

The Correlation of Physical Ability to Culture

The Correlation of Physical Ability to Culture

By

Hubart L. White

Bachelor of Science

Oklahoma Agricultural and Mechanical College

Stillwater, Oklahoma

Submitted to the Department of Physical Education

Oklahoma Agricultural and Mechanical College

In Partial Fulfillment of the Requirement

For the Degree of

MASTER OF SCIENCE

1937

OKLAHOMA
AGRICULTURE & MECHANICAL COLLEGE
LIBRARY
OCT 26 1937

Approval:

E. C. Gallagher
In Charge of Problem

E. C. Gallagher
Head, Department of Physical Education

D. C. M. Tutosh
Dean of Graduate School

Table of Contents

Topic	Page
1. Motor Ability and Culture Test	1-4
2. Correlation Table	5-6
3. Conclusion	7
4. Bibliography	8

The Correlation of Motor Ability to Culture

The Brace "Motor Ability Test" is a test devised of twenty motor ability stunts to be performed. The results of performing the stunts gives the adaptability of a person for motor ability.

A short summary of the stunts are as follows:

Form M.

1. Walk in a straight line, placing the heel of one foot in front of and against the toe of the other foot.
2. Stand, jump into the air and clap both feet together once and land with the feet apart.
3. Lie flat on the back on the floor. Fold the arms across the chest. Raise the trunk to a sitting position. Do not raise the feet above the floor, or unfold the arms.
4. Fold the arms behind the back. Kneel onto both knees. Get up without losing the balance or moving the feet about.
5. Take a front leaning rest position, i.e. place the hands on the floor, arms straight, extend the feet back along the floor until the body is straight. Bend the arms, touching the chest to the floor, and push up again to straight arms. Do this three times in succession and do not touch the floor with the legs or waist.
6. Squat on the toes with feet together and knees out, and hands between the knees with fingers touching the floor. Spring up onto both heels, with legs straight and toes up, and swinging both arms out at the side level with the floor. The feet should then be about eighteen inches apart. Head up repeat the exercise three times rhythmically.
7. Stand with feet together. Jump into the air and make a full turn to the left, landing on the same spot. Do not lose the balance or move the feet after they strike the floor.
8. Jump into the air and clap feet together twice and land with the feet apart.

9. Stand on the right foot. Grasp the left foot behind the right knee. Bend and touch the left knee to the floor, and stand up without touching any other part of the body to the floor, or losing the balance.

10. Hold the toes of either foot in the opposite hand. Jump up and jump the free foot over the foot that is held, without letting go.

Form N.

11. Jump into the air and slap both heels with the hands behind the back.

12. Stand, kick the right foot up so that the toes come at least level with the shoulders.

13. Stand on the left foot. Bend forward and place both hands on the floor. Raise the right leg and stretch it back. Touch the head to the floor, and regain the standing position without losing the balance.

14. Stand with both feet tight together. Bend down, extend both arms down between the knees, around behind the ankles, and hold the fingers together in front of the ankles without losing balance. Hold this position for five seconds.

15. Stand with both feet together. Swing the arms and jump up in the air, making a full turn to the right. Land on the same spot and do not lose the balance.

16. Kneel onto both feet. Extend the toes of both feet out flat behind. Swing the arms and jump to the feet without rocking back on the toes, or losing the balance.

17. Fold the arms across the chest. Cross the feet and sit down cross-legged. Get up without unfolding the arms or having to move the feet about to regain the balance.

18. Stand on the left foot. Hold the bottom of the right foot against the inside of the left knee. Place hands on hips. Shut both eyes, and hold the position for ten seconds, without shifting the left foot about on the floor.

19. Take a squat test position. Rock forward onto the hands, raising the feet from the floor. Support the body on the hands. Hold this position for five seconds.

20. Stand on the left foot with the right foot extended forward off of the floor. Sit down on the heel of the left foot, without touching the right foot or hands to the floor. Stand full up without losing the balance. 1

The physical ability test can be given by the physical educator for two purposes one for homogeneous grouping of the classes in physical education and the other to check to see if the students in physical education are working at the best of their ability.

The results obtained from the Motor Ability test, from one hundred and six freshmen enrolled in Oklahoma A. and M. College in the fall of 1934 were: The mode of the scores ran at 58 which is above the average but within the middle $2/3$ by the test score; and the mean for the test ran at 57.7 which is 7.7 higher than the high school scale.

The meaning of the test scores are as follows:

Test passed	Scale score	Test passed	Scale score
0	19	1	22
2	23	3	26
4	29	5	33
6	35	7	38
8	40	9	43
10	45	11	48
12	52	13	55
14	58	15	61

Test passed	Scale score	Test passed	Scale score
16	64	17	68
18	72	19	76
20	80		

Scale score	Meaning
Above 50	Above average
Below 50	Below average
Between 40 and 50	The middle 2/3
Above 60	The highest 1/6
Below 40	The lowest 1/6 2

The mode of the ages of the freshmen boys was seventeen making their ages for scoring fall in the above scale.

The culture test that results were obtained from was given to the freshmen during orientation week in the fall of 1934 by faculty members of Oklahoma A. and M. College. The results of the orientation test were sent to some of the faculty members and from looking at the results of the test the culture test was chosen for the correlation with the Brace "Motor Ability Test".

The correlations are as follows:

2 Ibid. p. 126

Physical Ability Grades

5

	19	22	23	26	29	33	35	38	40	43	45	48	52	55	58	61	64	68	72	fy	dy	fdy	fd ² y	f	-	
184-up																		12			2	4	8	34	24	
															0		6	9								
144-183															5		1	1			7	3	21	63	15	
															0		6	9								
113-143															0		4	6			3	2	6	12	10	
															0		4	6								
85-112											-4	-3		-1		1	2									
											1	2		-2		2	3									
											-4	-8		-2		2	6			12	15	1	15	15	20	
64-84									0				0		0	0	0	0	0							
									1			3			7	3	7	2	1	26	0	0	0	0		
									0			0			0	0	0	0	0							
48-63									6				2	1	0	-1	-2	-3	-4							
									1			3	1	5	1	5	6	1	20	-1	-20	20	15	35		
									6			6	1	0	-1	-10	-18	-4								
34-47										8	6	4	2	0	-2	-4	-6	-8								
									1	2	4	1	3	2	2	1	1	1	17	-2	-34	68	38	26		
									8	-2	-5	8	0	-4	-8	-6	-3									
22-33										12		6	3	0	-3	-6	-9	-2								
									2		1	1	1	3	3	3	1	15	-3	-45	135	33	23			
									24		6	3	0	-9	-18	-27	-2									
13-21												8					-12									
												1					2			3	-4	-7	28	8	24	
												8					-24									
Fx									8	0	4	4	12	7	22	11	19	18	7	106			-58	371	161	118
dx									6	-5	-4	-3	-2	-1	0	1	2	3	4						43	
fdx									12	0	-16	-17	-24	-7	0	11	38	56	28	51						
fd2x									72	0	64	63	48	7	0	11	76	162	112	615						

Culture Grades

$$c_y = \frac{-58}{106} = .547$$

$$c_x = \frac{51}{106} = .481$$

$$c^2y = .298$$

$$c^2x = .231$$

$$y = \frac{\sqrt{371} - .298}{106} \times 17.5 \quad x = \frac{\sqrt{615} - .231}{106} \times 4$$

$$1.79 \times 17.5$$

$$2.36 \times 4$$

$$y = 31.325$$

$$x = 9.44$$

$$r = \frac{\frac{43}{106} - .547 \times .481}{1.79 \times 2.36}$$

$$\frac{.142517}{4.2244}$$

$$r = .3373$$

r means the coefficient of correlation and it is interpreted as: .40 to .60 is fairly substantial, above .65 is considered as high, and below .40 is regarded as low correlation. 3

Concluding from the evidence of the correlation of physical ability to culture there is no evidence for a person to be adapted in physical ability and also be adapted in culture.

From observing the results of the physical ability test one can believe that college freshmen seventeen years of age are 7.7 above the average of high school boys at seventeen years of age in physical ability.

Bibliography

- Brace, D. K.: Physical Ability Test; A. S. Barnes and Company;
New York; 1930
- Orientation Test Results: Oklahoma A. and M. College; Stillwater,
Oklahoma; Fall 1934
- Palmer, Irene: Test and Measurements; A. S. Barnes and Company;
New York, 1934
- Ruch, G. M.: The Objective or New-type Examination; Scott,
Foresman and Company; Chicago; 1929