

DIRECTION FOR OPTIMIZATION OF THE TRAINING PROCESS IN JUNIOR HOCKEY

Kygaevskiy S.A.

Kharkiv National University of Arts

Annotation. *Purpose:* to consider the possible directions of optimization of training activity in youth hockey and offer practical advice. *Material:* study analyzed data from the literature and the latest achievements in the practice of training the player's domestic and foreign authors on training in youth sports. *Results:* innovative approaches are considered in the initial stages of training sports perfection, as well as various areas of optimization of the training process in the initial stages of hockey and preliminary basic training. The examples of the training process in the North American and European hockey schools. The questions concerning the construction and orientation of training process at the initial stages and pre- basic training. *Conclusions:* highlighted promising areas for optimization of the training process of young hockey players in the initial stages of sports perfection.

Keywords: hockey, training, junior, training, process, optimization.

Introduction

Modern development of hockey sets to player's training increasing requirements. Correctly formed basis in junior hockey is a favorable pre-condition for progressing in sports of highest achievements. First of all it depends on correctly built training process and its orientation. Hockey is not only one of the quickest and the most possessed team kind of sports. In its essence, hockey is one of rinds of sports with the most complex coordination. In the process of game player shall adequately response to movements of adversaries, actions of partners, apply techniques with bandy, apply power techniques in counter-actions, quickly change direction of movement, dartingly analyze changes in game's situations, correctly move within played tactic schema. And all these actions are fulfilled on narrow footing of skates and under constant adversary's power pressure. Mistake in any decision, incorrect evaluation of situation, inadequate technical tactic technique can result in losing both of certain game moment and game in general.

At present time player can not compete owing to development of only one side of fitness with moderate indicators of other players [3, 16, 17,]. Player shall be first of all developed harmoniously. This is the task of a coach – to educate a high class player, considering his features and bent to one or other game style. But, as it often happens in domestic hockey, years of training transform talented beginner into firm middle class player, who is not able to compete in sports of highest achievements. In Soviet Union development of innovative methods of hockey players was at high level [1, 8, 13], great attention was paid to junior hockey as a reserve for clubs and combined team. A lot of works of domestic specialists were devoted to this problem [21, 22, 23], and materials were accessible both to coaches and their disciples.

Modern works in the field of hockey set high requirements to level of theoretical knowledge and fitness of hockey coaches. However, presence of high scope of information often is a deluding factor in choosing of strategy of training and selection of training means. It pre-determined problematic of our theoretical work.

Purpose, tasks of the work, material and methods

The purpose of the present work is to offer directions of optimization of training process in children and junior hockey.

Material and methods of the research: analysis of literature sources and advanced domestic and foreign works, devoted to hockey training at initial stages of sport perfection.

Results of the research

At post-Soviet space state of theory and methodic can be evaluated as satisfactory [1, 8, 12, 15, 17]. There constantly appear new methodic and innovations in theory of players' training, based on actual material of training and competition functioning. However, the trends in sport training are under influence of different hockey schools. Conventionally they can be divided into North-American (Canada, USA) and European (Russia, Czech Republic, Slovakia, Sweden, Finland, Ukraine).

Main distinction of these schools is different organization of training process. North American school accentuates individualization of training process [7, 9, 20, <http://www.elitehockeycamps.com/>]. That is, from child's entering hockey circle he is being trained to the fact that he would prepare for game season, choose coach and profiles of training independently [7, 20]. In European school team approach to training process is the main; this trend is especially spread on territory of late USSR, in particular in Ukraine.

Application of group methods [8, 13, 15, 22, 23], permits to intensify training process, increase density of one training; however in most cases it is an insuperable barrier for talented individuals on their way to professional hockey. In our case the problem is a system of training's building and selection of players. In domestic hockey children's group is usually supervises by 2 coaches, who shall train children to technique of skating, handling of bandy, passes and basics of tactic actions. As a result, at stages of initial training and preliminary basic training coaches often prefer those children, who "quickly stand on skates and catch material". In most cases at such stages team is left by promising players with good potential, but who could not manage to show themselves owing to insufficient attention from

supervisor or to wrong construction of training process. But even in this case, if beginning player does not leave training hockey, there appears next factor, which could be called "passion of a coach". That means that disciples are able to move on skates and manipulate with puck, know basis of tactics and coach starts to press out from his disciples everything possible in order to win championships, matches. With it in practice there are many example, when coaches blame disciples in insufficient level of technical tactic fitness, forgetting that they deal with beginners and their training is only on 1st and 2nd stages of sport perfection and forgetting that main task of a coach on these stages is just to teach and create pre conditions for future perfection, but not to collect as much caps as possible at such far from professional level. To avoid such negative factor, scientific popular literature was very accessible in the USSR [5, 21, 22, 23], which permitted for amateurs not only to have knowledge about methodic of hockey players' training but also use it as a kind of self teaching guide for training. At present time in Ukraine there is no such practice.

For North American school such trend is not characteristic. Because, starting from children level from 2 to 4 specialists supervise one group [<http://www.elitehockeycamps.com/>, <http://www.icevault.com/indexb.php>]. Besides there exist summer training camps, in which rising sportsmen can not only recreate but also to continue perfection of their technical-tactic skills. Such approach is more preferable because percentage of leavers is lower. Coaches do not strive for victories, but desire to increase quality of training process, understanding that the stronger is base the more successful their disciple will be in professional sport.

And naturally, application of this approach to training results in higher quantity of players, promising to be professionals; consequently competitiveness and show character of games as well as club's profit are higher.

Individual approach, sport training camps in separate kinds of sports [<http://www.skinnerhockey.com/>, <http://www.laurastamm.com/>], approved themselves in USA, Canada, Czech, Finland and Sweden. After finishing of game season player chooses by himself what sides of fitness he shall improve [<http://www.skinnerhockey.com/>, <http://www.laurastamm.com/>]. Having decided this he addresses appropriate training center, in which he trains individually under supervision of specialist. Player himself is responsible for training of his functional abilities and technical tactic skills. Individualization of pre-season training permits to qualitatively rise level of hockey player's fitness and permits for him to develop his natural bents for successful progressing. It should be noted that it is characteristic not only for final stages of sport perfection, but for initial stages as well. Considering such trends we can conclude that individualization of training process in Ukraine is a direction of priority for further researching. Otherwise, such methodic would have been practiced more often in training process of Ukrainian hockey players and would have been elucidated in literature.

Orientation of hockey player's training process is conditioned by requirements of competition functioning. Match lasts for 3 periods, 20 minutes each, plus overtime is possible. Hockey player spends on ice about 30-90 seconds. Total time of being on site during game varies from 16 to 25 minutes. During this time hockey player fulfills from 30 to 50 accelerations at distance from 10 to 15 meters, executes from 10 to 20 brakeage, followed by starts and new accelerations, carries out from 5 to 15 power techniques [1, 4, 20]. Mean quantity of player's replacements also varies from 16 to 25 replacements. Every period of time on ice requires from player great tension. Heat beats rate during being on ice is 170-190 b.p.m. Consumption of oxygen is 48.9 – 53.6 ml.per min. per kg, concentration of lactate is 78-132 mg %, and oxygen debt is 8.5 – 9.6 liters [4, 6]. Time on ice is spent in anaerobic, alactate, anaerobic glycolytic mode; transition to aerobic mode happens after replacement, during rest at bench. Total (up to 2/3) switching in of muscular systems and alternating rhythm of work from moderate to maximal intensity, depending on situation on ice field should also be noted. The above presented examples set very high requirements to special physical fitness (SPF).

In this connection individual approach to training is more purposeful that team approach. Training program, built with consideration of functional abilities of both: separate player and group of players permits to prepare team for match at higher level of functional fitness. In this connection orientation of training activity, selection of means and methods shall ensure adaptation responses, which would provide effective competition functioning. As it was mentioned above, in USA and in Canada, main coach of club does not spend training time for improvement of players' functional abilities. He works at training of definite tactic schemas for future matches. Functional abilities are trained by a player with personal coach on physical (skating, technical) training individually.

In domestic school of hockey, in contrast to North American school up to present time team meetings with group fulfillment of physical fitness training programs have been being practiced. However, this direction often negatively influences on team's level in general, because training program can not suit every player completely [11, 12, 17, 18, 19].

The above presented aspect is rather important also in children-junior hockey. Training program, built without consideration of players' individual responses to load, their bent to definite type of energy supply (for example sprinter, long distance runners, mixed) [10], because it is the factor, which influence on further formation of player. Application of training cycles' models with earlier known effect would significantly make easier planning of training process and exclude using of inadequate training influences. However, this direction in hockey is fragmentary and to large extent belongs to works in cyclic kinds of sports. Construction of such models is possible only if great quantity of empiric material is available as well as high level of organization of training process's control.

Control is one of links of management cycle. Without timely objective information about state of player, scopes of trainings, effectiveness of technical tactic actions it is impossible to formulate correct decision for one or another situation [18, 20, 22, 23]. These aspects have been developed at high level in hockey, however at first stages of training they practically do not exist in Ukrainian hockey. In most cases coaches limit themselves only by visual control during

training. Application of medical-biologic, pedagogic and bio-chemical control, which are widely spread abroad, permits for a coach to optimize training process and selectively choose training means in compliance with existing tasks.

As it was mentioned above, timely analysis of obtained information data and appropriate corrections in training plan make training process more effective and controlled and, as a result, decreases probability of negative influences and coach's mistakes.

Conclusions:

Generalization and discussion of presented above theoretical research point that optimization of training in children junior hockey can be realized only with consideration of main factors, which influence on training process:

- Improvement of organization and ensuring of training process – individualization of training process, involving of coaches into separate kinds of training, material provisioning of training process;
- Improvement of control over training process;
- Working out of model characteristics of special and functional fitness;
- Rational selection of means depending on trainees' fitness;

The prospects of further researches imply development of complexes for special training of 6-10 years old hockey players, with consideration of different types of functional adaptation to load.

References:

- 1 Brejkin D., Akimov A. *Khokkej* [Hockey], Moscow, Physical Culture and Sport, 1971, 52 p.
- 2 Brusovanskij A., Lukashin Iu., Ryzhkov D. *Malaia enciklopediia sporta* [Brief encyclopaedia sports], Moscow, Physical Culture and Sport, 1990, 685 p.
- 3 Verkhoshanskij Iu.V. *Osnovy special'noj fizicheskoy podgotovki sportsmenov* [Fundamentals of special physical preparation of athletes], Moscow, Physical Culture and Sport, 1988, 330 p.
- 4 Gorskij L. *Trenirovka khokkeistov* [Training hockey], Moscow, Physical Culture and Sport, 1981, 224 p.
- 5 Gretcki Uolter, Tejlor Dzh. *Uejn Gretcki* [Wayne Gretzky], Moscow, Physical Culture and Sport, 1987, 98 p.
- 6 Guminskij A.A., Tarasov A.V., Elizarova O.S. *Opredelenie urovnej potrebleniia kisloroda u khokkeistov* [Determination of oxygen consumption in hockey]. *11 Vsesoiuznaia nauchnaia konferenciia po fiziologii, morfologii, biomekhanike i biokhimii myshechnoj deiatel'nosti* [11 All-Union conference on the physiology, morphology, biomechanics and biochemistry of muscle activity], Sverdlovsk, 1970, pp. 114-116.
- 7 Kitting Iu., Khogg Dzh. *Predygrovaia podgotovka khokkeistov NKHL* [Pre-game preparation NHL], Moscow, VNIIFK, 1997, pp.21-26.
- 8 Kozlovskij G.N. *Trenazher dlia razvitiia skorostno-silovykh kachestv u iunykh khokkeistov* [Simulator for the development of speed and power qualities of young hockey players]. *Khokkej* [Hockey], Moscow, 1986, pp. 40-41.
- 9 Koval'chuk V.N. *Ot Tveri do Atlanty* [From Tver to Atlanta], Tver, 2004, 128 p.
- 10 Kugaevskij S.A. *Pedagogika, psihologia ta mediko-biologicni problemi fizichnogo viovanna i sportu* [Pedagogics, psychology, medical-biological problems of physical training and sports], 2012, vol.1, pp. 67-69.
- 11 Pavlov S.E. *«Sekrety» podgotovki khokkeistov* ["Secrets" of hockey players training], Moscow, Physical Culture and Sport, 2008, 99 p.
- 12 Petrov A. *Tajny sovetskogo khokkeia* [Secrets of Soviet hockey], Moscow, 2010, 288 p.
- 13 Nikonov Iu.V. *Podgotovka kvalificirovannykh khokkeistov* [Training of skilled players], Minsk, 2003, 352 p.
- 14 Verkhoshanskij Iu.V., Tikhonov V.V., Koloskov V.I., Korolev Iu.V., Lazarev V.V., Charyeva A.A. *Programmirovaniie trenirovochnykh nagruzok po SFP vysokokvalificirovannykh khokkeistov v godichnom cikle podgotovki* [Programming training loads on TFP highly skilled hockey players in the annual cycle of training], Moscow, 1989, 70 p.
- 15 Savin V.P. *O postroenii trenirovochnogo processa khokkeistov* [On the construction of the training process hockey]. *Khokkej* [Hockey], Moscow, 1985, pp. 25-28.
- 16 Savin V.P. *Teoriia i metodika khokkeia* [Theory and Methods of hockey], Moscow, Academy, 2003, 400 p.
- 17 Savin V.P. *Metodika vospitaniia vynoslivosti u khokkeistov* [Methods of education stamina in hockey], Moscow, 1986, 35 p.
- 18 Savin V.P. *Khokkej* [Hockey], Moscow, Physical Culture and Sport, 1990, 320 p.
- 19 Savin V.P., Uriupin N.I. *Metodicheskie podkhody k ocnke sorevnovatel'noj i trenirovochnoj deiatel'nosti khokkeistov* [Methodological approaches to assessing competitive and training activities players], Moscow, 1990, 32 p.
- 20 Tvist Piter. *Khokkej: teoriia i praktika* [Hockey: Theory and Practice], Moscow, Astrel, 2005, 288 p.
- 21 Tarasov A.V. *Detiam o khokkee* [Children about hockey], Moscow, Soviet Russia, 1986, 208 p.
- 22 Tarasov A.V. *Khokkej bez tajn* [Hockey without secrets], Moscow, Young Guard, 1988, 277 p.
- 23 Tarasov A.V. *Potochnyj metod trenirovki v khokkee* [Line method of training in hockey], Moscow, Physical Culture and Sport, 1966, 69 p.
- 24 Meulman H.N., Berger M.A.M., van der Zande M.E., Kok P.M., Ottevanger E.J.C., Crucq M.B. Development of a tool for training the drag flick penalty corner in field hockey. *Procedia Engineering*, 2012, vol.34, pp. 508–513. doi:10.1016/j.proeng.2012.04.087.

- 25 McEwan D., Martin Ginis K.A., Bray S.R. "With the Game on His Stick": The home (dis)advantage in National Hockey League shootouts. *Psychology of Sport and Exercise*, 2012, vol.13(5), pp. 578–581. doi:10.1016/j.psychsport.2012.03.007.

Information about the author:

Kygaevskiy S.A.: ORCID: 0000-0002-1065-2278; num.kharkiv@gmail.com; Kharkiv National University of Arts; Sq. Constitution, 11/13, Kharkov, 61003, Ukraine

Cite this article as: Kygaevskiy S.A. Direction for optimization of the training process in junior hockey. *Pedagogics, psychology, medical-biological problems of physical training and sports*, 2014, vol.2, pp. 37-41. doi:10.6084/m9.figshare.923512

The electronic version of this article is the complete one and can be found online at: <http://www.sportpedagogy.org.ua/html/arhive-e.html>

This is an Open Access article distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited (<http://creativecommons.org/licenses/by/3.0/deed.en>).

Received: 09.12.2013
Published: 28.12.2013