

### MODERNIZATION OF LEARNING AND TRAINING PROCESS OF FEMALE HANDBALL PLAYERS AT THE AGE OF 11 – 12 AT THE INITIAL STAGE OF TRAINING ACTIVITIES

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#### **Annotation:**

The article is devoted to the search of new approaches that are aimed at the improvement of handball training system. The author analyzes contemporary methods and existing means of improving physical skills of female handball players at initial stage of training. The article represents a new approach of learning and training process modernization for girls at the age of 11–12; the method is based on creatively different usage of training time. The author introduces elective training hours to annual learning and training plan. The updated methodology focuses training process on the increasing of general and special physical preparedness level that influences the results positively

**МОДЕРНІЗАЦІЯ НАВЧАЛЬНО-ТРЕНУВАЛЬНОГО ПРОЦЕСУ ГАНДБОЛІСТОК 11 – 12 РОКІВ НА ЕТАПІ ПОЧАТКОВОЇ ПІДГОТОВКИ** Шуба Людмила  
Дослідження присвячене пошуку нових підходів спрямованих на удосконалення тренувальної системи в гандболі. Проаналізовано сучасний стан існуючих методик та засобів розвитку фізичних якостей гандболісток на етапі початкової підготовки. В науковій роботі представлений новий підхід модернізації навчально-тренувального процесу дівчат 11-12 років при використанні нестандартного розподілу навчальних часів. Доповнені варіативні частини річних планів навчально-тренувальних занять. Удосконалена методика спрямована на підвищення рівня загальної та спеціальної фізичної підготовленості, що позитивно впливає на результат.

**МОДЕРНИЗАЦИЯ УЧЕБНО-ТРЕНИРОВОЧНОГО ПРОЦЕССА ГАНДБОЛИСТОК 11 – 12 ЛЕТ НА ЭТАПЕ НАЧАЛЬНОЙ ПОДГОТОВКИ** Шуба Людмила  
Исследование посвящено поиску новых подходов направленных на усовершенствование тренировочной системы в гандболе. Проанализировано современное состояние существующих методик и средств развития физических качеств гандболисток на этапе начальной подготовки. В научной работе представлен новый подход модернизации учебно-тренировочного процесса девочек 11 – 12 лет при использовании нестандартного распределения учебных часов. Дополнены вариативные части годовых планов учебно-тренировочных занятий. Усовершенствованная методика направлена на повышение уровня общей и специальной физической

**Key words:**

methodology, handball, sport training, physical skills, physical preparedness.

методика, гандбол, спортивне тренування, фізичні якості, фізична підготовленість

подготовленности, что позитивно влияет на результат.

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**Introduction.** Solution of contemporary problems of achieving high results in sport necessitates research and development of sport among children and juvenile [4, 6].

Enhancing the effectiveness activities among children and youth sport schools as well as specialized school for Olympic trainees that play a key role in high-class sportsmen preparation is impossible without in-depth research in the field of Sport Science. It is undeniable that childhood age is basic for general and special physical fitness as well as technical and tactical skills formation, which are essential for achieving the level of master of sports of international class in the future [2, 5, 7].

Furthermore, at each stage of long-term sport training, experienced coaches make health promotion and physical fitness of the child a priority the same as it is required in training process in adulthood [3, 10].

Problems of preparation of sports reserve in handball are connected with improving of athletes' initial training; searching of tools and techniques for ensuring effective and lasting mastery of motor abilities and skills [1, 6, 9].

In handball, as in other game kinds of sports, formation and improving of motor skill have great importance. The motor skill is one of the basic sides of human preparedness for sports activities. It serves as the foundation for new skills. Motor activity may be successful if it is based on formed skill stability. In handball, it determines athlete's proficiency.

**Review of recent papers and publications.** The paper of S. Kushniryuka [3] describes the competitive activity of high qualification handball players as the basic requirement for the level of their physical preparedness. The research of J. Kozina, V. Slyusareva, E. Volkov [2] based on the results of correlation and factor analysis, demonstrates that indicators of throws accuracy, speed-strength abilities and anthropometric parameters are leading factor in effective training process structuralization and competitive activities performance. T. Tymush [5] outlines major aspects in methods of techniques and tactics teaching in handball.

The research of leading foreign scholars such as A. H. Saeterbakken, R. van den Tillaar, S. Seiler [9] and H. Wagner, T. Finkenzeller, S. Würth, S. P. von Duvillard [10] are focused on investigation of the most effective ways of organizing training process for female handball players. The scholars analyze internal team communication as well as representation of personal abilities and skills of each player.

The empirical approach to problem as well as the analysis of research and methodology literature sources show that the formation of the necessary skills and abilities among handball players on the initial stage has no sufficient scientific justification yet. In the process of learning and training, there are mistakes and errors repetition in the technology of techniques implementation that leads to the extension of initial training period. There is a formed stereotype of classes that cannot cause new motivation background and existing aggravators do not create necessary conditions for increasing the efficiency of general and special training at initial stage [1, 5, 8].

The established system of preparation reduces the effectiveness of training achieving the objective; it does not contribute to maintaining interest to sports among children. The above-mentioned problems lead the scientists and trainers to the search for new approaches in improving the learning and training process as well as advancing training resources.

**The objective** – to improve and experimentally test the methodology of general and special physical preparedness improvement among female handball players at the age of 11 – 12.

**Results of research.** The stage of initial training (phase of initial sports specialization) is the “foundation” for sports activities of a young handball player. The main task at this stage is providing comprehensive physical preparedness of athletes; subsequent mastering rational sports technique among players; creation of favorable preconditions for achieving the best results [4, 5].

On the base of the above-mentioned material, there is an annual plan of work (Table 1) in control group (hereinafter referred to as – C. G.) and experimental groups (hereinafter referred to as – E. G.).

Due to the fact, that it is the most important planning document for the implementation of our advanced techniques, we represent in our paper. Furthermore, this table allows comparing planning time in control and experimental groups.

The main task of the time plan design is to evaluate the level of preparedness of the athlete, his/her age, sports qualification, experience in handball, calendar of sporting events, peculiarities of the sport kind, conditions of learning and training process that can determine the indicators of athlete’s simulated state at the scheduled period.

In accordance with the annual plan of work in control and experimental groups, the methodology is developed in accordance with the temporal structure and consists of macro-cycles, meso-cycles and micro-cycles.

Macro-cycle is a long-term training cycle six-month type (in some cases it can be shortened to 3 – 4 months), annual type or years long type. This type of training cycle is connected to development, stabilization and temporary loss of sport form and includes a range of completed periods, stages and meso-cycles.

Meso-cycle is kind of training cycle with average duration from 2 to 6 weeks. Meso-cycles consist of a relatively completed number of micro-cycles.

## II. НАУКОВИЙ НАПРЯМ

*Table 1*

**The annual plan of work in control and experimental groups**

Types training	Amount of hours		IX		X		XI		XII		I		II		III		IV		V	
	C.G.	E.G.	C.G.	E.G.	C.G.	E.G.	C.G.	E.G.	C.G.	E.G.	C.G.	E.G.	C.G.	E.G.	C.G.	E.G.	C.G.	E.G.	C.G.	E.G.
1. Theoretical training	10	12	1	1	2	2	1	1	1	1	1	1	1	1	1	2	1	2	1	1
2. General physical training	90	70	10	10	10	10	10	10	10	9	10	12	10	8	10	5	10	5	10	5
3. Special physical training	90	110	10	10	10	10	10	10	10	11	10	12	10	12	10	15	10	15	10	15
4. Technical training	45	48	5	5	5	5	5	5	5	5	5	5	5	5	6	5	6	5	6	
5. Tactical training	21	26	2	2	3	3	3	3	2	2	2	3	2	3	3	3	2	4	2	3
6. Game training	5	6	2	1	-	1	-	-	1	1	-	1	-	-	-	1	-	1	2	-
7. Test games, competitions	12	12	-	-	-	-	3	3	-	-	3	3	-	-	3	3	-	-	3	3
8. Checking qualifying standards	19	8	3	3	-	-	1	-	1	1	3	-	3	1	1	-	1	-	6	3
General amount of hours	292	292	33	32	30	31	33	32	30	30	34	33	31	30	33	35	29	33	39	36

## II. НАУКОВИЙ НАПРЯМ

Table 2 represents detailed information on percentage rating distribution of training activities types in experimental group

*Table 2*

<b>Percentage rating distribution of training activities types in experimental group</b>					
№	Type of activity	I meso-cycle	II meso-cycle	III meso-cycle	IV meso-cycle
1	Theoretical training	5%	5%	5%	2,5%
2	General physical training	45%	30%	20%	15%
3	Special physical training	20%	30%	40%	45%
4	Technical and tactical training	15%	20%	30%	35%
5	Action-oriented games	20%	20%	10%	5%

Micro-cycle is a short-term small cycle of training activities, mostly it is associated with a week or net to week's duration of training, it usually consists from two to four training classes.

Meso-cycle consists of 8 micro-cycles (8 weeks). There are 4 training sessions each week. Micro-cycles are designed in accordance with the correlation to the percentage rating distribution of training activities types in meso-cycle.

This approach is based on increase in the amount of training loads dynamics with a slight growth general intensity of training. Although, the intensity of exercise also grows, the degree of its increase is limited in a narrower range than the increase in total volume.

Is necessary to notice that the decisive factor in the development of physical qualities among the children in control and experimental groups is consideration of sensitive periods of physical qualities and comprehensive approach at physical training classes.

Competently organized process of general and special physical training of children of experimental group is aimed at both diverse and proportional development of motor characteristics.

The obtained data of general physical preparedness level after the experiment show that the groups are homogeneous in general taking into consideration the results of the tests: "running 30 meters, s." (V – 6,14% C.G., V – 5,91% E.G.), "shuttle running for 100 meters distance meters per seconds" (V – 8,21% C.G., V – 7,86% E.G.).

According to tests of "standing long jump, m." (V – 7,67% C.G., V – 7,01% E. G.), "handball throwing in a standing position, m." (V – 7,13% C.G., V – 5,16% E. G.), "handball throwing with both hands in a sitting position, m." (V – 8,55% C.G., V – 7,94% E. G.), there are medium fluctuations in measurement results.

The results of "running 30 m, s" test for the control and experimental groups are pro tanto  $5,44 \pm 0,83$  s and  $5,12 \pm 0,58$  s ( $p < 0,05$ ). The results of "standing long jump, m." test for the control and experimental groups are pro tanto  $181,00 \pm 0,88$  m. and  $198,00 \pm 0,58$  m. ( $p < 0,01$ ). The results of "handball throwing in a standing position, m." test for the control and experimental groups are pro tanto  $16,50 \pm 0,63$  m. and  $21,00 \pm 0,51$  m. ( $p < 0,05$ ). The results of "handball throwing with both hands in a sitting position, m." test for the control and experimental groups are pro tanto  $6,50 \pm 0,51$  m. and  $8,50 \pm 0,49$  m. ( $p < 0,05$ ). The results of "shuttle running for 100 meters distance meters per seconds" test for the control and experimental groups are pro tanto  $30,03 \pm 0,94$  s. та  $28,16 \pm 0,75$  s. ( $p < 0,05$ ).

The received data of special physical preparedness level after the experiment exemplify that the groups are homogenous taking into account the tests indexes of "30 meters distance handball dribble with the help of right hand, seconds" (V – 6,12% C. G., V – 5,61% E. G.); "handling of the

ball goal in 30 seconds, times” (V – 5,97% C. G., V – 5,78% E. G.); “exactitude of handball throwing, times” (V – 6,61% C. G., V – 5,92% E. G.).

For the tests, “30 miters distance handball dribble, seconds” (V – 7,18% C. G., V – 6,02% E. G), and “30 miters distance handball dribble with the help of left hand, seconds” (V – 5,33% C. G., V – 4,17% E. G), fluctuations in measurement results are average.

The test results “30 miters distance handball dribble, seconds” in experimental group and control group are pro tanto  $5,69 \pm 0,88$  seconds and  $5,31 \pm 0,28$  seconds ( $p < 0,05$ ). The test results “30 miters distance handball dribble with the help of right hand, seconds” are pro tanto  $8,98 \pm 0,48$  seconds and  $8,29 \pm 0,28$  seconds ( $p < 0,05$ ). The test results “30 miters distance handball dribble with the help of right hand, seconds” are pro tanto  $10,06 \pm 18,14$  seconds and  $9,96 \pm 19,14$  seconds ( $p < 0,05$ ). The test results “exactitude of handball throwing, times” are pro tanto  $1,04 \pm 0,69$  and  $1,04 \pm 0,51$  ( $p < 0,01$ ). The test results “handling of the ball goal in 30 seconds, times” are pro tanto  $16,14 \pm 1,64$  and  $15,04 \pm 1,29$  ( $p < 0,05$ ).

Thus, the statistics data received during the experiment conduction represent quantitative characteristics of the two different methodologies of teaching handball among female children at the age of 11–12 and prove the existence of differences between the above-mentioned methodologies.

As a result, based on the conducted experiment it is shown that the development of physical qualities gained with the help of the experimental methodology has positive influence on training process of 11–12 years old girls and can be implemented into training process.

**Conclusion.** The contemporary methods and techniques for the development of general and special physical preparedness for female players at the age of 11–12 that specialize in handball are analyzed. The methodology of physical qualities development for the girls aged 11–12 that go in for handball is upgraded taking into account the analyze of specialized literature. The upgraded methodology includes such blocks as block of theoretical knowledge, general physical preparation, specialized physical preparation, technical and tactical preparation and action-oriented games.

The selected themes reflect major and minor aspects of handball preparation that are urgent for female players and can contributed to motivation development of the chosen kind of sport;

General physical preparedness. In this preparation block, there are exercises that are focused on maximum preparation of the female body for the training process; the exercises are not repetitive;

Special physical preparation. This block describes multifaceted process, that represents great amount of specially selected techniques and methods focused on the female athletes development and provides necessary preparation for the achievement of the maximum results in sport activities;

Technical and tactical preparation. This block is designed for acquisition and improvement of technical and tactical knowledge, skills and competences as well as tactical thinking of female handball players;

Action-oriented games. The games are specially chosen the way that they can simulate game situations for the improvement of sports activity among female players;

The article evaluates the efficiency of the improved methodology taking into account the indexes of the control and experimental group, the indexes were obtained during the research period.

The tests, in particular, are focused on the general physical preparedness control and the largest increase can be seen in tests: “handball throwing in a standing position, m.”: C. G. – 8,94%; E. G. – 12,98 %; “handball throwing with both hands in a sitting position, m.”: C. G. – на 6,49 %; E. G. – 11,17 %.

The distinction among experimental and control group in such tests as “30 miters distance running”: C. G. – 6,51 %; E. G. – 8,12 %; “standing long jump, m.” C. G. – 10,47 %; E. G. – 13,26%; “shuttle running for 100 meters distance meters per seconds”: C. G. – 8,64%; E. G. – 11,69%.

The distinction in experimental and control groups are relatively small and do not go beyond the statistical error.

Among the tests designed for specific physical preparedness control the largest increase can be seen in tests: “30 meters distance handball dribble with left hand” C. G. – на 4,07 %; E. G. – на 9,69 %; “30 meters distance handball dribble with right hand”: C. G. – на 4,25 %; E. G. – на 8,87%.

The distinction among experimental and control group in such tests as “30 meters distance handball dribble” C. G. – на 7,04 %; E. G. – на 12,56 %; “handling of the ball goal in 30 seconds, times” C. G. – 5,11 %; E. G. – 10,41%; “exactitude of handball throwing, times”: C. G. – 7,52 %; E. G. – 12,22 %.

Analyzing the above-mentioned indexes, we can conclude that the improved methodology has relatively positive effect on the female athletes in comparison with the traditional methodology of training and can be implemented into the training process at initial stage for female handball who are 11–12 years old.

**Perspectives of further research.** The investigation of the efficiency of the proposed methodology is going to be implemented preparation into training at the whole initial stage.

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