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SIMPLIFYING AND GENERALISING THE METHODS USED IN TEACHING BASIC SNOWBOARDING TECHNIQUE

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Abstract

Snowboarding is a sport similar to other sports like skateboarding, surfing (with or without sail), wakeboarding, except the fact that it is practiced on the snow as a slip surface and other numerous small differences in the material endowment. The experimental study was conducted at the ''Virgil Teodorescu'' Sports Training Centre, in the Parang Mountains, from 27 February to 4 March, in the academic year 2016-2017. The subjects were Master students (EFAMTL) and 3rd year Bachelor students with skiing specialisation. They were divided into two groups of 10 students each. At the beginning of the activity, the subjects were informed about the experiment in which they would participate and the control tests they would perform. Methods used in the study: scientific research in the field of physical education and sport has grown in the last period, the theory and methodology of skiing adopting methods specific to the discipline specificity. Of these methods, the following are suitable for this study: observation, experiment, conversation, testing method, statistical and mathematical method, graphical method. The method used to learn snowboarding is the global learning of the techniques. The efficiency of the experiment was verified through two technical processes, front turn and back turn, and the last test consisted of a contest with passages through 8-10 flagpoles.

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Keywords: Snowboard, learning method, global comprehension.

1. Introduction

Snowboarding, as an extreme sport, began with the human desire to escape, to do something special, something bold, something extraordinary. The favourite domain of snowboarding, the raw snow, fresh snow, so beloved by snowboarders, makes them wander new unexplored paths, rare forests, narrow valleys, hard to reach peaks (Pelin, 2007).

Thus, in the middle of the 7th decade of the 20th century, on the American continent, Shermann Poppen, a passionate surfer, wanted to widen the thrills of sliding on a board in the white season, on the snow. His 1.20m prototype was just a simple board similar to water surfing, without edges, without binding and with a simple string tied to the slightly risen tip. With this invention, he knocked on the doors of different sports companies. Thus, a bowling manufacturer company liked the idea and started producing the new equipment called "Snurf", a combination of "Snow" and "Surf" (Grigoraş, 2002).

There is a connection between lab studies regarding the snowboard's mechanical construction characteristics and the way a snowboard performs on the slope (Buckingham & Blackford, 2004).

Although the Snurf was hard to handle on a beaten track, it continued to be sold, the athletes constantly searching for new unexplored paths to ski. Thus, a natural selection was made from the beginning among those who embraced the new sport: they were adventurous, seeking for new paths and new sensations, the pioneers of this sport.

Taking into consideration the aforementioned, we can say that, in our country, the evolution of this sport has been spectacular from the very beginning, from Andy Fazakas and Gabi Morariu until today, when the Romanian Snowboarding Federation and the National Championships are recognized internationally. We can notice a growing interest in snowboarding, especially among the young people, partly because it is easier and quicker to learn than other winter sports, needing only around 5-6 days to acquire its basics (Reichenfeld & Bruechert, 1995).

2. Problem Statement

Using simplified and generalised means to improve the snowboarding teaching methods will bring benefit to learning the basic technique.

In an attempt to improve the snowboarding technique, the literature encourages using new means and methods when learning it (Cârstocea et al., 2000).

Technology advancements have influenced snowboarding as regards the quality of the equipment, slopes, mechanical means for climbing the slope (Pelin, 2007). This is why there is a need for intervention in the means and methods through which snowboarding is taught, keeping in mind the individuality of the people learning this sport.

3. Research Questions

Given that, during the last years, the trend has led more and more people to snowboarding (Teter & Schultz, 2013), in the experimental part of our research, we shall try to adapt the snowboarding technique according to present requirements.

In the theoretical part, we introduced some practical materials, such as viewing clips and photos

describing the snowboarding technique. In the experimental phase, we simplified and generalised the technique in order to make the learning program accessible to all participants, regardless of their training level. There are methods that we can use to homogenise the group, according to the subjects' qualities.

4. Purpose of the Study

When learning the basic snowboarding at a beginner level, if the elements and techniques are exercised globally, favourable results are achieved in a shorter time.

5. Research Methods

5.1. Place and subjects of the research

The experimental study was conducted at the "Virgil Teodorescu" Sports Training Centre, in the Parang Mountains, in the period 27 February - 4 March 2017. The subjects were Master students (EFAMTL) and 3rd year Bachelor students with skiing specialisation. They were divided into two groups of 10 students each. At the beginning of the activity, the subjects were informed about the experiment in which they would participate and the control tests they would perform.

5.2. Methods

We consider that the following methods are suitable for an experimental research in the field of physical education and sport: observation, experiment, conversation, testing method, statistical and mathematical method, graphical method (Păunescu, 2013). The tests used to check the effectiveness of the experiment were the front turn and back turn, and the last test was the final contest.

6. Findings

- Methodological bases of learning snowboarding at the beginner level

Objectives:

Familiarising with the equipment and terms

Learning to move on flat ground by pedalling with one foot

Learning to turn by side slipping

Going down an easy slope using sideslip turning

- Technical process succession

a. Balance training

b. Basic stance

c. Sliding – straight descent down the slope

d. Oblique descent

e. Sideslip

f. Turning towards the hill

g. Moving on flat ground

h. Sideslip turning

Day I

a. Balance training (BT)

Exercises:

BT1 – flexion and extension of the knees varying amplitude, intensity and movement angle

BT2 – flexion and extension with a slight jump, gradually increasing jump height

BT3 – balancing forward and backward on the board

BT4 – placing the board alternatively on each edge by flexing and extending the ankle to achieve the highest inclination possible

BT5 – on a flat surface, with the board tied to the feet, jumping and spinning around the vertical axis of the body as close as possible to a 180-degree rotation and then a 360-degree rotation

BT6 – falling on the front side, body in extension; when getting back up the board, it must be brought as close as possible beneath the body

b. Basic stance

If we look closely at a snowboarder, his/her movements resemble those of a beam balancer trying to maintain balance in a similar lateral position using their hands and feet. According to the preferred choice of the forward foot, the stance can be regular (left foot forward) or not (right foot forward).

The basic stance is with the legs flexed, shoulders towards the direction of movement, arms loose to help with balance. Knees are slightly pivoted and pushed towards the forward side of the board. The flexed ankles make so that the tibia is pushing on the anterior side of the boot, body weight is on the forward part of the board. For adjustable binding, it is recommended that the forward boot is at a 45-degree angle related to the imaginary line perpendicular to the board, and the other boot at a 10-30-degree angle related to the same line.

c. Sliding (S) - downhill

Exercises:

S1 – Sliding straight downhill and balancing towards the frontside and backside of the snowboard on one foot and the other

S2 – Sliding straight downhill and closing the eyes for an increasing amount of time at each attempt, in order to get a better feeling of the correct position

S3 – Sliding downhill and slightly jumping by extending the legs

d. Oblique descent (OD)

It is preferred to start facing the hill (frontside), but the same amount of exercise must be provided for facing the steep slope (backside).

Exercises:

OD1 – facing the hill, with the snowboard on the front edge, progressively turn the board at a 45-degree angle from the slope and slowly start sliding. In order to stop, put pressure on the front edge until the board starts turning towards the hill.

OD2 – sliding obliquely on the slope by flexing the knees and hips in an accentuated manner as if to catch the board with both hands.

OD3 – sliding obliquely on the slope (backside). This is also an opportunity to exercise strapping on the snowboard from a sitting position.

OD4 – sliding obliquely on the slope from both sides (frontside and backside) turning on each side of the slope either by sitting down or through a jump.

Backside position might be a little bit more uncomfortable than frontside position as the knees are less flexed, pressure is on the heels and the torso is bent downhill, an angulation similar to the one in skiing.

Day 2

e. Sideslip (S)

Exercises:

S1 – standing still, balance the board on the front edge. From this position, progressively extend the knees and put some weight on the heels as to put it flat on the snow and the board will start to sideslip downhill. Stopping the sideslip is done by progressively flexing the knees and putting the weight on the front of the feet, and thus on the edge which is facing the hill.

D2 – backside sideslip – the board is on the rear edge, weight is on the heels, stance is like in the oblique descent, with torso slightly facing downhill. Through a light flexion and unloading of the front edge, the board is laid flat on the surface and starts to sideslip. To stop the sideslip, lift the front side of the feet and load the heels and the back edge. Controlled sideslipping is a very useful element in learning how to snowboard, especially in the first year (it resembles a plough in skiing).

D3 – on a groomed slope, without obstacles, practice controlled frontside and backside sideslipping as long as possible distance-wise, with the eyes closed.

D4 – oblique descent frontside and backside – triggering the sideslip leads to a sideslipping oblique descent, and stopping it leads to a normal oblique descent.

f. Turning towards the hill - uphill (HT)

Exercises:

HT1 – on a flat surface, basic stance, load the front edge progressively by flexing the knees and pressing the tibias in the front of the boot until the point where balancing is no longer possible, then revert to the starting stance.

HT2 – loading the back edge through a light extension of the knees while also tilting the torso forward in order to maintain balance. Repeat while emphasising progressive edging.

HT3 – from a straight descent downhill, execute a frontside turn by gradually loading the front edge. The body tilts slightly towards the inside of the turn to compensate for the centrifugal force acting on the snowboarder.

HT4 – from a straight descent downhill, execute a backside turn by loading the heels and thus the back edge, complete the turn by stopping towards the hill.

Day 3

The day starts by passing again through the already learned elements in the order in which they have been thought, as presented above. After this, the subjects learn to move on the board on a flat surface by "pedalling" with one leg.

g. Moving on a flat surface

This type of movement is very similar to riding a skateboard. The front foot is in the binding while the back foot is loose and "pedals", propelling the board forward. This can be done on a marked course in order to improve balance while moving on a flat surface by pedalling.

h. Sideslip turn

Part of the work for learning this was done before, in turning towards the hill from a straight descent.

Beginners start from the leanest part of the slope, which should be as broad as possible. It is preferred to start with the front turn (front of the body facing the inside of the turn), as this "on toes" position is more comfortable than the "on heels" one, characteristic to the back turn.

Front turn (FT)

Both the front turn and back turn have mechanisms similar to the ones in skiing (flexion-extension-flexion), corresponding to the three phases – preparation, initiation and leading the turn. By progressively approaching each of the three parts, an algorithm was created.

Exercises:

FT1 – while sliding backside, execute as many flexion-extension movements as possible. The flexion should be done slowly and progressively, and the extension rapidly, taking the weight off the board.

FT2 – "backside wreath". From an oblique descent, the subject executes FT1 - at the moment of the extension (when the board is unweighted) in the final phase, by pivoting the legs and loosening the hill edge, the board turns downhill. At this moment, through a progressive flexion and by putting pressure on the front edge, the subject turns towards the hill. Successively chaining these two elements results in a "wreath".

FT3 – from a straight downhill descent, execute an extension triggering front turn towards the hill. The difference between this exercise and the previous one is that the turn is initiated by an accentuated extension at the end of which the board can be pivoted more easily towards the new direction.

FT4 – the front turn is practiced through a backside oblique descent. The mechanism is presented below:

Preparation: progressive flexion as if a spring is being compressed. Board is on the hill edge.

Triggering: active extension - unloading of the board and pivoting the legs towards the new direction (the board has a moment in which it is flat on the ground)

Leading the turn: progressive flexion and loading the other edge, continuing to pivot the board

Closing the turn: fixing a balanced frontside stance on an oblique descent. In this phase, the effects of the tail sideslipping or of an exaggerated rotation due to overuse of the torso in the turn initiation is eliminated. Executing the turn on a slight bump makes it easier because the contact area of the snowboard and the surface (snow) are smaller in the pivoting point. As the subject becomes more proficient, a board with a more accentuated sidecut is recommended, as opposed to the straighter, "softer" and more forgiving beginner board.

Back turn (BT)

Exercises:

BT1 – frontside oblique descent, executing the flexion-extension movement

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BT2 – frontside "wreath"

BT3 – from a straight downhill descent – uphill turn, back turn triggered by an extension

BT4 – back turn from an oblique descent

At this moment, the subjects progress to chaining the turns and they can descend the beginner slope by using the sideslip turn.

Day 4

This day is reserved for fixing and consolidating the elements which the subjects have already learned and to learn how to combine these elements to safely descend an easy slope through a premade course. The elements are reviewed in the order they have been learned. Turns are executed at a set mark on the slope. After the midday break, the subjects descend the slope freely, with an accent on chaining the turns in a smooth manner.

Before the end of the day, they have to complete 2-3 times an 8-10 gate course. The main objective is to not miss any of the gates.

Day 5

The exercises from the precedent days are reviewed and then the gates are installed again in order for the subjects to go through it 2-3 times, with the same goal of not missing any of them. The next 2-3 repetitions will emphasise the speed with which they go through the course. The proper descent rhythm and path are explained and demonstrated beforehand. Knowing that the optimal turn is shaped like a comma, accelerated in the second part, the optimal path is a meandering "serpentine" (chaining of commas), turn initiation happening after the half of the distance between two gates.

Day 6

This is the final day of the cycle, which is dedicated to the examination. Chained front turns and back turns are demonstrated in a free descent. In the second part of the examination, an 8-10 gate course is installed and the subjects' evolution is timed, similar to a contest.

5.1. Results

In the first test, the subjects were graded for the front turn. The results are as following:

Table 01. Front turn grades

Subjects	Front turn Experimental group	Subjects	Front turn Control group
1. A.I.	10	1. B.A.	10
2. C.A.	9	2. C.A.	9
3. D.B.	10	3. D.I.	10
4. E.A.	8	4. E.I.	8
5. G.L.	10	5. F.M.	10
6. I.I.	8	6. F.I.	8
7. L.I.	10	7. I.L.	10
8. M.L.	9	8. L.V.	8
9. M.I.	9	9. M.G.	9
10. N.M.	8	10. O.I.	8

The scores obtained by the subjects for the back turn are the following:

Table 02. Back turn grades

Subjects	Back turn Experimental group	Subjects	Back turn Control group
1. A.I.	10	1. B.A.	7
2. C.A.	9	2. C.A.	6
3. D.B.	10	3. D.I.	7
4. E.A.	9	4. E.I.	6
5. G.L.	10	5. F.M.	7
6. I.I.	10	6. F.I.	8
7. L.I.	8	7. I.L.	6
8. M.L.	10	8. L.V.	7
9. M.I.	9	9. M.G.	6
10. N.M.	10	10. O.I.	8

At the final contest between the experimental and control groups, the subjects' times were:

Table 03. Contest finishing times

Subjects	Contest Experiment group	Subjects	Contest Control group
1. A.I.	45	1. B.A.	50
2. C.A.	51	2. C.A.	53
3. D.B.	46	3. D.I.	47
4. E.A.	53	4. E.I.	51
5. G.L.	40	5. F.M.	43
6. I.I.	38	6. F.I.	46
7. L.I.	41	7. I.L.	37
8. M.L.	37	8. L.V.	39
9. M.I.	55	9. M.G.	42
10. N.M.	49	10. O.I.	48

5.2. Final results after statistically calculating the data

a) Front turn

Table 04. *Front turn statistics*

Indicators	Front turn Experiment group	Control group
Σ	91	90
$\overline{X}$	9.1	9.0
S	±0.77	±0.88
Cv	8.46%	9.77%

b) Back turn

Table 05. *Back turn statistics*

Indicators	Back turn	
	Experiment group	Control group
Σ	95	68
$\overline{X}$	9.5	6.8
S	±1.35	±0.79
Cv	14.21%	11.62%

c) Final contest

Table 06. *Contest statistics*

Indicators	Final contest	
	Experiment group	Control group
Σ	98	89
$\overline{X}$	9.8	8.9
S	±1.32	±0.88
Cv	13.46%	9.88%

5.3. Interpreting the results obtained from the tests

a) The first test was the front turn. The key points we emphasised were how correctly the movement was done and the turning phase succession.

The average score for the experiment group was 9.1. For the control group, the average was 9. The two scores are very similar, thus the difference between the two is irrelevant and the progress is the same.

The calculated standard deviation had the following values: for the experiment group ±0.77 and for the control group ±0.88. The mean value of the experimental group is more representative than the one from the control group. The coefficient of variability indicates high homogeneity of the results for both groups.

Student's t-test calculations indicate the following values:

"t" =; n-2 =>n=8

>2.26 (0.05 threshold) => 95% certainty

>3.25 (0.01 threshold) => 99% certainty

b) For the second test involving the back turn, the average score for the experimental group is 9.5, while for the control group, it is 6.8.

The progress is noticeably bigger for the experimental group than for the control group.

The standard deviation is ±1.35 for the experimental group and ±0.79 for the control group.

The result of the standard deviation for the control group is more representative, thus the variance is smaller for this group.

Although the standard deviation is more relevant for the control group, the coefficient of variability indicates high homogeneity for both groups.

Student's t-test calculations indicate the following values:

"t"= 6.23; at n-2 => n=8

6.23>2.26 (0.05 threshold) => 95% certainty

6.23>3.25 (0.01 threshold) => 99% certainty

c) At the final contest, the subjects were graded according to their evolution.

After collecting the data, we calculated the following values:

For the experimental group, the average was 9.8, and for the control group, 8.9.

The standard deviation for the experimental group was ±1.32, and for the control group, ±0.88.

The coefficient of variability indicates high homogeneity for the experimental group, but also for the control group.

Student's t-test calculations indicate the following values for the final contest:

 "t"= 6.65; at n-2 => n=8

6.65>2.26 (0.05 threshold) => 95% certainty

6.65>3.25 (0.01 threshold) => 99% certainty

7.   Conclusion

1. By studying the literature and through this practical experiment, we can confirm the hypothesis. Our contributions regarding the particularities of teaching beginner groups how to snowboard may lead to a shortening of the learning time, by globalising the elements and techniques.

2. The program we applied to the experimental group was a success due to the obtained results and the way in which the subjects reacted to this experiment.

3. As "snowboarding is not a series of static positions, but continuous movement within a sphere of motion" (Reichenfeld & Bruechert, 1995, p. 7), by simplifying and globalising the technical aspects of snowboarding, the teaching methods become more accessible and will attract a larger number of participants, regardless of age and physical training.

4. Due to the current trends of snowboarding, there is an accent on learning quickly, thus the necessity to change the teaching methods in order to comply with this. Our experiment demonstrates that the teaching succession is viable.

5. We hope that this program which had positive results for the experimental group will also be used by different snowboarding instructors for beginner groups.

6. We have demonstrated that shortening the learning period leads to positive results and might yield a higher performance level throughout the years of training.

7. By using teaching aids (photos and clips) and discussing about them, we managed to reveal for our subjects a global picture of the technical elements specific to snowboarding. By demonstrating global exercises, the subjects understood that segmenting the elements does not favour learning and might also have a negative impact if any part of the movement is learned in an incorrect way.

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