

STUDY ON THE LEVEL OF SOMATIC DEVELOPMENT IN EIGHTH GRADE BOYS

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Abstarct

The discipline of physical education and sports through its means leads to the growth and development of the human body. Within the activities carried out during classes, physical education must achieve its objectives, by maintaining an optimal state of health, developing motor skills, learning motor skills and practicing physical exercises. Identifying the anthropometric profile of secondary school students could lead to the optimization of calendar planning and, why not, to the adaptation of educational programs to the discipline of physical education according to somatic development. The main goal is to determine the anthropometric profile of the 8th grade boys from the Iorgu Vârnav Liteanu Technological High School. In the constatative study, I studied specialized works on physical education, used the method of observation, the method of somatic evaluation and systematized the obtained data.

Introduction

Anthropometric assessment is a means of estimating physical development centered on measurements of the human body, on certain segments or on the whole body. The main aspect of the anthropometric evaluation is represented by the comparison of the results from a mathematical point of view, through numbers, graphs, activity that requires precision and correctness [4].

In the beginning of puberty, there is an increase in the morpho-functional indices that change height and weight faster in girls than in boys. Consequently, according to several authors [1, 13], girls aged between 10 and 14 are better developed than boys, are taller, have a greater body mass than boys of the same age, and then they latter to surpass the girls in height and weight. Along with the accelerated growth of the body, there will also be an increase in the level of organs, devices and systems in the somatic sphere of each child. We can specify about the locomotor, genital and respiratory apparatus that they have an accelerated growth during this pubertal period, and the lymphoid organs, the thymus and the pineal gland develop until puberty, after which they stagnate. In order to continue sports activities and avoid abandoning them, the teacher must be very careful how he chooses the exercises and how he doses the effort so that the students participate with pleasure.

From the perspective of specialists [2, 3, 14], this increase is more pronounced in the lower limbs, then the upper limbs, the trunk lengthens and the chest narrows. Through the lens of these body changes, visible to the naked eye, the organs in the chest are less developed, causing difficulties in the sports activities in which the child is involved. Due to a low capacity for adaptation and functional resistance of the cardiovascular and respiratory apparatus to physical exertion at a higher level, fatigue, dizziness and heart rhythm disorders often appear. From the point of view of the nervous system, there is an increase in the volume of the brain and the growth of association fibers that increase the functional connections in different areas.

Each stage of development corresponds to a certain age characterized by the existence of specific processes for that period. The specific processes that occur during the period of psychic development are categorized as psychic particularities of age. The appearance and formation of new mental development processes indicate that the child is moving from one stage to another higher stage, adapting to the social and natural environment in which he lives. With the mental maturation of the child, the spatial-temporal orientation develops more pronounced, the thinking process takes a different form, and the perceptions become clearer. During puberty, the child is willing to work with tasks with a greater degree of difficulty, showing interest and curiosity for everything new. At the same time as the changes that the body has, a state of discomfort appears consisting of an irascible, slightly violent behavior, states of excessive shyness. Also during this period all children want to implement their rules, personal ideas and the desire for affirmation increases [5].

From the point of view of motor development, due to the growth of the cerebral cortex and the nervous processes of excitation and inhibition, the level of improvement of motor qualities will also increase. Through this motor development, speed [11] progresses by leaps and bounds, followed by the development of skill, this period being a beneficial one for these two motor qualities. Also during the puberty period, the muscles that increase the development of strength in speed regime in the form of relaxation also develop. Strength and resistance [10] in secondary school classes are more difficult to develop, the teacher being very careful in choosing the means taking into account the particularities of the students. These particularities refer to the degree of difficulty of the exercises, the time allocated to them, fluency, work speed, expressiveness.

Practicing sports games leads to increasing the quality of life, reducing the frequency of diseases and promoting a correct and healthy lifestyle [7, 8]. Also, physical exercise practiced since childhood contributes to the harmonious development of the human body, qualities and motor skills [6, 9,12].

At the school level, health and harmonious physical development are important prerequisites for the qualities, capacities and main attributes of schoolchildren. The favorable change in the state of health, increasing the body's ability to exercise, through the systematic exercise of vital functions and adaptation to the environment, as well as the formation of individual and collective hygiene skills, are basic models of the need and value of school physical education. Physical education in school provides an excellent opportunity to learn and practice the skills needed to improve fitness and health throughout life.

Research methodology and organization

The students involved in the constitutive study are from the 8th grade at the "Iorgu Vârnav Liteanu" Technological High School, Liteni town, Suceava County, 18 boys, and the measurements took place in the high school gym.

The methods that led to the realization of this study were: the bibliographic study method - the study of specialized literature, the method of anthropometric measurements - the assessment of the degree of somatic development of the students, the statistical method - the interpretation from a mathematical point of view, the graphic and tabular method - the presentation of data according to collection and measurement through tables and graphs.

Results and their interpretation

In order to carry out this confirmatory study, two measurements were carried out. Eighth grade boys were somatically assessed at the beginning and end of the school year, representing baseline and final measurement.

The measurements were focused on the following somatic indicators: height, body weight, bust height, abdominal circumference, arm span and sole length. A digital scale, tape measure and a tape measure were used to obtain this data.

The data obtained are centralized and represented graphically for interpretation.

Table 1. Initial and final anthropometric measurement, 8th grade

Name	Height		Body weight		Bust height		Abdominal circumference		Arm span		Foot length	
	M ^I	M ^F	M ^I	M ^F	M ^I	M ^F	M ^I	M ^F	M ^I	M ^F	M ^I	M ^F
A.D.	158	166	39	43	78	78	65	67	163	163	25	25
A.M	179	179	61	62	89	89	69	70	182	182	27	27
B.R.	150	154	34	38	77	77	61	62	153	153	23	24
C.A.	164	168	67	75	84	86	78	80	162	162	26	27
C.C.	170	176	55	62	86	86	68	72	180	179	26	26,5
D.A.	167	172	54	58	86	87	69	73	170	169	26	26
F.G.	174	178	50	54	91	91	67	68	173	173	27	27
G.E.	176	177	55	58	82	82	71	74	180	179	27	27
H.I.	147	154	38	43	70	70	69	74	150	150	22	23
I.C.	177	180	59	59	84	84	70	70	175	175	27	27
J.A.	164	164	47	65	83	85	68	72	167	167	25	26
L.A.	151	155	40	45	76	78	63	68	160	159	24	24,5
L.V.	170	176	55	62	86	86	68	72	180	179	26	26,5
M.M	167	172	54	58	86	87	69	73	170	169	26	26
N.A.	174	178	50	54	91	91	67	68	173	173	27	27
N.C.	176	177	55	58	82	82	71	74	180	179	27	27
P.E.	147	154	38	43	70	70	69	74	150	150	22	23
T.C.	177	180	59	59	84	84	70	70	164	175	27	27
A _a	32	26	33	37	21	21	17	18	32	32	5	4
X	166	170	50,56	55,33	82,50	82,94	68,44	71,17	168,44	168,67	25,56	25,92

+/-S	10,98	9,81	9,31	9,51	6,18	6,21	3,54	3,87	10,55	10,40	1,72	1,41
Cv%	6,61	5,77	18,41	17,18	7,49	7,48	5,16	5,44	6,26	6,16	6,74	5,43

The results obtained at the initial measurement, the height anthropometric indicator is equal to 166cm, while at the control test we have a significant increase of 4cm, the average value being equal to 170cm. Analyzing the data obtained regarding body weight, it can be seen that there is an increase of 4.77 kg from one test to another (Figure 1.1.).

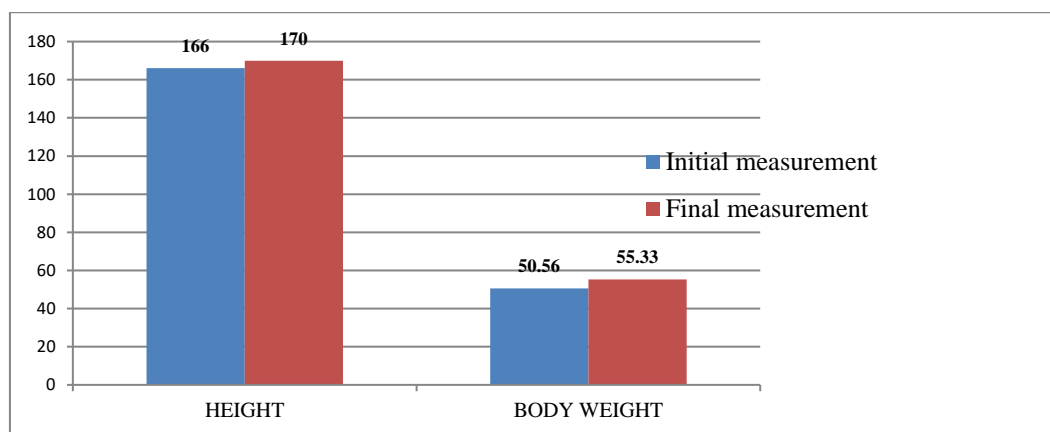


Fig. 1.1. Comparative analysis of anthropometric results for height and body weight

Comparing the measurements taken at the height of the bust, it can be seen that there is a very small difference, starting from 82.5cm and reaching 82.94cm. The average of the results obtained at the final test for the somatic indicator abdominal perimeter, shows us a difference of 2.56 cm greater than at the initial test, where we achieve an average equal to 68.44 cm (Figure 1.2.).

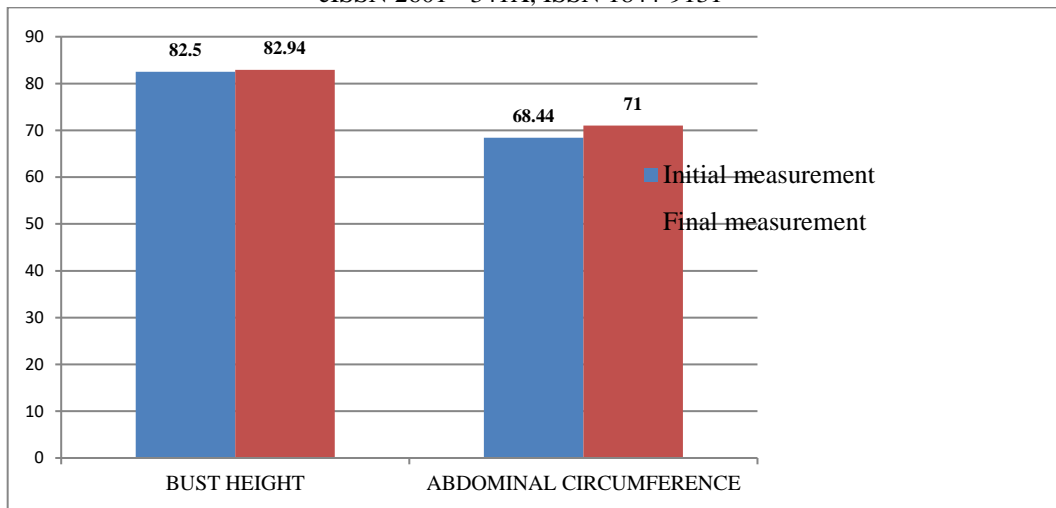


Fig. 1.2. Comparative analysis of anthropometric results in bust height and abdominal circumference

At the initial measurement, at arm span, we obtain an average of the results equal to 168.44cm, and at the measurement we have an average of 168.67, with no significant values. As for the length of the sole, we obtain an average value of 25.56cm at the initial test, while at the final measurement we have an average of 25.92cm (Figure 1.3.). We observe in the two analyzed indicators that they do not register significant differences.

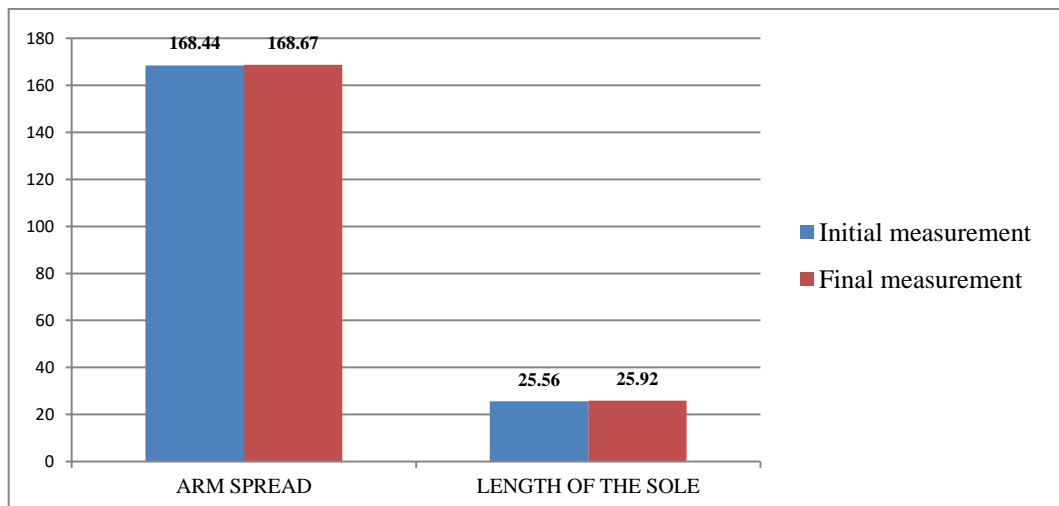


Fig. 1.3. Comparative analysis of anthropometric results for arm span and foot length

Conclusions

Analyzing the results obtained by the boys who participated in the confirmatory experiment, it can be seen that there were no significant differences in all the tests performed, except for the anthropometric indicator where body weight was measured.

In order to increase muscle mass or increase body size in eighth grade students, a program containing special physical exercises and means specific to sports games must be created and applied during physical education and sports classes.

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