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EVALUATING THE PHYSICAL FITNESS OF 1ST-2ND GRADE STUDENTS THROUGH "HEALTH" TESTS

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Annotation: The study investigates the correlation between sensitive developmental phases and motor abilities in 1st and 2nd grade students, highlighting the role of adaptability in the organism's development. A pedagogical experiment was conducted using "Salomatlik" health assessment tests to monitor the dynamics of motor qualities in young primary school children over an annual educational cycle. This experiment aims to assess how various physical attributes and adaptability influence overall physical development and readiness.
Keywords: "Salomatlik" test, pedagogical experiment, pedagogical control, ontogenesis, adaptive abilities, speed-strength physical qualities, physical activity, physical readiness, physical perfection.

Introduction

Motor abilities play a crucial role in the physical development of children and their manifestation varies across different stages of ontogenesis. During the transition from one developmental age to another, factors such as rapid increases in body length, muscle mass, heart size, total blood volume, and hemoglobin concentration contribute to changes in motor abilities. Physical education teachers working with primary school-aged children must take these sensitive periods into account when developing motor skills.

Linking these sensitive periods to the motor skills of children at specific ages is a significant indicator. The adaptive capabilities of the developing organism are influenced by the interactions between complex functional systems and the changing external and internal environments, which can lead to the proper development of bodily systems depending on their adaptive value at a given stage of ontogenesis.

This article describes a pedagogical experiment that utilizes "Salomatlik" health assessment tests to monitor the dynamics and comparative changes in motor qualities throughout an annual educational cycle for primary school-aged children. The results of this experiment underscore the importance of regular pedagogical monitoring of physical condition, optimal dosing of physical activity based on the morphological and functional characteristics of the growing organism, and the regular implementation of medical-pedagogical measures, taking into account individual characteristics of the children.

A review of the literature indicates that specific sensitive periods in children's lives, characterized by peak motor performance, have been identified based on physiological facts. These periods, known as sensitive periods, provide opportunities for significant improvements in motor abilities. However, the onset of these sensitive periods related to specific motor skills remains a topic of serious scientific research and extensive discussion.

Motor skills play a crucial role in children's physical development and vary at different stages of ontogenesis. During the transition from one age period to another, factors such as the acceleration of body length, muscle mass, heart size, total blood volume, and hemoglobin concentration affect changes in motor abilities. Physical education teachers working with primary school children need to consider these critical periods when developing motor skills.

Linking sensitive periods to motor skills in children of specific ages is a crucial indicator. The adaptive capabilities of the developing organism are influenced by the interaction of complex functional systems with changing external and internal environmental conditions. This interaction can lead to the proper development of body systems based on their adaptive value at specific stages of ontogenesis.

The pedagogical experiment described in this article aims to observe the dynamics and comparative changes in motor qualities throughout the annual educational cycle using the "Salomatlik" health tests for primary school children. The results of this experiment highlight the importance of regular pedagogical monitoring of children's physical condition, optimal dosing of physical activity based on the morphological and functional characteristics of the growing organism, and the implementation of regular medical and pedagogical measures.

Monitoring of literature on this issue shows that in children's lives, sensitive periods for motor abilities have been identified at specific stages of their life, based on physiological facts, referred to as periods when the rate of development is highest. Sensitive periods in children allow for more significant improvements in motor qualities. However, the onset of sensitive periods related to specific motor skills remains a subject of serious scientific research and extensive discussion.

Motor readiness can be described by various indicators and may exhibit different chronological changes. In children of this age, the manifestation of speed-strength abilities is not related to the characteristics of the nervous system. It is important to note that during the same age periods, growth processes become more active, but differentiation processes slow down, suggesting that there are age and individual conditions for the formation of differences in abilities. During sensitive periods, the impact of external stimuli on mature functional systems, including those naturally predisposed to respond to external stimuli, is evident. The characteristics of sensitive periods and the potential variability of structures and functions under external influences are crucial for understanding the nature of relationships between external stimuli and developing motor abilities.

Research on age-related changes has limited value and should be supplemented with meaningful experimental analyses that adequately reflect age-related developmental patterns. Surveys conducted among physical education teachers in schools have highlighted the need to pay special attention to strength and power exercises during lessons. This was evident in the results of tests such as the vertical jump from a lying position, where the initial average result was 11.7 ± 2.3 repetitions, increasing to 12.3 ± 2.2 repetitions by the end of the second quarter, showing a difference of 4.9%. In the test of flexion and extension of the arms while lying down, the initial strength indicators of children were 6.9 ± 1.9 repetitions, with a significant increase of 2.9% in follow-up tests. Positive changes were observed in tests for flexion and extension of the arms, with an average result of 7.1 ± 1.6 repetitions. For throwing a tennis ball, an average distance of 14.1 ± 4.0 meters was achieved, with a notable increase of 4.1%.

These results emphasize the importance of paying particular attention to strength and power exercises in physical readiness development, taking into account age and individual conditions.

The author’s innovative methodology developed during this quarter, with an emphasis on athletics and team sports activities, led to a significant improvement in the average score of six motor qualities in children, with a progressive increase of 2.43%. During the third quarter, special attention to strength training continued for elementary school children. The author introduced unique strength-based physical exercise complexes in physical education lessons, considering age-specific features of the studied group.

By the end of the third quarter, which spanned two mesocycles, there was notable progress in motor abilities in children. A high correlation was found between throwing and strength exercises, closely tied to increased strength training during physical education classes. The most significant

improvements were observed in the evaluation of strength abilities, with average values showing increases ranging from 11.4% to 17.9%. The analysis of the results obtained during the monitoring process showed a positive trend in the substantial growth of the studied strength abilities over the quarters. Thus, by the end of the second quarter, the results improved by an average of 16.8% compared to the initial data, while by the end of the third quarter, the overall result for all tests increased to 53.5%. By the end of the fourth quarter, the results of motor preparedness in elementary school children over the one-year educational cycle reached 72.9%.

Similarly, with the implementation of the pedagogical measures aimed at improving speed-strength qualities, a general positive shift of 2.7% on average was noted. Pedagogical testing of motor skills conducted with 1st and 2nd-grade students showed that, at the beginning of the experiment, children in these grades did not fully meet the program material requirements of the basic physical education curriculum. This shortcoming highlighted the insufficient contribution of physical education lessons in the process of forming well-rounded individuals, as well as the incomplete fulfillment of the social functions assigned to these children. It was also discovered that the mandatory basic physical education lessons in elementary schools did not meet the minimum needs to reduce hypodynamia. Furthermore, insufficient attention to physical education in preschool institutions contributed to the lack of adequate physical preparation for school.

The issue of 1st and 2nd-grade students' physical readiness according to the regulatory requirements of the "Salomatlik" health tests for the first age group became of great interest, prompting a pedagogical experiment for this age group. The pedagogical testing method was used to measure the physical preparedness of the first age group according to the "Salomatlik" health test requirements. The following indicators were assessed: 30m running, 3x10m shuttle running, standing long jump, tennis ball target throw, push-ups, single-leg hopping, and skipping rope. According to the pedagogical experiment results, 7-year-old boys showed an average result of 6.79s in the 30m run, with individual variations ranging from 9.2s to 6.6s ($v=12.1\%$; $P<0.01$). In 8-year-olds, speed efficiency improved by 4.35%, with an average time of 6.69s and individual variations from 8.6s to 6.3s ($v=12.3\%$; $P<0.01$).

The test results showed irregular performance in the sprint indicators included in the "Salomatlik" health tests. However, significant improvements in speed abilities were observed during the sensitive age period when growth rates became more stable. This fact suggests that by this sensitive age, the structure of running speed becomes more complete, and children's physical abilities improve further due to enhanced physical fitness. The pedagogical study results of 1st and 2nd-grade students' motor preparedness were processed using mathematical statistical methods, as shown in Table 2.

Table 2.
Comparative Dynamics of Children's Physical Fitness Levels Based on the Normative Requirements of the "Health" Health Tests for the First Age Group (7-8 Years)

Indicators	1-class				2-class			
	X	Sx	σ	V%	X	Sx	σ	V%
30 m. run to (s)	6,79	0,02	3, 3,1	12,1	66,69	0,03	3,3	12,3
Jump (on one leg, times)	17,11	0,14	4 4,2	13 ,4	17,16	0,13	4,1	13,6
Bending ashes while resting on the ground (times)	6,89	0,13	4 4,2	19,2	66,90	0,14	4,3	19,3
150 gr. throwing sports equipment (m, cm)	13,9	0,17	3 3,4	14,5	114,1	0,29	3,4	13,5
Standing long jump (m, cm)	123,4	1,29	2 2,9	15,8	133,8	1,39	2,9	12,8
Archery jump (1 minute, times)	23,39	0,19	5 5,4	18,3	224,4	0,18	5,3	17,3
Sprint 3x10 m (s)	10,62	0,13	2 2,9	19,3	10,52	0,14	2,9	19,6

Jumping from a standing position is a universal exercise that characterizes the level of development of children's motor skills and physical qualities as a factor of speed-power nature and plays an important role in the motor abilities of younger students.

During the study of physical qualities of younger schoolchildren, it was found that the average result for boys in grade 1 in the standing long jump was 123.4±1.29 cm, with a coefficient of variation (v) of 15.8%, and a significance level of $P<0.05$. The extreme individual values ranged from 140 cm to 107 cm. By the age of 8, second-grade students significantly improved their standing long jump test results by 9.36% (v=12.8%; $P<0.01$), reaching an average of 133.8±1 cm. In this age group, the best result was 140 cm, and the worst was 100 cm.

Comparative analysis showed that the sequential growth of students from ages 7 to 8, based on the results of the standing long jump test, reflected an increase in the speed-power readiness of younger children by up to 14.18%.

Throwing a tennis ball, as specified in the school physical education program, is a technically complex exercise requiring the demonstration of physical qualities and technical preparedness in children of this age. Notably, this life-skill exercise is included in both the normative requirements of the school physical education program and the "Health" tests for the first age group.

In our study, we examined the testing of primary schoolchildren in throwing a 150g tennis ball. The 7-year-old students showed an average result of 13.9±0.17 m (v=14.5%; $P<0.05$), with individual performance ranging from 10 to 15 m. By the age of 8, the average throwing result increased by 5.70% (v=14.5%; $P<0.05$), reaching an overall average of 14.1±0.29 m.

The coordination abilities of younger schoolchildren were studied based on the results of the 3x10 m shuttle run. This exercise is an essential practical physical activity included in the normative requirements of the "Health" physical education and health tests for the first age group. Seven-

year-old students covered this distance in an average of 10.62 seconds, with a variation coefficient (v) of 19.3% (P<0.05), and by the age of 8, they covered it in an average of 10.52±0.14 seconds, with v=19.6% (P<0.05).

The data on the manifestation of motor abilities at different stages of ontogenesis are vast, and their age-related changes increase as individuals transition from one life stage to another. The most influential factors affecting sensitivity include the increase in body length (acceleration), muscle mass, heart size, total blood volume, and higher hemoglobin concentration. In this regard, physical education teachers working with this age group must particularly consider the sensitivity period factor in developing children's motor abilities.

In her experimental studies on children of the same age group, O.V. Goncharova, while examining the effectiveness of training with an emphasis on stimulated development of physical potential, highlighted the presence of age-related and individual characteristics in their development.

Linking sensitive periods to the motor abilities of children at a specific age stage is an integral indicator. The diversity of these relationships confirms that the adaptive capacities of the developing organism are related to the interaction of a complex set of functional systems with the constantly changing external and internal environmental conditions. This factor likely leads to the heterochronic development of body systems depending on their adaptive value at a particular stage of ontogenesis.

A pedagogical experiment conducted to observe the dynamics and comparative dynamics of changes in motor qualities during the annual educational cycle of younger schoolchildren within the school education system, using the "Health" health tests, allowed the following conclusions:

Regular pedagogical monitoring of the physical condition of younger schoolchildren, taking into account their individual characteristics;

Optimal dosing of physical activity considering the morphological and functional characteristics of the growing organism;

Regular implementation of medical-pedagogical control to timely adjust physical activity in children's bodies.

Conclusion

The results of the pedagogical experiment conducted with younger schoolchildren using the "Health" tests highlight the importance of considering sensitive periods in the development of children's motor abilities. The identified relationships confirm that the adaptive capacity of the developing organism is influenced by the interaction of complex functional systems with the changing external and internal environmental conditions.

Based on these findings, it is recommended that physical education teachers and other professionals involved in the physical development of children regularly monitor the physical condition of younger schoolchildren, taking into account their individual characteristics. In optimally dosing physical activity, the morphological and functional characteristics of the growing body should also be considered. Furthermore, regular medical-pedagogical monitoring will help timely adjust physical activity in children's bodies.

By adhering to these recommendations, it will be possible to assist in the healthy and balanced development of motor skills in younger schoolchildren, ensuring that their physical education and activity align with their individual characteristics and the evolving needs of their developing bodies. Further research into the relationship between sensitive periods and motor skill development can enhance pedagogical practices aimed at optimizing physical growth during the crucial early years of a child's life.

Literature

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