

FINDING STUDY OF PHYSICAL DEVELOPMENT OF PRIMARY SCHOOL STUDENTS

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Abstract:

Ontogenetic motor development is largely dependent on the location and time of exercise. If the development of motor skills is hindered, for example, by a small space or by the lack of an incentive and a coordinator, the deficit of movements will have repercussions on the whole development of the child, because, among other things, movement is an important means of enriching knowledge.

Introduction

The function of improving physical development is part of the category of specific functions and has a priority role, especially in the physical education of the young generation. The positive role of harmonious physical/bodily development, of superior somatic/morphological and functional/ physiological indices, for the life and activity of people of all ages is too well known, not being denied or contested. [2], [3].

Physical development is one of the most important components in the field, directly related to a priority goal: improving human development. The aim is, on this level, to obtain superior and harmonious indices, in optimal correlation with the age of the subjects. The improvement of these indices through the activities of physical education and sports is possible - but only within certain limits - if it is acted systematically not only through lessons, but also through the independent activity in the free time of the subjects.[1], [4]

Material and method

The research took place during the school year 2021 - 2022 at the Gymnasium School No. 1 Vicovu de Sus, Suceava County, the subjects subject to research being represented by students of grades I - IV, girls and boys. The school does not have a gym or a specially designed space for physical education classes in bad weather (low temperatures during the cold season or rain). They take place in students' classrooms in makeshift spaces.

The experiment group consisted of:

- 18 students enrolled in the first grade (9 girls și 9 boys);
- 17 students enrolled in the second grade (7 girls și 10 boys);

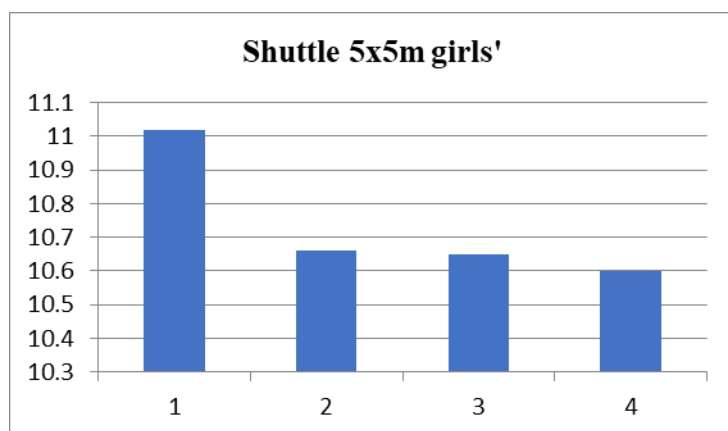
- 19 students enrolled in the third grade (9 girls și 10 boys);
- 16 students enrolled in the fourth grade (6 girls și 10 boys).

Discussions

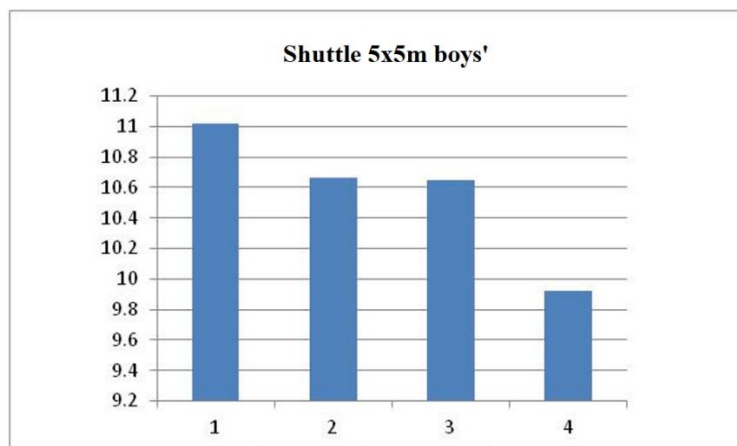
Shuttle 5X5m (seconds)

Statistical indicator	Class							
	I		II		III		IV	
	Girls	Boys	Girls	Boys	Girls	Boys	Girls	Boys
Arithmetic mean	11.8	11.02	11.08	10.66	11.0	10.65	10.61	9.92
Median	11.7	11.2	11.2	10.6	11.0	10.4	10.6	9.85
Standard deviation	0.84	0.44	0.42	0.28	0.42	0.76	0.34	0.62
Minimum	13.4	11.6	11.9	11.1	11.7	12.0	11.1	11
Maximum	10.7	10.3	10,6	10.2	10.3	9.9	10.2	9,0
Amplitude	2.7	1.3	1.3	0.9	1.4	2.1	0.9	1.0
Coefficient of variation (%)	7.12	3.9	3.81	2.72	3.8	7.2	3.2	6.31
Above / below average	55,5% / 44,5%	44.4% / 55.6%	42.8% / 57,2%	70% / 30%	55.5% / 44.5%	60% / 40%	50% / 50%	60% / 40%

Graphical representation of the girls' arithmetic mean:



Graphical representation of the boys' arithmetic mean

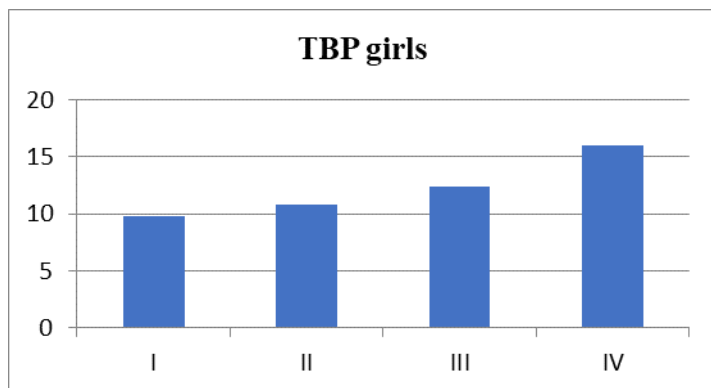


From the two representations we can see an obvious reduction of the average time required to cover the distance of 25m, in "shuttle" mode for both girls and boys. We can attribute this both to the physical development of the subjects and to the motor experience gained from one year to another. The values of the coefficient of variation (2.72% - 7.2%) indicate a very good homogeneity of the classes from this point of view. [9]

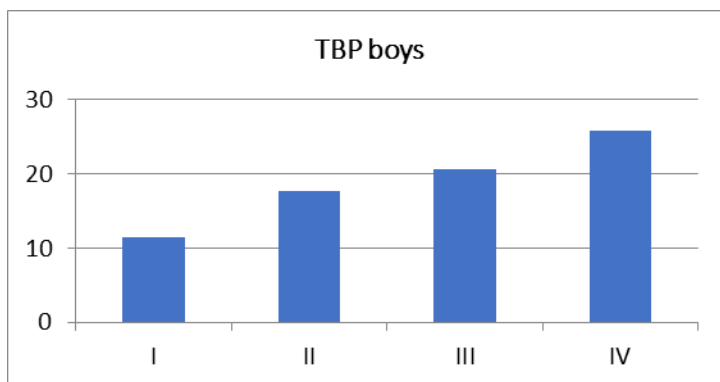
Throwing the ball in place (m)

Statistical indicator	Clasa							
	I		II		III		IV	
	Girls	Boys	Girls	Boys	Girls	Boys	Girls	Boys
Arithmetic mean	9.77	11.44	10.85	17.6	12.44	20.7	16	25.8
Median	9	11	11	18.5	12	19	17	26
Standard deviation	1,54	1,81	1.45	3.66	3.11	4,84	2.58	3.09
Minimum	8	9	9	12	8	14	12	20
Maximum	13	15	13	23	20	27	19	30
Amplitude	5	6	4	9	12	13	7	10
Coefficient of variation (%)	15.86	15.87	11.55	20.8	25.07	23.4	16.13	11.97
Above / below average	33.33% / 66.6%	33.33% / 66.6%	57.14% / 42.86%	60% / 40%	33.33% / 66.6%	40% / 60%	66.66% / 33.33%	70% / 30%

Graphical representation of the girls' arithmetic mean:



Graphical representation of the boys' arithmetic mean:



Analyzing the graphical representations of the results obtained when throwing the sheep ball (AMO) on the spot we find a constant improvement of them from class to class for both girls and boys. In girls, the average throwing distance increases from 9.77m (in class I) to 16m as it measures the throwing distance of the sheep ball in class IV; and for boys, the average throwing distance in class I is 11.44 m, reaching 25.8 m in class IV. [6]

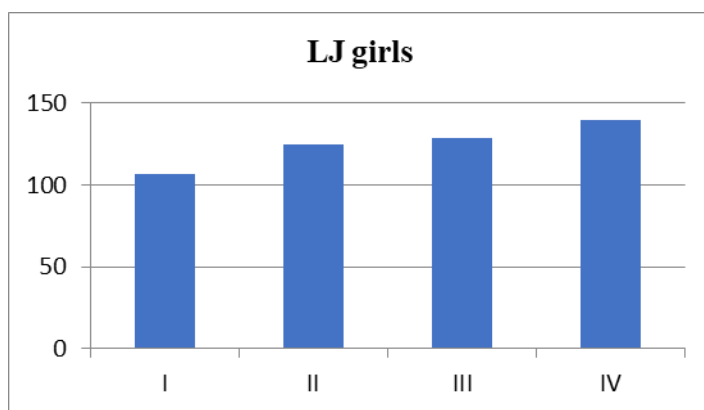
The standard deviation varies inconsistently, being between 1.45m and 4.84m and the coefficient of variation is between 11.55 - 25.07% which means that we are dealing with relatively homogeneous groups from this point of view, data scattering is medium, the arithmetic mean being sufficiently representative. [9]

Long jump (cm)

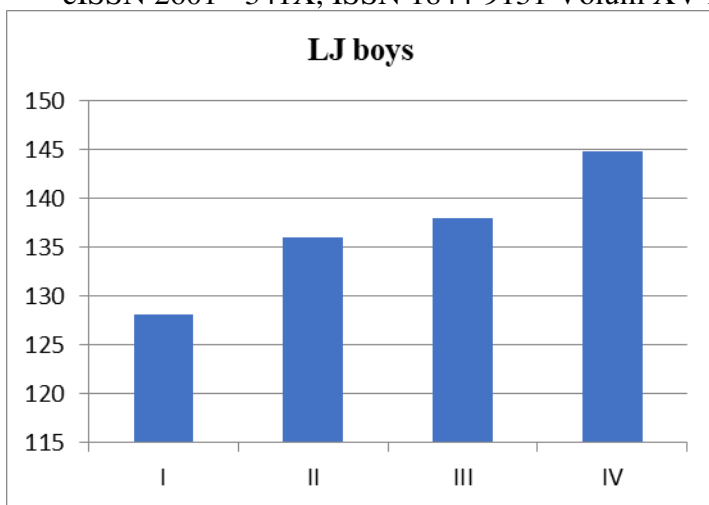
	Clasa
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Statistical indicator	I		II		III		IV	
	Girls	Boys	Girls	Boys	Girls	Boys	Girls	Boys
Arithmetic mean	106.66	128.11	125	136	128.33	138.05	139.16	144.8
Median	110	130	120	137.5	125	130	140	142.5
Standard deviation	6.69	9.46	14.39	9.94	11.95	16.00	13.03	12.9
Minimum	95	110	105	120	105	115	115	125
Maximum	115	140	145	150	150	158	155	165
Amplitude	20	30	40	30	45	43	40	40
Coefficient of variation (%)	6.27	7.38	11.51	7.31	9.31	11.59	9.36	8.93
Above / below average	55.5% / 44.5%	66.66% / 33.33%	42.85% / 57.15%	50% / 50%	44.44% / 55.6%	50% / 50%	50% / 50%	50% / 50%

Graphical representation of the girls' arithmetic mean:



Graphical representation of the boys' arithmetic mean



Analyzing the graphical representations of the results obtained in the long jump (SLL) we find a constant improvement from class to class in both girls and boys. In girls, the length of the jump increases from 106.66cm (in class I) to 139.16cm as it measures the average length of the jump in class IV; and in boys the average jump length in class I is 128.11cm, reaching 144.8cm in class IV. [9]

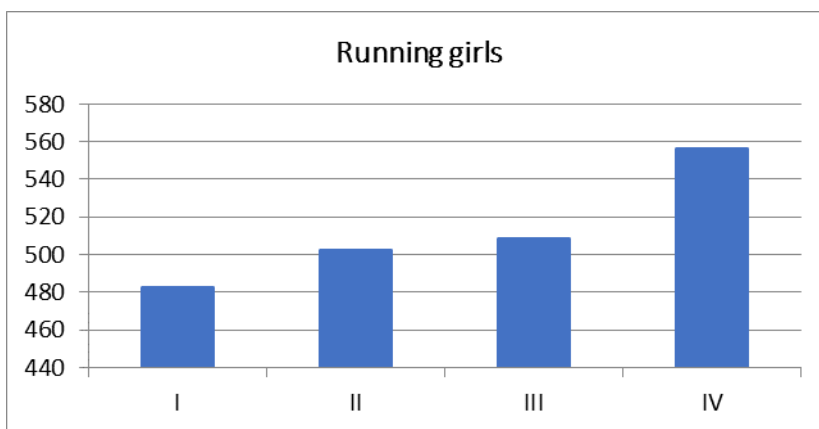
The standard deviation varies inconsistently, being between 6.69 cm and 16.00 cm and the coefficient of variation is between 6.27% - 11.59% (less than 15%) which means that we are dealing with homogeneous groups from this point of view. view, the data spread is very small, the arithmetic mean being representative. [6]

Running (seconds)

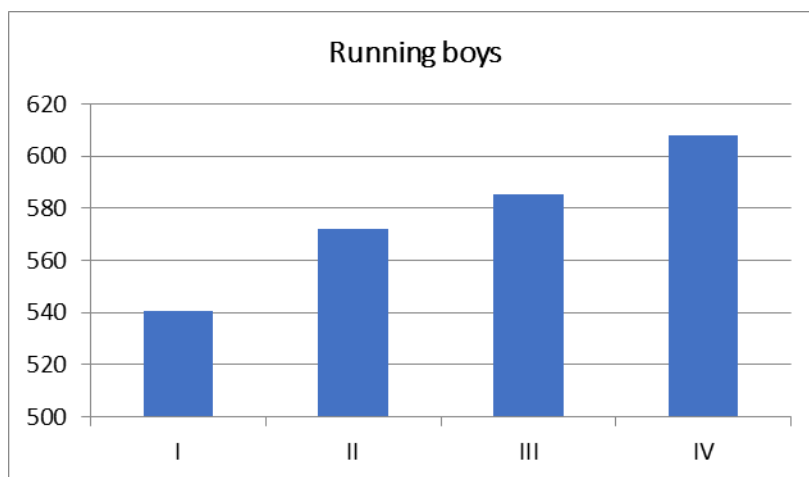
Statistical indicator	Clasa							
	I		II		III		IV	
	Girls	Boys	Girls	Boys	Girls	Boys	Girls	Boys
Arithmetic mean	482.77	540.55	502.14	572	508.88	585.5	556.66	608
Median	490	530	500	590	495	577.5	572.5	612.5
Standard deviation	34.09	21.40	45.5	56.04	69.56	78.81	71.04	57.93
Minimum	420	515	430	470	350	450	430	500
Maximum	525	585	570	670	600	690	630	670
Amplitude	105	70	140	300	250	240	200	170
Coefficient of variation (%)	7.06	3.96	9.06	9.79	13.67	13.46	12.76	9.52

Above / below average	55.5%/ 44.5%	33.33%/ 66.66%	42.85%/ 57.15%	70%/ 30%	44.44%/ 55.56%	50%/ 50%	50%/ 50%	50%/ 50%
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Graphical representation of the girls' arithmetic mean:



Graphical representation of the boys' arithmetic mean:



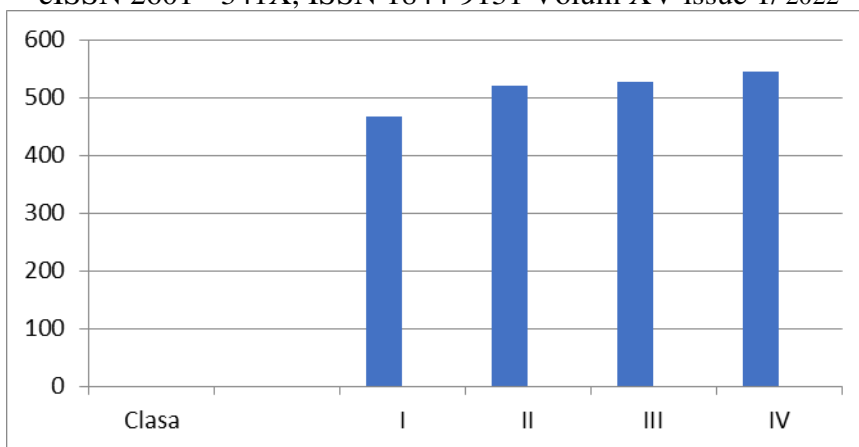
Analyzing the graphical representations of the results obtained in long-distance running (2min. 30sec.) We find a constant improvement of running distances from class to class for both girls and boys. In girls, the average running distance increases from 482.77m (in class I) to 556.66m as it measures the average distance run in class IV; and for boys the average distance run in class I is 540.55m, reaching 608m in class IV.[6] The standard deviation varies inconstantly, being between 21.4m and 78.81m and the coefficient of variation is between 3.96% - 13.67% (less than 15%) which means that we are dealing with homogeneous groups from this point of view. , the data spread is very small, the arithmetic mean being representative. [9]

Test Matorin (left + right., grade)

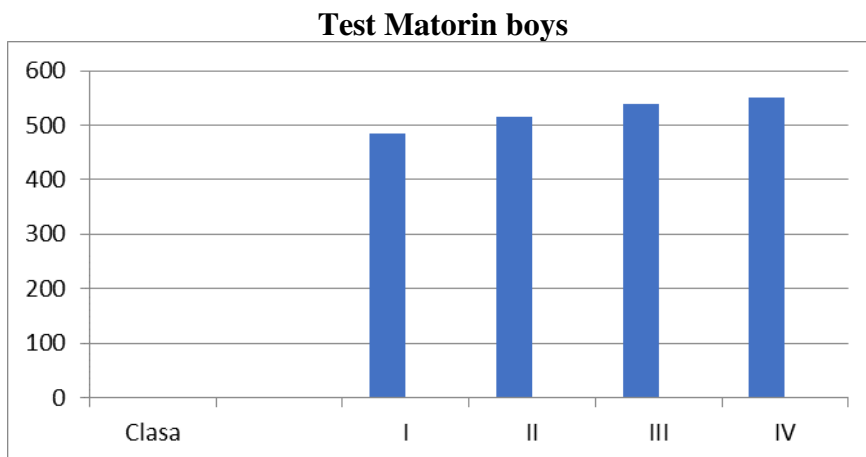
Indicator statistic	Clasa							
	I		II		III		IV	
	Girls	Boys	Girls	Boys	Girls	Boys	Girls	Boys
Arithmetic mean	466	484.77	512.14	515	526.11	540	545	551.5
Median	485	495	495	520	540	540	560	540
Standard deviation	82.12	56.25	101.65	45.30	59.03	71.18	80.88	52.96
Minimum	305	360	360	420	420	425	420	495
Maximum	560	570	660	585	625	670	665	660
Amplitude	255	210	300	165	205	245	245	165
Coefficient of variation (%)	17.62	11.60	19.84	8.79	11.22	13.18	14.84	9.60
Above / below average	55.5%/ 44.5%	55.5%/ 44.5%	42.85%/ 57.15%	70%/ 30%	66.66%/ 33.33%	44.44%/ 55.56	83.33%/ 16.67%	40%/ 60%

Graphical representation of the girls' arithmetic mean:

Test Matorin girls



Graphical representation of the boys' arithmetic mean:



Analyzing the graphical representations of the results obtained in the Matorin test, which measures the degree of coordination and balance and involves two jumps around the longitudinal axis of the body (left and right) we find a constant improvement from class to class in both girls as well as boys. In girls, the sum of the two jumps increases from 466 degrees (in class I) to 545 degrees as it measures the sum of jumps in class IV; and for boys the sum of the two jumps in class I is 484.77 degrees, reaching 551 degrees in class IV. [6]

The standard deviation varies inconsistently, being between 52.96 degrees and 101.65 degrees and the coefficient of variation is between 8.79% - 19.84%. In six cases the coefficient of variation is less than 15% which means that we are

dealing with homogeneous groups from this point of view, the data scattering is very small, the arithmetic mean being representative, and in two cases - class I girls 17.62 % and second class girls 19.84% - the value of the coefficient of variation is higher than 15% which means that the data scattering is average the arithmetic mean for the two situations is sufficiently representative. [9]

Conclusions

There is a relationship of interdependence between physical development and motor ability. In a class we can meet students with good indices of morphological and functional development, but perform movements below their technicality and indices of speed, endurance, strength or skill are under the provisions of school curricula. We say in this situation that they have signs of good development, but the motor capacity is low. Also in a class there may be students with a good motor ability but with inadequate morphological and functional development indices. In both situations, it is necessary to intervene with “customized” recovery programs to remedy the discrepancies and establish the balance between the two categories of indices. These remedial programs involve the choice of the categories of exercise to be introduced, the determination of their volume, intensity and complexity, the specification of application periods. Last but not least, the effectiveness of these programs must be regularly checked.

Very good results can be obtained if you work during physical education classes on value groups. These groups can be formed following the initial tests at the beginning of the year, beginning of the semester or beginning of the thematic cycle, the students being able to “promote” in a higher value group if its obvious progress is noticed on the respective segment.

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