TRAINING-TEST MODULE IN THE SYSTEM OF PEDAGOGICAL CONTROL OF PHYSICAL FITNESS IN LOWER GRADES

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Annotation. *Purpose*: to substantiate model characteristics of physical fitness of elementary school students of secondary schools through the introduction of training and test module in the pedagogical control. *Material*: the study involved 320 boys and 278 girls in grades 1-4 schools in Kharkov number number 57, 112, 166. *Results*: the level of physical fitness of elementary school students with available motor tests and the results are compared between the experimental data and control classes. Found that the introduction of educational test module in the process of physical education in the experimental classes has enhanced the level of physical fitness. In the experimental classes compared to the control classes, there was an increase of indicators (boys 22.2%, girls 24.6%). *Conclusions*: the introduction of educational test module in the pedagogical control for primary school pupils, will improve the physical fitness of children in the experimental classes, compared with controls, as well as to determine the averages on basic motor tests that can be used as a model characteristics of physical fitness.
Keywords: training and test module, model characteristics, pedagogical supervision, motor tests, physical fitness.

Introduction

One of important problems of modern education is increasing of its quality [1, 2, 3, 7, 8]. A component of this problem and condition of education's quality improvement is development of objective means and criteria for evaluation of disciples' progress. In modern conditions objective and systemic evaluation of junior school pupils' physical fitness is especially urgent. It is stressed both in official document [On approval of criteria for evaluation of junior school pupils' academic progress: order of Ministry of education and science of Ukraine № 755 dt. 20.08.2008 // Official site of Supreme Council of Ukraine: http: // zakon 1.rada.gov/ua/cgibin/1aws/main.cgi] and in researches of scientists (T.S, Bondar [1], Yu.V. Vaskov [3], G. Krotov [6], T.Yu. Krutsevych [7, 8], A.A. Predyk [9] et al.). The urgency of the mentioned problems is paid attention to also in foreign works [12-15]. Complexity of this problem is that curriculum of physical culture for pupils of 1^{st}- 4^{th} forms [11] determines: "Results achieved by pupils in academic year, in the course of determination of their reserve potentials **are not to be evaluated in points".** But, as it is stressed in this program, these results shall be bench marks for further perfection of pupils' physical fitness and server for teacher to make corrections for effective use of different forms and methods of training.

For objective evaluation of academic (**reserve** by program) potentials of junior forms' pupils it is necessary to have scientifically grounded bench marks of development of main motion skills. Such bench marks can be model characteristics of pupils' physical fitness. For their working out it is necessary to carry out research of development of 1-4 pupils' main motion skills and dynamic of this process in the process of studying at primary school. To carry out such research we offer to introduce academic-testing module in school curriculum; this module shall include stages of preparation and realization of accessible for pupils, motion tests as well as their detail analysis in comparison with requirements of program.

The work has been fulfilled in compliance with plan of SRW of Kharkiv humanitarian-pedagogic academy.

Purpose, tasks of the work, material and methods

The purpose of the research is scientific foundation of model characteristics of junior comprehensive school pupils' physical fitness.

Solution of this purpose was specified in the following *tasks*: determination of junior school pupils' physical fitness with the help of available tests; distribution of comprehensive school pupils – participants of experiments into control and experimental groups; fulfillment of experiment in experimental groups with the help of academic-testing module; comparison of indicators of experimental and control groups after experiment; determination of mean indicators of experimental groups pupils as model characteristics of physical fitness of 1^{st}-4^{th} forms pupils.

Main *methods of the research:* determination of pupils' physical fitness with the help of motion tests; determination of physical condition (height and weight); factor and correlation analysis; sociological questioning, methods of mathematical statistics.

Results of the research

One of means for determination of pupils' physical fitness is different tests. By dictionary "test" is interpreted and standard task for testing of mental development, physical abilities, will qualities and other psycho-physiological characteristics of a person. [Dictionary of foreign words. – M.: Russian language. – 1980. – pg.624].

Depending on field of researches K. Ingekamp [5] distinguishes such kinds of tests: tests of achievements, psycho-metric personality's tests, tests for school progress, tests for intellect and professional workability ad so on. Tests, in the base of which there are motion tasks, are called motion or motor ones (V.M. Zatsiorskiy [4]).

In physical education testing helps to solve a number of complex pedagogic tasks: determination of children's motion skills; comparing of different age and sex pupils' fitness; ensuring of objective control of pupils' training;

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determination of positive and negative influence of teaching methods; selection of pupils for certain kind of sports and so on.

Tests shall meet such criteria as validity, capacity, information character, accessibility, indifference, reliability and etc. Specifying of these criteria is not the task of our research, but every researcher, who fulfills measurements with the help of tests, shall be guided by them.

For realization of our tasks, in period from 2010 to 2011 we carried out pedagogic experiment on implementation of system of junior schoolchildren's physical fitness's testing in order to determine safe level of physical qualities' development. At first stage of experiment (stating) we formed control and experimental groups as well as mean indicators of physical fitness in these groups. At second stage of the experiment (forming) we implemented special, worked out by us, module, which, in its turn, consisted of stages of preparation and conducting of testing of 1^{st}-4^{th} forms pupils' physical fitness.

At third (comparative) stage we determined mean indicators of physical fitness in experimental and control groups, compared results and grounded model characteristics on the base of them. Pedagogic experiment was conducted on the base of comprehensive educational establishment No.57 (Kharkov, control group) and specialized school "Vertical" No.166, educational complex No.112 (Kharkov, experimental group).

At the beginning of experiment we determined results of standard test exercises, which were included into approximate complex testing of academic program "Physical culture" for 1^{st} -4^{th} forms (see tables 1-4). With it testing results were registered and calculated separately for girls and boys. In total 200 boys and 155 girls from experimental group and 120 boys and 123 girls from control groups took part.

Table 1

Mean indicators of physical fitness and physical condition of experimental group's boys

n=200	Height	Weight	30 meters run	6 minutes run	Torso forward bending	Chin ups	Shuttle run 4x9 m	Long jump from the spot
1 form (n=42)	121.6	23	7.960976	207.3171	3.609756	0	13.4878	113.1707
2form (n=77)	127.3	26.7	7.312821	363.4615	2.192308	4.65	12.35897	126.0256
3 form (n=48)	132.5	29.7	7.2125	412.5	3.916667	2.125	11.575	138.8333
4 form (n=33)	138.6	34.9	6.28	800	2,9	1.1	12.03	145.25

Table 2

Mean indicators of physical fitness and physical condition of experimental group's girl

n=155	Height	Weight	30 meters run	6 minutes run	Torso forward bending	Chin ups	Shuttle run 4x9 m	Long jump from the spot
1 form (n=39)	120.2	22.6	7.810526	206.3158	3.657895	12.18	13.49211	119.3421
2 form (n=46)	125.7	27.9	7.521277	324.4681	4.468085	15.38	12.59149	116.1915
3 form (n=34)	130.8	30.7	7.217647	426.4706	3.382353	10.23	12.01176	134.8235
4 form (n=36)	138.1	33.9	6.6	766.667	5.33333	18.66	11.56667	140.8333

Analysis of tables 1-2 data proves that mean testing results of experimental groups' boys and girls are within limits of academic program, i.e. correspond to criteria of academic process, For convenience of calculations we made

exclusion only with calculating of strength indicators of 1st form boys because chin ups on lows bar (as per program) for boys is not permanent for all period of studying.

The same situation was registered in control group – results of approximate complex testing in average meet governmental standards for academic process. In the whole, it permits to make conclusion that in compliance with criteria of academic discipline "Physical culture" for 1st-4th forms of comprehensive educational establishments control and experimental groups were equal.

Table 3

Mean indicators of physical fitness and physical condition of control group's boys

n=120	Height	Weight	30 meters run	6 minutes run	Torso forward bending	Chin ups	Shuttle run 4x9 m	Long jump from the spot
1 form (n=34)	122.0	24.6	7.321471	280.5294	2.75	0	12.82676	106.5588
2 form (n=30)	128.1	28.6	6.916452	330.9677	3.24	3.58	15.94355	120.5806
3 form (n=26)	132.6	30.34	7.196296	405.1852	5.37	2.57	12.7037	128.5926
4 form (n=30)	138.7	35.03	6.61	800	5	2	11,33	170

Table 4

Mean indicators of physical fitness and physical condition of control group's girls

n=123	Height	Weight	30 meters run	6 minutes run	Torso forward bending	Chin ups	Shuttle run 4x9 m	Long jump from the spot
1 form (n=34)	119.5	22.5	7.704118	221.9	4.835294	4.53	21.08	95,97
2 form (n=27)	126,.85	26.6	7.175	313.42	7.560714	4.0357	12.85357	119,4286
3 form (n=32)	131.359	28.9	7.17	424.2	7.484848	7.3333	12.51818	112,6364
4 form (n=30)	134.6	31.7	6.68	712.9	8.129032	6.9677	11.68097	133,8065

For determination of static confidence in the process of our research we, with the help of software Statistica calculated mean square deviation – dispersion of every indicators of physical abilities' and physical condition's development. In order to prove equality of samples by indicators of schoolchildren's physical fitness we used Fisher's criteria. Considering restricted limits of the present article, we do not provide completely the tables of these indicators.

The carried out comparison permitted to clear up statistical confidence of physical condition for experimental and control groups, both boys' and girls'.

In the process of forming experiment, in control and experimental groups we studied technical elements of tests' fulfillment; we carried out special physical training, motion tests like during stating measuring. These tests included: quickness – 30 meters run; endurance – 6 minutes run; flexibility – torso forward bent from sitting position; strength – chin ups (boys), chin ups in lying position (girls); dexterity – shuttle run 4 [9 m; speed-power skills – long jump from the spot. In tables 5 and 6 we gave mean indicators of control and experimental groups' members and indicator Tp, which was calculated by Fisher's criterion.

Table 5

Comparative characteristic of physical fitness indicators of control and experimental groups' boys at the end of experiment

	Quickness 30 m.p.sec			Endurance 6-min. run, m.			Flexibility, cm			Strength, q-ty of times			Dexterity Shuttle run 4x9 m, sec.			Speed-power abilities, cm			P
	CG	EG	Tp	CG	EG	Tp	CG	EG	Tp	CG	EG	Tp	CG	EG	Tp	CG	EG	Tp	
1 form	7.01	6.2	1.9	207.3	401.4	2.84	4.5	5.3	1.9	11	13.7	1.96	12.8	12.3	1.92	113.2	117.7	1.92	P<0.05
2 form	6.9	6.2	1.91	363.5	426..2	2.24	5	8.7	2.32	13	17.9	1.97	12.3	12	1.91	124.6	133.3	2.07	P<0.05
3 form	6.6	6	1.91	412.5	564.6	1.9	6.4	8.7	2.41	3.1	3.9	1.91	11.7	11.2	1.94	132.7	144.5	2.06	P<0.05
4 form	6.28	5.38	2.01	540	726.2	2.01	7	9.1	2.11	3.8	4	1.96	11.4	11.1	1.98	139.6	153.3	1.94	P<0.05

Table 6

Comparative characteristic of physical fitness indicators of control and experimental groups' girls' at the end of experiment

	Quickness 30 m.p.sec			Endurance 6-min. run, m.			Flexibility, cm			Strength, q-ty of times			Dexterity Shuttle run 4x9 m, sec.			Speed-power abilities, cm			P
	CG	EG	Tp	CG	EG	Tp	CG	EG	Tp	CG	EG	Tp	CG	EG	Tp	CG	EG	Tp	
1 form	7.1	6.5	1.9	305.5	386.3	1.95	5.2	6.3	2.08	6	13.5	3.45	15.3	12.5	2.12	102.6	117	1.97	P<0.05
2 form	7.0	6.3	1.93	380.2	426.3	2.04	8.1	9.6	2.03	8	17.7	4.84	12.1	12.1	1.03	124.2	131.9	2.02	P<0.05
3 form	6.9	6.2	1.92	485.3	583	2.47	8.3	8.6	1.98	11	18.6	3.01	11.7	11.3	2.09	126	132.4	1.91	P<0.05
4 form	6.2	5.5	1.91	735.2	764.6	1.99	9.5	9.5	1.21	12	20.9	3.44	11.2	11.0	1.94	135.4	144.5	2.03	P<0.05

Implementation of academic-testing module resulted in confident improvement of physical condition of experimental group boys of 1^{st} – 4^{th} form by all indicators (see table 5). It is conditioned by positive transferring and comprehensive character of pre-testing trainings. These trainings included special and preparatory exercises for increasing of quality of certain test's fulfillment. In general physical fitness of experimental group boys was better than in control group by 22.2% by the end of experiment.

General average indicator of experimental group's girls was 24.6% by the end of experiment that also permits to make conclusion that comprehensive pre-testing training of girls positive transferring also took place. Thus, the worked out methodic is effective. On the base of analysis of tables we determined model characteristics of junior school boys' and girls' physical fitness.

Conclusions:

The obtained with the help of tests results can be used as objective foundation for planning of academic-educational process. Tests help to solve the following tasks:

1. Determination of general physical fitness with the help of tests.
2. Determination of dynamic of results during academic year as well as during several academic years (junior, secondary and senior schools).
3. Determination of planning compliance with received in academic-educational process results.
5. Cultivation of pupils' independence at lessons on the base of their abilities for self control and control.
6. Testing of theoretical principles in practice, determination of ways of their implementation in practice.
7. Determination of pupils' health.
8. Determination of control standards by certain sectors for pupils of different age.
9. Determination of main criteria of achievement of maximal results.

Methodic recommendations shall include:

1. Tests for determination of different motion skills shall be fulfilled in certain sequence: first for quickness and coordination, then – for speed-power abilities and flexibility; at the end – for endurance.

2. Testing can be practiced from two (September – May) to four times a years (September, December, February, May).

3. It is recommended to make individual register for every pupils and fill it, starting from 1st form, noting changes of results during studying at school from 1st to 4th forms and then – up to 11th form. Such system permits for teacher-instructor to constantly carry out pedagogic control over development of pupils' main motion qualities.

In this article we tried to briefly elucidate main aspects of determination of pupils' physical fitness with the help of tests, included in academic program. *The prospects of further researches* imply theoretical and practical searches of motion and functional tests, with the help of which it would be possible to control dynamic of children's physical progressing from 1st to 11th forms, considering separate test for every motion quality, i.e. by complex of test for determination of certain motion ability's level.

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