88 - TRAINING METHODOLOGY IN ARTICIAL WALL FOR ROCK CLIMBING

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INTRODUCTION

The sportive climb, a slope of mountaineering is a sport modality witch appears mid of 70's in the Unity States and Europe, and search, from the elimination of the artificial support equipment's, to use only hands and feet outgrow the obstacles. In this modality the height, the level of difficult, the routs, the access to de base are variable, be sides the less quantity of equipment's to be used.

The term bouldering arise with the English climber Oscar Eckenstein (1859 – 1921) and was considered for many years a kind of training which consists in climb small rock blocks with hates that varies between 3 and 10 meters. although substantially simpler than the sportive climb, by reason of only needs rock shoes and magnesium, the boulder technique involves movements more intensive than that, once that requires more strength and flexibility.

The sportive climb and boulder characterize by the slow progression, which becomes in vertical and with 4 support points. Hands and feet are used to sustain the body on the wall, wile the arms are maintained outstretched, to rest until the begin of movement, or flexed to auxiliate the leg to project the body in different directions with opposite movement and compression, allied to abdominal muscle contraction which will provide better stability of movement. By this reason the climb needs a special attention related to its training.

The indoor walls are beaut from a wood structure with resin holds bolted to the wall, which are similar to the real conditions in forms and textures, allowing to vary motor gestures, given different form of progression and favoring the reproduction of movements similar to the required in natural conditionings. The repertory of movements developed in artificial wall auxiliates the climber, correcting the details and training de movements by a systematic form, with the aim to fix and improve the coordination and the physical capacities needed to for the technique can be used with trustability and precision when applied in a natural ambient. By this way, the technical exercises to the learning of handling on climb, as the 4 supporting pointing exercises, the triangle base, the laterality of hands and feet technique, are practiced on the symmetrical wall and at the 70° negative inclination wall and helps the development of coordinating movements.

The symmetrical wall was develop by Roberto Bagnoli (2012) which defines as being and instrument that goes beyond the possibility of refine and learning the various technique of climbing in a systematic way as a support to the introduction in this sport. With the symmetrical wall is possible to do a symmetrical and standardized work of different movements. In a different way it can be seen as a pure way of training to increase the strength and coordination. It stimulates the body to extreme movements generally, including feet. Used as a mainly way to teach the principles of base, it allows the learning and refinement of the technique in an effective way. The 4 supporting points exercises and the triangle base are the main responsible for the sportive position and handling.

Four supporting points: the climber learns the sportive position, which is , the initial situation of handling is changed by two supporting points (feet) to four supporting points (feet and hands); according to Hurni (2003) arms must be maintained extended, which shoulders distant by the wall and the hip next to it. By this way the wall inclination stays favorable to the climber and decreases the strength applied by the hands, transferring part of the body weight to the legs.

Triangle base: to Bagnoli (2012) movements with higher spending of energy, the climbers moments of a higher spent of energy are toes in which he sustain him self on the wall using only three supporting points, which are, both feet and only one hand. Being this situation very frequent during a climb, a good use of the technique allows save valuable energy. The triangle base is formed by the vertex in hand and the base on feet, where the climber's hand must be always positioned between his feet so that have a performance increase on balance. This technique is one of the main to be learned and must be refined along the training, alternating the position of feet and hands, constantly searching the balance point in triangulation, by reason of this active rest position to the arms. The triangle base technique together with the four supporting points technique will give the base for the handling of the next exercise.

Feet laterality: starting from the four supporting point position, this technique teaches the simpler movement to be realize with feet for the climber's displacement in vertical. This exercises is responsible for teaching, to the beginner climber, that the handling on climb, according to Hurni (2003) initiate with the feet handling, which are used to push the body up and not the arms, which whom must be used to auxiliate in the movement balance.

Feet and hands laterality: starting by the four supporting point position, this technique helps to fix the work develop in the last exercise and increases the movement of one of the arms, which extends up or in the diagonal, trying to hold for a moment in the upper hold. The arm that sustain de body close to the wall during the exercises must stay extended, because, according to Hurni (2003), maintaining the arms extended during the upward movement auxiliates in the use of lags to realize the movements. From this phase the climber starts to vary the movement between the triangle base and the sportive position.

The 70° negative inclination wall is used aiming auxiliate the climber to assimilate the developed technique with total and partial methods of teaching methods on the symmetrical wall, and to reproduce the movements in a sequential way. In this wall the climber uses the technique alternating the triangles formed by the variation of hands and feet along of his handling. Hurni (2003) establish that the three supporting points the body on the wall must maintain with equal pressure to develop together the sense of balance.

Regarding to the routs is recommended to climber start climbing toes that has good hold and allows easy handling to assure the precisely reproduction of the technique with movement stability. Hörst (2008) recommend that be climbed a inclined and tiring routs, but technically easy, by the climber be able to repeat de positions and the techniques many times.

Boulder, in turn, is generally used by the beginners by exercises to upgrade the technique and develop strength. According to Sherman (2012) more than any other training exercises, boulder is, far away, the most effective to the development of the characteristic required to climb well and acquire strength in de process.

Starting from the need to improve the technique and the physical capacities required to the rock climbing, the following study aimed propose a training methodology of climbing in artificial wall with the objective to the practice in a natural ambient for the climbers in booth modality sportive climb and boulder.

MATERIAL AND METHODS

The methodological procedures had a theoretic – bibliography characteristics field, descriptive and with qualitative characteristics. The proposed exercises by the methodology instruction where developed according to the total and partial method of teaching proposed by Weineck (2003) the sample/population was composed by 13 climbers of both genders, with ages among 18 and 40 years, beginners of climber of Salamandra Escola de Montanha, located at Estrada Mutucas, 2691 – Vila Nova, Joinville – SC.

The trainings where realize in a frequency of two times a week, with 2:30 hours duration, and was developed at Salamandra Escola de Montanha. Works have been initiated with a subjective evaluation of the climbers handling at the 70° negative inclination wall, when was analyzed the feet movement, the hip positioning, arms and upper-body in relation to wall. After realize the subjective evaluation, that served as an initial parameter to the posterior evaluations, it was taught the four support point technique, the triangle base, the feet laterality, feet and hands laterality, through the verbal and visual stimuli associate to a demonstration of the techniques in this order, followed by the execution of the techniques by the climber. The trainings were composed of warm-up, coordinating exercises, exercises of execution of the technique in routs and/or boulder and stretching. Doing the rock climb was evaluating subjectively the performance of the characteristics mentioned before to follow the climber development.

ANALYSIS, INTERPRETATION AND DISCUSSION

As any other sportive program, the learning process is related to the movement process and, according to Weineck (2003), it device in three steps: the pre motor step, which prepares the climber with verbal, visual and additive stimuli to release the technique; the motor step, which occurs during the execution by the climber, and the couch observation related to the taught techniques; and the post motor step, where the technique and precision of execution of the movements are evaluate. As the movement teaching the author propos a division in total and partial teaching method, to the exercises related to the position of four support points and the triangle base, it was utilized the total teaching method, given to the climber a better way to assimilate de sportive position, which is defined by Verkhoshansky (2001) as being the capacity to reproduce a desired position of body in space or the maintenance of its stability during the needed time. Knowing that all movement has its beginning in a sportive position and ends in a other, in this case varying between in three or four supporting points corresponding to the progress and rest of the climber, it was used the partial teaching method to teach the feet laterality technique and feet and hands laterality. This last one is steel used at the 70° negative inclination wall to the exercises of routs and boulder, according to the movements that approach the climber's limit. To handling with low spent of energy of arms, it needs substantially, knowing to balance the body to find the center of equilibrium, as affirms Bagnoli (2012), using the best possible way the feet support points to decrease the upper-body effort. There for the need to develop a good repertory of movements, searching to vary the triangle formation that creates the handling base together with the sportive position of four supporting points.

By reason of this study be a methodological teaching propose of the base techniques for climb, the data analyze was done by a subjective form, based on the observation and the movement analyze that was taught and posterior realized by the climbers. Thus it was observed the maintenance of the sportive position, as well as the movement coordination together with the position and in following analyzed the technical evolution applied on rock after the training of the same techniques at the artificial wall.

The climbers that trained twice a week and practiced rock climb at least once a week, realizing the proposing activities on the training program, showed significant improvement of feed precision movement; does climbers were able to use better the hip positioning to a better performance of equilibrium and decrease the energy consumed. It was also observed that the climber could maintain the arms extended during the movement, using legs to realize the vertical displacement even in the natural ambient.

The training assumes important place related to improvement of the muscular development according to the structures that are formed in the organism to adjust. Therefore to Weineck (2003) the training consists in a structure that search to improve the mechanisms that makes the movements, in high importance when related in the complex movements, which whom are found on rock. Climbers that trained in a lower frequency, but that continued to practice rock climb at least once a week, it was possible to observe among them a higher difficult in coordinate the feet laterality movements, as well as feet and hands, that are trained at the symmetrical wall and posteriorly assimilated et 70° negative inclination wall. Those climbers also demonstrated a higher difficult in getting out of the sportive position to give continuity to the movement, both in sportive roots as on boulder, although it has been found and improvement in the triangle base utilization to rest and the feet supporting point utilization and the hands with more precision.

This difficult in realize the motor position, to Weineck (2003) is doe to the fact that all movement is always executed over the knowledge of other position learned before. By this way, the climber that practiced less the coordinating exercises stimulated in a lower quantity the motor system, and as a consequence found higher difficult to assimilate the similar situations of the natural ambient.

FINAL CONSIDERATIONS

The sportive climb and boulder are modalities of this sport in which the body positioning is a determinant factor do the movement execution. The methodology proposed a sequence of basic techniques that was taught to the climbers of Salamandra Escola de Montanha in a symmetrical wall beginning with a sport position going through a movement ending at the initial position. The trained techniques showed to be effective to auxiliate the assimilation of the motor position e its applicability on rock, insofar as the climbers that most practice the coordination exercises refined the sportive movement. Do develop the technique in a controlled ambient, including regular practice on rock, can auxiliate substantially in the technique learning. The symmetrical wall is a versatile system to teach and assimilate the motor position, a resource that can be better studied to the improvement of other climb needs.

REFERENCES

BAGNOLI, Roberto. Triangulo Base. Disponível em: <http://www.climbingtraining.it/it/técnica /triangolo-di-base>. Acesso em: 12 de julho de 2014.

LOPEZ, Eva. Entrenamiento de Bloqueos (IV): Revisión de algunos Métodos e introducción a los bloqueos explosivos. Disponível em: <http://www.eva-lopez.blogspot.com.es/2013/01/entrenamiento-del-bloqueo-iv-revision.html> acesso em: 25 junho 2014.

LOPES, Charles; Monteiro Artur. Periodização esportiva: estruturação do treinamento. São Paulo, AG editora, 2009.

HÖRST, Eric J. Conditionig for Climbers: the complete exercise guide. Guilford: Morris Book Publishing, 2008.

HURNI, Michelle. Coaching Climbing: a complete program for coaching youth climbing for high performance and safety. Guilford: The Globe Pequot Press, 2003.

MATVEIEV, L. P. Fundamentos do Treino Desportivo. Lisboa: Livros Horizonte, 1986.

PEREIRA, Benedito; SOUZA, Tácio Pessoa Jr. Compreendendo a Barreira do Rendimento Físico. São Paulo: Phorte Editora ltda, 2005.

SHERMAN, John. Better Bouldering. Guilford, Globe Pequot Press, 2012.

VERKHOSHANSKY, Yury V. Treinamento Desportivo: teoria e metodologia. São Paulo: Artmed, 2001.

_____. Preparação de Força Especial: modalidades desportivas cíclicas. Rio de Janeiro: Grupo Palestra Sport, 1995.

WEINECK, Jürgen. Treinamento Ideal: instruções técnicas sobre o desempenho fisiológico, incluindo considerações específicas de treinamento infantil e juvenil. Barueri: Manole, 2003.

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TRAINING METHODOLOGY IN ARTICIAL WALL FOR ROCK CLIMBING

ABSTRACT

On rock climbing the displacemtent changes from de horizontal to the vertical, and so the movement, which is usually realized in two supporting points, goes through a constant alternancy from four to three supporting points and vice versa, due to the use of hands and feet to sustain the body close to the wall. From this premise, the study aimed to develop a trainning methodology in artificial wall, intending to improve the rock climbing geared to beginner climbers of both genders, older than 18 years. The vertical displacements techniques are taught to climber's from Salamandra Escola de Montanha, from Joinville, SC, in a symmetrical wall, which allows to work in a wide way the laterality and the coordination of movements, while the 70° negative inclination wall serves to training the movement continuity technique, approaching the climber from reality. The basic physical properties are develop, generally, with the learning and the training of the technique, although it's used specific training complementary to the desired physical development. After application of the training program it was verified that the climbers whom had training at least twice a week, and practiced rock climbing at least once a week had a better improvement of feet precision movement; They where able to use better the hip positioning to a better profit of the balance point and reduce the energy consumption; as well as they could sustain the arms outstretched during de movement, using their legs to make it scroll the vertically movement even on rock. Among the climbers who trained in a less constancy, but who continued to practice rock climb at least once a week, it was possible to observed a higher difficulty in coordinating the lateral movement of feet and lateral movement of feet and hands, which are trained at the symmetrical wall and posteriorly assimilated at the 70° negative inclination wall. Besides, those climbers also demonstrated a higher difficulty in getting out the sportive position to give the movement continuity, booth in a sportive rout as the boulder, although it has been found a improvement on the triangle base utilization to the rest position and the use of hands and feet straight with a higher precision. The present methodology by providing the learning of the technique by steeps in a controlled place (indoor), showed very effective and efficient to the upgrading of the physical qualities so that the climber can be able to perform, with precision and safety movements on the vertical plan in a natural ambient.

KEYWORDS: Climb; methodology; boulder

MÉTHODE DE FORMATION EN ARTIFICIELLE MUR POUR L'ESCALADE

RÉSUMÉ

Les changements de déplacement dans l'escalade de l'horizontale à la verticale, qui se fait généralement en utilisant deux points d'appui, passe par une alternance constante de quatre à trois points d'appui et vice versa, dû à l'utilisation des mains et des pieds pour rester prêt du mur. Partant de cette prémisse, l'étude visait à développer une méthodologie de formation dans le mur artificiel, avec l'intention d'améliorer l'escalade adaptée aux débutants grimpeurs des deux sexes, âgés de plus de 18 ans. Les techniques de déplacements verticaux sont enseignées aux grimpeurs de Salamandra de Escola de Montanha, de Joinville, SC, dans une paroi symétrique, ce qui permet de travailler dans une grande manière la latéralité et la coordination des mouvements, tandis que la paroi d'inclinaison négative de 70 ° sert à la formation de la technique de la continuité de mouvement, approchant le grimpeur à la réalité. Les propriétés physiques de base sont à développer, généralement, avec l'apprentissage et la formation de la technique, même si elle est utilisée dans une formation spécifique complémentaire au développement physique souhaitée. Après l'application du programme de formation, il a été vérifié que les grimpeurs qui avaient une formation d'au moins deux fois par semaine, et pratiquaient l'escalade au moins une fois par semaine avaient une amélioration dans la prècision des mouvements des pieds. Ils ont pu utiliser mieux le positionnement de la hanche pour un meilleur profit de son point d'équilibre et de réduire la consommation d'énergie; aussi bien qu'ils le pourraient soutenir avec les bras tendus pendant le mouvement, en utilisant leurs jambes pour le faire défiler verticalement. Parmi les grimpeurs qui ont été formés dans un moins constant, mais qui ont continué à pratiquer l'escalade au moins une fois par semaine, il était possible d'observer une difficulté plus élevée dans la coordination du mouvement latéral de pieds et le mouvement latéral des pieds et des mains, qui sont formés à la paroi symétrique et en arrière assimilé à la paroi d'inclinaison négative de 70 °. En outre, les grimpeurs ont également démontré une difficulté plus élevée à sortir de la position sportive pour donner de la continuité au mouvement, stand dans un parcours sportif comme le rocher, mais il a été constaté une amélioration de l'utilisation de base du triangle à la position de repos et l'usage des mains et des pieds en ligne droite avec une plus grande précision. La méthodologie actuelle de l'apprentissage de la technique par étapes dans un endroit contrôlé (intérieur), a montré de très efficace et efficiente amélioration des qualités physiques de sorte que le grimpeur peut être en mesure d'effectuer, avec précision et sécurité, des mouvements sur le plan vertical dans une ambiance naturelle.

MOTS-CLÉS: Escalade; méthodologie; rocher

METODOLOGÍA DE ENTRENAMIENTO EN PARED ARTIFICIAL PARA ESCALADA EN ROCA

RESUMEN

En la escalada, el desplazamiento cambia del plano horizontal para el vertical, y así el movimiento, que normalmente es realizado en dos puntos de apoyo, pasa para una constante alternancia de cuatro para tres puntos de apoyo y viceversa, se hace la utilización de las manos y pies para sostener el cuerpo proximo a la pared. A partir de esa premisa, el estudio tuvo por objetivo desenvolver una metodologia de entrenamiento en pared artificial con vistas a la mejora de la escalada en roca, direccionada para escaladores iniciantes de ambos los sexos, mayores de 18 años. Las técnicas de desplazamiento en vertical son enseñadas a los alumnos de Salamandra Escuela de Montaña, de Joinville, SC, en pared simétrica, que permite trabajar de forma amplia la lateralidad y la coordinación los movimientos, mientras la pared con inclinación negativa de 70º sirve para

entrenar la técnica con continuidad de movimiento, aproximando mas el escalador de la realidad. Las cualidades físicas básicas son desenvolvidas, en gran parte, junto con el aprendizado y el entrenamiento de la técnica, mismo que sean utilizados medios de entrenamiento específicos para completar el desenvolvimiento físico deseado. Después de la aplicación del programa, se constato que los alumnos que entrenaron por lo menos dos veces por semana y practicaron escaladas en roca por lo menos una vez por semana presentaron significativa mejora de precision del movimiento de los pies; fueron capaces de mejor utilizar el posicionamiento de la cadera para aprovechar mejor el punto de equilibrio y disminuir el consumo de energia; bien como consiguieron permanecer con los brazos estendidos durante el movimiento, utilizando las piernas para realizar el desplazamiento en la vertical mismo en ambiente natural. Ya en los alumnos que entrenaron con menos frecuencia, pero que continuaron a practicar escaladas en roca por lo menor una vez por semana, fue posible observar una mayor dificultad en coordinar los movimientos de lateralidad de los pies y de los pies y manos, que son entrenados en la pared simétrica y posteriormente asimilados en la pared con inclinación negativa de 70º. A parte de eso, estos alumnos también demostraron una mayor dificultad en salir de la pose esportiva para dar continuidad al movimiento, tanto en vias esportivas como en el boulder; aunque se tenga constatado una mejora en la utilización del triángulo base para reposo y la utilización de puntos de apoyo de los pies y las manos con mayor precision. La metodologia propuesta, por proporcionar el aprendizado de la técnica por pasos en ambiente controlado, se mostro bastante efectiva y eficiente para la mejora de las cualidades físicas de modo que el alumno pase a ser capaz de realizar, con precision y seguridad, desplazamientos en plano vertical en ambiente natural.

PALABRAS CLAVES: Escalada; metodologia; Boulder

METODOLOGIA DE TREINAMENTO EM MURO ARTIFICIAL PARA ESCALADA EM ROCHA

RESUMO

Na escalada, o deslocamento muda do plano horizontal para o vertical, e assim o movimento, que normalmente é realizado em dois pontos de apoio, passa para uma constante alternância de quatro para três pontos de apoio e vice-versa, face à utilização de mãos e pés para sustentarem o corpo próximo à parede. Partindo dessa premissa, o estudo teve por objetivo desenvolver uma metodologia de treinamento em muro artificial com vistas ao aprimoramento da escalada em rocha, voltada para escaladores iniciantes de ambos os sexos, maiores de 18 anos. As técnicas de deslocamento na vertical são ensinadas aos alunos da Salamandra Escola de Montanha, de Joinville, SC, em um muro simétrico, que permite trabalhar de forma ampla a lateralidade e a coordenação dos movimentos, enquanto a parede com inclinação negativa de 70º serve para treinar a técnica com continuidade de movimento, aproximando mais o escalador da realidade. As qualidades físicas básicas são desenvolvidas, em grande parte, junto com o aprendizado e o treinamento da técnica, ainda que sejam utilizados meios de treinamento específicos para complementar o desenvolvimento físico almejado. Após a aplicação do programa, constatou-se que os alunos que treinaram pelo menos duas vezes por semana e praticaram escaladas na rocha ao menos uma vez na semana apresentaram significativa melhora da precisão do movimento dos pés; foram capazes de melhor utilizar o posicionamento do quadril para aproveitar melhor o ponto de equilíbrio e diminuir o consumo de energia; bem como conseguiram permanecer com os braços estendidos durante o movimento, utilizando as pernas para realizar o deslocamento na vertical mesmo em ambiente natural. Já entre os alunos que treinaram com menor frequência, mas que continuaram a praticar escaladas na rocha ao menos uma vez na semana, foi possível observar uma maior dificuldade em coordenar os movimentos de lateralidade dos pés e dos pés e mãos, que são treinados no muro simétrico e posteriormente assimilados no muro com inclinação negativa de 70º. Além disso, estes alunos também demonstraram uma maior dificuldade em sair da pose esportiva para dar continuidade ao movimento, tanto em vias esportivas como no boulder; embora tenha sido constatada uma melhora na utilização do triângulo base para o repouso e a utilização de pontos de apoio dos pés e as mãos com maior precisão.A metodologia proposta, por proporcionar o aprendizado da técnica por passos em ambiente controlado, mostrou-se bastante efetiva e eficiente para o aprimoramento das qualidades físicas de modo que o aluno venha a ser capaz de realizar, com precisão e segurança, deslocamentos no plano vertical em ambiente natural.

PALAVRAS-CHAVE: Escalada; Metodologia; Boulder