Competitive performance modeling skills training method: tests and benefit analysis

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Abstract

Objective of the study was to develop and test benefits of a new competitive performance modeling skills training method in application to the skilled 17-19-year-old volleyball players.

Methods and structure of the study. We sampled for the competitive performance modeling skills training method testing experiment the 17-19-year-old Class I/ II players (n=28) and split them up into Reference and Experimental Groups (RG, EG) of 14 people each. Pre-experimental physical fitness tests (including the 3/ 6m sprints (s); standing long/ high jumps (cm); and 1kg fitball jump throws – straight and left-/ right-turn ones) found insignificant intergroup differences ($p>0.05$). Pre-experimental technical fitness tests (including the situation-specific response efficiency; motor skills control on the move; and situation-specific attacking skills tests) also found insignificant intergroup differences ($p>0.05$). The RG training in the experiment was standard, and the EG training was complemented by the new competitive performance modeling skills training method.

The competitive performance modeling skills training method offered special training tools to excel the specific perceptions, attention control, motor memory and a range of other individual intellectual and physical qualities.

Results and conclusion. The new competitive performance modeling skills training method was tested beneficial for the situation specific responses and control excellence purposes as verified by a set of the group pre- versus post-experimental physical / technical fitness tests, with special improvements in a range of intellectual performance and practical aspects. The improved competitive performance modeling skills were found to contribute to the game reading, forecasting and analyzing abilities for fair analyses of the own/ opponent's technical performance of special importance for the competitive experience building aspect.

Keywords: *volleyball, actions modeling, educational experiment.*

Background. Motor skills excellence trainings for competitive progress in modern volleyball require persistent efforts to train the sport-specific perceptions, attention control, motor memory and a range of other individual intellectual and physical qualities; with the motor perceptions and motor skill control and excellence tools being critical for the competitive performance and progress modeling purposes.

Objective of the study was to develop and test benefits of a new competitive performance modeling skills training method in application to the skilled 17-19-year-old volleyball players.

Methods and structure of the study. We sampled for the competitive performance modeling skills training method testing experiment the 17-19-year-old Class I/ II players (n=28) and split them up into Reference and Experimental Groups (RG, EG) of 14 people each. Pre-experimental physical fitness tests (including the 3/ 6m sprints (s); standing long/ high jumps (cm); and 1kg fitball jump throws – straight and left-/ right-turn ones) found insignificant intergroup differences ($p>0.05$). Pre-experimental technical fitness tests (including the situation-specific response efficiency; motor skills control on the move; and situation-specific attacking skills tests) also found insignifi-

cant intergroup differences (p>0.05). The RG training in the experiment was standard, and the EG training was complemented by the new competitive performance modeling skills training method.

The competitive performance modeling skills training method offered special training tools to excel the specific perceptions, attention control, motor memory and a range of other individual intellectual and physical qualities. A special priority was given to the individual perceptions of every competitive game action on an inclusive/ holistic basis i.e. as a combination of interrelated specific game elements classifiable by their contributions – from the core to associating secondary ones with their specific details when necessary – to help understand their complex relationships.

The perception excellence trainings included the following practices: (1) Name a specific technical skill as soon as you see it; (2) Analyze the technical skill structure and indicate its core technical element with the associating details; (3) Explain why the element plays the core role; and describe the details and their roles for success of the technical element; etc.

Other EG members were encouraged to assess the above partner responses with clarifications when necessary. A special attention in this training was given to objectivity, accuracy, perceptive clarity and good understanding of every opponent's/ partner's action and its contribution to success – to facilitate formation of due motor memory with its two most important aspects: scope and strength.

Results and discussion. Upon completion of the experiment, we run post-experimental tests to rate the group physical / technical fitness progress. The tests found progress in both groups, although the EG was tested significantly better in virtually every post-experimental test.

The group pre- versus post-experimental physical fitness tests yielded the following data. The RG and EG made progress in the standing high jump test from 58.16±4.65cm to 59.97± 3.82cm (p>0.05); and from 57.29±3.85cm to 61.79±5.35cm (p<0.05), respectively. In the fitball jump throw tests, the RG and EG made progress from11.63±2.15m to 12.33±1.77m (p> 0.05); and 11.71 ± 1.55m to 13.18 ± 1.82m (p<0.05), respectively. The same advantage of the EG versus RG was found by other physical fitness tests.

The group pre- versus post-experimental technical fitness tests yielded the following data. The RG and EG made progress in the situation-specific response efficiency test from 2.73± 0.32 to 2.88±0.39 points (p>0.05); and from 2.70± 0.24 to 3.62± 0.27 points (p<0.05), respectively.

And in the motor skills control on the move test, the RG and EG made progress from 3.05± 0.26 to 3.17± 0.23 points (p>0.05); and from 3.08± 0.20 to 3.72± 0.36 points (p<0.05), respectively. The same advantage of the EG versus RG was found by the other technical fitness tests.

Therefore, the group pre- versus post-experimental physical / technical fitness tests demonstrated benefits of the new competitive performance modeling skills training method in every aspect including the game-specific perceptions, motor memory, attention controls, analytical skills, opponent's actions reading/ forecasting and other skills – with the method used as complementary to the physical/ technical trainings of the 17-19-year-old volleyball players. This finding gives us the grounds to recommend the competitive performance modeling skills training method for application in the training systems.

Conclusion. The new competitive performance modeling skills training method was tested beneficial for the situation specific responses and control excellence purposes as verified by a set of the group pre- versus post-experimental physical / technical fitness tests, with special improvements in a range of intellectual performance and practical aspects. The improved competitive performance modeling skills were found to contribute to the game reading, forecasting and analyzing abilities for fair analyses of the own/ opponent's technical performance of special importance for the competitive experience building aspect.

References

1. Avramova N.V., Nazarenko L.D. Formation of ability to predict motor actions of volleyball players aged 15-17 years old. Fizicheskaya kultura: vospitanie, obrazovanie, trenirovka, 2012. no. 2. pp. 34-36.
2. Burtsev A.V. Improving spatial-temporal orientation of skilled volleyball players. Pedagogiko-psikhologicheskie i mediko-biologicheskie problemy fizicheskoy kultury i sporta. 2011. No.1. pp. 34-38.
3. Kashirin V.A., Burtsev A.V., Nazarenko L.D. Structural approach to development of agility in volleyball players. Ulyanovsk: UlSU publ., 2009. 132 p.
4. Nazarenko L.D., Anisimova E.A. Education in sports. Moscow: Teoriya i praktika fizicheskoy kultury i sporta publ., 2015. 80 p.