

THE IMPLEMENTATION OF NEW LEARNING TECHNIQUES METHODS OF " SKI PARALLEL TURN" WITH ROTATION IN ALPINE SKIING

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Summary: *The paper proposes the application of an algorithmic route of new techniques in basic learning, especially parallel turns in alpine skiing by using " turn learning machine "to the youngest skiers, beginners" . The application of specific means methodology of exercises with the" turn learning machine " helps assimilating the rotation, in a short time and with high quality index. The proper learning procedure of the parallel turn with rotation using turn learning machine ", enables the efficient downhill evolution of new skiers, regarding the ability to properly go through the marked gates, in optimal time units.*

Mise en œuvre de nouvelles méthodes d'apprentissage des techniques de "parallel turn with rotation " to alpin skiing.

Introduction

The methodological background, which represents all learning methods to alpine skiing, should be adjusted continuously depending on the athletes particularities features and be adjusted to changes that current generations pass from one year to another. The specialists will be facing the reality of practice area, concerns over the specialized sports training process development in alpine skiing are all directed to rationally determinants .

The scientific background which is the base of the Alpine ski training improvement , in terms of rational operation of each factor separately (physically, technically, tactical, psychological), creates the conditions for to obtain great performance, optimization and standardization it provides through individualized, differentiated treatment or modeling.

With the modern training requirements imposed skiers ever higher, standardization and rationalization methods and means for driving the technical training component, gives the whole process of preparing a certain quality standard, in full accordance with precise

objectives training. Alpine skiing technique in general and specific driving skills to enter into the composition, are highly complex and requires special ways of learning, building and maintaining them at a higher quality level. Leadership ability skis on different paths and different types of terrain and snow, is just a process of adapting the skier driving skills to complex technical requirements, and to control and psychological reactions related to fear or control reactions caused by the fear.

Considerations on skiing technique

When we talk about alpine skiing as a sport with a great technical complexity, we refer to aspects of specific skills difficulty and drive skis in sliding on snow, on different paths and high speeds in the involving capacity conditions of maximum coordination, balance and a very good motor control.

In addition to psycho-motor skills specific combination that a skier must have for a good learning to the complex skills for skis driving, capacity of doing the turns implies self-control and focus on tensions, fear of falls, or self-preservation instinct caused by sliding speed.

"The analysis of alpine skiing technique should start from analysis of two terms, concepts that characterize the positions and driving:

- From the outside by involving biomechanics, mechanics and auricular and muscle physiology.
- Inside characterizing the specific terms psycho-motility driving motor behavior of skiers. All the skiers driving acts are motivated by one thing, the effect they have on the downhill ski slope movement and their skis driving ".

The skis driving involves developing a great kinesthetic sense on the skis, a so-called sense of snow or sliding on snow and keeping the flexible position of downhill skiers. The very "flexible" aerodynamics position depends mostly on the ability to relax and then tense muscles and put your legs to ensure adaptation to the ground, with part of the body on skis like an suspension and not least of a great physical strength, to maintain the position of static aerodynamic or to trigger an action to absorb the excessive pressure that occur during an downhill skiing.

The regulation of motor reactions of skis sliding requires greater physical and mental flexibility due to the absence of fear and is accommodating high speed and perfect knowledge of the route, removing

any sense of reluctance strain . For a good regulation of motor reaction of skis sliding, for an optimal regulation, in the beginners skiers preparation , will have to consider the physical components, the proper development of psycho-motor specific skills and also the technical component of training, thru which actually makes learning Ski descents and wide turns or short turns. In the children alpine skiing preparation, we have to take care of their particularities in terms of organizing specialized training. The learning process will take into account several factors such as bio-motor weight and size of children. For example for children who weigh less pressure it exerts on the skis and snow is less, which makes it easier than the execution of changes of direction. Also with a height less than that of adults, the center of gravity is much lower, closer to the ground, allowing more easily maintain balance and exercise much better control over the skis. Children have much shorter body segments which implies a much smaller amplitude movements, resulting in improved execution speed motor acts and actions, this is advantageous in terms of rebalancing.

Gh. Balint (2002), "Theoretical and methodological teaching skiing are", recommended for school-age children "following sequence of techniques:

getting used to skis and slipping
walking on flat ground and climbing slope
change the direction of the place
direct descent
avoiding the swivel and the swivel stop
passes over the slope changes by adapting
small bumps by cushioning
skid braking
the valley rotation turn “

With a less developed muscles and a much smaller endurance, preparing children to be scheduled and conducted so as to take account of resistance and sensitivity to cold and their susceptibility to respiratory diseases. You will also need to consider that they have the ability to dose and no effort can correct appreciation of the limits available. With no instinct for self as developed as that of adults, children learn much faster ski specific technical actions but on the other hand the danger of uncontrolled acts, which can cause excessive injury.

Parabolic skis or appearance of "Carve" was a moment of revival and transformation somewhat or completely current technique in alpine skiing. Methods ski properties is strongly directed towards achieving the

management cut skis, on a optimal path valley, in order to obtain maximum sliding speed."the parabolic ski, placed on the edge, take contact with the snow at two points in the top and tail. The area between the two points is lateral curvature of skiing called " bow side " ski construction. If skiing, sitting on the edge is strained by the weight of skiers, the lateral is in contact with snow throughout the ski length. Sliding ski tense describes an arc called contact area ski / snow. The arc of contact may be more pronounced or less pronounced depending on the intensity of pressing (shown by skier weight and forces acting on the skier turns), but depending on mechanical and dimensional qualities of skiing: size of lateral curvature, flexibility flexion (bending), and its distribution along the length of the ski, torsion flexibility in its distribution and the spatula and heel. "

We consider very important in leading ski the desired trajectory is given by the capabilities and skills of the skier has to depend heavily on the accuracy and stability of specific skills acquired, the quality and quantity. The skier has more control slip and simple automatisms, or as more specific skills mastered driving the ski, the more complex maneuvers can be input and output in turn. The parallel turn is a process falling within the second ownership of the art, the intermediate level, where they constitute turn reference point, or with skis parallel detours. In this level, during the two technical classes A and B, reinforcing basic movements learned in the first technical level.

The methodology of teaching techniques corresponding to level II, slip processes that include: passing undulations of land (false flat surface crossing, crossing breaks of slope, slope transition joints, bumps) is learned first, followed by procedures for braking (skidding lateral oblique slip)

for then to reach bypass procedures (Turn through vertical balance, turn by counter sliding turn with rotation). After they accelerate learning processes - technical adjustment (steps pour, distance skating)

Specific milestones of learning the technique level II are:

Slide turns by vertical balance.

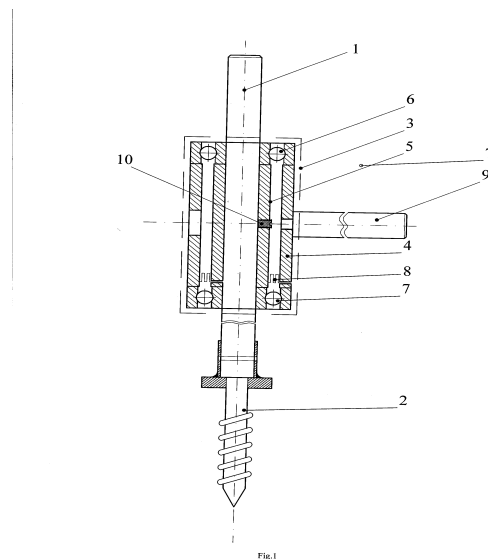
Slide turns with rotation.

In the level II identifies a number of techniques and specific motor actions detour. Intermediate level class learning procedures proposed slippage and crossing undulations of land, culminating in learning turn by vertical balance. In the class B is found to accelerate processes and two parallel processes ski pass through counter sliding and rotation.

The ultimate objective of level II is learning turn with counter sliding and rotation.

Machine learning to Alpine ski turn

The device for teaching downhill skiing turn to the invention is made of a rigid vertical flag a carbon fiber with a core set to 2, steel, sharp, spiral with a length of 50 cm, required for attachment device in the snow (ground). On a vertical flag is applied to a rotary device 3, consisting of outer sleeve 4 of insulating materials, namely Teflon, Teflon bushing inside five concentric with the first two radial ball bearings 6 and 7 placed on the ends and a spring leaf 8 located at the bottom of the device 3. In the middle of the outer sleeve 3 is attached by screwing a horizontal arm 9 carbon fiber with a length of 1.5 m 3 equipped with rotary device can perform both a horizontal arm rotating on a vertical flag and a movement away via a locking screw 10, a vertical flag. Arch leaf 8 of the two horizontal arm bushings allows 9 return to its original position after use.



The device, according to the invention, will assist in making cristianiei skier (the turn), with mobile horizontal arm that grabs the hill skier and that support from the moment of opening until completion of the turn.

The invention has the following advantages:
- Is easy to achieve and it is made of materials are cheap;

- Reduce the time to learn to turn novice skiers;
- Ease of learning cristianiei rotating isolated valley;
- Supports the execution skier turn eliminating the feeling of fear and uncertainty;
- Minimize the risk of accidents, resulting in turn fixing the place of execution;

The device facilitates learning and perfecting the rotation turn isolated valley (the one turn), and the execution of sequences linked by

descent turn oblique line slope, skier may use successively more devices mounted on the sides the slope.

Using two similar devices, placed on either side of the slope, with its exterior oriented mobile arms (slope), allows execution of two turns rotation right and left connected by an oblique line down the slope.

More devices arranged in slalom skier can support the key moment (central) input and go on a curvilinear path detour.

The optimal entry points when rotating the whole skier-skiing and also successively into the trunk, torso, knees and skis in rotation

By using these devices is achieved turns fixed repetition, facilitating learning and training increased density in the lesson;

Ski parallel learning device using indices helps to improve coordination of the skier capacity (space-time orientation, balance, kinesthetic differentiation).

Centripetal force will act in favor of entry skier and ski in the rotation, when it rises (preparation turn), download the skis, grab the horizontal bar, and in rotation (the snow).

Centrifugal force works in reverse, pushing the skier to the outside detour. Therefore we predicted that mobile horizontal arm to be longer, allowing hands slipping out, and the weight of the skier bypass area to be larger or smaller. The device can be used after acquiring prior direct descent and oblique descent, orders otherwise logical method of acquiring turn with rotation .

Methodical sequence learning turn rotating the device

Specific means

Direct descent off the plug

Direct descent line slope while maintaining the correct position semi plate

Direct descent blanché vertical support poles to lift all the semi plate

Direct descent off the plug

Oblique to bypass the hill descent

Oblique descent maintaining the correct position

Vertical and oblique descent swing off the hill (without sticks)

Aids (learning machines turn to skiing)

Of direct descent, grabbing arm side of the device, pivot and pass to parallel ski hill

In oblique descent, grabbing arm side and pass rotation parallel ski hill

Two detours using two devices on either side of a slope linked oblique descent

Three detours using three devices connected two oblique descent

Research Methods

Study the literature→
 Teacher Observation→
 The experimental method→
 Test Method→
 Method experts→
 Method graphics and tabular→
 Randament analysis educational process→

Hypothesis

If you use "ski turns-learning device" as a method of learning the technique, the basic general training alpine skiers beginners will optimize the learning process cristianiei rotation, specific fundamental skill in leading and guiding slalom ski routes. Learning proper braking in turn will lead to elimination of routes going through slalom gates and therefore marked with increasing sliding speed.

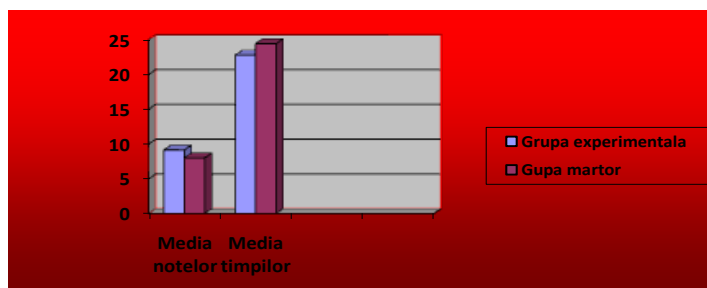
The experiment

The experiment was conducted in 2010-2011 and 2011-2012 season, on a total of 100 children. Of all children who turn learning device used in the present paper we analyzed only 30 children, ages 7 and 8 years who attended a special test on the slalom course schedule. Subjects, time and place of the experimental study
 The study was conducted on a total of 30 children divided into two groups, of which 15 enrolled in School Sports Club hearth-Wah and another 15 enrolled in the Winter Sports Centre Olympic Vatra Dornei.

Table no.1. Statistical indicators for experimental and control groups

| STATISTICAL INDICATORS | AVERAGE RATE EXPERIMENTAL GROUPS | AVERAGE RATE CONTROL GROUPS | TIME PERFORMED EXPERIMENTAL GROUPS | TIME PERFORMED CONTROL GROUPS |
|------------------------|----------------------------------|-----------------------------|------------------------------------|-------------------------------|
| x | 9,13 | 8,87 | 22,76 | 24,41 |
| s | 0,81 | 1,02 | 2,35 | 4,76 |
| cv | 0,09 | 0,12 | 0,1 | 0,19 |

Graficul nr.1. Graphical representation of experimental results (average grade, times average)



Tabelul nr. 2. Conversion of technical motor evolutions assessment criteria in notes

| Failure to perform test | Ineffective low | Environment appropriate | Good | Very good | Excelent |
|--|--|--|--|---|---|
| Motor can not perform the task. Can not demonstrate technical process conditions required minimum balance and coordination | Meets fewer motor task performance criteria. Is unable to demonstrate global technical process | Can demonstrate effective technical process required, fulfilling its basic criteria. Possess the motor skills necessary to carry out an environmental standard motor task. | Meets all relevant criteria imposed motor task. Can demonstrate the technical level required optimal technical process, possess specific skills necessary for motor execution required parameters. | Successfully meets all relevant criteria imposed motor task. Can demonstrate a high technical level required technical process, possess specific skills necessary for motor execution of highly technical interpretation. | Excels in interpreting motor, meeting the standard of excellence appropriate criteria motor task. Demonstrates excellent technical process required, have excellent skills necessary motor execution level of technical mastery |

| Failure to perform test | Ineffective low | Environment appropriate | Good | Very good | Excellent |
|-------------------------|-----------------|-------------------------|------|-----------|-----------|
| 4 | 5-6 | 7 | 8 | 9 | 10 |

Conclusions

The device proved to be very effective in learning cristianiei rotation of the valley for several reasons, namely:

- Was attractive and had the character playing exercises
- The edge of the positioning device helped the children in that they indicate where the sequence starts sliding and pivoting action (oblique descent, balance, rotation), knowing exactly how to slide obliquely, when to perform balance and unloading ski;
- By grasping the arm horizontally children were forced to adopt an appropriate position of the body, the trunk valley and a twisted knee before screwing the hill (towards the inside of the detour).
- Was a real support for children, especially when exchanging turn outside leg weight, removing the feeling of fear and reactions caused by this imbalance.

Students in the experimental group learned faster and better turn with rotation, this is demonstrated by obtaining better appreciated both technical execution and performance notes expressed in travel time route in slalom.

Machine learning to turn (turn with rotation), can be used both as a basic technical training and supporting device as a learning method of this process mainly representative of alpine skiing technique.

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Titlu: Implementarea unei metode noi de învățare a procedurii tehnice „cristiană cu rotație” la schi alpin.

Cuvinte cheie: metodă, învățare, cristiană cu rotație, schi alpin, aparat.

Rezumat: Lucrarea își propune aplicarea unui traseu algoritmic nou de însușire a procedurilor tehnice de bază, în special a cristianei cu rotație la schi alpin, prin utilizarea „ aparatului de învățare a virajului”, la schiorii mici, începători. Metodica aplicării pe lângă mijloacele specifice,

a unor exerciții noi la „ aparatul de învățare a virajului”, favorizează procesul de însușire a cristianiei cu rotație, în timp scurt și cu indici crescuți de calitate. Însușirea corectă a procedurii cristiania cu rotație, cu ajutorul exercițiilor la aparatul de învățare a virajului, permite o evoluție eficientă a schiorilor începători pe zăpadă, privind capacitatea de a parcurge în mod corespunzător a unor trasee marcate cu porți, în unități optime de timp.

Titre: Mise en œuvre de nouvelles méthodes d'apprentissage des techniques de "rotation Cristiania" ski alpin.

Mots-clés: méthode, l'apprentissage, la rotation Cristiania, ski alpin, le dispositif.

Resume: Cet papier propose une application des itinéraires algorithmiques des nouvelles techniques d'apprentissage de base, en particulier en ski alpin, de rotation cristiania en utilisant " l'apprentissage de tour appareille ", pour les petites skieurs, débutants. L'aplication de la méthodologie des moyens spécifiques, les exercices avec «l'apprentissage de tour appareille " aide l'assimilation de cristiania rotation, dans court temps et avec un indice de haute qualité. Apprendre propres les procédures de rotation cristiania avec l'aide d'un apprentissage de tour appareille, permet le développement efficace des skieurs débutants, sur la capacité de sentiers bien marqués par les portes, en unités optimale du temps.