02 - KINEANTHROPOMETRIC STUDENTS: SCIENTIFIC LEGITIMACY AND EMPIRIC KNOWLEDGE

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Introduction

Among its several teaching contents, Physical Education has the sport practice as the most inherent to its pedagogic developments. The objective of this article is to analyze kineanthropometric measures and their conditioning aspects which build up stereotypes that remain in the school Physical Education determining standards for the sport practice choice or onset.

The sociopolitical sport context presents scenarios of debates, among Physical Education professionals and also other professionals, who point out standards and physical biotypes that condition or determine the practice of certain sports. As an example, we have the artistic gymnastics labeled as a modality of "short athletes", being opposed to basketball and volleyball that valorize the player's height.

In the Physical education classes, at schools, this collective thought has been reinforced that the sport is pointed out as preference, or as performance possibility and high efficiency, by observing the typology of the anthropometric standards.

Talking about a sporting modality, the athletics has been indicated for students in agreement with their anthropometric measures. Physical Education, at school, in the search of physical fitness, accomplishes a role parallel to the sport. Its work is revealed similar in the comparisons with the institutionalized sport, for students are indicated to begin the training in agreement with their biotypic characteristics. Ferreira (1996), when researching ten textbooks about athletics, published in Brazil, highlighted that nine of them have their focus on the high efficiency performance aspect.

Braga (1990), in research accomplished in the region of Piracicaba/SP, obtained from teachers and students the statement that the modality of athletics is not part of the preference or the programmatic contents of Physical education, at elementary and secondary schools. The research has revealed that, although the knowledge of that modality is not part of the context of the contents of the schools, there is greater number of participants in that modality, in school games, in comparison with collective modalities. In spite of the fact that they do not have knowledge of the technical movements, the students participate and are chosen according to the presented anthropometrical characteristics.

In the daily routine of teaching staff, in either performing school pedagogics or at the sporting meetings, the teacher, coming across a student holding certain anthropometrical characteristics, reduces the horizon of that student's motive experiences, because, prematurely, directs him/her for sportive practice of a certain modality, limiting him/her of other movements.

Facts as that have been happening daily and it is not necessary to show references in order to make us sure of that reality. The continuity of those events in the Physical Education classes is what makes us react to verify, after an application of a battery of tests, if there are advantages of the taller students over the students that physically present shorter anthropometrical standards/measures.

Objectives

The present study aims at studying and analyzing the aspects concerning the performances of the elementary school students, with age between twelve and thirteen years and six months old, as for his/her motive performance in tests directly related with the movements of certain modalities of athletics.

The objective has as its purpose to answer if the results obtained in modalities related with movements of the athletics present similarities as for the motive performance, in relation to the kineanthropometric characteristics in elementary school students.

Methodological Process

The study involved 49 students of both sexes, being 23 males and 26 females, from the Teaching Municipal Network that attend the Nucleus of Athletics of the Municipal City hall of Vitória, located at CEFET-ES. According to the literature, a child starts to possess a total assimilation capacity, not only relative to the reasoning linked to the natural science, but also in the learning sense regarding the motricity and to his/her execution. In that way, "[...] *we are of the opinion that the orientation for the sporting basic forms, in due time and correct movements, regarding the rough technomotive form, should take place at the age of 11-12 years old [...]"* (KIRSCH, 1983, p. 19) (Tables 1 to 6)

Data Collection

In the first moment, anthropometrical measures were collected from the students:

Height of Vertex (HVRTX) it is characterized by the distance between the vertex and the plantar area (DE ROSE, 1984).

Total Corporal Mass (MC) it is characterized by the gravitational attraction force exerted by the earth, which implicates corporal weight strictly speaking (DE ROSE, 1984).

For the mensuration of the parameters, a Filizola weighing scale equipped with an anthropometer was used.

In the second moment, motive performance tests relevant to the athletics modality were applied. According to Anjos (2001, p. 54), "[...] the 50 meter modality is adequate to measure the students' speed in the age from eleven to thirteen years old in both sexes."

- 50-meter free-style the test was accomplished in couples**.** Each couple ran three times and the individual classification was obtained by the best time of the three series.

Two chronometers were used for each student

- 600 meters for the male students, that test was accomplished in two sets, being one of eleven participants and the other with twelve; in the female students, there were two sets with thirteen participants.

- Long jump the participants' performances were analyzed in their jump phases: **stopped jump (SDP)** in which the student stays stopped at the edge of the sand box and he/she executes a jump forward with impulse of both legs, being accomplished three jumps by student, the best jump is written down; **impulse jump (SDI)** the student chooses the distance in the jump track and, in speed, he/she impels with one of his/her legs the closest possible of the sand box, performing the jump. There were two attempts for each student, marking the largest distance of the jump. The measurements were accomplished from the place of the student's impulse.

- High jump (SA) the convenient materials for this modality: mattresses, altimeters and horizontal bar were used. The students could participate in any style.

All the tests were accomplished in the athletics track of *CEFET-ES*. After the tests, the students were divided in three groups. The classification was according to the collected *height*. In that way, the groups were:

a) Male:

- Group Y: from the 1st. to the 7th higher;
- Group X: from the 8th to the 15th higher;
- Group Z: from the 15th to the 23rd higher.

b) Female:

- Group Y: from the 1st. to the 8th higher;
- Group X: from the 9th to the 17th higher;
- Group Z: from the 18th to the 26th higher;

After the separation in groups, the averages of each test and parameter were accomplished, aiming at the comparison for the final conclusions. In order to reach such averages, the following formula was used, according to Stevenson (1981, p. 45): X =?X/N, where:

X is the average;
X is the whole amount of the events;
N number of times in which the event took place.

Male

Table 1: Group Y – 1st to the 7th

Students	Age	HVRTX	MC	50m	600m	SDP	SDI	SA
1st	13.5	1.68	52.1	07"7	2'09	1.96	3.48	0.90
2nd	12.3	1.65	47.5	07"6	2'07	2.18	3.72	1.20
3rd	13.1	1.64	45.0	07"8	2'23	1.74	3.40	0.85
4th	13.6	1.60	48.1	07"8	2'12	2.05	3.70	1.10
5th	13.4	1.59	43.0	09"6	3'34	1.90	3.23	0.90
6th	12.7	1.56	38.9	09"1	2'37	1.84	3.05	1.25
7th	12.6	1.55	38.5	08"0	1'54	2.13	4.19	1.15
X	***12.6***	***1.61***	***44.7***	***08"2***	***2'25***	***1.97***	***3.46***	***1.05***

Table 2: Group X – 8th. to the 15th

Student	Age	HVRTX	MC	50m	600m	SDP	SDI	SA
8º.	13,2	1,54	38,2	07"3	2'07	2,07	3,29	1,00
9º.	13,4	1,52	46,3	09"1	3'11	1,67	2,30	0,80
10º.	12,4	1,51	39.6	09"0	2'44	1,70	3,41	0,80
11º.	12,0	1,51	38,9	07"8	2'07	1,92	3,74	1,10
12º.	12,2	1,50	39,7	08"0	2'13	2,25	3,38	1,10
13º.	12,2	1,48	37,6	08"6	2'47	1,88	3,25	0,85
14º.	13,2	1,48	39,0	08"1	2'11	1,75	3,45	1,00
15º.	13,3	1,48	34,4	09"0	3'03	1,55	2,93	1,05
X	***12,7***	***1,50***	***39,2***	***08"3***	***2'43***	***1,85***	***3,22***	***0,96***

Table 3: Group Z – 16th. to the 23th

Alunos	Idade	HVRTX	MC	50m	600m	SDP	SDI	SA
16th.	13,3	1,47	34,6	08"2	2'49	1,79	3,30	0,80
17th.	12,4	1.47	37,6	07'6	2'18	1,83	3,54	0,85
18th.	12,9	1.46	35,1	08"6	2'19	1,61	3,40	0,95
19th.	12,3	1.45	33,2	08"5	3'22	1,40	3,09	1,05
20th.	13,2	1.44	36,2	08"7	2'23	1,76	2,84	1,10
21th.	12,4	1.37	34,6	08"6	2'20	1,78	2,98	1,00
22th.	13,3	1.36	35,6	08"3	2'24	1,85	3,07	0,90
23th.	12,8	1,32	28,0	08"3	2'26	1,72	3,34	0,85
X	***12,8***	***1,42***	***34,3***	***08"4***	***2'37***	***1,72***	***3,19***	***0,94***

Female

Table 4: Group Y – 1st to 8th

Students	Age	HVRTX	MC	50m	600m	SDP	SDI	SA
1st	13.2	1.67	69.8	08"5	4'21	1.10	2.13	0.75
2nd	13.6	1.66	53.6	08"3	2'55	1.53	2.53	0.85
3rd	12.6	1.66	63.5	08"2	3'28	1.57	3.00	0.70
4th	12.7	1.62	63.5	09"6	3'43	1.21	2.36	0.80
5th	12.2	1.62	43.3	08"5	2'44	1.49	2.70	0.95

Results

In the male group, in both 50 meters and 600 meters, stopped long jump, impulse long jump and high jump, all the results pointed a performance of the taller students' groups (Y).

In the female group, the results came distributed in homogeneous way in the three groups: the taller students' group (Y) obtained two favorable results, one in the 50 meters and other in the impulse long jump; the students' group with medium height (X) obtained two favorable results, one in the stopped long jump and the other in the high jump; the students' group classified in the group (Z) obtained a favorable result. In the 600 meters, however, in their results, that same group approached of the best results obtained in the competitions of the impulse long jump and in the 50 meters. In that way, we understand there is not a distinction group, as for the results, in the extent of the three female groups.

For effect of this study, the classifications were made in accordance with the height parameter, of each student, from the average of h > to h <; the comparisons performed for the final conclusions were due to the averages reached by the groups, within the modalities in tests and not individually. We exemplify the case of the student 17, who is classified in the 17th place and in the 50 meters his result was of 07"6 seconds. If the classification were made according to the best results, he would be appearing in the 3rd. position of the 1st group.

In this study, it was observed that in many cases there were similarities between height and results, however it is necessary to understand that, in order to get to a relationship between parameters of this magnitude, it needs applications with larger contingents for protocol validation considering it legitimate.

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KINEANTHROPOMETRIC STUDENTS: SCIENTIFIC LEGITIMACY AND EMPIRIC KNOWLEDGE

The objective of the study is to analyze the results obtained in performance tests with *Elementary School* students from the *Municipal Education Network of Vitória/Espírito Santo,* and to compare the relationship between anthropometric measure and result attained in the motor tests. A total of 49 students ranging from 12 to 13.6 years of age were tested, consisting of 23 males and 26 females. The tests applied were: 50-meter flat race, 600 meters, standing long jump (SDP) and running jump (SDV) and high jump (S). The students submitted to the measurement of the *vertex* height, pursuant to (DE ROSE, 1984) and of the *Total Body Mass* (MC). The students were distributed in two groups, one of males and one females, and were divided up into three subgroups, (Y), (x) and (Z). The mean results of each test and parameter were obtained after distribution between the subgroups, aiming at comparison for conclusions. X=X/N, from Stevenson (1981), was used to obtain the mean results. It was concluded that male students from group 1 achieved the best results. A fact that we did not identify in the female groups, where the results were divided among the three groups. Key words: Physical Education. Anthropometry. Tests.

TESTS CIÉANTHROPOMÉTRIQUES CHEZ DES ÉTUDIANTS : LÉGITIMITÉ SCIENTIFIQUE ET CONNAISSANCE EMPIRIQUE

L'étude a pour objectif d´analyser les résultats obtenus dans les tests de performance d´étudiants de L´*Enseignement Fondamental du Réseau Municipal d´Education de Vitória/ES* et de comparer le rapport entre la mesure anthropométrique et le résultat atteint dans les tests moteurs. 49 étudiants entre 12 et 13,6 ans ont été analysés, 23 du sexe masculin et 26 du sexe féminin. Les tests appliqués furent : 50 mètres ras, 600 mètres, saut à distance arrêté (SDP) et en vitesse (SDV) et saut en hauteur (S). Les élèves ont été soumis à la mesure de hauteur du *vertex*, selon (DE ROSE, 1984) et de la *Masse Corporelle Totale* (MC). Les élèves ont été répartis en deux groupes, un masculin et un féminin, et sous-divisé en trois sous-groupes, (Y), (x) et (Z). Après la répartition, ont été réalisées de moyennes de chaque test et paramètre, de façon à comparer pour en tirer les conclusions. Pour atteindre les moyenne de Stevenson (1981) a été utilisé, où X=SX/N. On en a conclu que les élèves des groupes masculins qui font partie du Groupe 1, avaient obtenu les meilleurs résultats. Fait que nous n'avons pas identifié dans les groupes féminins, où les résultats ont été partagés entre les trois groupes. Mots-clef : Education Physique. Anthropométrie. Tests.

PRUEBAS CINEANTROPOMÉTRICAS EN ESCOLARES> LEGITIMIDAD CINETÍFICA Y CONOCIMIENTO EMPÍRICO

El estudio tiene como objeto analizar los resultados obtenidos en tests de performance de estudiantes de la *Enseñanza Fundamental* de la *Red Municipal de Enseñanza de Vitoria/ES* y comparar la relación entre las medidas antropométricas y los resultados alcanzados en los tests motrices. Se analizó a 49 estudiantes con edades de 12 a 13,6 años de edad, siendo 23 del sexo masculino y 26 del sexo femenino. Los tests aplicados fueron: 50 metros llanos, 600 metros, salto en distancia parado (SDP) y con velocidad (SDV) y salto en altura (S). Los alumnos se sometieron a la medición de la altura del *vértex*, (conforme DE ROSE, 1984) y de la *Masa Corporal Total* (MC).Los alumnos se distribuyeron en dos grupos, uno masculino y otro femenino, y fueron subdivididos en tres subgrupos, (Y), (X) y (Z). Después de la distribución se realizaron mediciones de cada prueba y parámetro, teniendo en mira la comparación para las conclusiones. Para el alcance de las medias se utilizó Stevenson (1981), donde X=X/N. Se concluyó que los alumnos de los grupos masculinos que se encuentran en el grupo 1, alcanzaron los mejores resultados. Este hecho no fue identificado en los grupos femeninos, donde los resultados quedaron divididos entre los tres grupos. Palabras clave: Educación Física. Antropometría. Tests.

TESTES CINEANTROPOMÉTRICOS EM ESCOLARES: LEGITIMIDADE CIENTÍFICA E CONHECIMENTO EMPÍRICO

O estudo tem como objetivo analisar os resultados obtidos em testes de performance de escolares do *Ensino Fundamental* da *Rede Municipal de Ensino de Vitória/ES* e comparar a relação entre medida antropométrica e resultado alcançado nos testes motores. Foram analisadas 49 escolares com idades de 12 a 13,6 anos de idade, sendo 23 masculino e 26 feminino. Os testes aplicados foram: 50 metros rasos, 600 metros, salto em distância parado (SDP) e em velocidade (SDV) e salto em altura (S). Os alunos submeteram à mensuração da altura do *vértex*, conforme (DE ROSE, 1984) e da *Massa Corporal Total* (MC).Os alunos foram distribuídos em dois grupos, um masculino e um feminino, e subdividido em três sub-grupos, (Y), (x) e (Z). Após distribuição foram realizadas médias de cada teste e parâmetro, com vistas à comparação para as conclusões. Para alcance das médias utilizou-se de Stevenson (1981), onde X=X/N. Concluiu-se que, os alunos dos grupos masculinos que se encontram no grupo 1, alcançaram os melhores resultados. Fato que não identificamos nos grupos femininos, onde os resultados ficaram divididos entre os três grupos. Palavras-chaves: Educação Física. Antropometria. Testes.