Sports training in summer polyathlon based on the rational distribution of training loads

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Abstract

Objective of the study was to determine the rationality of the distribution of training loads of different types of all-around exercises of polyathlon students in the annual cycle.

Methods and structure of the study. To solve the set goal, a pedagogical experiment was conducted, in which 32 polyathlete students aged 17-24 years old (men and women) with qualifications from the II sports category to masters of sports, involved in sports improvement sections of various universities in Moscow, took part. All students-polyathletes were divided into two equal groups - experimental and control. The experimental group (16 people) practiced according to the developed methodology, taking into account the patterns of transfer (interaction) of physical qualities and the mutual influence of various types of exercises. In the control group (16 people), they did not adhere to a strict sequence of classes and included in one lesson a variety of exercises included in the types of all-around.

Results and conclusions. The results of control tests and competitions showed that the increase in results in all types of all-around events for the entire experimental period was significantly higher in the groups that used the developed methodology, which provided for the consistent use of exercises, taking into account the transfer of physical qualities during two training sessions a day.

The rational distribution of training loads in the annual cycle allowed to improve sports results in 100% of polyathletes students, and in 50% of cases to achieve sports standards and titles.

Keywords: *polyathlon, students, types of all-around, training load, periods of training sessions.*

Introduction. High achievements in polyathlon, as a multi-athlon sport, are possible as a result of systematic long-term training [2, 6, 7]. At the same time, those involved have to master the technique of sports that differ sharply from each other [4, 5].

Solving the problems of special and general physical training in polyathlon is more than in other sports based on the laws of transfer of physical abilities, which allows, with the development of one ability, to achieve an increase in the level of development of others [1, 7].

To date, the topical issue is the determination of the optimal training load in each type of all-around, the variability of all-around types in one training session, in a weekly training cycle, etc., as well as their sequence.

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The experimental group (16 people) practiced according to the methodology developed by us, taking into account the patterns of transfer (interaction) of physical qualities and the mutual influence of various

types of exercises. Training was carried out twice a day in the morning and in the evening.

In the control group (16 people), they did not adhere to a strict sequence of classes and included in one lesson a variety of exercises included in the types of all-around. We trained once a day.

After a two-month training process, all polyathlete students participated in competitions in competitions, and then, within 45 days, the training methods in both groups were changed - the control group began to study according to the experimental plan, and the experimental group - according to the control. At the end of the experiment, control testing was carried out in both groups, and all polyathlete students took part in official competitions.

Results of the study and their discussion. The results of control tests and competitions showed that the increase in results in all types of all-around events for the entire experimental period was significantly higher in the groups that used the developed methodology, which provided for the consistent use of exercises, taking into account the transfer of physical qualities during two training sessions a day. The technique is presented in tables 1 and 2.

Subsequent training according to the methodology followed by the experimental group showed its high efficiency. From a group of 16 people who were included in the experimental group, four people became masters of sports, four became candidates for master of sports, one became a European champion, two became champions of Russia. Eight more students-polyathletes of the experimental group had personal successes in performances at competitions.

As a result of pedagogical observation and our own many years of experience in training students-polyathletes, it was determined that the order of types of all-around exercises in the annual training cycle should be distributed as follows: shooting, sprinting, grenade throwing, long-distance running, swimming (Table 3).

In addition, a two-time workout per day gives a better increase in working capacity and physical qualities than a one-time workout with the same daily amount of physical activity. It has also been found that non-intense swimming does not adversely affect shooting; after swimming, training in sprinting or throwing grenades is not advisable; intensive training in running or throwing grenades reduces the result in shooting.

In the preparatory period, the ratio of funds for general and special training was in the range of 60 and 40%. 11-12 training sessions were held per week, including swimming - 3 trainings, cross-country training - 3, shooting - 3, throwing - 1-2, sprinting - 1.

In the competition period, the ratio of general and special training facilities was within 4:1. The number of training sessions - 12, including swimming - 3, shooting - 3, grenade throwing - 2, 100 m run - 2, 2000-3000 m run - 2.

Table 1. *The sequence of types of all-around exercises in one training session*

Lesson No.	Types of all-around exercises		
1	Shooting	General physical preparation	Swimming
2	Shooting (non-stressful)	Run 100 m, throwing	Swim or cross
3	Run 100 m (quality)	Throwing (quality)	Swimming (free)
4	Run 100 m (technique)	Throwing (technique)	Swimming (enhanced)
5	Throwing (technique)	100m run (technique)	strength training
6	strength training	Swimming (free)	-
7	Swimming	general physical preparation	-
8	Swimming	Shooting	General physical preparation
9	Intense running	General physical preparation	Swimming (free)
10	General physical preparation	Swimming	-

Table 2. *The order of types of all-around exercises with two training sessions per day*

Morning workout	Evening workout
Shooting, swimming (not intensive)	Strength training, swimming (free)
Swimming (free), shooting	Intense running (or throwing), swimming (or cross-country)
100m running, throwing	Shooting, cross or throwing
Throwing, general physical training	Intensive running, swimming (free)
Cross	Shooting, swimming
General physical preparation	100m running, throwing, swimming (free)
Swimming (intensive)	Shooting, general physical training
Strength training, cross	Swimming (non-intensive)
Intense running	Swimming

Table 3. *Approximate scheme of annual planning of training sessions of polyathlete students*

Types of all-around exercises	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
Preparation period							
100 m run		+					
Shooting	+		+		+		
Swimming	+		+		+		
Throwing		+					
Running 2000-3000 m	+		+			+	
Competition							+
Competitive period							
100 m run		+			+		
Shooting	+		+		+		
Swimming	+		+		+		
Throwing		+			+		
Running 2000-3000 m		+					
Competition						+	+
Transition period							
100 m run			+				
Shooting	+				+		
Swimming	+		+		+		
Throwing							
Running 2000-3000 m						+	
or conditioned cross			+			+	

In the transitional period, the volume and intensity of training loads were reduced to 40-60% within 2-4 weeks. The number of training sessions was reduced to 7-8.

Conclusions. When planning the training of students-polyathletes, a positive mutual influence of the types of all-around events was revealed as follows: an improvement in the result in the 100-meter run had a positive effect on the result in the 2000-3000-meter run; improvement of speed qualities in the 100-meter run made it possible to improve the effectiveness of grenade throwing, etc.

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