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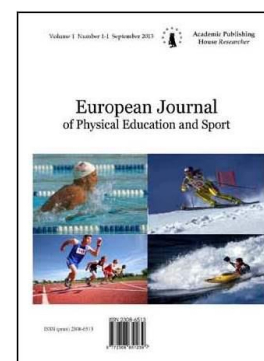
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The Technology to Train Techniques in Sports

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Abstract

The training session of technical techniques is proposed to conduct on the playing ground where computer-controlled light emitters create allowed and unallowed light dynamic zones. Each athlete is to be placed in one of the allowed zones and to execute with an implement some techniques directed with his breast on the light guide mark created outside the allowed zone. The athlete holding an implement is not allowed to go out of the permitted area. In the course of the training session unpredictably for an athlete the position, the shape and the area of the permitted and unallowed zones is changed. The athlete's going into the unallowed zone or performing techniques in the position not-oriented on the guide mark is considered to be an error. If the errors are none, the allowed zone area is reduced and the intensity of the session is increased until the athlete commits an error. By the minimum square of the allowed zone, the maximum speed of its movement that the athlete performing the exercise does not commit any errors, they evaluate the athlete's technical skill.

The proposed technology facilitates in faster mastering the play technique, unlocking the individual technical features and enhancing them at any stage of the professional career. The technology can be used for the technical training of athletes of different professional profiles specializing in football, hockey, handball, basketball and other sports that require implement handling.

Keywords: sports, movements technique, techniques, training, methodology of training, information.

1. Introduction

Sport technique is considered to be a set of techniques and actions executed to obtain the most effective solution of motor problems due to the specifics of a particular kind of sport (Krivoshchekov, 2007). As early as at the stage of basic training (in the first year) one of the main tasks in sports education is training the fundamental sport techniques such as motor skills (Sofronov et al., 2012).

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The conventional methods of technique training have been used for more than 40 years already, so the problem of the technical skill growth is highly dependent upon the established system to train the basics of the sport drills through mainly such methods as a description, an explanation, and a demonstration.

According to M. Vershinin et al. (Vershinin et al., 2013), at the present time, a systematic approach to the development and improvement of sport technique training methods involving the search and development of novel technologies is absolutely required. As the technical skills improve, the opportunities for making the selective impact on certain aspects of the motor function increases. To provide for many-sided training more coaching tools ought to be applied (Abramov, 2012). For this purpose seeking innovative, more efficient means to build up movement techniques using information technologies is important. This will allow us to (Ermakov, 2001; Petushinskii, 2006; Luk'yanov et al., 2007):

- master quicker the rational and efficient technology and know how to apply it;
- find an individual technique style;
- modify the technical training at any stage of the athlete's training starting from the beginner and to Merited Master of Sports level;
- bring the quality of training in team sports to a higher level;
- facilitate the coach's work aimed at achieving better results in sports.

The use of information technologies for technical and tactical training in team sports have been earlier examined by the authors and the method of technical (Afon'shin et al., 2014; Polevshchikov et al., 2014), tactical actions training by means of simulation play situations in virtual reality (Rozhentsov and Afon'shin, 2013) and technical and tactical training in team sports has been proposed (Rozhentsov and Afon'shin, 2014).

The purpose of the work is to develop the techniques training technologies in sports using information technologies.

The Technology of Techniques Training in Sports

The session to train techniques takes place on the playing ground, where by means of computer-controlled light emitters, allowed and unallowed light-dynamic zones are created. Each athlete is to keep staying in one of the allowed zones, execute certain drills with an implement, focusing with his breast on a light guide mark created outside the permitted zone. The athlete holding his implement is not allowed to leave the permitted area. In the course of the training session unpredictably for an athlete the position, the shape and the area of the allowed and unallowed zones is changed.

Depending on the athlete's proficiency level the speed of transformation and movement of zones on the playing field is set. For beginners the minimum speed is set and higher qualified athletes are subjected to more difficult tasks simulating the play with an experienced opposing player. The error is considered to be committed when the athlete enters the unallowed zone or performs the technique in the non-oriented to the guide mark position.

If the errors are not committed the area of the allowed zone area is reduced, and the intensity of the training session is to be increased until the athlete fails to perform the drill correctly. The minimum area of the allowed zone, the maximum movement speed that the athlete is performing his drill not making any errors help to evaluate the athlete's technical proficiency (Patent..., 2015).

2. Discussion

According to V.I. Prokopenko and V.P. Metyolkin (Prokopenko and Metelkin, 2011), the researchers studying the problem of children's physical activity proved that 5-7 year old children were able to master the sport movements being complex types of motor skills. Therefore, much attention in the domestic and foreign sports science and practical experience is paid to the researches related to not only children's involvement in sports but also to the development of the scientifically substantiated training methods. In this respect, a special emphasis in training team sports should be allocated to learning the technical elements (technique) of sport as one of the main factors of consistency and productivity of the athlete taking part in competitions.

The initial stage of young athletes training in team sports is characterised by a large number of single-purpose drills performed in standard conditions e.g. on the playing ground or at a low

speed, without any time constraints, etc. (Lobachev et al., 2011). Then, the techniques are trained in more complex conditions and finally, in complicated ones close to the real play (Dulibskii, 2010).

At the same time, one of the factors restraining young athletes' training in team sports according to A. Dulibsky (Dulibskii, 2010) is the technological infrastructure. This gap in the play technique is already seen at the early training stages. The methods that have been defectively applied in infancy continue to be a stumbling block at the time of maturity in sports as well (Lobachev et al., 2011).

While training young athletes, improved efficiency of play technique and skills mastering in variative conditions, close to the play ones is required. The process of young athletes' training ought to be based on learning and mastering techniques not in isolation from each other, but in certain combinations, which are most often found in game situations (Lobachev et al., 2011).

It is necessary to modify the structure of motor actions, their dynamics, kinematics and rhythm to improve the technical qualification. To do this the 'set' of movements in the situations close to the conditions of a competition is to be extended. An important role in solving those problems belongs to various training devices, facilitating in evaluation and development of both physical and technical qualifications (Ermakov, 2001). However, both abroad and in Russia those devices are generally highly specialised and have low functionality. For example, to monitor and analyse the athlete's movements they film the movements under study with the video camera, then the video clips are transmitted to the computer, set the reference points on the athlete's body or on the implement in the first frame, track their positions in all the subsequent frames, calculate the trajectory of reference points movement and analyse them. Such a system facilitates in examining the athlete's movements in a confined space, but not in evaluating the speed and intensity of motor and technical actions in team sports directly on the playing ground (Patent..., 2004).

According to D.A. Leleko (Leleko, 2011), application of the latest technical devices and information technologies for training sessions helps to develop efficiently the motor abilities, improve technical skills, and receive immediate and reliable information on the quantitative and qualitative characteristics of the movements, of the level of the athlete's technical proficiency and ensure rapid improvement of the motor skill. Owing to this, it is possible to diversify the training process and enhance athletes' excitement.

3. Conclusion

The proposed technology facilitates in quick mastering the rational play technique, unlocking the player's individual technical features and improving them at any stage of the professional career. The technology can be used to quantify the athlete's proficiency in a wide range of cognitive and motor tests, which will be the basis for analysing the player's capabilities and adjusting his/her training tasks.

The technology can be used for technical training of athletes of different proficiency profiles who specialise in football, hockey, handball, basketball and other sports played with the implements.

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Технология тренировки технических приемов в спортивных играхВладимир Евгеньевич Афоншин ^{a,*}, Валерий Витальевич Роженцов ^b^a ООО «ЛЭМА», Российская Федерация^b Межрегиональный открытый социальный институт, Российская Федерация

Аннотация. Тренировку технических приемов предлагается проводить на игровом поле, на котором световыми излучателями, управляемыми компьютером, формируются разрешенные и запрещенные светодинамические зоны. Каждый спортсмен должен находиться в одной из разрешенных зон, выполнять заданные технические приемы со спортивным снарядом, ориентируясь грудью на световую метку, создаваемую вне разрешенной зоны, не выходить из разрешенной зоны и удерживать в ней спортивный снаряд. В процессе тренировки непредсказуемо для спортсмена меняют положение, форму и площадь разрешенных и запрещенных зон. Ошибкой считается попадание спортсмена в запрещенную зону или выполнение технических приемов в положении не ориентированным на метку. При отсутствии ошибок площадь разрешенной зоны уменьшают, а интенсивность тренировки увеличивают до тех пор, пока спортсмен не сможет безошибочно выполнять данное упражнение. По минимальному размеру разрешенной зоны, максимальной скорости ее перемещения, при которой спортсмен, выполняя данное упражнение, не допускает ошибок, судят о технической подготовленности спортсмена.

Предложенная технология позволяет быстрее овладеть рациональной игровой техникой, раскрыть индивидуальные технические особенности игрока и совершенствовать их на любом этапе профессиональной карьеры. Она может использоваться при технической подготовке спортсменов разной квалификации, специализирующихся в футболе, хоккее, ручном мяче, баскетболе и в других видах спорта, где необходима работа со спортивным снарядом.

Ключевые слова: спортивные игры, техника движений, технические приемы, обучение, методика тренировки, информационные технологии.

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