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RESEARCH AND ANALYSIS OF PSYCHOMOTOR SKILLS AND SPORTS INTELLECT OF YOUTH BASKETBALL PLAYERS PRACTICING 3 ON 3 BASKETBALL

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ABSTRACT

Goal: The subject of this report is the influence of certain methods of preparation on sports intellect of youth basketball players practicing 3 on 3 basketball. The research contains observation of the 12 to 14 age group.
Methods: Methods used are pedagogical observation, tutorial experiments, and statistical methods to extrapolate results.
Results: The results show positive development of the observed factors in all of the monitored groups, whereas the difference within the groups is not statistically significant at the end of the study. This is a result of the basketball practice within the groups, and the basketball game itself and the 3 on 3 game promote improvement of the psychomotor skills and basketball intellect of the practicing youth, despite the different practice methods and the personal qualities of the players observed.
Conclusion: The game of basketball in its standard format and in its 3 on 3 format contribute to the improvement of the psychomotor skills and basketball intellect of the observed youth players ages 12 to 14, despite the different practice methods and the personal qualities of the players observed.
Keywords: basketball 3 on 3, psychomotor, sports intellect, youth basketball players.

INTRODUCTION

"Psychological training is part of the general system for psychological support of sports, which is a comprehensive set of activities aimed at improving and optimizing the mental regulation of body functions and behavior of the athlete in view of the tasks of the training process and the goals of the competition." (5). It has a system-complex nature and is not a pre-race campaign event. The essence of the intellectualization of sports activities as part of the formation of elite athletes consists in the synchrony of the activity between coach and athlete and the special requirements of the specific sport (4). Acquisition, comprehension and application are the three sides of sports intelligence, which shape the intellectualization of sports training. Especially valuable qualities for basketball are speed and efficiency of thinking. It is necessary to create conditions for purposeful development of the athlete's intellect and that will reflect in the athletes of the whole team. Through the intellectual sphere, the athlete learns to independently reveal problems in unexpected situations by creating new, original sports actions, elements, exercises" (5).

V. Yanev (5) studies sports intelligence and substantiates it as "revealing the unknown by transforming the usual to create new and improved course of action." The following peculiarities are taken into account in the intellectualization of the sports preparation for basketball in adolescents: intellectual organization of the sports activity; peculiarities of thinking in athletes; development of intellectual abilities; requirements to the intellectual qualities of the athletes in different modes of sports activity; modeling of sports activity.

V. Tsvetkov (3) found that personal anxiety has the greatest impact on the basketball skills of children playing mini basketball. The different types of passes and shooting in the basket are most closely related to the properties of temperament.

According to L. Petrov (1, 2), the operational thinking of young basketball players develops with age. Great improvement is observed from 12 to 13-year-olds, on average with 7 moves and 21 seconds, from 13 to 14 years, on average with 7 moves and now with less time - 11 seconds. By the age of 16, basketball players improve their operational thinking by significantly, and after that age the improvement is less. Between 16-17 and 18 years old, the improvement in results is symbolic. This age for basketball players is considered the beginning of their maturity (5). According to L. Petrov (1), increasing the overall speed of the basketball game improves, albeit minimally, operational thinking. The time for operative thinking hardly changes, which speaks of the greater difficulty in improving this quality of thinking (4).

MATERIALS AND METHODS

Objective: The purpose of this report is to study and analyze the psychomotor skills and sports intelligence of young basketball players practicing 3-on-3 basketball.

Research methodology: Adolescent basketball players aged 12-14 years practicing the game of 3-on-3 basketball were studied.

Control group - studied according to the established program of the Bulgarian Basketball Federation since 2008 for annual training process in basketball 3 on 3.

Experimental groups - according to specialized methodology, with distinctive features in the organization of the activities. Game and specialized basketball exercises are used, which include: most of the time playing on 1/ 1/1, 2/2 and 3/3 courts. The experimental groups conduct training activities as follows: training days a week - 5; training duration - 1.5 hours; training days a month - 20; training months of the year - 10.

Control tests used during the research:
1. Tapping 10. It is examined with the help of a delineated cross-shaped plane. The subject holds in his comfortable hand a pencil (pen), with which he successively crosses the plane diagonally. The task is to inflict as many blows as possible.
2.Coefficient of operational thinking: Tests to study sports intelligence.
Test 18. Operational thinking – 4-moves combination number of moves per time.
Test 19. Operational thinking - 5 moves combination number of moves per time.
3. The results were processed using the statistical programs EXCEL SPSS, using variation, correlation, factor, comparative and graphical analysis.

RESULTS

Tables 1, 2 and 3 present the results of the research with the "Tapping 10" test, which gives an idea of the speed and accuracy of the movements of the comfortable hand, characteristic of the basketball game. The mean values of the experimental group show development during the study period with nearly 2 strokes, which difference is statistically significant (Pt = 99%). This confirms the contribution of the methodology used for 3-on-3 basketball training.

The differences in achievements (min - max) are large - between 27 and 44 hits at the beginning of the study period and 26 and 40 - at the end of the period, i.e. in the studied group there are athletes with quite different psychomotor qualities. The coefficient of variation (V) is within 15.89% at the beginning of the study and 13.92% at the end. This confirms the claim of relatively stable results, i.e. the experimental group is relatively homogeneous in this indicator and also that the methodology used had an impact on all competitors in the experimental group.

***Table. 1**. Results of the variational analysis of the data on the psychomotor skills and sports intelligence of the studied basketball players from the experimental group – home*

№	Name of Test	x	S	V%	A_s	E_x	min	max	R
1.	Tapping 10	34.62	5.50	15.89	0.24	-1.02	27	44	17
2.	OT 4	2.80	2.27	81.07	3.41	12.02	1.40	10.25	8.85
3.	OT 5	2.38	1.15	48.32	1.94	3.16	1.32	5.28	3.86

Table. 2. *Results of the variational analysis of the data on the psychomotor skills and sports intelligence of the studied basketball players from the experimental group – end*

№	Name of Test	x	S	V%	A_s	E_x	min	max	R
1.	Tapping 10	32.69	4.55	13.92	0.36	-0.89	26	40	14
2.	OT 4	2.14	0.43	20.09	0.05	-1.81	1.53	2.78	1.25
3.	OT 5	1.78	0.33	18.54	1.55	3.11	1.40	2.64	1.24

Table. 3. *Significance of the increase of the mean values for psychomotor skills and sports intelligence in the experimental group at t-crit - 1.78*

Type		Begin		End		d	t	Pt
№	Name	X_1	S_1	X_2	S_2			
1.	Tapping 10	34.62	5.50	32.69	4.55	-1.93	3.58	99 %
2.	OT4	2.80	2.27	2.14	0.43	-0.66	1.16	75.4 %
3.	OT 5	2.38	1.15	1.78	0.33	-0.6	2.30	97.9 %

The tests for operational thinking (OT) 4 and (OT) 5, respectively solving 4-move and 5-move combinations, show relatively fast involvement of the subjects from the experimental group. At the end of the experiment, the results in both 4-move and 5-move combinations improved. For the former, this is with a statistically insignificant difference of 1.16 (75.4%), for the latter - with a significant difference of 2.3 (97.9%). We attribute this to a large extent to the used training methodology, which emphasizes exercises in which technical tactical situations are solved in a short time.

Table. 4. *Results of the variational analysis of the data on the psychomotor skills and sports intelligence of the studied basketball players from the control group – begin.*

№	Name of Test	x	S	V%	A_s	E_x	min	max	R
1.	Tapping 10	39.54	7.68	19.42	0.50	-0.45	29	54	25
2.	OT 4	3.39	2.13	62.83	1.72	3.53	1.58	9.10	5.42
3.	OT 5	2.65	2.27	47.92	1.63	1.68	1.68	5.42	3.74

Table. 5. *Results of the variational analysis of the data on the psychomotor skills and sports intelligence of the studied basketball players from the control group – end*

№	Name of Test	x	S	V%	A_s	E_x	min	max	R
1.	Tapping 10	39.37	6.83	17.17	0.58	-0.96	32	52	20
2.	OT 4	2.14	0.43	20.09	0.05	-1.81	1.53	2.78	1.25
3.	OT 5	1.78	0.33	18.54	1.55	3.11	1.4	2.64	1.24

Table. 6. *Significance of the increase of the average values for psychomotor skills and sports intelligence in the experimental group at t-crit - 1.78*

Type		Begin		End		d	t	Pt
№	Name	X_1	S_1	X_2	S_2			
1.	Tapping 10	39.54	7.68	39.77	6.83	0.23	0.33	25.9 %
2.	OT 4	3.39	2.13	2.14	0.43	-1.25	2.06	96.1 %
3.	OT 5	2.65	1.27	1.78	0.33	-0.87	2.37	98.2 %

Tables 4, 5 and 6 and Diagrams 1 and 2 show the results of the comparison of the experimental and control groups. In the Tapping 10 test, better results were observed in the experimental group compared to the control group at the beginning of the study and at its end, and the improvement of

the results was with a significant increase (Pt = 99%), in the control group - the increase was only 25%. The methodology used and the better initial selection had a significant positive effect on the psychomotor skills of the basketball players from the experimental group.

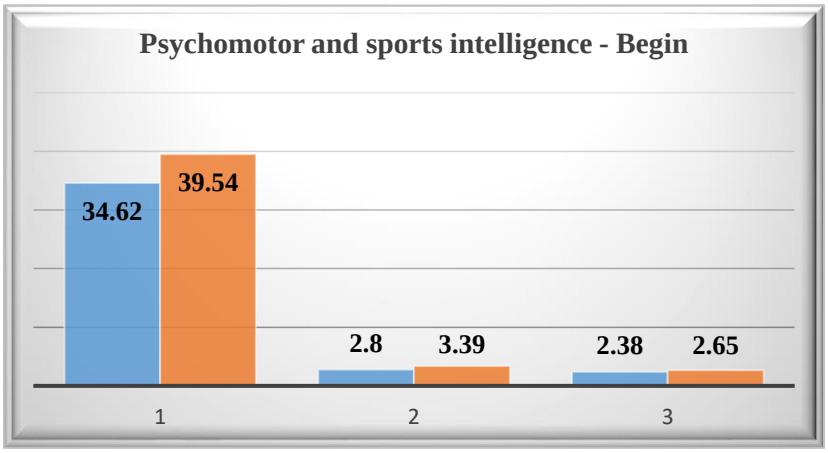

Diagram 1. Development of psychomotor skills and sports intelligence: Tapping 10, OT 4 and OT 5 of the basketball players from the experimental group (in blue) and the control (in red) - begin

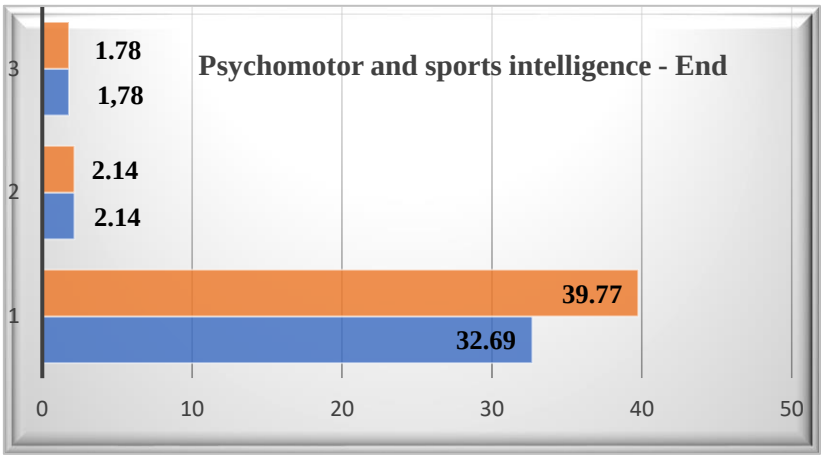

Diagram 2. Development of psychomotor skills and sports intelligence: Tapping 10, OT 4 and OT 5 of the basketball players from the experimental group (in blue) and the control group (in red) - end

Observing the results of the tests OPM 4 and OPM 5, similar results can be seen in both study groups in the initial stage of the study. At its end, after a one-year experiment, the results were leveled. Basketball game provides an opportunity to improve the basketball intelligence of those practicing this sport in its two varieties, despite the different methodologies and other qualities of the subjects.

CONCLUSION

Summarizing the results for psychomotor skills and sports intelligence, it can be argued that there is development in both groups, and the difference between them is not significant at the end of the study. This is probably the result of basketball training in both groups. The positive influence of the applied methodology on the physical condition, psychomotor and intellectual qualities of the studied experimental group was established, comparing it with the control one.

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