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The technical preparation of the young rowers of Pinar del Río

La preparación técnica de los remeros juveniles de Pinar del Río

A preparação técnica dos jovens remadores de Pinar del Río

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ABSTRACT

The technical preparation as one of the components of the sport preparation in rowing has a great importance because of the relationship with the competitive result. During the technical preparation of the rowers, juvenile category of Pinar del Río, deficiencies have been detected in the execution of the rowing technique, in each of its phases. That is why, for this study, the objective was to characterize the technical preparation of the juvenile male category rowers of the EIDE "Ormani Arenado" of Pinar del Río. The population used was composed of nine athletes of the juvenile category and six coaches, including the one who leads the preparation of this team mentioned above. For the development of this research, theoretical and empirical methods were used. Among the theoretical methods are systemic-structural-functional, historical-logical, analysis-synthesis, induction-deduction. The empirical methods used were document analysis, observation, interview and survey. The use of these methods made it easier for the researcher to know the real state of the technical preparation of these athletes and showed deficiencies such as execution errors, the non-existence of tests to evaluate the technique, it is not planned or controlled taking into account the individual characteristics of the athletes; however, it is considered by the coaches, as an aspect of great importance, the technical preparation in this sport.

Keywords: technical preparation; rowing; technique; sports training.

RESUMEN

La preparación técnica como uno de los componentes de la preparación deportiva en el remo tiene una suma importancia por la relación que guarda con el resultado competitivo. Durante la preparación técnica de los remeros, categoría juvenil de Pinar del Río, se han detectado deficiencias en la ejecución de la técnica de remar, en cada

una de sus fases. Es por ello que, para este estudio se trazó como objetivo caracterizar la preparación técnica de los remeros de la categoría juvenil masculino de la EIDE "Ormani Arenado" de Pinar del Río. La población utilizada estuvo compuesta por nueve atletas de la categoría juvenil y seis entrenadores, incluyendo el que dirige la preparación de este equipo antes mencionado. Para el desarrollo de esta investigación, fueron utilizados métodos teóricos y empíricos. Dentro de los métodos teóricos el sistémico-estructural-funcional, el histórico- lógico, análisis-síntesis, inducción-deducción. Los métodos empíricos utilizados fueron el análisis de documentos, la observación, la entrevista y la técnica de encuesta. El uso de estos métodos facilitó al investigador conocer el estado real de la preparación técnica de estos atletas y mostró deficiencias como los errores de ejecución, la no existencia de las pruebas para evaluar la técnica, no se planifica ni controla teniendo en cuenta las características individuales de los atletas; sin embargo, es considerado por los entrenadores, como un aspecto de mucha importancia, la preparación técnica en este deporte.

Palabras clave: preparación técnica; remo, técnica; entrenamiento deportivo.

RESUMO

A preparação técnica como um dos componentes da preparação desportiva no remo tem uma grande importância devido à relação com o resultado competitivo. Durante a preparação técnica dos remadores, categoria juvenil de Pinar del Río, foram detectadas deficiências na execução da técnica de remo, em cada uma de suas fases. Por isso, para este estudo, o objetivo foi caracterizar a preparação técnica dos remadores da categoria masculina juvenil da EIDE "Ormani Arenado" de Pinar del Río. A população utilizada foi composta por nove atletas da categoria juvenil e seis treinadores, incluindo aquele que lidera a preparação desta equipe mencionada anteriormente. Para o desenvolvimento desta pesquisa, foram utilizados métodos teóricos e empíricos. Entre os métodos teóricos estão o sistêmico-estrutural-funcional, histórico-lógico, análise-síntese, indução-dedução. Os métodos empíricos utilizados foram a análise documental, observação, entrevista e técnica de pesquisa. A utilização destes métodos facilitou ao investigador o conhecimento do estado real da preparação técnica destes atletas e mostrou deficiências como erros de execução, a inexistência de testes para avaliar a técnica, não é planejada nem controlada tendo em conta as características individuais dos atletas; no entanto, é considerada pelos treinadores, como um aspecto de grande importância, a preparação técnica neste esporte.

Palavras-chave: preparação técnica; remo, técnica; treinamento esportivo.

INTRODUCTION

Rowing, as a socio-cultural sport, has been implanted in the university communities of great recognition of the High Society (Oxford, Cambrige) and its similar in America, being these the ones that have traditionally been represented in the elite teams.

The competition takes place in reservoirs that limit their monitoring by television; this competition is marketed on Internet sites that are dedicated to the sale of boats or attachments to be used in the action of rowing for high performance. Therefore, the number of fans or followers of this type of competition is limited, so they attend regularly, people who know this activity, family and friends.

The duration of the preparation cycle of one year is determined by the use of dilated loads (subject to the development of aerobic resistance and resistance to force as determining directions of performance in this sport), at the end of which are concentrated the competitions to be performed, which are conducted by events of six to eight minutes (up to twice a day, depending on the number of participants) for three consecutive days or not, in Olympic games, world cups and world championships.

The competition takes place against the opposing boats, which compete at the same time, in hits of six; the winners face the elimination hits in quarterfinals, semifinals and finals, as appropriate. This makes the racing strategies dependent on the characteristics of the opponents in each hit.

The motor difficulty is conditioned to the effort to be made in the continuous action of rowing in a cyclical way.

Rowing is a sport that takes place in the aquatic environment, although it also has terrestrial preparation; its competitions take place mainly in summer because that is when the competitive scenarios are not frozen. Its practice begins after the age of 12, since that is when the bone maturation is stabilized and the highest performances are reached after the age of 25; the sport life is regulated approximately at the age of 35.

This sports discipline is considered a time and mark sport because it consists of overcoming the competition distance in the shortest time possible and points are accumulated according to all the hits of the competition to determine the winning country or province.

Rowing takes place in mixed conditions of energy expenditure, with a predominance of aerobic regime and presence in the sprints that occur in the final moments of the races or according to the strategy of the race of alactic anaerobic accents. On the other hand, it is established by the International Federation of Rowing Amater (FISA) that as a minimum the rest between meetings is one hour, up to 24 hours of rest can be reached and, in one case or another, the recovery for the next race must be guaranteed. This generates that these efforts are supported by a great development of the volitional qualities and positive disposition before the effort (FISA, 2018).

Nielsen, T. (1999), states that the maximum pulse values to be reached in the race are around 190 p/m, although training is between 150 and 180 p/m, which has to do with the training objective to be developed. This generates lactate movements between 10-14 ml. in competition and between 2 - 8 ml. in training (Integral Program of Sport Preparation 2016-2020).

Most of the authors consider that the evolution of the rowing technique began when the North American Babcock came up with the idea of placing the mobile cart under the oarsman's buttocks to increase the displacement of the bow-boarder and vice versa and thus obtain a greater angle of the paddle and with it an increase in performance.

In all the specific literature consulted, the authors define six models through which the development of the rowing technique has passed (Orthodox, Fairbairn, Conibear, ADAM, Rosemberg and the DDR which is the current trend).

Theo Korner (Korner, 1979), according to Utria (2012), makes a summary of the most important points of the DDR technique:

- Wide front position with relaxed knees bent (not extreme) and a body tilt of 60º - 70º approximately.
- Simultaneous start of leg and hip extension.
- Long leg thrust with ample upper body impulse and application of arm traction when hands are at knee level.
- Further extension of the legs, hips and trunk to the natural 10° backward position of the trunk, which acts to stabilize the traction of the arms, which becomes maximum at the end.
- Full extension of the stroke in the final traction up to near the lower arch of the ribs.
- After "hands off", the upper body is straightened slightly and attention is paid to the lower word of the upper body and the cart.
- This sequence makes it possible for the athlete's mass to slide aft without shock and thus to move the boat forward evenly

By sports technique, it is meant the procedure normally developed in practice to solve a given motor task in the most appropriate and economical way. The technique of a sports discipline corresponds to a so-called "ideal motor type", which, despite maintaining the characteristic features of its movements, can be modified according to individual circumstances (Zech, 1971; Martin, 1977; Pietka/Spitz, 1976; Ter-Ovanessian, 1971; cited by Weineck, 2005).

This same author refers that, in the course of the training process, the continuous improvement of physical performance factors must be sought, but also of technical capacities, which are inseparably associated with these. If the parallel development of technique and of the main forms of motor work is neglected, a discrepancy can occur between technical capacities and physical level; a poorly developed technique prevents the athlete from transforming his or her growing physical potential into greater performance specific to the modality. It also refers to the fact that, in the endurance modalities, the technique has, above all, economizing functions.

According to Djackov (1973), quoted by Weineck (2005), the path to technical-sports improvement is determined above all by the initial level of technology and the motor skills acquired. In this sense, it can be seen that students who are better trained in the coordination aspect learn the correct technical-sports execution more quickly than those who have a limited repertoire of movements and therefore a limited coordination base. Therefore, work should be done at an early stage to expand the repertoire of movements, to train basic techniques and to continuously improve physical performance factors.

Technique-specific training is based on the motor experiences of general technique training. If in the latter the priority was the acquisition of a large number of motor (technical) skills, now the range of specific techniques for each modality is reduced, focusing the learning process on the improvement of a global movement and its different constituent parts. This is also reflected in the choice of training methods and content and in the choice of methodological measures.

Several authors such as Bassetti *et al.,* (2012), Sforza *et al.,* (2012), Lukasik, Smolka, & Skublewska-Paszkowska (2018) and Penichet-Tomás *et al.,* (2018), have published works related to the technical preparation of rowers, approaching it from different aspects and situations.

In order to evaluate the technique with more precision, according to Djackov (1973), quoted by Weineck (2005), it is important to find criteria for it and for its dynamic structure, which allow to objectify the technical level. Accordingly, important criteria are the efficiency of key elements in the kinematic chain, the reliability and accuracy of movements, as well as the automation and stability of motor skills against unfavorable influences, both internally and externally.

Related to the above, Utria Barrera, G. (2012) carried out a biomechanical study on the rowing technique, in which a summary of the indicators of the technique is presented, established for the kinematic study of the execution of the rowing technique based on what was proposed by Nilsen (1999) and Nolte (2005), but the indicators to be taken into account by phases of the technique are not shown, although it provides aspects that can be taken into account for the control of the technical preparation from the general to the specific physical preparation.

If the technique is found to be the "ideal type" of motor skill and matches the individual athlete's capabilities, the development of motor skill should be pursued further in terms of "quantitative" criteria (e.g. strength, speed, etc.). If, however, the technique does not correspond to the motor "ideal type" and deviates to a greater or lesser extent from the Athlete's individual capabilities, development should focus on "qualitative" criteria (improvement of motor sequence, etc.) (Djackov, 1973) Cited by Weineck (2005).

In this respect, the feedback and processing of the monitoring information plays a particularly important role for the athlete, as it allows the operation of the monitoring equipment to be improved and adapted to the changed conditions. An Athlete who does not recognize technical errors and is not informed of them cannot improve his or her technique.

In summary, it can be said that technique work is basically a process of continuous development, based on motor skills and abilities. An optimum degree of individual performance is only achieved if all the psychophysical components undergo their corresponding development.

For the technical preparation of the rowers, the authors of this study consider that the basic methodological principles on the training of the technique, raised by Weineck (2005) should be taken into account. Among those that are found to be the sufficient strengthening of the back and leg extenders to learn O'Brien's technique in shot put, the teaching of the technique should precede the teaching of the most difficult movements in order to avoid excessive difficulties in the learning of these movements. The need for precise corrections of movement requires the use of objective control procedures. And the identification of movement details is important in learning or perfecting a sport technique; observation skills and knowledge of technique should be included in the training process.

Perdomo-Manso (2018) refers to Donskoi's (1982) definition of technical preparation: within the subsystem of processes that compose the biomechanical system of man, there are, on the one hand, the direction of movements and, on the other hand, the improvement of the systems of movements. This is precisely what the development of technical preparation is dedicated to in order to achieve a certain level of technical mastery in athletes. Technical preparation is based on well-defined indicators of sports technique in each of the sports and depending on the structures of movement, particularly the kinematic and dynamic structures present in it.

Sports technique: category of sports training, expressed as an integral quality associated with the content and form of the motor actions performed by the athlete. It constitutes the object of the Technical Preparation, Perdomo-Manso (2018).

The same author, Perdomo-Manso (2018), agrees that sports technique characterizes a technical element of a sport or the sport itself, and that it is linked to a set of demands that underlie the process of preparation of sportsmen and women and which are manifested according to well-defined indicators, including standardization, variability and individualization. A standardized technique allows to obtain movement patterns, which means similarity in the behavior of the biomechanical characteristics that identify the actions that are executed.

Rowing is considered a technically very demanding sport since with the mastery of the technique it is possible to get the boat moving as quickly as possible. The propulsive force is intermittent and repeats itself in a cyclical manner, given the sequence of the rowing in its air and water phases; therefore, the rowing technique is classified as cyclical. The rowing technique therefore aims to minimize the appearance of negative forces and the phenomenon of pitching (rocking of the boat from bow to stern, caused by the displacement of the rower) and to favor the positive forces, i.e. those that favor the advancement of the boat.

In order to address the description of the aspects of the technical action that are convenient for its evaluation, it was necessary to have a detailed qualitative description of it that was naturally obtained from the specialized literature, even knowing that several patterns of execution of some level of differentiation, but in any case equivalent, subsist. The criteria for the establishment, based on their general coincidental characteristics of the execution pattern, were taken from Utria (2012).

The criteria to be taken into account for the qualitative description specified for this study the way in which the technical action was carried out. Nilsen, T. (1999), modified by Utria (2012) when indicating that the taking of these criteria to make the description must be done anatomically (taking into account the movements of the body) or in relation to the implement. These are:

1. By hemi-body.
2. By phase of execution of the technical action.
3. By member and up to body segment level according to interest.
4. By muscle groups involved with greater predominance and regime of muscle contraction.
5. By function of the parts involved in the execution of the action.
6. According to what happens to the implement.

For the study of the paddling cycle, several authors consider it appropriate to divide the action into: attack, throw, exit and recovery. However, it is the thesis author's criterion that, in order to control the different moments in the rowing technique, it is necessary to further fragment the cycle as proposed by Nilsen, T. (1999) into: attack, paddle 1, paddle 2, paddle 3, paddle 4, finish, throw, start and recovery 1, recovery 2, recovery 3 and before attack.

For this study, the objective was to characterize the technical preparation of the juvenile male category rowers of the EIDE "Ormani Arenado" of Pinar del Río.

MATERIALS AND METHODS

For the study, a population of nine juvenile rowing athletes, male category, between 16 and 18 years old was used. As a source of information, we used the one provided by six coaches with more than 20 years of experience in the sport.

The methodology used for the development of the research is based on a general methodological approach, with the combined use of theoretical and empirical methods, to obtain information and its subsequent processing and assessment through mathematical-statistical methods. Within the theoretical methods, historical-logical and analysis-synthesis were used. The empirical methods used were: document analysis, observation, interview and survey technique.

The interview was applied to the six coaches and the commissioner with the objective of knowing the opinion that they give to the technical preparation.

Observation was used during the general and special preparation stage, a total of six training sessions were observed.

The technical tests that are performed were analyzed and these are tests that arise from empiricism, given the experience of the coaches. They only measure some indicators of the technique, which does not allow to know by phase the main errors to correct them during the trainings.

The analysis of documents allowed to verify that no pedagogical tests are planned to know the characteristics of the technical preparation during the general and special preparation stage. For this reason, the training plans and the Athlete's Integral Preparation Program of this and the previous Olympic cycle (2016-2020) were reviewed. These documents do not show tests that allow knowing the state of the technique, nor the indicators that should be taken into account for this purpose.

The technique of methodological triangulation was used for the analysis of the information obtained from the application of various methods and the determination of coincidental points and discrepancies.

RESULTS AND DISCUSSION

As a result of the applied interview, it was obtained that 100 % of the interviewees consider the technical preparation for the rowers important. The 100 % of the interviewees stated that they control the technique according to their experience, since no evidence appears in the PPID that would allow them to evaluate the technique or to give guidance on how to do it.

All of them consider that there is a need for a way to control the technique of their athletes that is specific to the sport. As shown in table 1, during the general and special preparation stage, six training sessions were observed (three for each stage) using the observation guide. The technique of rowing by phases was only executed in one training session of the PG stage, which represents 33.3 %. In the special preparation (SP), this aspect is evaluated as negative since in 100 % of the observations the technique by phases was not executed. Thus, the correction of errors in the two stages was carried out, limiting a better execution and correction of the split technique (Table 1).

Table 1. - Results of the observations to the trainings

Observed aspects	General preparation stage (3 training sessions)		Special preparation stage (3 training sessions)	
	Si %	No %	Si %	No %
1- the technique of the oarsman is executed by phase	33,3	66,6	-	100
2- errors are corrected for each phase	33,3	66,6		100
3- aspects are taken into account such as				
- Trunk inclination	66,6	33,3	100	-
- Final print run	-	100	100	-
- Quick turnaround	-	100	100	-
- Paddle width	66,6	33,3	66,6	33,3
- Cartwheel	100	-	33,3	66,6
- Trolley speed control	100	-	33,3	66,6
- Rhythm of paletade	100	-	33,3	66,6
4- Do the technical tests carried out correspond to the parameters for each phase?	-	100	-	100
5- Is the control of the technical preparation individualized?	-	100	-	100
6- Are the planned objectives taken into account to analyze the results of the training?	33,3	66,6	33,3	66,6

The inclination of the trunk as observed is an element within the technique that is considered by the coaches at the time of its execution. It is observed with a 100 % of the observed trainings of the PE stage, although they have been working since the General preparation stage with 66.6 %.

In the General preparation stage, the final throw and the speed of the hand serve are not considered, however, in the Special Preparation stage they are aspects that are prioritized for their control during the execution of the technique (100 %). This, in consideration of the author, limits the systematization of the control and the aspects to take into account to control the technical preparation during the different stages.

The extent of paddling was similarly observed during the two preparatory stages (two sessions in each) 66,6 %. The width of the paddle allows the athlete a greater sweeping angle of the paddle in the water, therefore, its control is not considered sufficient as it had to be taken into account in the total of the training sessions.

The cart wheel, cart speed control and paddle rhythm are taken into account with more emphasis in the general stage, however, it is not given the importance that it has also in the EP stage, because it was only observed in one training of the observed (33,3 %).

To obtain detailed information on the rowing technique, a test was required that included the dimensions and indicators per phase of the technique proposed by the author, based on criteria from Nilsen, (1999). It also coincides with what Villa and Cabello (2016) propose when they refer to the need for a test structure that contains the determination of technical-tactical indicators, criteria of variability, timing and game situations, (in the case of Handball where they developed their study) as the latter constitutes a more finished form of sports practice than exercise, as it is closely related to the objective of the sport being studied.

The dimensions are: the attack, the paddle throw 1; 2; 3 and 4, the exit, the recovery 1; 2; 3, before attacking and the collective bounce are dimensions that were evaluated from R (Regular) with a scale of (Good) B-3 points, R-2 points and (Bad) M-1 point (Table 2).

The indicators were mostly evaluated from R which showed, in a general way, two athletes evaluated from B, three from R and four from M.

Table 2. - Evaluation of dimensions

	Dimensions	Media	evaluation
1	ATTACK	2	R
2	THROW (PADDLE 1)	2	R
3	THROW (PADDLE 2)	2	R
4	THROW (PADDLE 3)	2	R
5	THROW (PADDLE 4)	2	R
6	EXIT	2	R
7	RECOVERY 1	2	R
8	RECOVERY 2	2	R
9	RECOVERY 3	2	R
10	BEFORE ATTACKING	2	R
11	GROUP BOATS	2	R

The study was carried out in detail, vertically and horizontally to find out the behavior of the indicators and dimensions per athlete and in the team.

In the team, all dimensions were evaluated for R, which indicates that there are shortcomings and a lot of work is needed to perfect all the execution errors in the rowing technique.

In the dimension 1, attack, there is only the paddle entry indicator to the water, it is evaluated from B. The rest of the indicators of the dimensions are all evaluated from R, which indicates that more work should be emphasized in order to perfect the technique of these athletes.

In the evaluation of the technique that was carried out through the application of a technical test, it was obtained that, of the nine athletes, only two were evaluated as Good, four as Regular and four as Bad.

The results obtained in the characterization made express the deficiencies that the technical preparation of the juvenile rowers presents and the need for it to be perfected, which contributes to a better execution of the rowing technique.

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The authors have participated in the writing of the work and analysis of the documents.