

**Eduard Hrazdára, Miriam
Kalichová, Martin Sebera, Martin
Zvonař**

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practical learning of snowboard
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Eduard Hrazdír*
Miriam Kalichová**
Martin Sebera***
Martin Zvonář****

THE CHOICE OF THE BEST TESTS IN PRACTICAL LEARNING OF SNOWBOARD STANCE

Introduction

The position of legs on snowboard comes from its specific way of use and from the fact that each leg has a different function. The technique of turning on snowboard is based on the different activity of the lower limbs.

The issue of selection of the front leg on snowboard is dealt with in scientific literature only marginally, authors usually rely on the use of several tests which effectivity has not been tested yet. In the framework of the methodological approach, selection of the front leg is dealt with by Weiß,¹ Luža & Nosková,² Vobr,³ Louka & Večerka,⁴ especially by presenting several tests for the determination of the front leg on snowboard. The most detailed research was carried out by Frischenschlager⁵ and Binter⁶ who suggest also the reliability of the tests.

Authors agree on more recommended tests. All listed authors mention the “gliding stance test.” The tested person glides on the ice or snow during which he automatically puts one leg in front of the other. This stance corresponds with the stance on snowboard.

Another test recommended by all the above mentioned authors (except for Luža & Nosková⁷) is the “imbalance step test.” The tested person takes the standing on two legs position, relaxes and closes his eyes. The body is let to fall forward or the instructor pushes him slightly. The person instinctively steps forward by one of the legs which compensates the fall. According to the above listed authors, this is the strongest lower limb which should be placed as the front leg in the snowboard stance.

* Univerzita Masaryka v Brně.

** Univerzita Masaryka v Brně.

*** Univerzita Masaryka v Brně.

**** Univerzita Masaryka v Brně.

¹ Ch. Weiß, *Snowboarding od A do Z*, Wyd. Český spisovatel, Praha 1983.

² J. Luža, S. Nosková, *Základy snowboardingu*, Wyd. Masarykovy univerzity, Brno 1998.

³ R. Vobr, *Snowboarding*, Wyd. Kopp, České Budějovice 2006.

⁴ O. Louka, M. Večerka, *Snowboarding*, Praha 2007.

⁵ E. Frischenschlager, *Snowboarding za tři dny*, Wyd. Pruvodce Sportem, České Budějovice 2004.

⁶ L. Binter, *Snowboarding: vybavení, technika jízdy, freestyle*, Grada Publishing, Praha 2006.

⁷ J. Luža, S. Nosková, *Základy...*

Another recommended test is “riding scooter stance test” (Louka,⁸ Luža & Nosková,⁹ Louka & Večerka,¹⁰ APUL,¹¹ Pach,¹² Binter¹³), when the authors identically interpret the use of lower limbs in the way that the standing limb on the scooter will be the stronger one and should be the front one on the skateboard.

Correct stance on snowboard can be suggested also by the stance of the individual on the skateboard of windsurfer if he devotes himself to these sports (Louka,¹⁴ Frischenschlager,¹⁵ Louka & Večerka,¹⁶ APUL,¹⁷ Binter¹⁸).

Another test which can be used is the “step on the stool test” when the first used lower limb will be the front in the snowboard stance (Pach¹⁹). When we know which leg is the take off one, it can also help to determine the front leg on snowboard (Luža & Nosková²⁰). Frischenschlager²¹ completes this list of tests by another two possibilities. These are the “shadow box test” when the individual puts forward the leg which should be the front one on the snowboard and the “kicking leg test” when the kicking leg is the rear one on the snowboard.

The wrong stance of the lower limbs on the snowboard can significantly slow down the efficiency of learning. This was the reason for dealing with this issue of snowboard stance in more detail which are the fundamentals of research in this work.

Research methods

Characteristics of the research sample. The research was carried out between 2003 and 2006 with the aim to determine the efficiency of the methods used in practice for the choice of the snowboard stance. 120 pupils of the higher stage of primary school aged 10-15 who had some experience with snowboarding took part. Data was obtained by the method of survey, testing and observation.

Methods of data collecting. The data collection for the evaluation of the most effective test for the determination of the snowboard stance took place in the form of brief survey dealing with the chosen tests: “determination of the take off leg,” “gliding stance test,” “im-

⁸ O. Louka, *Metodika snowboardingu*, Wyd. CDVU KTV UJEP a Asociace českého snowboardingu, Ústí nad Labem 1998.

⁹ J. Luža, S. Nosková, *Základy...*

¹⁰ O. Louka, M. Večerka, *Snowboarding...*

¹¹ Apul, *APUL Snowsports manual*, Wyd. Špindlerův Mlýn, 2008.

¹² M. Pach, *Snowboarding*, Wyd. PEEM, Bratislava 2012.

¹³ L. Binter et al., *Snowboarding*, Wyd. Grada Publishing, Praha 2012.

¹⁴ O. Louka, *Metodika snowboardingu...*

¹⁵ E. Frischenschlager, *Snowboarding...*

¹⁶ O. Louka, M. Večerka, *Snowboarding...*

¹⁷ Apul, *APUL Snowsports manual...*

¹⁸ L. Binter et al., *Snowboarding...*

¹⁹ M. Pach, *Snowboarding...*

²⁰ J. Luža, S. Nosková, *Základy...*

²¹ E. Frischenschlager, *Snowboarding...*

balance step test,” “kicking leg test” and “riding the scooter stance.” The informants were asked how did they perform the individual tests in the past. If they were not able to answer or they did not carry out the test before, the test was carried out immediately and the result was obtained by observation.

Diagnostic methods. The obtained data was compared to the real stance of the tested person on snowboard. The way of test evaluation and determination of the fact that the result of the test comply with the snowboard stance according to publications by (Louka,²² Luža & Nosková,²³ Frischenschlager,²⁴ Louka & Večerka,²⁵ APUL,²⁶ Pach,²⁷ Binter²⁸) are logically justified as follows.

In the test “take off leg determination” as an congruent performance with the snowboard stance, it is considered if the take off leg is the front one on the skateboard according to the weight distribution in the basic snowboard stance. Take off leg is in relation to the swing one stronger and will better manage the dominant load. Swing leg is on the other hand “more apt” and will better take part in snowboard control as the rear leg.

In the “imbalance step test” it is considered as congruent if the individual steps forward by the leg which is a front one on the skateboard. The tested person compensated the fall after an unexpected imbalance (e.g. by pushing) by instinctively stepping forward by the stronger leg which is more suitable for the prevailing load on snowboard.

In the “gliding stance test” it is considered as congruent if the stance is identical with the snowboard stance. Tested person glides on the slippery surface after a short run up. Taking the middle position is expected, by the stronger leg front because the movement strongly resembles the future movement on snowboard (skateboard, windsurf etc.).

In the “kicking leg test” it is considered as congruent if the individual kicks by the leg which is rear on the snowboard, the leg which is more apt. The kicking leg is considered to be dominant from the point of view of fine motorics and will better help to control the snowboard.

In the “riding a scooter stance test” it is considered as congruent between the test and the snowboard stance if the individual stands on the scooter with the leg which is a front one on the snowboard which is the stronger one. It is supposed that the movement on the scooter without taking off resembles the movement on the snowboard. With take off, it is nearly identical with the skill which is on snowboard used for overcoming short distances by gliding with taking off when the front leg is fixed in the binding and the rear one is used for taking off the snow surface.

Data was further processed by two methods, by the calculation of absolute and relative frequencies and by comparison carried out by nonparametric method of the classifi-

²² O. Louka, *Metodika snowboardingu...*

²³ J. Luža, S. Nosková, *Základy...*

²⁴ E. Frischenschlager, *Snowboarding...*

²⁵ O. Louka, M. Večerka, *Snowboarding...*

²⁶ Apul, *APUL Snowsports...*

²⁷ M. Pach, *Snowboarding...*

²⁸ L. Binter et al., *Snowboarding...*

cation trees. Classification trees enable to find mutual relations and structure in the data. From this point of view it is considered to be an explorative method. From the individual algorithms of learning, CART algorithm (Classification and Regression Trees) was used, binar tree was generated where each nod has exactly two subnods. The selection of the best attribute for the choice was carried out based on entropy and Gini index. The method is thus able to order the variables according to their importance during classification.²⁹

Results and discussion

The results of calculations of absolute and relative frequencies show a different level of efficiency of individual tests. The result of the “gliding stance test” complied for 94 people out of 120 with the snowboard stance. This level of compliance was 78,3%, which ranges this test among the most efficient ones for choosing the snowboard stance. On the other hand the lowest level of efficiency was represented by the “kicking leg test” in which was only 33,3% of compliance with the snowboard stance represented by 40 respondents. Other tests showed efficiency at a relatively same level. 60% efficiency can be seen from the “riding a scooter test,” which corresponds with the compliance of 72 cases out of 120. Slightly lower results can be seen from the “take off leg test” which is 56,7%, corresponding to 68 informants compliance. In practice well known and commonly used “imbalance step test” based on observing of which leg steps forward in immediate imbalance, represented 52,5% efficiency which is just above 50% border, when expressed in absolute frequency, it applies to 63 informants.

As a part of the research, other interesting facts came out. In the ratio of the goofy vs. regular stance e.g. right leg vs. left leg front among young snowboarders, goofy stance is preferred by 77 cases which is (64,2%) and means the right leg front. Left leg front is preferred only by 73 informants which is (35,8%).

In exercise “kicking leg test” there is a remarkably high percentage (92,5%) of individuals kicking by the right leg which was 111 out of 120 tested. When compared to the test of efficiency, it shows out that many snowboarders choose their creative (control) leg in this case as their front leg which is striking. 72,5%, which means 87 snowboarders should glide for the first time by their right leg first. According to the similarity of the test to the real snowboarding and the number of snowboarders with goofy stance (64,2%), it is interesting that about 8% would prefer the opposite leg. 60% which is 72 of the tested respondents would solve by their right leg the risk of fall in case of imbalance which means that they marked it as the stronger one. 57,5%, which means 69 respondents choose the right leg as the take-off one. Nearly evenly the legs are used by snowboarders while riding a scooter, 50,8% take off from the left leg while 49,2% take off from the right leg.

Relatively different results were obtained from the assessment by classification tree method. If the relations between the group of the informants are taken into account, it is

²⁹ K. Komprdová, *Rozhodovací stromy a lesy*, Wyd. Leden, Brno 2012.

possible to carry out the following analysis and find the determinants for prediction of the snowboard stance: In id = 1 nod, all the informants are divided into groups of 43 regular and 77 goofy. The height of rectangles shows frequency of each category, information in the middle of the nod represents prevailing category, in nod id = 1 it is R (right leg). Nod id = 1 is divided into nods id = 2 and id = 3 according to “the kicking leg test.” In nod id = 2 are those informants who did not have the same leg in the kicking leg test and in snowboard stance (corresponding stance is marked „1,” non-corresponding by code „0”). In total there was compliance based on the test “laterality” in 40 informants, see id = 3.

Remaining informants who were 60 are in nod id = 2. Nod id = 2 is divided into nods id = 4 and id = 5 according to the test “stance in gliding.” The compliance here between the snowboard stance and the result of the “gliding stance” was in 71 cases, see nod id = 5.

Further the algorithm generates the order of variables which are important for this classification tree even if they do not need to represent the criterion during the tree creation. There are the variables in the “importance graph”: the result corresponds with the designed classification tree. The most important predictor remains the “kicking leg test” followed by the variable “gliding stance.” The graph also shows that the results of the “stance when riding the scooter” and “take off leg test” are not important at all. These tests are insignificant for the prediction of the snowboard stance according to the results of this statistical method.

From the evaluation by methods of the “classification tree” and “importance,” the dominant position of the „kicking leg test” towards other tests can be seen clearly. It is remarkable that in this test, there is a big difference in evaluation carried out both by the frequency calculations and the classification tree method. Based on these results it can be concluded that determining the stance on snowboard by the “kicking leg test” is not conclusive enough. The low efficiency of this test (33,3%) can be caused by its disability to determine the stronger and more apt leg clearly. It is supposed that the kicking leg should not only be able to make a precise kick but also strong enough to give the ball the necessary speed. In this test, the function of one leg is not only concentrated on force activity and the function of the second leg on aptitude which does not comply with the different function of the front and rear leg in snowboard stance. This test is not therefore suitable by its character for purposes of this research.

The test which seems to be best suitable based on the results both from frequency calculations and classification tree is the “gliding stance test.” It can be concluded that the high efficiency of this test (78,3%) as well as its second position in the “importance graph” is caused by its close similarity to the real stance and the movement character on snowboard.

Conclusion

The aim of the research was to assess the efficiency of the learning process in snowboarding by determining the efficiency level of five commonly used tests for the stance choice on snowboard. Based on the results, it is recommended to use the test for “stance

in gliding.” On the other hand it is not recommended to determine the front leg according to the kicking leg test. The best way is to combine more tests together, especially “stance in gliding test,” “take off leg test” and “stance when riding a scooter test.” In the end it should be remarked that in beginners, the posture on the snowboard should be determined before practicing on the slope because the correction in terrain is later very difficult due to both weather and pedagogical principles.

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THE CHOICE OF THE BEST TESTS IN PRACTICAL LEARNING OF SNOWBOARD STANCE

Abstract: In this article the authors analyze the condition of snowboard ride, especially to the issue of correct stance. In the authors opinion the efficiency of snowboard ride learning the skill of correct or incorrect to put of the front leg is especially influenced. In the article the best tests were talk over, eg. imbalance step test, riding scooter stance test, step on the stool test and shadow box test. The theoretical thesis were reinforced with research. This research was carried out between 2003 and 2006 on the sample of 120 pupils. Based on the results, the authors assign the best tests in snowboard ride learning.

Keywords: snowboard ride learning, correct stance, tests

WYBÓR NAJLEPSZEGO TESTU W NAUCE UTRZYMYWANIA ODPOWIEDNIEJ POZYCJI W JEŹDZIE NA SNOWBOARDZIE

Streszczenie: W rozdziale zostały zanalizowane warunki nauki jazdy na snowboardzie, ze szczególnym uwzględnieniem wagi prawidłowej postawy. Autorzy argumentują, iż na skuteczność nauki jazdy ma wpływ umiejętność poprawnego lub niepoprawnego stawiania nogi. W artykule omówio-

no najbardziej znane testy pomocne w nauce jazdy na snowboardzie, tj. imbalance step test, riding scooter stance test, step on the stool test oraz shadow box test. Tezy teoretyczne artykułu zostały poparte badaniami przeprowadzonymi w latach 2006-2009 na próbie 120 uczniów. Na podstawie tych badań ustalono najlepsze testy w zakresie nauki jazdy na snowboardzie.

Słowa kluczowe: nauka jazdy na snowboardzie, prawidłowa postawa, testy pomocne w nauce jazdy na snowboardzie