

APPLICATION OF NEW TRAINING COMPONENTS FOR DEVELOPMENT OF BALANCE SKILLS IN SPORTS TRAINING OF CHILDREN IN THE EARLY SCHOOL AGE IN SKIING

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Abstract

The aim of the article is to summarize the available theoretical and practical knowledge of the fitness training in skiing and show the possible development of innovative approaches of balance skills in sports training for children in the early school age.

In our article we summarized the available knowledge and information about the options for development of balance skills for children in the early school age on the basis of professional, literary and internet resources. Criteria in assessing of the appropriateness of special components for development balance skills were: timeliness, specificity requirements of skiing as a sport, the identity of the course movement structure, age appropriateness of the components, the type of connected analyzer and selected specificities of conditions of sports training (training period, spatial, material and economic conditions).

Based on a critical analysis and logic methods, we came to the conclusion that the development of innovative approaches of balance skills in sports training in early age category can include in particular the following innovative training components: In-line, Roller, Balancer, Fit-ball, Beam and Slack line. We believe that our new training components placed at a suitable application, will help ensure the desired progress of the training effect in the studied age group of skiers.

Keywords: fitness training, balance skills, innovative components, skiing, early school age

Introduction

Downhill skiing belongs among those sports that have a rather complex structure and high variability of movement, while to its mastery there is needed comprehensive development of kinetic abilities (Bedrich, L. – Bedrich, P. – Klouček, 2008). Top downhill skiers must be in excellent physical shape so that they will be able to use the proper technique in extreme situations and to get themselves from start to finish as quickly as possible. That is why the considerable attention in the training process is devoted to fitness training in relatively early stages of sport development. Theory and didactics of downhill skiing, dealing with sport training of children from the point of view of training and improving of carving technique in children, is not adequately developed in our terms. There are not so many specialized works and publications available in Slovakia which would address more detailed possibilities of training and improving of carving curve with the help of special means, exercises and games in sport training of children in downhill skiing. Available information is mostly focused on category of adults where not everything is possible to use respectively copy in sport preparation of children. Unlike adults, it is necessary to include especially those imitation exercises for children that will be sufficiently attractive, funny, uncommon, co-ordinately

adequately demanding and of course focused on the acquiring of a necessary range of kinetic abilities and skiing skills needed for managing the optimal skiing technique. Downhill skiing coaches of children in Slovakia are currently using their own practical experience. They also communicate with other coaches from abroad while being on a training trip and “copy” from them available methods into our conditions. With our contribution we want to widen the base of knowledge and information about possibilities of specific fitness training and contribute for improvement and enrichment of sport training in downhill skiing in Slovakia for children. In our contribution we deal with analysis of available resources, which represents a number of new training approaches, means and possibilities with which the downhill skiing coaches in Slovakia can diversify sport training of young skiers. They focus on development of coordinative abilities, mainly stability abilities.

Respecting all the didactic and methodological principles, specificities and peculiarities of sport training of children in downhill skiing, from the perspective of its many coaches (Blahutova – Belanova – Belan, 2004), consider this to be important:

- adequate and appropriate communication
- realization of visual demonstration
- proper selection of training resources.

Increasing performance in downhill skiing expects mastering of carving technique, which requires an adequate fitness base and appropriate level of coordination abilities.

According to Blahutova and Krasula (2007), downhill skiing requires a whole complex of coordinative abilities: rapid response to external stimuli, orientation in space, exact differentiation of muscular sensation (optimal control of tonus and relaxation to maintain the dynamic balance), efficient coordination of rhythm and frequency of movements.

According to Hellebrandta and Zalesaka (1982), stability ability is determining for downhill skiing. Skier uses it to maintain, respectively to restore steady position during rapid and relatively extensive changes of postures and to cope with uneven terrain. This enables the skier to maintain steadiness and rhythm of the ride.

Marsik (2003) states, that just movement of lower limbs ensures better stability, which is necessary for transferring body weight from one ski to the other in the phase of coming out of the curve when the skier gets into a moderate tilt back position. As well as in the phase of guiding the curve where just stability, flexibility and also strength of lower limbs allows the skier to put himself into the curve and position himself on the ski edges.

Dynamic stability ability enables movement in unsteady posture. According to Zidek (1992) just this ability and its level of development affects the basic stance, levelling the course of centre of gravity while skiing on uneven terrain, acquisition of the feeling of the edge and contact area, turning of the ski, transferring the body weight from one ski to the other and current rotation.

We monitor increasing number of more demanding features in many technically challenging sports as well as technical excellence and execution of complex movements. On the basis of strength dispositions are children capable to perform ski curves correctly in downhill skiing. It requires the ability to orientate quickly and correctly in complex and rapidly changing conditions, while maintaining balance and steadiness and rhythm of the ride.

This is favourable period for development of coordinative abilities (age 5 – 13 Perič, 2008, Suchomel, 2006). Therefore it is appropriate to include imitational exercises for acquirement of the whole range of movements and needed skiing skills (Blahutova – Belanova – Belan, 2004). Kasa – Simonek (1999) confirm that it has its substantiation. They found out that with systematic development of coordinative abilities from the age of 5 a child can reach a high level of their development in the age of 7 – 10.

1 Aim

On the basis of analysis of available resources, the aim of the contribution is to summarize knowledge and point at opportunities to develop stability abilities with new training means for children in downhill skiing.

2 Methods

As the main method of our research how to obtain data, we used a study of available Slovak and foreign literature and its subsequent qualitative analysis focused on possibilities of use of new training means for development of stability abilities.

We used studies and resources which we had analyzed on the basis of meta-analysis. Then we summarized our findings with the aim to point at the most appropriate and effective training means applicable in sport training of young skiers. We used 6 selected studies from foreign and domestic authors Ladig – Rüger, (2003), Castka a kol. (2005), Blahutova – Belanova – Belan (2004), Blahutova – Kmet (2010), Cerna – Louka – Kratochvilova (2010), Machova a Tremel (2008), for realization of the research, discussing the topic of sport training and use of new training means for development of stability abilities in downhill skiing.

In the next research period we are planning to put these theoretical findings into practice, where we will attempt to verify them experimentally.

3 Results and Discussion

We are going to gradually present our theoretical findings, obtained on the basis of meta-analytical approach of individual sources, in the results section. We focused on knowledge, which authors state from the view of possibilities to use specific means for development of coordinative abilities in regard to develop stability.

Roller skates

Analysing the source of Castka a kol. (2005), we found out, that authors state roller skating as one of the most effective forms of off-season training for skiing. According to the source mentioned above roller skates provide a sense of skip. Position and tilting of skates imitates movement as if the skier tilts skies on their edges. They are highly efficient in developing stability abilities and significantly contribute to the development of fitness abilities. They effectively contribute to the raining and developing of skiing skills off snow. A similar view of roller skates has also Ladig – Rüger, (2003). According to them, it is an appropriate way of summer training and they recommend integrating it as a part of training. According to their discoveries it is possible to regard roller skating as true imitation, with the similar load for lower limbs and muscle involvement as it is in skiing. Castka a kol. (2005) they confirm that this type of off-snow training significantly affects development of coordinative abilities, especially stability as well as orientation in space and rhythm. Blahutova – Belanova – Belan (2004) state, that coach can use roller skates as special exercises to practise drive through gates (with the use of visible cones or flexible rods placed in heavy metal pedestals, etc.).



Fig. 1 Selected exercises on Roller skates

Water skiing

Blahutova – Kmet (2010) cite that appropriate specific means, which effectively helps to perfect the training of skiers, is water skiing. Augustinova (2011) and Zgodava (2011) state that some of Slovak skiing clubs (e.g. Bratislava clubs LOPS, Victory, or Levocsky skiing club) after applying water skiing into the training process, as a specific means as well as complementary sport, several Slovak skiers are achieving excellent results in children’s downhill skiing. Slackline can be considered as the next innovation in the sport training of skiers. It is a nylon strap stretched between two fixed points, which is used to develop dynamic balance in a funnier way. Černa – Louka – Kratochvilova (2010) have examined its use with children. They note positive results in the development of coordinative abilities, especially stability abilities.



Fig. 2 Selected exercises on water skies

Cycling

Blahutova – Belanova – Belan (2004) and Blahutova – Kmet (2010) affirm that the next adequate sport training in young age should be the use of mountain bikes. They consider them as an optimal means for development of coordination – stability, endurance and strength.

They recommend implementing, as appropriate exercises, various crossings of tracks with obstacles, static exercise to develop stability and basic acrobatics on a bicycle. The authors also recommend realization of so called cross-country ride in nature, which in addition to coordinative abilities, develop strength and endurance, increase confidence and improve reaction of an individual when driving on uneven surface etc.



Fig. 3 Selected exercises on bicycle

Coordination means

Machova a Treml (2008), on the basis of their research, recommend to include into the training process wider range of various devices for developing stability and coordination, such as fit balls, bosu balance, balancing boards (roll, balance board), balance beam etc. They state that a good coach can with their application use unlimited number of various exercises to develop not only stability but also other coordinative and fitness abilities. Blahutova – Kmet, (2010) also indicate a positive effect of the inclusion of such devices in children preparation for downhill skiing.



Fig. 4 Selected exercises for coordination

Conclusion

In the Results section we have indicated some potential innovative approaches to the development of coordination abilities, especially stability in skiing preparation of children. We are aware that this is only a fraction of the opportunities offered by the current development of science and technology. Based on our knowledge and practical experience,

we can afford to state that Slovakia is still only slowly gaining interest in coaching such innovative means. Several coaches still like to use more conventional methods (benches, mattresses, etc.). We believe that every attempt to use something new that has been tested somewhere else brings positive results. Based on our elemental analytical research, in available resources to us, we can conclude that the new training means used in sport training of children in downhill skiing can include – roller skating, water skiing, bicycle, fitness ball, balance board, bosu balance, roller, slackline and balance beam. It is necessary to use with the development of stability abilities such coordination exercises and means that will be new to children, adequately attractive, unusual, sufficiently frequent and varying as well as appropriately demanding when it comes to coordination and performed in continuous conscious control.

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UPLATNĚNÍ NOVÝCH TRÉNINKOVÝCH PROSTŘEDKŮ PRO ROZVOJ ROVNOVÁHOVÝCH SCHOPNOSTÍ VE SPORTOVNÍ PŘÍPRAVĚ U DĚTÍ V MLADŠÍM ŠKOLNÍM VĚKU V SJEZDOVÉM LYŽOVÁNÍ

Cílem příspěvku je shrnout dostupné teoretické a praktické poznatky z oblasti kondiční přípravy v sjezdovém lyžování a poukázat na možné inovativní přístupy rozvoje rovnováhových schopností ve sportovní přípravě u dětí v mladším školním věku. V našem příspěvku shrnuje dostupné poznatky a informace o možnostech rozvoje rovnováhových schopností u dětí v mladším školním věku na základě odborných, literárních a internetových zdrojů. Kritérii při posuzování vhodnosti speciálních prostředků pro rozvoj rovnováhových schopností byly: aktuálnost, specifčnost požadavků sjezdového lyžování jako sportu, totožnost průběhu struktury pohybu, věku přiměřenost prostředků, druh zapojeného analyzátoru a vybrané zvláštnosti podmínek sportovní přípravy (období přípravy, prostorové, materiální a ekonomické podmínky).

ANWENDUNG NEUER TRAININGSMETHODEN FÜR DIE ENTWICKLUNG DES GLEICHGEWICHTSSINNS BEIM SKI ALPIN TRAINING VON KINDERN IM FRÜHEN SCHULALTER

Ziel des Beitrags ist es, erreichbare theoretische und praktische Erkenntnisse im Bereich des Konditionstrainings im alpinen Skirennen zusammenzufassen und auf die möglichen innovativen Ansätze der Entwicklung des Gleichgewichtssinns beim Sport für Kinder im frühen Schulalter hinzuweisen. In unserem Beitrag fassen wir die verfügbaren Erkenntnisse und Informationen über Möglichkeiten der Entwicklung vom Gleichgewichtssinn bei Kindern im frühen Schulalter auf der Grundlage von Fach-, literarischen- und Internetquellen zusammen. Die Kriterien bei der Beurteilung der Eignung von Spezialmitteln für die Entwicklung des Gleichgewichtssinns waren: Aktualität, Spezifität der Anforderungen des Ski Alpin Sports, Stabilität im Verlauf der Bewegungsstruktur, dem Alter angemessene Mittel, Art des einbezogenen Analysators und ausgewählte Besonderheiten der Bedingungen der sportlichen Vorbereitung (Vorbereitungszeit; räumliche, materielle und wirtschaftliche Bedingungen).

ZASTOSOWANIE NOWYCH ŚRODKÓW TRENINGOWYCH W ROZWIJANIU ZDOLNOŚCI UTRZYMANIA RÓWNOWAGI W RAMACH SPORTOWEGO PRZYGOTOWANIA DZIECI W WIEKU MŁODSZYM SZKOLNYM W NARCIARSTWIE ZJAZDOWYM

Artykuł ma na celu podsumowanie dostępnej wiedzy teoretycznej i praktycznej z zakresu przygotowania kondycyjnego w narciarstwie zjazdowym oraz wskazanie możliwego podejścia innowacyjnego do rozwijania zdolności utrzymania równowagi w przygotowaniu sportowym dzieci w wieku młodszym szkolnym. W naszym artykule podsumowano dostępną wiedzę i informacje nt. możliwości rozwoju zdolności utrzymania równowagi u dzieci w wieku młodszym szkolnym w oparciu o źródła naukowe, literaturowe i internetowe. Do oceny przydatności specjalnych środków do rozwijania zdolności utrzymania równowagi wykorzystano poniższe kryteria: aktualność, specyfika wymagań narciarstwa zjazdowego jako dyscypliny sportu, identyfikacja przebiegu struktury ruchu, dostosowanie środków do wieku, rodzaj wykorzystanego analizatora oraz wybrane cechy warunków przygotowania sportowego (okres przygotowania, uwarunkowania przestrzenne, materialne i ekonomiczne).