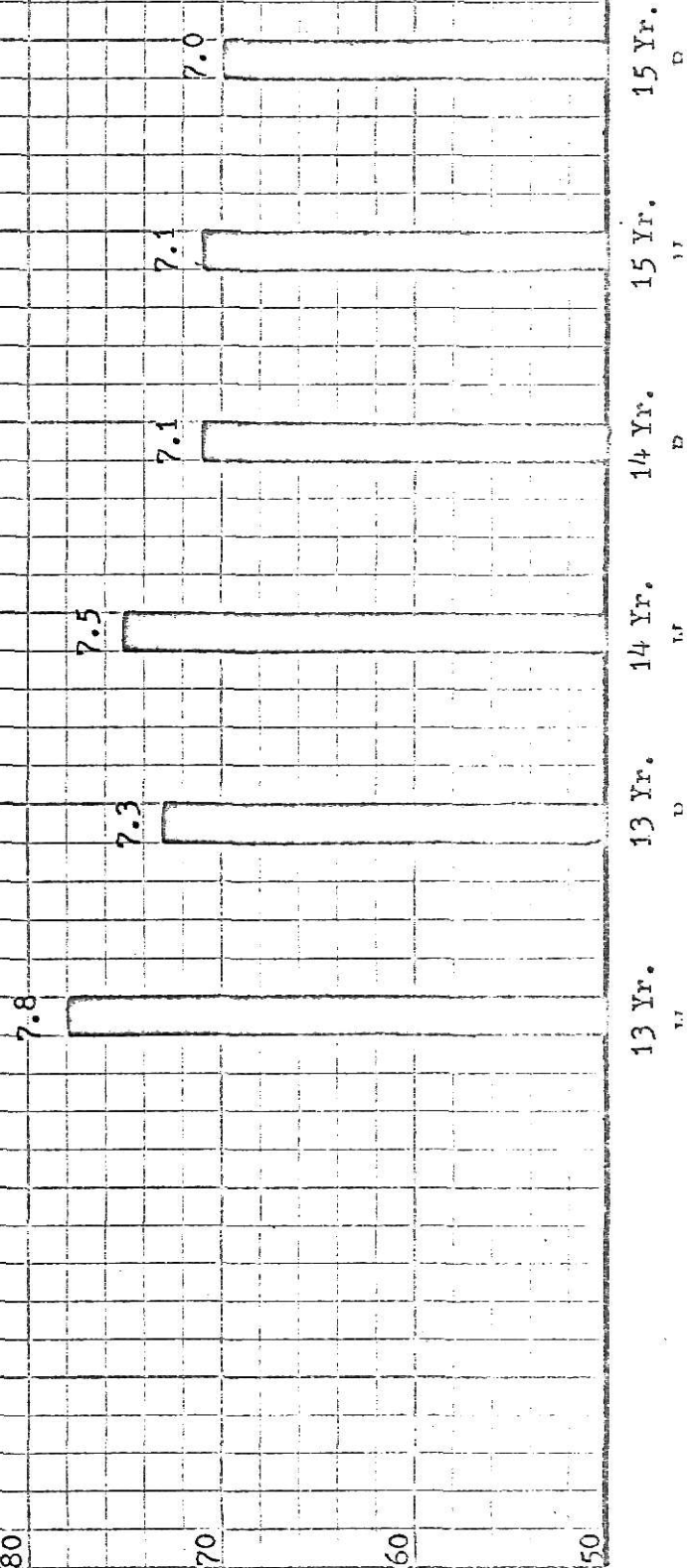


Figure 11 represents mean scores for the three age groups. The scores were recorded and compared to procure the following percentages: fourteen-year olds did 3% better than 13-year olds, and 15-year olds achieved 4% better than 14-year olds.

Figure 12 separates the two groups racially. The results showed that Blacks performed 4% better than Whites in the 50-yard dash.

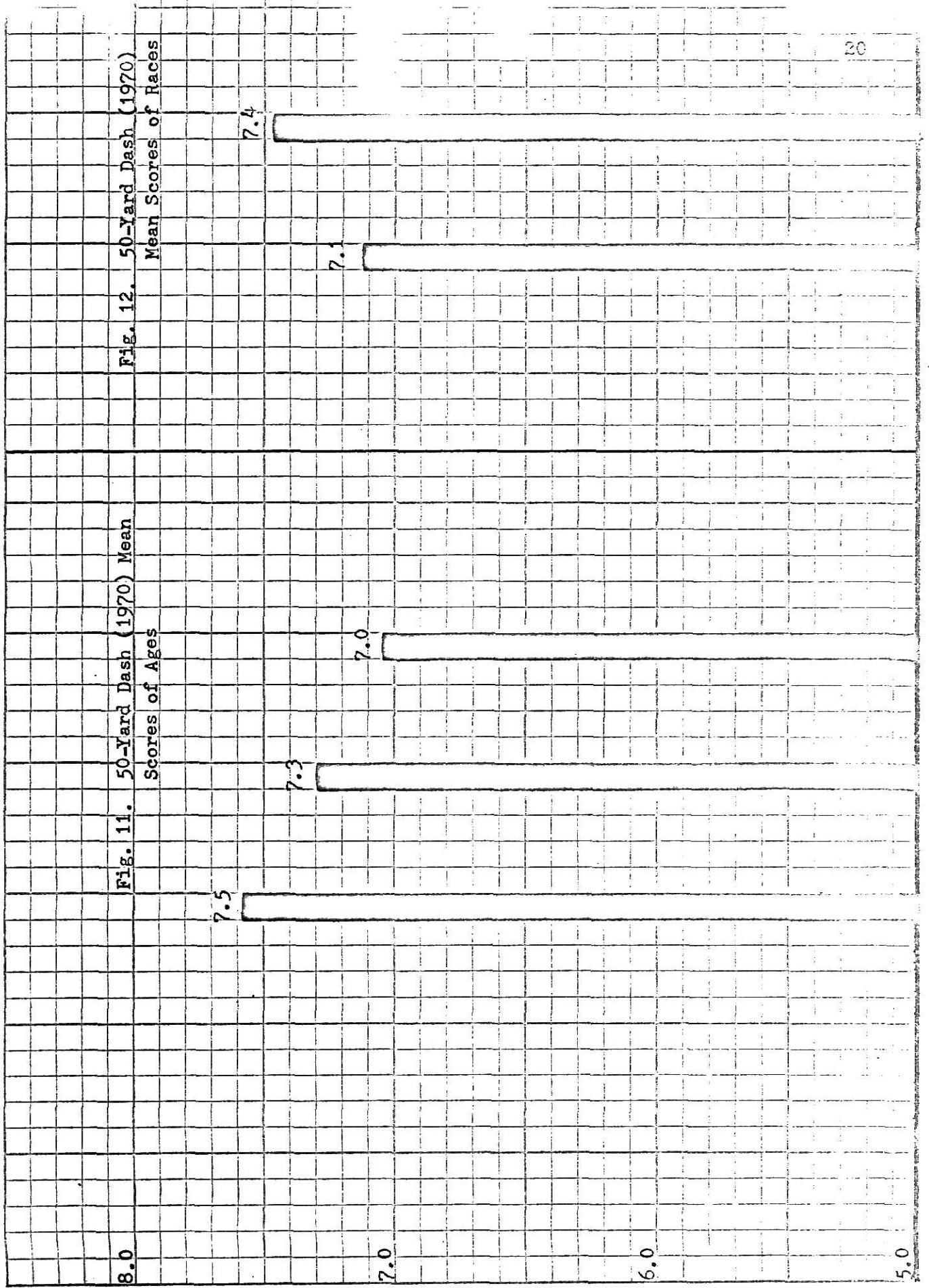
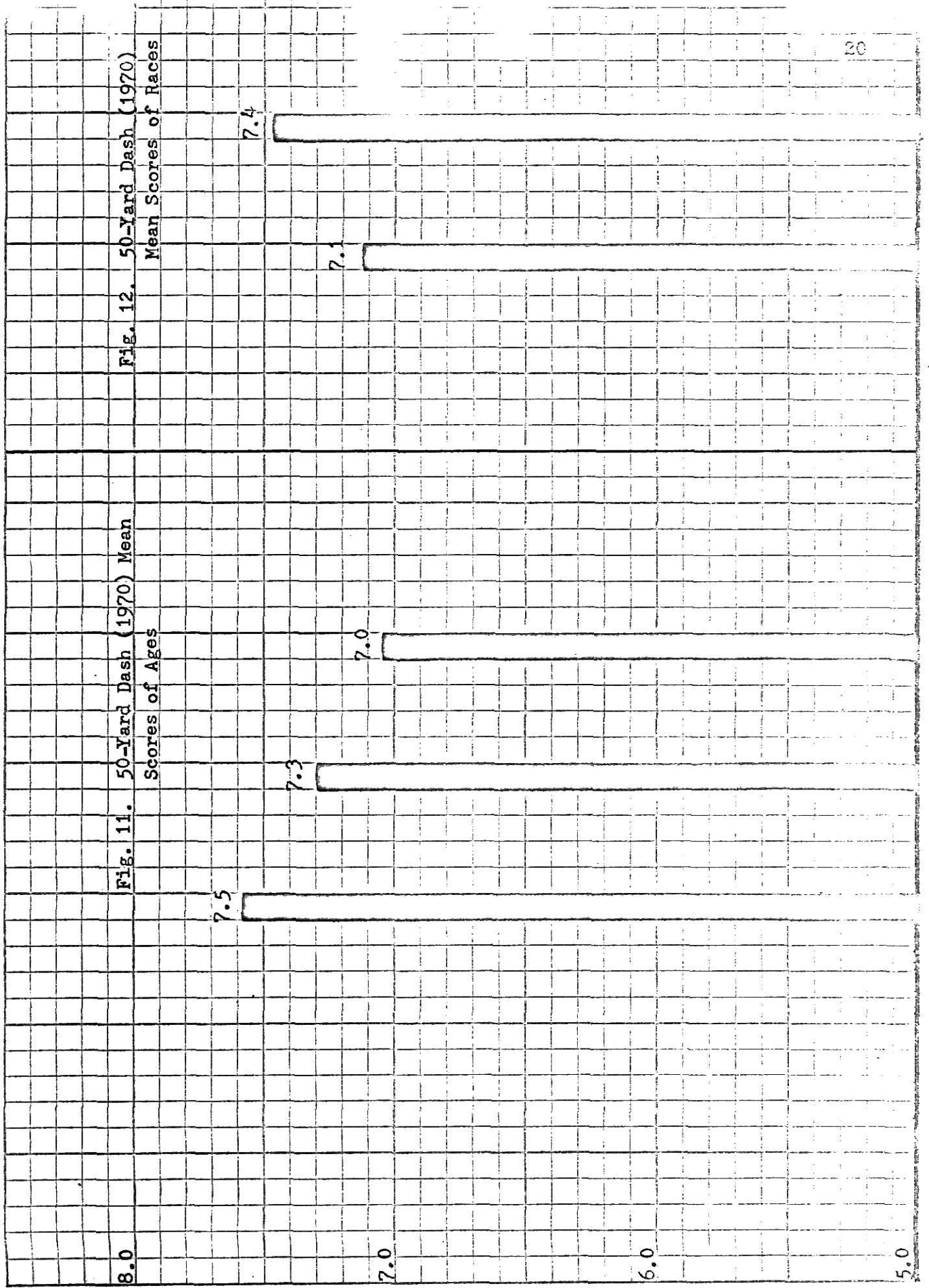
An analysis of variance was run of the 50-yard dash (1970). The individual times were compared in order to determine which variable contributed the most to individual performance. The results are shown in Table VI.

TABLE VI  
ANALYSIS OF VARIANCE OF RESULTS FROM 50-YARD DASH (1970)

Source	df	SS	MS	F
Total	119	34.78		
Students	19	6.80	0.36	
Race	1	2.98	2.98	14.45*
Age	2	4.90	2.45	11.90*
Race X Age	2	0.55	0.27	1.33
Error	95	19.57	0.21	

\* Difference significant at .05 level.

Both age and race seem to be significant sources of variation in this test at the .05 level, but again, age appears to be the most significant.



## SUMMARY

The junior high boys at Brooks Junior High School, Wichita, Kansas, were separated racially, and according to their ages, were tested in three areas: agility, speed, and endurance. These tests took place in the fall and spring of both 1969-70 and 1970-71.

Results of the basic agility test showed that 12-year old Blacks performed 5% better than 12-year old Whites. Thirteen-year old Blacks and 13-year old Whites did not have a significant difference to compute a score. Fourteen-year old Blacks performed 5% better than 14-year old Whites. Fifteen-year old Whites and 15-year old Blacks did not have any significant difference to compute a score.

Thirteen-year olds as a whole performed 6% better than 12-year olds. Fourteen-year olds performed 6% better than 13-year olds, while 15-year olds performed 1% better than 14-year olds.

Blacks as a whole performed 3% better than Whites. Results show in this test that both color and age make a difference in producing fast times, but age was the dominant factor.

The results from the 50-yard dash (1971) showed that 12-year old Blacks performed 7% better than 12-year old Whites. Thirteen-year old Blacks did only 1% better than 13-year old Whites. Fourteen-year old Blacks performed 2% better than 14-year old Whites. Fifteen-year old Blacks performed 4% better than 15-year old Whites.

Thirteen-year olds performed 2% better than 12-year olds. Fourteen-year olds performed 7% better than 13-year olds, and the 15-year olds performed 2% better than 14-year olds. Black students performed 5% better than white students in the 50-yard dash. This test shows that both age and color were significant in producing fast times.

The following was observed in the 600-yard run (1970): 13-year old Blacks performed 6% better than 13-year old Whites, 14-year old Blacks did 31% better than 14-year old Whites, and 15-year old Blacks and 15-year old Whites did essentially the same.

Thirteen-year olds did 8% better than 14-year olds, and the 15-year olds performed 34% better than 14-year olds. Blacks as a whole achieved  $12\frac{1}{2}\%$  better times in the 600-yard run than the Whites. Results show that age was the dominant factor in producing fast times.

Results from the 50-yard dash (1970) showed that 13-year old Blacks performed 6% better than 13-year old Whites, 14-year old Blacks performed  $5\frac{1}{2}\%$  better than 14-year old Whites, and 15-year old Blacks' and 15-year old Whites' scores were not compared because of their similarity.

Fourteen-year olds did 2% better than 13-year olds, and 15-year olds did 4% better than 14-year olds. Blacks as a whole performed 4% better than Whites. Both age and color were significant at the .05 level of significance on this test.

TABLE VII  
AVERAGE SCORE FOR 50-YARD DASH (SPRING 1970)

Age	Mean for Whites (seconds)	Mean for Blacks
13-year olds	7.8	7.3
14-year olds	7.5	7.1
15-year olds	7.1	7.0
Average	7.47	7.13

TABLE VIII  
AVERAGE SCORE FOR 600-YARD RUN (SPRING 1970)

Age	Mean for Whites (minutes)	Mean for Blacks
13-year olds	2:11.8	2:03.8
14-year olds	2:42.4	1:57.4
15-year olds	1:06.8	1:06.9
Average	2:13.3	1:56.0

TABLE IX  
AVERAGE SCORE FOR AGILITY TEST (SPRING 1971)

Age	Mean for Whites (seconds)	Mean for Blacks
12-year olds	16.7	15.8
13-year olds	14.8	14.7
14-year olds	13.8	13.1
15-year olds	13.5	13.1
Average	14.7	14.2

TABLE X  
AVERAGE SCORE FOR 50-YARD DASH (SPRING 1971)

Age	Mean for Whites (seconds)	Mean for Blacks
12-year olds	8.0	7.4
13-year olds	7.6	7.5
14-year olds	7.0	6.8
15-year olds	6.8	6.6
Average	7.350	7.075



## CONCLUSION

The difference in the mean scores of 160 black male junior high school students and 160 white male junior high school students were used in this study. The scores indicated that black students were superior in speed, agility, and endurance ( as measured by the 50-yard dash, agility test, and the 600-yard run) at four age levels in 1971 and three levels in 1970. To determine the significance between the 14 groups the ratios were computed. At most levels, black students had statistically significant faster times in all races at all levels. While race played a role in producing faster times in two out of four tests, age appeared the dominant variable for endurance, agility, and speed.

## APPENDIX

Scores of 12-year old Whites      Scores of 12-year old Blacks  
Spring Semester 1971

Agility	50-yard Dash	Agility	50-yard Dash
15.6	7.5	14.2	7.6
22.8	7.2	16.0	8.6
17.8	7.5	14.8	6.8
14.2	8.2	13.5	8.0
15.0	7.9	23.0	7.8
17.9	6.8	13.1	6.7
15.1	7.3	14.4	8.0
17.8	7.9	19.0	8.0
17.1	7.2	15.3	7.8
17.0	8.2	16.2	8.0
18.0	8.6	14.6	7.2
24.0	10.3	13.2	7.5
23.0	8.1	16.2	6.7
16.1	10.9	14.4	7.8
17.2	8.5	28.5	7.5
14.1	7.2	13.6	7.1
15.6	8.8	14.7	6.9
15.9	8.2	14.5	7.0
14.6	7.8	16.0	6.9
16.0	8.3	15.1	6.8
14.6	7.4	13.1	7.3
16.2	7.6	17.0	7.5
13.0	8.0	15.0	7.3
14.3	8.1	16.1	8.1
15.5	7.7	14.7	7.2

## Scores of 13-year old Whites

## Scores of 13-year old Blacks

Spring Semester 1971

Agility	50-yard Dash	Agility	50-yard Dash
12.5	7.2	13.5	7.1
14.5	7.6	17.3	7.2
15.8	7.6	12.4	7.3
15.8	7.5	14.0	8.1
13.0	6.4	13.6	7.1
14.3	7.6	13.4	8.0
13.0	7.9	16.9	8.4
13.6	8.0	16.1	8.3
16.0	7.5	16.2	8.7
18.0	7.8	13.0	7.7
14.0	7.2	15.8	7.6
14.5	7.6	14.1	7.1
14.8	9.5	15.0	7.5
14.7	8.2	16.0	7.8
13.4	7.0	13.4	7.2
16.4	8.0	15.8	7.0
14.5	7.4	16.5	7.0
14.8	7.4	12.4	6.9
18.0	7.6	15.0	7.1
13.5	8.0	13.9	7.5
17.0	7.3	14.1	7.0
15.8	7.9	14.5	7.6
13.0	7.6	15.5	7.7
14.3	7.3	15.1	7.5
16.5	7.5	15.0	7.4

## Scores of 14-year old Whites

## Scores of 14-year old Blacks

Spring Semester 1971

Agility	50-yard Dash	Agility	50-yard Dash
13.3	6.4	13.0	6.9
14.0	7.0	12.8	6.5
12.5	6.6	12.3	8.5
15.4	7.6	13.3	7.0
16.8	7.3	11.6	7.0
12.6	7.3	11.8	6.5
13.1	7.0	13.1	6.2
13.5	7.1	13.0	7.5
13.0	7.2	12.2	6.9
12.2	6.8	15.2	7.0
14.0	6.8	15.1	7.6
14.4	7.0	13.6	8.3
17.5	7.1	13.0	7.0
13.0	7.9	13.4	6.5
12.8	7.0	13.0	6.1
13.9	7.3	11.6	6.0
15.0	7.4	12.7	7.2
18.0	7.1	11.9	6.4
12.7	6.6	12.0	6.1
14.0	7.1	14.3	6.1
13.1	7.5	14.6	7.1
13.0	6.8	13.6	7.0
12.4	6.9	13.6	6.6
13.0	7.0	15.1	7.6
13.6	6.9	12.6	6.5

## Scores of 15-year old Whites

## Scores of 15-year old Blacks

Spring Semester 1971

Agility	50-yard Dash	Agility	50-yard Dash
13.3	6.5	11.5	6.6
12.5	6.4	13.6	6.3
12.1	7.6	11.9	6.3
12.6	7.0	12.0	6.4
13.3	6.9	12.6	6.2
12.5	7.0	12.0	6.1
12.5	7.1	14.9	6.5
23.5	6.7	16.9	6.5
13.0	6.9	12.0	7.1
14.4	6.1	12.8	6.5
15.9	7.1	11.8	6.9
14.4	7.0	14.0	6.3
13.5	7.4	13.0	6.9
12.9	7.0	11.7	7.5
12.7	6.6	12.6	6.2
13.5	7.4	23.6	6.7
12.5	7.5	11.5	7.1
13.9	6.9	13.6	7.0
13.3	7.0	11.9	6.7
15.0	8.1	12.0	7.2
11.7	6.3	14.9	7.2
12.1	6.1	12.3	6.5
12.4	6.4	11.5	7.4
12.6	6.2	11.3	6.7
13.2	6.9	12.3	6.4

## Scores of 13-year old Whites

## Scores of 13-year old Blacks

Spring Semester 1970

600-yard Dash*	50-yard Dash	600-yard Dash*	50-yard Dash
168.0	8.0	159.8	6.9
145.5	7.9	154.6	7.4
161.1	8.9	107.7	7.1
126.3	8.0	110.5	6.9
124.4	8.0	115.3	7.7
130.0	7.4	124.4	7.4
150.1	6.9	120.0	7.6
116.5	7.8	110.7	7.4
110.0	7.4	121.3	6.2
116.7	8.1	132.5	8.2
132.2	7.6	112.2	7.8
118.6	7.4	146.6	6.9
126.6	7.5	118.2	7.4
122.4	7.5	108.2	7.9
138.6	8.1	119.6	7.9
123.4	7.5	122.3	7.2
145.3	8.1	111.3	7.0
131.1	8.1	130.9	7.6
126.8	7.9	121.8	7.3
124.3	8.0	128.3	7.3

\* Times recorded in seconds

## Scores of 14-year old Whites

## Scores of 14-year old Blacks

Spring Semester 1970

600-yard Dash*	50-yard Dash	600-yard Dash*	50-yard Dash
146.8	8.4	104.6	6.8
109.0	6.9	118.1	7.6
116.5	7.7	114.2	7.3
125.5	7.5	118.1	7.2
111.2	7.1	108.1	6.6
118.7	7.2	120.0	7.2
111.0	7.0	108.0	6.7
115.8	7.0	102.1	7.0
112.8	7.1	121.1	7.7
116.0	7.6	116.0	7.6
101.0	6.9	132.2	8.2
137.7	8.1	86.1	6.2
112.0	7.4	98.2	6.9
129.3	7.7	96.1	6.6
126.1	7.4	102.8	7.2
118.2	7.5	150.5	7.8
132.4	7.2	155.1	7.0
130.0	8.0	147.1	7.1
115.9	7.7	153.3	7.4
96.3	6.8	115.0	7.8

\* Times recorded in seconds



## Scores of 15-year old Whites

## Scores of 15-year old Blacks

Spring Semester 1970

600-yard Dash\* 50-yard Dash

600-yard Dash\* 50-yard Dash

113.9

6.1

98.9

6.7

118.2

7.8

97.8

6.6

89.5

6.5

116.8

7.2

116.9

6.9

96.1

6.9

97.3

6.8

92.7

6.3

105.7

7.0

94.0

6.9

103.8

7.1

98.0

7.0

143.6

6.8

102.5

6.9

98.1

6.7

106.1

6.8

113.0

7.4

113.9

7.0

99.1

6.7

105.1

7.7

105.3

6.9

117.9

7.6

117.6

7.4

120.0

6.9

101.1

6.8

128.3

8.0

119.7

7.4

96.9

6.7

120.2

7.9

137.6

7.3

93.0

7.0

88.3

6.7

98.7

7.5

94.1

6.5

108.0

8.5

120.1

7.0

114.2

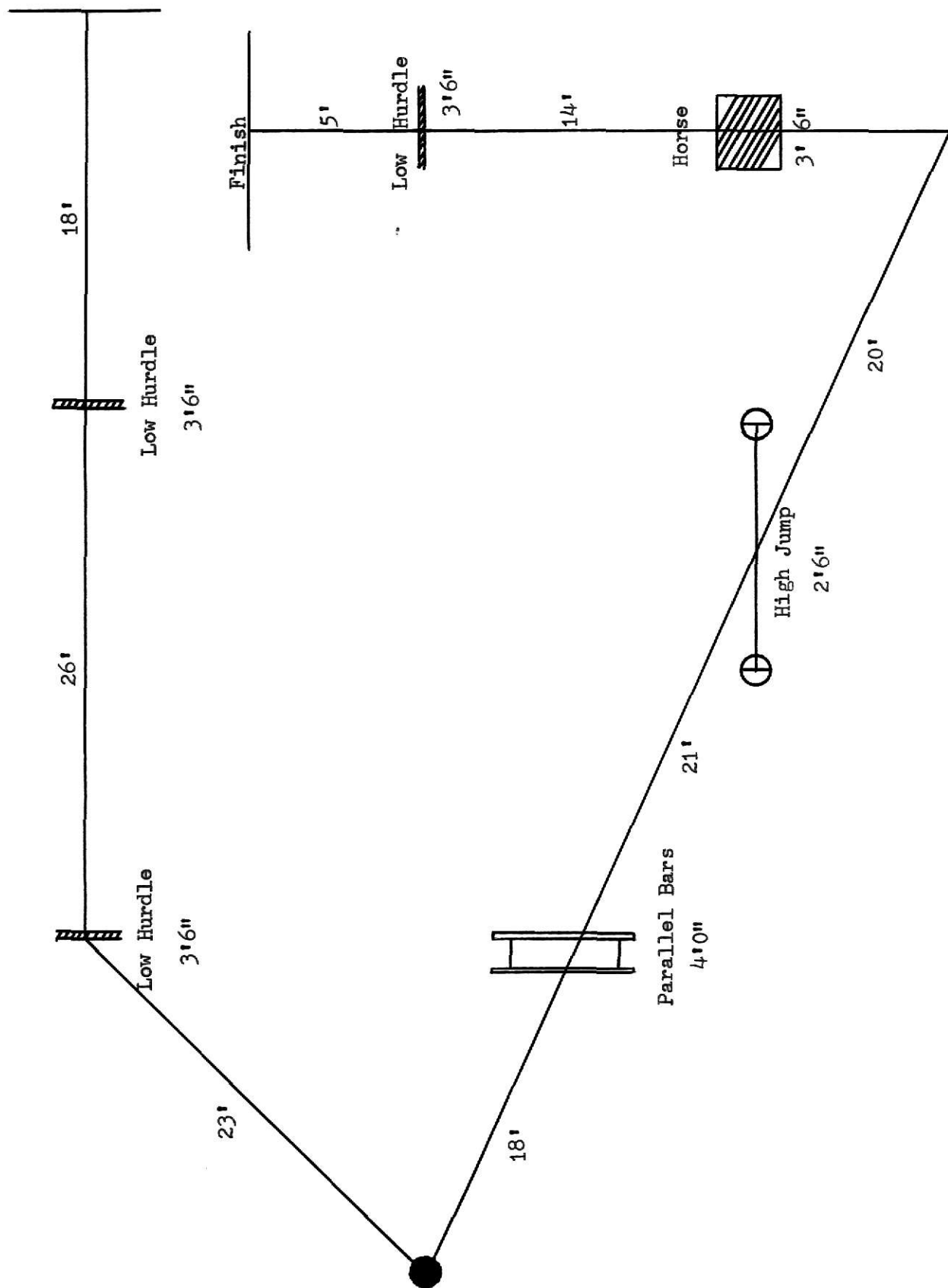
7.7

101.6

7.0

\* Times recorded in seconds

Fig. 13. Floor Plan for Agility Test



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A COMPARATIVE ANALYSIS OF SPEED, AGILITY, AND ENDURANCE  
OF BLACK AND WHITE MALE STUDENTS AT WICHITA,  
BROOKS JUNIOR HIGH SCHOOL

by

FRANK A. NIGRO

B. A., St. Mary of the Plains College, 1969

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AN ABSTRACT OF A MASTER'S REPORT

submitted in partial fulfillment of the

requirements for the degree

MASTER OF SCIENCE

Department of Physical Education

KANSAS STATE UNIVERSITY  
Manhattan, Kansas

1971

A study was conducted comparing the physical ability of black and white male junior high students at Brooks Junior High School, Wichita, Kansas. Speed, agility, and endurance tests were used as criteria on which the conclusions were based. These tests included: a 50-yard dash, a basic agility test, and a 600-yard run. Black students' as compared to white students' physical ability was studied within three different age groups in 1969-70 and four age groups in 1970-71.

Times were recorded for individual students in each group as the tests were conducted. An analysis of variance of these scores indicated the following results. Age appeared to be the major source of variance in all tests conducted. In the same tests, black students out-performed white students in the same age bracket.

Results on the basic agility test showed that 12-year old Blacks performed 5% better than 12-year old Whites. Thirteen-year old Blacks and 13-year old Whites did not have a significant difference to compute a score. Fourteen-year old Blacks performed 5% better than 14-year old Whites. Fifteen-year old Whites and 15-year old Blacks did not have any significant difference to compute a score.

Thirteen-year olds as a whole performed 6% better than 12-year olds. Fourteen-year olds performed 6% better than 13-year olds, while 15-year olds performed 1% better than 14-year olds.

Blacks as a whole performed 3% better than Whites. Results show in this test that both color and age make a difference in producing fast times, but age was the dominant factor.

The results from the 50-yard dash (1971) showed: 12-year old Blacks performed 7% better than 12-year old Whites. Thirteen-year old Blacks did only 1% better than 13-year old Whites. Fourteen-year old Blacks performed 2% better than 14-year old Whites. Fifteen-year old Blacks performed 4% better than 15-year old Whites.

Thirteen-year olds performed 2% better than 12-year olds. Fourteen-year olds performed 7% better than 13-year olds, and the 15-year olds performed 2% better than 14-year olds. Black students performed 5% better than white students in the 50-yard dash. This test shows that both age and color were significant in producing fast times.

The following was observed in the 600-yard run (1970): 13-year old Blacks performed 6% better than 13-year old Whites; 14-year old Blacks did 31% better than 14-year old Whites; and 15-year old Blacks and 15-year old Whites did essentially the same.

Thirteen-year olds did 8% better than 14-year olds, and the 15-year olds performed 34% better than 14-year olds. Blacks as a whole achieved  $12\frac{1}{2}\%$  better times in the 600-yard run than the whites. Results show that age was the dominant factor in producing fast times.

Results from the 50-yard dash (1970) showed: 13-year old Blacks performed 6% better than 13-year old Whites; 14-year old Blacks performed  $5\frac{1}{2}\%$  better than 14-year old Whites; and 15-year old Blacks' and 15-year old Whites' scores were not compared because of their similarity.

Fourteen-year olds did 2% better than 13-year olds, and 15-year olds did 4% better than 14-year olds. Blacks as a whole performed 4% better than Whites. Both age and color were significant at the .05 level of significance on this test.

This study was limited in the fact that only 320 students participated in the testing and this represented only one location within a single city. It is recognized that other tests or other locations might produce different results, but within the limits of this study it appears that in the junior high level, age is the dominant factor in predicting physical ability, and black students appear to exceed white students within each age group.