

A COMPARISON OF THE RESULTS OF THE BARRON MOTOR ABILITY
TEST SCORES OF WAKE FOREST COLLEGE AND KANSAS
STATE UNIVERSITY REQUIRED PHYSICAL EDUCATION
CLASSES, 1962-1963 SCHOOL YEAR

by

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A MASTER'S REPORT

submitted in partial fulfillment of the

requirements for the degree

MASTER OF SCIENCE

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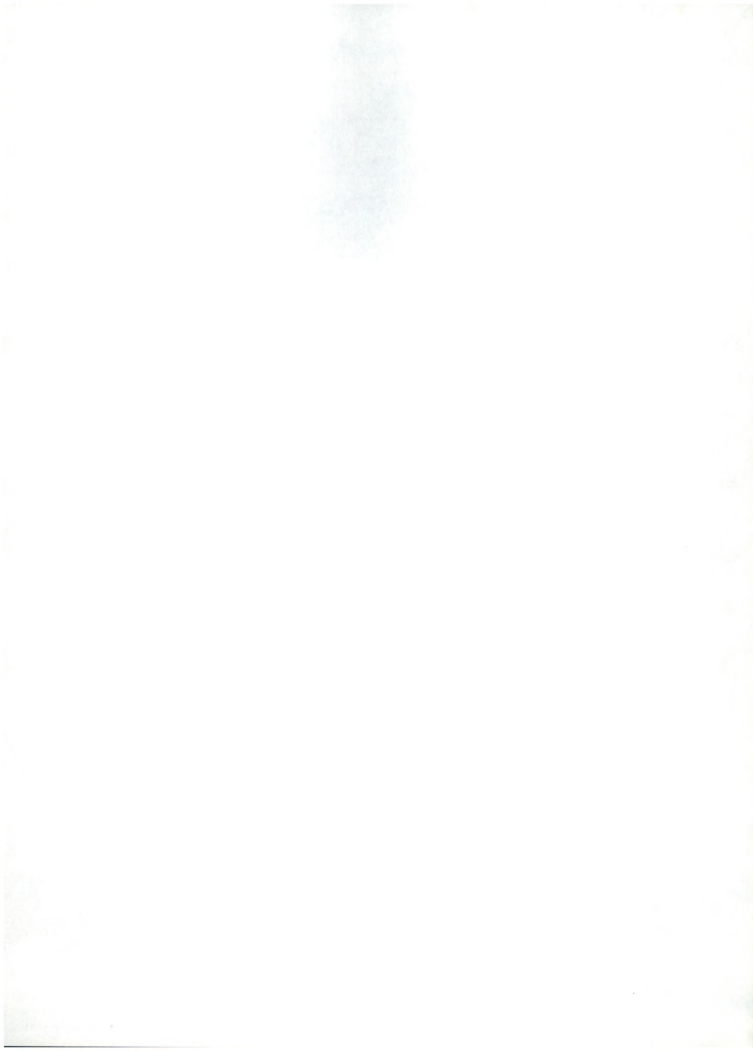
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INTRODUCTION

There is a need in physical education today for an evaluation of the college student's ability in motor learning and performance. These tests can then aid in the classification and guidance of the student.

Proper placement and scheduling of students in basic classes is necessary if individual needs are to be met. Social development is more likely to occur when individuals and groups are equated in powers and abilities. Educators need to know as much concerning the student's ability to perform skills as his ability to do academic work if the student's "whole" needs are to be met.¹

It is for these reasons that Kansas State University's Physical Education Department decided to give a testing program this year.

The following study shows the results and analysis of the Borrow Motor Ability Test given to the required physical education classes at Kansas State University during the 1962-1963 school year. It is compared with the same test given to the required classes at Wake Forest College.

PURPOSE OF THE STUDY

The physical education program at Kansas State University has recently been changed. Prior to the school year 1961-1962, four semesters of physical education were required for graduation from the university. No credit

¹Harold M. Barrow, "Test of Motor Ability For College Men," Research Quarterly, October, 1954, 25:253.

hours or grade points were given for these required physical education classes. The different activities consisted of football, basketball, volleyball, softball, wrestling, beginning swimming, advanced swimming, beginning bowling, advanced bowling, gymnastics, and trampoline. Each student was given a choice of the activity in which he wished to participate. Each student was encouraged to participate in as many different activities as possible in his four semesters of participation.

Because of limited staff and facilities basic physical education requirements were lowered to two semesters for graduation. This was done for the school year 1961-1962. An elective physical education program was also inaugurated at this time. A student could choose an activity such as; tennis, golf, bowling, or weight training and body building. One year of basic physical education was required before a student could enroll in one of these elective courses. The elective courses were for one hour credit. From these courses a student could earn up to two hours credit for graduation.

This change in the program gave the physical education department a better chance to utilize staff and facilities.

After this program was in effect for a year the Department of Physical Education decided to give the Borow Motor Ability Test to all enrollees in the required program. Borow's three battery test was chosen. It consisted of the standing broad jump, medicine ball put, and zigzag run. These items tested, in order, power, strength, and agility. The three battery test was chosen over the six battery test because of the speed in administration and the indoor facilities available.

The total points of the three tests were added together. If a student had a score of 111 or more total points, he was given his choice of activity.

Those with a score below 1/4 were placed in a adaptive class in wrestling, weight training, or gymnastics. The physical education staff felt these three activities would aid in the development of the individual more than any others that could be offered.

In this study the scores of the Kansas State University required classes are compared with those of the Wake Forest College required classes. It is the purpose of this report to study these results and discrepancies, if any, for future testing and the betterment of the physical education program.

The writer hopes that this study may aid in the future testing of the required classes and the proper placement of each student in the activity that will prove most beneficial.

BACKGROUND OF THE BARROW TEST

Dr. Harold M. Barrow, head of the Physical Education Department at Wake Forest College, Winston-Salem, North Carolina, was the author of this test.

The test was devised in 1953 as a partial fulfillment of the degree of Doctor of Physical Education in the School of Health, Physical Education, and Recreation at Indiana University.

The purpose was to develop an easily administered test of motor ability for college men. The results could be used for classification, guidance, and measurement of achievement.²

In forming the test he started with 87 items which had been used in the past to measure 15 different factors of motor ability. Employing the jury technique, with his professors as the jury, it was decided to utilize eight

²Barrow, op. cit., p. 254.

of these 15 factors. They were the ones most highly related to motor ability. These factors were; agility, hand-eye-foot-eye co-ordination, speed, power, arm and shoulder co-ordination, strength, balance, and flexibility.

This narrowed the 87 items of measurement to 29. These 29 items were administered on a test-retest basis to 222 male students in required physical education classes at Wake Forest College.

With the findings from this research, Barrow decided upon two batteries of tests. Test Number One had six items. It tested the six most highly related factors.

ITEM	FACTOR
Standing broad jump	Power
Medicine ball put	Strength
Zigzag run	Agility
Softball throw	Arm-shoulder co-ordination
Wall pass	Hand-eye co-ordination
60-yard dash	Speed

Test Number Two has three items. It is composed of the standing broad jump, medicine ball put, and zigzag run. As is noted, these three items appear in the six item test.

The six item test showed 70 percent improvement over a best guess. The three item test is recommended for indoor administration or for quick classification.³

NORMS

The following norms were used in scoring the test. They were established by Barrow in his study completed in 1953.⁴

³Barrow, op. cit., pp. 253-256.

⁴Ibid., p. 255.

TABLE I

NORM USED IN SCORING ZIGZAG RUN

Time in seconds	Score	Time in seconds	Score	Time in seconds	Score	Time in seconds	Score
17.5	100	21.7-21.8	72	26.1	44	30.4-30.5	16
17.6	99	21.9	71	26.2-26.3	43	30.6	15
17.7-17.8	96	22.0-22.1	70	26.4	42	30.7-30.8	14
17.9	97	22.2	69	26.5-26.6	41	30.9	13
18.0-18.1	96	22.3-22.4	68	26.7	40	31.0-31.1	12
18.2	95	22.5-22.6	67	26.8-26.9	39	31.2	11
18.3-18.4	94	22.7	66	27.0-27.1	38	31.3-31.4	10
18.5	93	22.8-22.9	65	27.2	37	31.5	9
18.6-18.7	92	23.0	64	27.3-27.4	36	31.6-31.7	8
18.8	91	23.1-23.2	63	27.5	35	31.8	7
18.9-19.0	90	23.3	62	27.6-27.7	34	31.9-32.0	6
19.1	89	23.4-23.5	61	27.8	33	32.1	5
19.2-19.3	88	23.6	60	27.9-28.0	32	32.2-32.3	4
19.4	87	23.7-23.8	59	28.1	31	32.4-32.5	3
19.5-19.6	86	23.9	58	28.2-28.3	30	32.6	2
19.7	85	24.0-24.1	57	28.4-28.5	29	32.7-32.8	1
19.8-19.9	84	24.2	56	28.6	28		
20.0-20.1	83	24.3-24.4	55	28.7-28.8	27		
20.2	82	24.5-24.6	54	28.9	26		
20.3-20.4	81	24.7	53	29.0-29.1	25		
20.5	80	24.8-24.9	52	29.2	24		
20.6-20.7	79	25.0-25.1	51	29.3-29.4	23		
20.8-20.9	78	25.1-25.2	50	29.5	22		
21.0	77	25.3-25.4	49	29.6-29.7	21		
21.1-21.2	76	25.5	48	29.8-29.9	20		
21.3	75	25.6-25.7	47	30.0	19		
21.4-21.5	74	25.8	46	30.1-30.2	18		
21.6	73	25.9-26.0	45	30.3	17		

TABLE 2
 NORM USED IN SCORING STANDING BROAD JUMP

Distance in inches	Score	Distance in inches	Score	Distance in inches	Score	Distance in inches	Score
133	100	86	72	64	44	16	16
132	99	85	71	63	43	15	15
131	98	108	70	62	42	14	14
130	97	107	69	61	41	13	13
129	96	106	68	60	40	12	12
128	95	105	67	59	39	11	11
127	94	104	66	58	38	10	10
126	93	103	65	57	37	9	9
125	92	102	64	56	36	8	8
124	91	101	63	55	35	7	7
123	90	100	62	54	34	6	6
122	89	99	61	53	33	5	5
	88	98	60	52	32	4	4
121	87	97	59	51	31	3	3
120	86	96	58	50	30	2	2
119	85	95	57	49	29	1	1
118	84	94	56	48	28		
	83	93	55	47	27		
117	82	92	54	46	26		
116	81	91	53	45	25		
115	80	90	52	44	24		
114	79	89	51	43	23		
113	78	88	50	42	22		
	77	87	49	41	21		
112	76	86	48	40	20		
111	75	85	47	39	19		
110	74	84	46	38	18		
109	73	83	45	37	17		

TABLE 3

NORM USED IN SOORI G MEDICINE BALL PUT

Distance in feet	Score	Distance in feet	Score	Distance in feet	Score	Distance in feet	Score
72	100	54.5	72	36-36.5	44	18.5	16
71.5	99	53.5-54	71	35.5	43	17.5-18	15
70.5-71	98	53	70	35	42	17	14
70	97	52.5	69	34.5	41	16.5	13
69.5	96	51.5-52	68	33.5-34	40	15.5-16	12
69	95	51	67	33	39	15	11
68-68.5	94	50.5	66	32.5	38	14.5	10
67.5	93	50	65	32	37	14	9
67	92	49-49.5	64	31-31.5	36	13.5	8
66.5	91	48.5	63	30.5	35	12.5-13	7
66.5-66	90	48	62	30	34	12	6
65	89	47-47.5	61	29-29.5	33	11.5	5
64.5	88	46.5	60	28.5	32	10.5-11	4
64	87	46	59	28	31	10	3
63-63.5	86	45.5	58	27.5	30	9.5	2
62.5	85	44.5-45	57	26.5-27	29	9	1
62	84	44	56	26	28		
61.5	83	43.5	55	25.5	27		
60.5-61	82	42.5-43	54	24.5-25	26		
60	81	42	53	24	25		
59.5	80	41.5	52	23.5	24		
59	79	40.5-41	51	22.5-23	23		
58-58.5	78	40	50	22	22		
57.5	77	39.5	49	21.5	21		
57	76	38.5-39	48	21	20		
56-56.5	75	38	47	20-20.5	19		
55.5	74	37.5	46	19.5	18		
55	73	37	45	19	17		

METHOD OF ADMINISTERING THE TEST

The Barrow Motor Ability Test was given to all required physical education classes at Kansas State University during the week of September 17-22, 1962. Two class periods of 40 minutes each were required to test a class of 100 boys. The class instructor administered the test with assistance from other staff members and practice teachers.

The test area was the gymnasium section of Ahearn Field House. This area includes three full length basketball courts. On one court three zigzag run courses were set up. Soft drink bottles were used at the corners, and an eight foot pole on a stand was used as the center obstacle. (See diagram on page 10 for course layout).

The middle basketball court was used for two medicine ball put areas. The area was layed out with one half foot markings. A six pound medicine ball was used.

The last court was used for two standing broad jump areas. Each area was marked off in inches.

Each boy was given a score card on which he wrote his name. This card was carried with him to each of the three different test stations. Each tester recorded the time or length of each trial for each item tested. The best time or length was circled on the students score card. Then the number of points for the circled number was posted on the students score card from the master score sheet for each event.

After completing all three events the students cards were collected by the instructor and the scores were totaled. Each student was then assigned to an activity which was based upon the total performance score

of the test items. The student continued in this activity throughout the semester.

A sample card follows.

TABLE 4
SAMPLE CARD USED IN RECORDING SCORES

<u>Event</u>	<u>Time or distance</u>	<u>Points</u>
Standing broad jump	(86"), 83", foul	41
Zigzag run	(23.5)	61
Medicine ball put	(48'), 40.5', 45'	<u>62</u>
		164

TESTS AND RESULTS

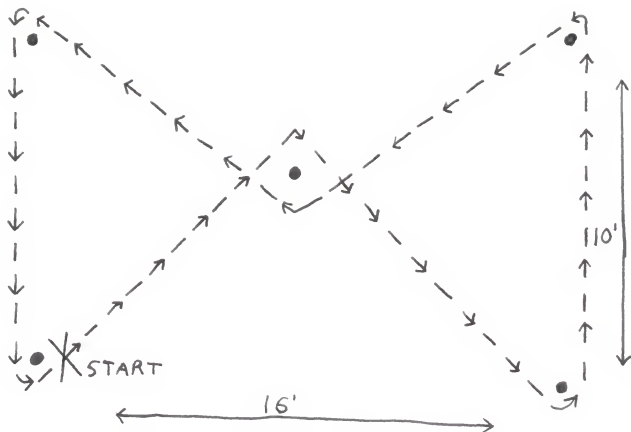
Following is a description of each test, with a comparison of the results from the two schools. One thousand twenty-nine students from Kansas State and 509 students from Wake Forest took the test. The classification tables and graphs will assist one to quickly analyze the results. A complete result listing is found in the appendix.

ZIGZAG RUN

The course was set up in an area 16 feet by 10 feet. Each student was allowed one trial. He started at point X and ran the prescribed course three times around. His time was recorded to the nearest tenth of a second.

A diagram of the course follows.

TABLE 5
THE ZIGZAG RUN COURSE



One stop watch was used to time each individual. Each student was started by a voice command. Many different staff members administered the test.

A table showing the results of the zigzag run is shown below.

TABLE 6
RESULTS OF THE ZIGZAG RUN

Classification	Kansas State's time in seconds	Wake Forest's time in seconds	Difference in seconds
Best time	19.5-19.9	22.5-22.9	K.S. + 3.0-3.5
Median	23.99	25.88	K.S. + 1.89
Mean	24.17	26.13	K.S. + 1.96
Standard deviation	1.78	1.82	
Range of middle 68%	22.39-25.95	24.31-27.95	
Poorest time	Below 32	Below 32	Same

The best time recorded for the Kansas State group was 19.5-19.9 seconds. One boy had this time. The best time from Wake Forest was 22.5-22.9 seconds. Three boys from Wake Forest were clocked in this range. The students from Kansas State had a better time by 3.0-3.5 seconds. The time difference is very unusual for such a small distance.

The median for students of Kansas State was 23.99 seconds. Wake Forest's median was 25.88 seconds. This gave Kansas State a 1.89 seconds faster median time for the zigzag run.

The mean for Kansas State students was 24.17 seconds. The mean for the Wake Forest students was 26.13 seconds. This gave students from Kansas State a faster mean by 1.96 seconds.

The mode for Kansas State students was in the 24.0-24.4 range. One hundred thirty-two out of 1029 or 13 percent received this score. The mode for Wake Forest students was in the 25.0-25.4 range, or 1.0-1.5 seconds slower than the mode at Kansas State. Seventy-four out of 506 students or 13 percent received the mode score for Wake Forest.

The standard deviation for Kansas State was 1.78 seconds. This caused the middle 68 percent of the trials to fall in the 22.39-25.95 seconds range.

The standard deviation for the Wake Forest group was 1.82 seconds. The range for the middle 68 percent was 24.31 seconds to 27.95 seconds.

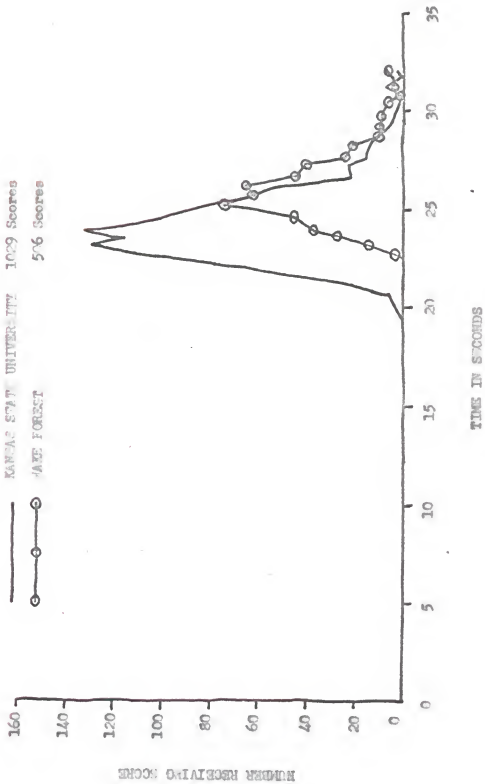
The poorest time was 32.0 seconds or below. Two students from Kansas State had this time, and six from Wake Forest recorded that time.

The graph in Table 7 shows that both schools had almost identical curves, however, Kansas State's curve for this event was faster.

This is the only test that showed a major discrepancy.

TABLE 7

COMPARISON OF ZIGZAG RUN TIME
 KANSAS STATE UNIVERSITY AND WAKE FOREST



Standing Broad Jump

The distance in the standing broad jump was measured in inches. The starting line was a piece of tape set perpendicular to the measuring line. Each student was allowed one practice jump and three trials. Each trial was recorded. The best one was circled, and the proper number of points were recorded for that distance. The contestant was disqualified on his jump if he touched or went over the starting line on his take off.

The results of the standing broad jump are shown in the table below.

TABLE 8
RESULTS OF THE STANDING BROAD JUMP

<u>Classification</u>	<u>Kansas State's distance in inches</u>	<u>Wake Forest's distance in inches</u>	<u>Difference in inches</u>
Best distance	108-110	114-116	W.F. + 6-8
Median	88.14	88.14	Same
Mean	87.46	87.78	W.F. + 0.32
Standard deviation	8.61	9.60	
Range of middle 68%	78.85-96.07	78.18-97.38	
Poorest distance	54-56	54-56	Same

The best distance in this event for Kansas State was in the 108-110 inch range. One student from Kansas State jumped this far. Wake Forest's best jump was in the 114-116 inch range. This was accomplished by one Wake Forest student. This made Wake Forest's best jump 6-8 inches farther than the best performance for any student from Kansas State.

The median score in this event for Kansas State and Wake Forest was identical, 88.14 inches. This was very unusual and showed the similarity of the two groups for this test item.

The mean for Kansas State students was 87.46 inches. The mean performance for Wake Forest students was 87.78 inches. Students from Wake Forest, then, had a 0.32 of an inch higher mean.

The mode for the broad jump for Kansas State students was in the 84-86 inch range, as was the case for students at Wake Forest. Kansas State had 151 out of 1029 or 15 percent in their mode. Wake Forest had 70 out of 509 or 14 percent in their mode.

The standard deviation for the Kansas State group was 8.61 inches. This made the middle 68 percent of their scores fall in the 78.85 inch to 96.07 inch range.

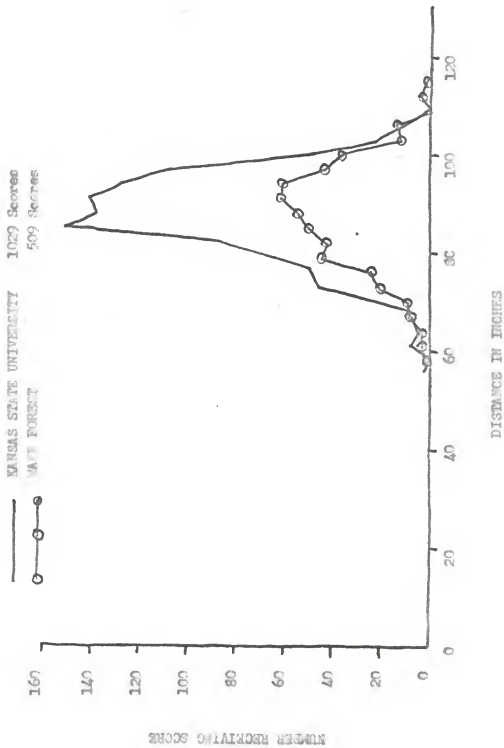
The standard deviation for the Wake Forest group was 9.60 inches. This made the range for their middle 68 percent fall in the 78.18 inch to 97.38 inch range.

The poorest distance by both groups was in the 54-56 inch range. Two from Kansas State and one from Wake Forest received the low score.

The following graph and tables show no major difference in the jumps of the two groups. In fact they are almost identical. The exactness of the medians show this. The standing broad jump was the most constant of any of the three tests given.

TABLE 9

COMPARISON OF STANDING BROAD JUMP DISTANCES
 KANSAS STATE UNIVERSITY AND WAKE FOREST



NUMBER RECEIVING SCORE

DISTANCE IN INCHES

Medicine Ball Put

The course was 70 feet, layed out in one half foot intervals. Two lines, a starting and a finishing, were put down perpendicular to the measured distance for the throwing area. They were 15 feet apart. The student had to stay in this area on his put. If he went out of this area on his put, that particular put was disqualified.

Each student was allowed one practice put and three trial puts. Each trial was recorded. The distance of the best trial was circled, and the proper number of points was awarded.

A six pound medicine ball was used.

The results of the medicine ball put are shown below.

TABLE 10
RESULTS OF THE MEDICINE BALL PUT

<u>Classification</u>	<u>Kansas State's distance in feet</u>	<u>Wake Forest's distance in feet</u>	<u>Difference in feet</u>
Best distance	60-61	54-55	K.S. + 6-7
Median	40.47	38.61	K.S. + 1.86
Mean	40.77	38.18	K.S. + 2.59
Standard deviation	5.14	5.98	
Range of middle 68%	35.63-45.91	32.20-44.16	
Poorest distance	18-19	18-19	Same

The best put for students at Kansas State was in the 60-61 foot range. There was one boy who put it that distance. Wake Forest's best put was in the 54-55 foot range. One boy from Wake Forest put it that distance. This made Kansas State's best put 6-7 feet farther than Wake Forest's best put.

The median score for the Kansas State students was also higher in this

event. Kansas State's median score in this event was 40.47 feet, while Wake Forest had a median of 38.61 feet. This was a 1.86 foot difference, with Kansas State recording the best.

Kansas State's mean for the medicine ball put was 40.77 feet. The mean for Wake Forest in this event was 38.18 feet. This gave Kansas State a higher mean by 2.59 feet.

The mode for both Kansas State and Wake Forest was in the 38-39 foot category. Kansas State had 176 out of 1029 or 17 percent in this range. Wake Forest had 91 out of 507 or 18 percent in the same range.

The standard deviation for the Kansas State group was 5.14 feet. This gave the middle 68 percent of their scores a range from 35.63 feet to 45.91 feet.

The standard deviation for the Wake Forest group was 5.98 feet. This made the middle 68 percent of their scores fall in a range from 32.20 feet to 44.16 feet.

Two Kansas State students and one Wake Forest student received the poorest score in this test. These boys put the medicine ball in the 18-19 foot range.

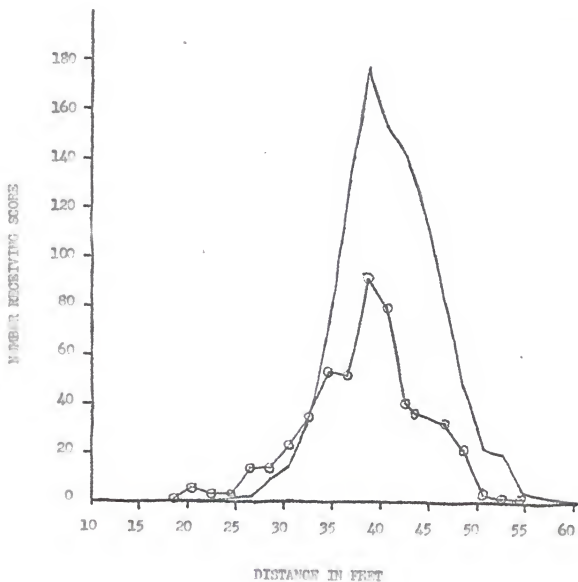
The range of scores and the graph show that Kansas State had more higher scores, while Wake Forest had a greater number of lower scores.

A comparative graph showing the results of the medicine ball put follows.

TABLE 11

COMPARISON OF DISTANCES OF MEDICINE BALL PUT
KANSAS STATE UNIVERSITY AND WAKE FOREST

—————	KANSAS STATE UNIVERSITY	1029 Scores
○—○—○	WAKE FOREST	507 Scores



RESULTS OF THE TOTAL TEST

The following table shows the results of the total test.

TABLE 12

RESULTS OF THE TOTAL TEST

<u>Kansas State</u>							
<u>Classification</u>	<u>Zigzag run</u>		<u>S.B.J.</u>		<u>M.B.P.</u>		<u>Total points</u>
	<u>Time</u>	<u>Points</u>	<u>Dist.</u>	<u>Points</u>	<u>Dist.</u>	<u>Points</u>	
Best Score	19.5-19.9	86	108-110	74	60-61	82	242
Mean	24.17	56	87.46	45	40.77	51	152
Poorest Score	32	6	54-56	4	18-19	15	25

<u>Wake Forest</u>							
<u>Classification</u>	<u>Zigzag run</u>		<u>S.B.J.</u>		<u>M.B.P.</u>		<u>Total points</u>
	<u>Time</u>	<u>Points</u>	<u>Dist.</u>	<u>Points</u>	<u>Dist.</u>	<u>Points</u>	
Best Score	22.5-22.9	67	114-116	81	54-55	73	221
Mean	26.13	44	87.78	46	38.17	47	137
Poorest Score	32	6	54-56	4	18-19	15	25

Analysing the test as a whole one can see by Table 12 that Kansas State's best score point total was 242 points. Wake Forest's best score point total was 221.

The mean score total for Kansas State was 152 points. This was 15 points better than the mean score total of 137 made by Wake Forest. Twelve of the 15 point difference resulted from the zigzag run, where it was noted that probably a discrepancy appeared in the testing. Kansas State students recorded more points, 51 to 47, in the medicine ball put. While Wake Forest students recorded more points, 46 to 45, in the standing broad jump.

The poorest score recorded for both schools was 25 points. This resulted by having a student in both schools score the lowest possible points on the scale used in each event.

CONCLUSION

It was difficult to draw a definite conclusion between the test scores of the Wake Forest students and those of the Kansas State students. The testers were not the same. It was not certain that all conditions were the same.

From the material on hand and assuming everything else equal these conclusions were drawn.

The main difference in the two groups was the results of the zigzag run. Kansas State's times were faster as a whole than the timings from Wake Forest. The best time was 3.0 to 3.5 seconds faster for students at Kansas State. The mean difference showed Kansas State 1.96 seconds faster. It can be assumed that a discrepancy in the testing was present. It might be in the way the course was set-up or in the individuals handling and reading the watches. If no discrepancies were present in the test, then Kansas State has a much quicker and more agile group. It will be interesting to note, in future testing, if this same difference continues to occur between the two groups.

The standing broad jump record of both groups was almost identical. Wake Forest had the best jumper, but the medians were the same.

Kansas State, as a whole, was better in the medicine ball put than Wake Forest. There is no major discrepancy in the comparison though. Kansas State had more fast times, while Wake Forest had more slow times. Another year might show a reversal in each schools position.

The test proved very successful in the placing of the students in the proper activities. In the opinion of this investigator, it will be shown, by other studies that low scores were brought up measurably in one semester, after the student had been placed in wrestling, tumbling or weight training.

RECOMMENDATIONS FOR FUTURE TESTING

The author makes these suggestions on improving the test.

In the zigzag run, six to eight foot poles should replace the soft drink bottles. It also might be wise to use two stop watches. If after another year of testing, under these conditions, Kansas State's times are still faster, a new norm should be established. By doing this the zigzag run will not result in such a high percent of the over all total score.

It might also be wise to have a demonstration of each event given before the entire class before the class is sent through the test.

All testers should be more uniform in the recording and testing procedures. This will enable a more efficient testing program.

It is important that all participants be in their proper gym uniform. No student should be given the test in street clothes or without gym shoes.

ACKNOWLEDGMENTS

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Appreciation is also expressed to Professor T. M. Evans, Chairman of the Department of Physical Education, and to all others who aided in the administration of the test.

A heartfelt thanks must also go to the students who so willingly co-operated in the taking of the test.

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APPENDIX

TABLE 13

Time in seconds	Kansas State's frequency	Wake Forest's frequency
19.5-19.9	1	0
20.0-20.4	4	0
20.5-20.9	6	0
21.0-21.4	20	0
21.5-21.9	49	0
22.0-22.4	75	0
22.5-22.9	105	3
23.0-23.4	129	14
23.5-23.9	116	27
24.0-24.4	132	37
24.5-24.9	101	45
25.0-25.4	83	74
25.5-25.9	61	62
26.0-26.4	52	65
26.5-26.9	21	44
27.0-27.4	22	40
27.5-27.9	15	24
28.0-28.4	13	21
28.5-28.9	9	10
29.0-29.4	5	10
29.5-29.9	3	9
30.0-30.4	1	6
30.5-30.9	1	1
31.0-31.4	2	4
31.5-31.9	1	4
32.0-Above	2	6

TABLE 14.
FREQUENCY OF STANDING BROAD JUMP

Distance in inches	Kansas State's Frequency	Wake Forest's Frequency
114-116	0	1
111-113	0	3
108-110	1	0
105-107	7	13
102-104	22	12
99-101	48	36
96-98	106	43
93-95	127	61
90-92	141	61
87-89	138	54
84-86	151	70
81-83	86	42
78-80	64	44
75-77	50	24
72-74	46	20
69-71	20	9
66-68	7	8
63-65	5	3
60-62	8	3
57-59	0	1
54-56	2	1

TABLE 15
 FREQUENCY OF MEDICINE BALL PUT

Distance in feet	Kansas State's frequency	Wake Forest's frequency
60-61	1	
58-59	0	
56-57	2	
54-55	5	1
52-53	20	1
50-51	22	3
48-49	47	21
46-47	81	32
44-45	117	36
42-43	141	40
40-41	153	79
38-39	176	91
36-37	130	51
34-35	71	53
32-33	34	35
30-31	15	23
28-29	9	14
26-27	2	14
24-25	1	3
22-23	0	3
20-21	0	6
18-19	2	1

A COMPARISON OF THE RESULTS OF THE BARROW MOTOR ABILITY
TEST SCORES OF WAKE FOREST COLLEGE AND KANSAS
STATE UNIVERSITY REQUIRED PHYSICAL EDUCATION
CLASSES, 1962-1963 SCHOOL YEAR

by

WILLIAM WALLACE GUTHRIDGE

B. S., Kansas State University, 1960

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

1963

The physical education program at Kansas State University has recently been changed to two semesters of required classes necessary for graduation.

This school year the Physical Education Staff decided to give the Barrow Motor Ability Test to all students enrolled in required physical education. There were 1029 students from Kansas State who took this test.

The Barrow Motor Ability Test is a three battery test consisting of a zigzag run, standing broad jump, and medicine ball put. It tests respectively; agility, power, and strength. The test was developed by Barrow for partial fulfillment of his degree, Doctor of Physical Education, at Indiana University. He is now head of the Physical Education Department at Wake Forest College.

This study compares the results of the Kansas State students, with a similar group from Wake Forest.

The Kansas State test was given on the Ahearn Gymnasium floor. All physical education staff members administered the test, given the week of September 17-22, 1962. The test scores were used in the placing of students in the different activities offered in the required classes.

In the zigzag run Kansas State's best time was 3.0-3.5 seconds faster than the best time recorded for Wake Forest. The mean for Kansas State in this test was 1.96 seconds faster. Both schools had students in the lowest range, 32 seconds or more. The curves of both schools were about the same, but Kansas State's curve was faster.

The standing broad jump test was almost identical for both schools. Wake Forest had a 6-8 inch better "best" jump. It also had a higher mean, but only by 0.32 of an inch. Both schools had students in the lowest range,

54-56 inches. The two schools were closer in this test than in either of the other two tests.

In the medicine ball put Kansas State's best put was 6-7 feet farther than the best put from the Wake Forest group. Kansas State had a higher mean by 2.59 feet. Again, both schools had students in the lowest range, 18-19 feet.

By awarding points for the best score, mean, and poorest score in each event the following comparisons can be made. Kansas State's best score was 242 compared to 221 for Wake Forest. Both schools had 25 points as a low score. The mean score points were 152-137 in favor of Kansas State. Twelve points of this 15 point difference were recorded in the zigzag run. Quite possibly there was a discrepancy in the testing of this event.

The two schools showed similar results in all areas except the zigzag run. If this discrepancy continues to exist in future testing it is recommended that a new norm be used for Kansas State. In this way the zigzag run will not carry so much weight in the final point total.