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## On the necessity to master physical fitness among young athletes practicing track-and-field in specialized sports classes

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The article contains the data on promising directions to master physical fitness by young athletes practicing track-and-field in specialized sports classes. The data obtained show that there are low growth rates of physical fitness indicators in meeting control standards. It happens because coaches-teachers use out-of-date programs for specialized educational and sports institutions and schools of the Olympic reserve. In their turn, the above-mentioned programs do not take into account the peculiarities of training of athletes in specialized sports classes.

**Keywords:** track-and-field; preparatory stage, physical qualities, specialized sports classes, control exercises, specialized educational and sports institutions.

В статье представлены сведения о перспективных направлениях совершенствования физической подготовленности юных спортсменов, занимающихся лёгкой атлетикой в специализированных по спорту классах. Полученные данные свидетельствуют о невысоких темпах прироста показателей физической подготовленности при выполнении контрольных нормативов в силу использования тренерами-преподавателями программ для специализированных учебно-спортивных учреждений и училищ олимпийского резерва, которые, в свою очередь, не учитывают особенности подготовки спортсменов в специализированных по спорту классах.

**Ключевые слова:** лёгкая атлетика, этап подготовки, физические качества, специализированные по спорту классы, контрольные упражнения, специализированные учебно-спортивные учреждения.

**Introduction.** Nowadays preparing of sporting reserve in track-and-field is relevant and it is one of the main tasks of athletic and sports organizations [1]. Numerous research in the field of training track-and-field athletes [2], [3] shows that reaching high results is necessary to follow the process of systematic longstanding preparation which starts from primary school age.

A coach-teacher is required to use various means, methods, and even certain organizational forms for conducting training sessions during the constant search for gifted athletes at the initial stages of long-term preparation and the further improvement of their physical qualities in specific types of track-and-field at subsequent stages. At present, there are a lot of forms for organizing track-and-field training sessions [4], [5]. Lessons and training sessions in specialized sports classes can be marked out due to their peculiarities.

The analysis of scientific methodological literature carried out allowed us to find out that the program for individual types of track-and-field is the main document determining purposefulness and content of the educational process in track-and-field in specialized educational and sports institutions and schools of the Olympic reserve (SESI) [6], [7]. It should be noted that in some cases under the conditions of SESI work (availability of material, technical and territorial base, climatic conditions) the administration and the teachers' meeting can make private changes to the content of these programs with the consent of the Founder. But the focus of the program should be saved. Therefore, in practice, the process of systematic long-term preparation (regardless of the organizational forms of training sessions), in addition to these programs, is also based on different scientific developments, methodological recommendations, as well as on the coach-teacher's own practical experience.

The content of these programs (they were published in the period from 2007 to 2013) was also studied in detail and it was revealed that the programs developed for the SESI do not consider the features of planning and composing the educational and training process that is envisaged for specialized sports classes [8]. Moreover, the existing requirements for completing training groups; approximate volumes of the distribution of the teaching load; regulatory requirements determining the levels of general and special physical fitness nowadays may not correspond to the current reality after the amendments to the decree «On establishing the recommended minimum age for practicing sports» [9] that came into force in 2017 (training sessions in track-and-field can be held among children from the age of 7).

It is also important that so far there has not been a generalization of the advanced practical experience of coaches-teachers on issues related to the training of young athletes in the conditions of a specialized sports class in the Republic of Belarus. The available methodological recommendations and scientific developments do not allow to fully get answers to the questions related to the need to improve physical fitness among young athletes studying in specialized sports classes.

**The goal of research.** The revealed features determine the further direction of our research, which consists in determining the promising courses for improving the physical fitness of young athletes practicing track-and-field in the conditions of specialized sports classes. The research is based on a questionnaire survey of coaches-teachers of the Republic of Belarus and an analysis of the dynamics of control and transfer standards. The features identified determine the further direction of our work.

**Research management.** To achieve the goal to be sought, we analyzed special scientific methodological literature, record books, and journal books of coaches-teachers in track-and-field. We summarized the results and made a comparative analysis of the control and transfer standards for 5 years among young athletes practicing track-and-field in specialized sports classes and training groups of specialized educational and sports institutions. We also determined the dynamics of their physical fitness for the analyzed period. We surveyed coaches-teachers who had practical work experience and total work experience of at least 5 years.

To identify promising directions for improving physical fitness, the results of control and transfer standards shown by young athletes ( $n = 105$ ) were analyzed. The athletes attended specialized sports classes in the Republic of Belarus from September 2013 to August 2018 (5 years of training, stages of initial and advanced sports specialization). These indicators were compared with the results of athletes ( $n = 78$ ) involved in education and training groups (ETG) in specialized educational and sports institutions. The results were taken over the same period. It should be noted that the sports training of all athletes participating in the study was carried out taking into account further orientation in the speed-strength types of track-and-field (sprint and jumps).

The following exercise indicators were analyzed: «20 m running from a high start», «Standing long jump», «Pull-ups» for boys and «Push-ups» for girls; «10 m zigzag running»; «Countermovement double beat jump»; «Toe touch bending from sitting position»; «5 minutes' running». These control and transfer standards allow assessing a wide range of physical qualities and they are included in the content of training programs for certain types of track-and-field. They are also approved by the coaching council of specialized educational and sports institutions in which young athletes were trained. Based on the results of the 7 control exercises, the average score was calculated. It reflects the general level of physical fitness in the studied groups. The dynamics of the studied indicators was shown separately for boys and girls.

The dynamics of the level of physical fitness (in points) for boys involved in specialized sports classes and educational and training groups at the stages of primary and advanced sports specialization (5 years of training) is shown in Figure 1.

Having carried out a comparative analysis of the obtained average group indicators for boys at the end of the first year of training, we found that the athletes involved in specialized sports classes had a higher level of physical fitness (3,30 points). At the same time, this indicator was 3,09 points among the athletes who attended educational and training groups. The average group results shown by the boys of both groups correspond to a satisfactory rating, and the difference between the groups was 0,21 points.

Most likely, a higher level of physical fitness, which is observed at this stage of training among athletes who attended specialized sports classes, is due to the preliminary selection of them. The athletes who have achieved the best performance in fulfilling the standards for physical training are enrolled in these classes (the most promising of the athletes of the SESI are admitted for further sports training at the stage of initial sports specialization in specialized sports classes).

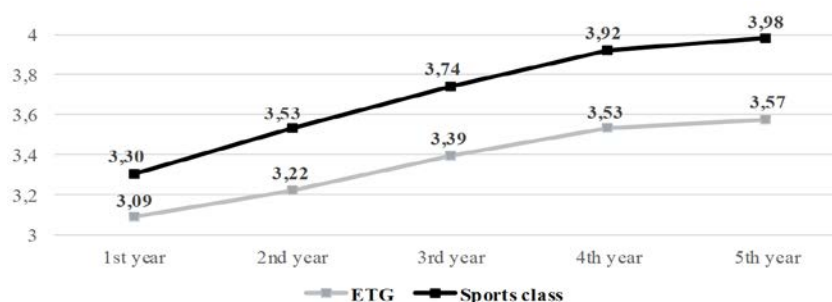


Figure 1 – Dynamics of the level of physical fitness among young athletes for the studied period

Having analyzed the indicators obtained at the end of the second year of training, we can state that the overall level of physical fitness has increased. It reached 3,53 points for those involved in specialized sports classes and 3,22 points for the athletes from educational and training groups. The increase in indicators compared to the previous year for the boys of the first group was 0,23 points, and for the second group – 0,13 points. The difference between the average group indicators was already 0,31 points and it was more significant. It should be noted that the identified features at this stage of training, in our opinion, can be facilitated by the distinctive features of the plan of training sessions in specialized sports classes (in contrast to the first year of training, in which the difference in the average group results could be associated with a higher initial level of physical fitness among the athletes involved in specialized sports classes, because of their selection).

At the end of the stage of initial sports specialization (the 3<sup>rd</sup> year of training) the average group indicator of physical fitness reached 3,74 points for the boys who attended specialized sports classes and for the athletes of the training groups – 3,39 points. Moreover, the increase in the results compared to the second year of training was 0,21 point for the boys who attended specialized sports classes, (the result increased by 0,17 point for the athletes from educational and training groups). The differences between the groups in average indicators by the end of this stage were up to 0,35 point.

According to the analysis of the results shown by the boys at the stage of advanced sports specialization (the 4<sup>th</sup> year of training), it was found that the overall level of physical fitness increased at this stage in both groups. Thus, this indicator was 3,92 points for the athletes undergoing training in specialized sports classes, and 3,53 points – for the athletes involved in the training groups of specialized educational and sports institutions. The level of physical fitness is assessed as satisfactory in both groups. The differences between the groups at this stage were 0,39 point. At the same time, the increase in the results, compared with the 3<sup>rd</sup> year of training, was 0,18 point in the first group, and 0,14 point – in the second.

By the end of the fifth year of training, the results shown by the athletes of both groups still correspond to a satisfactory assessment. They were 3,98 points among the boys who attended specialized sports classes and 3,57 – among the athletes in educational and training groups. At the same time, the difference in the average group indicators of the level of physical fitness was 0,41 point. It should be noted that this annual macrocycle is characterized by the lowest growth rates in the overall level of physical fitness, which was up to 0,06 point in the first group and 0,04 point – in the second group in comparison to the previous year. In our opinion, this dynamics can be explained by the fact that the training process includes a large volume of special physical, technical and tactical training at the stage of advanced sports specialization (in comparison with the previous training period and even the previous annual macrocycle). This corresponds to the future narrow specialization in track-and-field. And the means aimed at the development of overall physical fitness are used to a lesser extent. As a result, the growth rates in exercises that do not correspond to the specifics of the future specialization in the chosen type of track-and-field can decrease noticeably.

The analysis of the dynamics of the level of physical fitness among the girls of both groups is shown in Figure 2. It makes possible to establish a practically similar situation with an increase in the results.

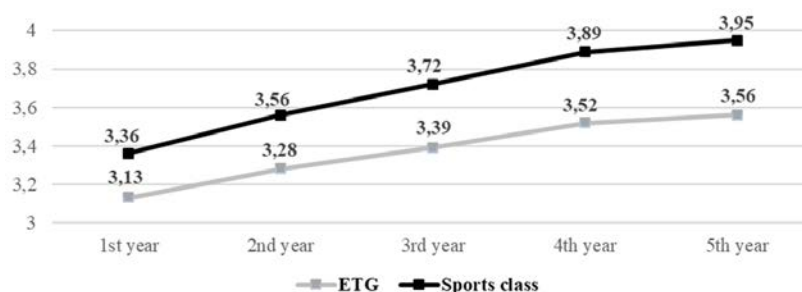


Figure 2 – Dynamics of the level of physical fitness among girls for the studied period

So, at the end of the first year of training, the girls who attended specialized sports classes have a higher level of physical fitness (3,36 points; «satisfactory» rating), in comparison with the girls from educational and training groups of specialized educational and sports institutions (3,13 points; «satisfactory» rating). The difference between the average group indicators was 0,19 point.

By the end of the second year, the difference in the indicators of both groups reached 0,28 point. The general level of physical fitness among the girls of the first group reached 3,56 points; the studied indicator was 3,28 points among the girls of the second group. The increase in the results in comparison with the previous year was 0,20 point among the girls who attended specialized sports classes, and 0,15 point – among the girls from educational and training groups.

The results of testing, which was carried out at the end of the stage of initial sports specialization (the 3<sup>rd</sup> year of training), show an increase in the overall level of physical fitness among the girls of both groups. So, this indicator was 3,72 points for those who attended specialized sports classes, 3,39 points – for the girls from educational and training groups. The increase in indicators for the year was up to 0,16 point and 0,11 point, respectively. The difference in the physical fitness indicators between the two groups at this stage was 0,37 point. At the same time, the physical fitness of both groups was at a satisfactory level.

The overall level of the physical fitness, shown by the girls who attended specialized sports classes, reached 3,89 points by the end of the fourth year of training; this indicator was 3,52 points among the girls from educational and training groups. The difference in the indicators between the groups at this stage was 0,37 point, and the increase in the results, compared to the third year of training, was 0,17 point in specialized sports classes and 0,13 point in educational and training groups.

By the end of the fifth year of training, the level of physical fitness reached 3,95 points among the girls who attended specialized sports classes, and the level of physical fitness was 3,56 points among the girls from educational and training groups (the difference was 0,39 points). As well as for the boys, the growth rates in the results at this stage are the lowest for the entire period of the research and were up to 0,06 point among the girls of the first group and 0,04 point among the girls of the second group.

In addition to the research based on the research of the dynamics of the results of control and transfer standards the coaches-teachers of the Republic of Belarus were surveyed to identify promising areas for improving the physical fitness of young athletes. These coaches have significant work experience in the classes specialized in track-and-field and in specialized educational and sports institutions. Based on the results of the analysis of the questionnaire survey data, we obtained the following information.

Most specialists, namely 31,48 %, referred to a single training regimen of the day as the most important distinguishing features of the organization of the educational and training process for all those athletes who practice sports in specialized sports classes. 24,07 % considered that the most important thing was the presence of a preliminary selection of children from among the most trained athletes when forming a class specialized in sports. 20,37 % chose the option that noted the possibility of increasing the mode of the training process by 2 academic hours per week. 12,97 % considered the opportunity to have training sessions 2 times a day at later stages of preparation as the most important feature. 11,11 % admitted the ability to organize the transfer period of training most optimally for young athletes.

The analysis of the answer to the question «Do you think the existing forms of sports training and teaching methods are developed and scientifically substantiated for specialized sports classes sufficiently?» showed that 68,52 % of the interviewed coaches-teachers answered negatively; 24,07 % answered positively; 7,41 % of the respondents found it difficult to answer that question.

When answering the question «Is it necessary to develop a program (method) for the training of young athletes attended a specialized sports class?», 53,70 % of the respondents gave a positive answer; 27,78 % of the coaches-teachers considered that it would be enough to adjust the current program, taking into account the peculiarities of training of athletes in the conditions of specialized sports classes; and 18,52 % did not see the need to develop a separate program (method) for the athletes of educational and training groups of specialized sports classes.

When answering the question: «What are you guided by when planning and building the educational and training process with young athletes attending specialized sports classes?», 42,59 % of the coaches-teachers indicated that they used sports programs for specialized educational and sports institutions and schools of the Olympic reserve, approved by Decree of the Ministry of Sports and Tourism of the Republic of Belarus, 22,22 % of the respondents used their own practical experience, 16,68 % – used scientific developments, and 14,81 % – methodological recommendations, 3,7 % of the respondents used all of the above-mentioned means and tools.

The results of the answer to the question «What level of development of physical fitness do young athletes have at the stage of initial sports specialization?» showed that a significant part, namely 48,14 and 35,19 % of the respondents, noted that the athletes had an average level and a level above the average, respectively.

The answers to the question «Why was not it still possible to achieve higher indicators in the level of physical fitness, when training athletes in the conditions of specialized sports classes?» indicate that a significant proportion of coach-teachers prefer to use track-and-field-specific programs for SESI. These programs determine the purposefulness, as well as the content of the educational and training process. Some of the trainers still tried to solve that problem using their own practical experience, as well as available scientific developments in the area. However, during the survey of this contingent, it was found that the means used by them in the organization and composition of the educational and training process had a limited range of influences, not contributing to the full extent of the complex physical development of athletes. We believe that these circumstances are associated with an insufficient number of scientific developments and recommendations for planning, organizing, and composing of the educational and training process in the conditions of specialized sports classes.

The analysis of the answers to the question: «What, in your opinion, ensures the effectiveness of training of young athletes (who have future specialization such as sprint and jumps) at the stage of initial sports specialization?» showed that the preference of all the proposed options is given to: development of physical qualities – 59,27 %; technique training – 31,48 %; tactics training – 3,7 %; all the above-mentioned directions – 3,7 %; theoretical training – 1,85 %.

It is of high importance to note that 40,74 % of the coaches participating in the research believe that, first of all, the attention should be paid to the comprehensive development of physical qualities and components of technical fitness at the physical training of young athletes. 35,19 % of the respondents believe that it is necessary to develop lagging physical qualities and components of technique readiness, and 24,07 % prefer to pay attention to leading physical qualities.

The answers to the question: «What means do you most often use to develop physical qualities among young athletes at the stage of initial sports specialization?» indicate that in most cases the respondents use exercises of a general developmental nature, as well as outdoor and sports games (38,89 and 31,48 %, respectively).

The opinions of the specialists about what additional training sessions (additional two academic hours) should be aimed at with young athletes who attended specialized sports classes differ. 37,04 % of the respondents believe that additional training hours should be used to restore young athletes. Most of the respondents (40,74 %) use this time as additional lessons aimed at developing general physical fitness. 14,81 % of the coaches who participated in the survey set the goal at these lessons to improve the technique preparedness of the athletes and 7,41 % of the coaches use additional hours as theoretical training sessions. At the same time, when answering the question: «Do additional training sessions influence the accumulation of fatigue among young athletes?», 90,74 % of the coaches-teachers indicated that excessive fatigue among trainees could be avoided with rational planning of training loads.

As a result of our research, it was found that, depending on the annual macrocycle of preparation and the means of sports training used during it, the level of physical fitness of the athletes participating in the research (boys and girls) gradually increased. The increase over the entire research period was 0,68 point (from 3,30 to 3,98 points) among the young athletes who attended specialized sports classes. At the same time, this indicator increased by 0,48 point (from 3,09 to 3,57 points) among the boys-athletes who were trained in the training groups of the specialized educational and sports institutions. The level of physical fitness increased from 3,36 to 3,95 points (an increase of 0,59 point) among the girls-athletes who attended specialized sports classes, and it increased from 3,13 to 3,56 points (an increase of 0,43 point) among the athletes from educational and training groups.

It can be noted that the achievement of a higher level of physical fitness among the athletes who attended specialized sports classes (the difference in the indicators between specialized sports classes and educational and training groups over the fifth year of training reached 0,41 point for boys and 0,39 point for girls), contributed to the distinctive features of the scheme of the educational and training process. Although the dynamics of the results of control exercises (the growth rates of the indicators gradually decrease and reach their minimum values over the fifth year) corresponds to the patterns of sports training, in which the increase in the indicators in control exercises can decrease with an increase in the level of physical fitness. None of the groups of the athletes who participated in the research did not reach the indicators corresponding to a good and excellent level of physical fitness for the entire period of training.

These features can be associated with the fact that a significant part of the coaches-teachers prefer to use programs for specific types of track-and-field for SESI. These programs determine the focus as well as the content of the educational and training process. Some coaches are still trying to solve this problem using their own practical experience, as well as the existing scientific developments in this area. However, when surveying this contingent, it was found that the means used by them in the organization and scheme of the educational and training process had a limited range of influences, not contributing to the full extent of the complex physical development of the athletes.

**Conclusion.** Based on the data of the research, it can be stated that the satisfactory level of physical fitness that the athletes of both groups have becomes one of the reasons for the low growth rates of physical fitness indicators. It may happen because the coaches-teachers use programs for individual types of track-and-field for SESI (as was indicated by 42,59 % of the respondents). Today these programs do not allow to fully reveal the potential of the distinctive features of the training of young athletes in specialized sports classes. There is also an insufficient number of scientific developments and the absence of similar programs for certain types of track-and-field, created directly for the athletes undergoing training in specialized sports classes.

In this regard, the problem of improving the physical fitness of young athletes actualizes the search for new scientific approaches and the rapid introduction into sports practice of innovative methods of physical training at the initial stages of long-term training, which would with the rational use of distinctive features contribute to the achievement of a higher level of physical fitness among those attended specialized sports classes in a much smaller amount of time.

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