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THE TECHNICAL TRAINING IN SLALOM DISCIPLINE THROUGH THE SPECIFIC ALPINE SKIING ABILITIES

Cătănescu Andreea Corina (a)*
*Corresponding author

(a) Transilvania University of Brasov, Street 1, Brasov, 500068, Romania, catanescu.andreea@unitbv.ro

Abstract

The approach of the modern technique implies the athlets side: more inclination, concentration on transition, retraction, stability and more pressure on the outside ski. Organization of research. The actual research was carried out in the competitive season of 2017-2018, in Poiana Brasov, the subject of research being six legitimate athletes at the alpine skiing section. Methods of research used: bibliographic study method, direct observation method, experimental method, statistical-mathematical method and graphical method. Results. During the test of the sketch test, between the initial and the final test, a statistically significant difference ($t = 5,186$ for $p < 0,01$) is recorded. When testing the edge control between initial and final testing, there is a statistically significant difference ($t = 3,236$ for $p < 0,05$). In case of independent rotation of the upper body over the lower one, there is a statistically significant difference ($t = 7.905$ for $p < 0.01$). Regarding the testing of the balance, between the initial and the final test, there is a statistically significant difference ($t = 7.905$ for $p < 0.01$). The results allow us to affirm that following the application of the training programs, four parameters mentioned above, the athletes scored better results in the final test compared to the original ones. Conclusions. The end of the test refers to the ability of the athletes to adjust the body during the races by guiding the skis on snow for maintaining the desired track and minimizing the friction between the skis and the snow.

Keywords: Alpine skiing, slalom, technical training, specific abilities.

1. Introduction

Sport and sport activities are considered as a place for modeling individual characters. The sport became a social phenomenon with a universal character and represents a contemporary reality of high importance by its functions and creative values as well as by the role it plays in our social life (Nechita, 2007).

Alpine skiing is a complex sports discipline featuring five samples: slalom, slalom giant, downhill, super giant slalom, and alpine combined.

Slalom races are set on steep, even terrain with the gates close together. Since the slalom racer is constantly turning across the fall line, the average speed is lower than that obtained in the giant slalom. Slalom races range from 45 to 60 seconds in duration. The slalom requires the most agility of the Alpine events.

Alpine skiing requires strength, coordination, balance, flexibility, and varying degrees of aerobic and anaerobic power (Atkins & Hagerman 1984). The duration and difficulty of the race course determines the energy and strength requirements of the event

The technique in alpine skiing refers to the total body movements of a skier that it performs while balancing and reorienting its skis to fulfill the task of slipping freely or around the gates. The challenge in terms of execution technique occurs when: increasing the slipping speed in the sleeves, the body must readjust to the configuration of the slope, the track, the quality of the snow, and last but not least, a perfect alignment of the body; and its segments to remain in balance (Kipp, & Nolting, 2014).

From the point of view of technique, a good result is a consequence of the best relationship between the velocity of sliding and the choice of the line of turns in a particular field setting (Pozzo, Canclini, Cofelli, & Platzer, 2005).

The goal of each competitor is to make the whole turn along the edges without the so-called rotation of the skis, which always causes a smaller or bigger side sliding. The rotation of the skis into a turn was typical of the old technique, and today, it represents only a method of controlling the speed when skiing between the gates (Lešnik & Žvan,2007).

Young competitors must learn the proper technique which is improved over the course of time until it achieves a top performance (Hintermeister et al., 1995). During skiing, the speed is constantly changing and it is the task of a competitor to preserve the optimal relationship between decreasing and increasing speed (Kugovnik, Nemec, & Supej, 2005). It is important to have operational objectives for strength, coordination, balance, flexibility, required by alpine skiing (Cojanu &Visan, 2013).

The effort in the teaching process must be in relation to the individual characteristics of the subjects and with great care for the achievement of the proposed tasks and objectives. The alternating effort with rest must not be neglected Curitianu, (2017)."Pedagogical Tact is a quality that can be modeled, not so much by work experience in the field or subjects which itself is a necessary but not sufficient, but by the attitude manifest researcher in relation to their own trening" (Nechita & Cioroiu, 2013).

2. Problem Statement

Competitive ski technique requires athletes different skills. Therefore, obtaining good results at a competitive level is conditioned by a good psychosocial status, referring to the development, training and

adaptation to the maximum potential of basic, technical, tactical and psychic skills (Haymes & Dickinson, 1980).

The objectives of applying the Skill Quest test battery are to promote basic (fundamental) skills that can be taught, measured, and tracked to increase long-term performance, taking into account age, driving experience, and capacity individual athlete, information processing.

2.1. Changes in the way adolescents process information can explain cognitive progress. Selecting neural connections that are lost and those that are strengthened is a process sensitive to experience. Thus, advances in cognitive processing vary greatly from one adolescent to another (Kuhn, 2006).

2.2. Researchers in the field of information processing have identified two categories of measurable changes in cognition: structural and functional changes (Eccles et al., 2003). Structural changes refer to: working memory (1) and increase in quantity of knowledge stored in long-term memory. And the most important functional changes are: (1) the continuous increase in processing speed (Kuhn, 2006), and (2) the further development of the enforceable function, including skills such as selective attention, decision making, control impulsive reactions, and memory management. These seem to develop at a variable rate (Blakemore & Choudhury, 2006; Kuhn, 2006).

3.   Research Questions

Since 1970, the PSIA has used the term "skill concept", skills (ski control, edge control, lower limb rotation, three-way balance) can be successfully integrated into today's training sessions. These refer to the fact that an athlete needs to be in constant movement, change, adaptation, but can manage during the sliding of the following issues related to:

- Pressure control on skis - must provide direct pressure controlled throughout the length of the ski.
- Edge control - must offer, access some sort of edge angle, in order to have the possibility of sliding around the gate;
- Control of the rotation of the skis - must provide (rotation, pivoting, direction), separated from the upper part of the body;
- Balance - it must offer the possibility of adapting the body to external and internal forces during sliding (http://www.psia-rm.org/the-scoop/the-skills-concept-skiing-fundamentals-byjonathan-ballou).

4.   Purpose of the Study

"Skill Quest," is the test that helps in the assessment of skiing abilities, and in the implementation of training exercises / drives in training sessions designed to train: pressure control, edge control, lower limb rotation and storage balance during racing). The research contributes to presenting training opportunities tailored to the U16 age specificities so that performance can be achieved gradually and with long-term competitive procurement.

4.1. Presentation of one training session model with specific basic skills, for the development of the execution technique at U16 years

Pressure control

- Exercise I: Lower diagonal, with parallel skis, low speed. Running turns in the plug by initiating the point of the inner stick, turning the outer ski's tail off and applying pressure on it progressively until it reaches an 80% to 20% ratio between the inside and the outside ski. Returning to the initial position by distributing the pressure in a ratio of 60% - 40% between indoor and outdoor skiing. Exercise II: Lower diagonal, parallel skis, low speed, alternate elevation of the 3x skis on each leg, then the turn in the plug according to exercise I.

Edge control

- Exercise I: Achieving parallel turns by swapping the blade quickly into a straight line, by bypassing 10 - 15 short stones, located on the vertical line of the slope at a distance of 1m between them.

- Exercise II: Making 10 - 15 short slalom slopes with huge skis.

- Exercise III: Achieving the carvings by exaggerating the lateral inclination from one turn to the other until the hip reaches a very close snow level.

Lower limb rotation

- 1.Shows with parallel skis on the spot. From the initial orientation towards the horizontal line of the slope, the ankles, knees and hip rotate up to the opposite direction, progressive **extension of** the knee joint and coxofemoral joint until the skis are oriented on the vertical line of the slope, followed by a progressive flexion of them. Carvings with parallel skis until the skis are hill-oriented, then return to the initial position.

Develping Balance

- Exercise I: Small speeds on a single ski while keeping the other ski in the air.
- Exercise II: We go to exercise 1 in short streamers on the vertical line of the slope with a distance of 2 - 3 m between them.
- Exercise III: Short skies with one ski in one leg and the other free.

5. Research Methods

The experiment itself focused on sports training, for four months (December - March), six athletes, which are in the U16 category. Athletes are certified in a private law club in Brasov, with a minimum of six years of experience in skiing.

Evaluation of the score obtained through the "Skill Test" was carried out at the beginning of January, through an initial test and at the end of March, through a final test, at the ski slope of Poiana Braşov, FIS approved slopes. The scores obtained were recorded in the individual records of each athlete, which were to be statistically interpreted.

5.1. The coaches mentioned on the score sheets the scores received. The points are from 0 to 10. Each of the four qualities refer to a very good, good, medium and poor execution. Therefore, the points are awarded as follows: 8, 9, and 10 represent - a very good execution that controls the pressure, edges, rotation and balance during sliding, control of the body, the rhythm of the executions being good; 6, 7, and 8 represent a good execution comprising: control of pressure, edges, rotation and balance during sliding, the execution rate being weaker; 3, 4, and 5 represent an

average execution which exhibits poor control of the pressure exertion, edge control, lack of rotation, and repeated misalignments throughout the sleeve; 0, 1, and 2 represent - a poor execution - without the control of the skis on a required aisle.

5.2. Methods of research used: bibliographic study method, direct observation method, test method, experimental method, statistical - mathematical method and graphical method.

6. Findings

Thus, following the "Skills - Quest" test, the results between initial and final testing indicate a significant increase in outcomes for specific core abilities (Table 01).

Thus, the "Ski pressure control" test indicates that standard deviations are acceptable, suggesting modest scattering of individual data around the mean of (4.5) at baseline, and (7.83) at final assessment. Analysis of mean values suggests that there is a statistically significant difference between the two ski pressure control assessments (t = 5.186 for p <0.01).

Thus, the "Edge Control" test indicates that standard deviations are acceptable, suggesting a modest scattering of individual data around the average of (4.83) at the initial assessment, and (7.83) at the final evaluation. Analysis of the mean values suggests that there is a statistically significant difference between the two edges control tests (t = 3.236 for p <0.05).

Thus, the sample of "Knee Rotation during Sliding" indicates that standard deviations are acceptable, suggesting a modest scattering of individual data around the mean of (5.33) at baseline, and (8.5), when evaluating the final. Analysis of mean values suggests that there is a statistically significant difference between the two rotation evaluations (t = 7.905 for p <0.01).

Thus, the "Balance on Skis" test shows us that the values obtained in the standard deviations are acceptable suggesting a modest scattering of the individual data around the mean, (5.16) at the initial evaluation and (8.33) at the final evaluation (Figure 01). Analysis of mean values suggests that there is a statistically significant difference between the two equilibrium assessments (t = 7.905 for p <0.01).

Table 01. Static indicators following the Skills Quest test, T.I. - T.F

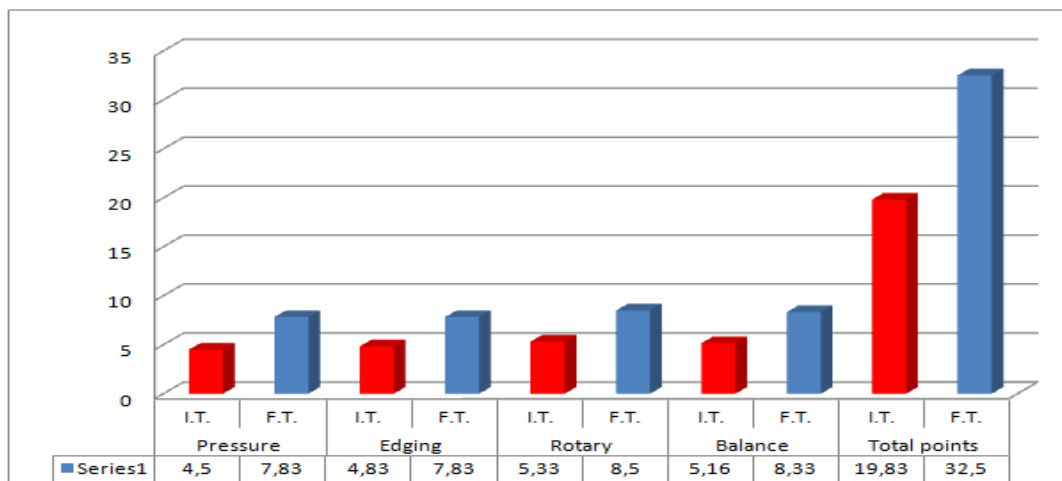| Variables	Media		Ab.std		M	
	T.I.	T.F.	T.I.	T.F.	T.I.	T.F.
Pressure Control	4,5	7,833	1,048	1,169	0,429	0,479
Edge control	4,833	7,833	1,602	1,602	0,656	0,656
Rotation	5,333	8,5	0,816	0,547	0,334	0,224
Balance	5,166	8,333	1,169	1,505	0,479	0,616
Total Points	19,83	32,5	4,167	3,987	1,707	1,631

Figure 01. Graph - Analysis between initial and final testing for the evaluation of the four abilities

7. Conclusion

As a result of the research carried out we have noted as significant the following theoretical elements, namely the necessity of rethinking the training methodology, regarding the vision of approaching the training process, all the factors involved in sport performance activity that have to be adapted to the level of development: psycho-somatic, physical, technical, tactical and psychological aspects of the athlete.

Thus, as far as the application of research is concerned, we can draw the following conclusions. The development of modern Alpine skiing requires athletes to develop as varied as possible the specific basic skills, which are a well-structured training process with progressive growth in terms of improving the execution technique at leisure, in training and competitions.

Thus, following the implementation of the training programs, which aimed at improving the specific basic abilities (pressure control, edge control, rotation and balance), a number of positive aspects can be observed. Following the experiment, the athletes developed, trained and corrected the aspects related to: controlling and managing the pressure on the skis, controlling the angles in the interaction with the snow, the role of the lower limb rotations and a possible balance keeping in all three planes.

From the point of view of the execution technique in the slalom test, we can highlight the following aspects. Changing the conditions of snow, causes the ability to accurately perform the exercise, and to react effectively during the race; Athlete's ability to manage the ratio of ski / snow in terms of pressure; The ability to maintain speed during turn. As a result of the control of the edges, there is a dynamics in the control of the edges during the races and the possibility of controlling the edges while placing their body in exaggerated positions (lateral angles) (Table 02).

Following rotation, which refers to: the separation of the upper part of the body from the lower one, demonstrated by the way of rotation of the skis while maintaining the upper part of the balanced body in space, being essential for efficient competitions. As a result of the equilibrium, the athletes have better control at the level of shifts, sliding, with different angles and inclinations, as well as better control at the whole body level. Thus, the skier learns new ways of approaching the competition slopes by adaptability to the multiple degrees of freedom conferred by their joints in order to streamline new situations that may occur during the test.

Table 02. Results obtained by the subjects submitted to the research

Crt.	Variables	Test t	Significance threshold
1	Pressure Control	5,186	$p<0.01$
2	Edge control	3,236	$p<0.05$
3	Rotation	7,905	$p<0,01$
4	Balance	4,069	$p<0,01$
5	Total Points	5,368	$p<0,01$

Acknowledgments

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