

IDEOMOTOR EXERCISES FOR THE DEVELOPMENT OF COORDINATION IN PHYSICAL TRAINING IN ROWING

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Abstract: *The relevance of the research of the article is conditioned upon the problem of improving the physical training of rowing athletes. The purpose of the article is to develop a model for improving the coordination abilities of rowing athletes at the level of the ideomotor mechanism in the factor of psychological support. The method for investigating the highlighted problem is functional tests for determining coordination data in various parameters using a coordination meter, a Romberg test, a Stork test and a coefficient of coordination abilities, which together will allow determining one of the important physical qualities in rowing as coordination abilities that allow them to carry out special sports activities. The article presents a model that will improve the coordination abilities of rowers at the level of mechanisms of the ideomotor order based on the factor of psychological and pedagogical support of athletes, which has an indirect ideomotor component of training affecting the nervous system of the athlete in the factor of influence on their coordination abilities. It includes a mental study of all sports movements at the level of overcoming the necessary distance in a friendly teamwork at the level of motivational-value, cognitive-informational, sociable, emotionally respectful and cultural criteria. The developed model will allow at the ideomotor level to form a special sports skill characteristic of rowing against the background of the formation of a high internal personal confidence of the athlete within the framework of harmonious interaction with the coaching staff, which will contribute to the stabilisation of their nervous processes responsible for coordination manifestations in the phase of a calm training and competitive process.*

Keywords: sport, athletes, training, ideomotor component of the training process, distance.

Physical fitness of athletes has always occupied a leading place in the factor of achieving sports results. The improvement of various methods of the training process allows, with the help of various pedagogical and sports tools, to increase the criteria of physical development at the level of expanding the possibilities of physical properties in athletes¹. Any training process has several components, so one of which is interaction at the level of psychological and pedagogical support of the coaching staff of the trainees themselves², within which they offer them to physically perform certain physical exercises, in varying degrees of complexity, based on the purposeful visibility of the coach in the effectiveness of this, but in fact, which should strengthen their personal

¹ K. Till, B. L. Jones, S. Cobley, D. Morley, J. O'hara, C. Chapman, "Identifying talent in youth sport: a novel methodology using higher-dimensional analysis", in *PLoS ONE*, 2016, vol. 11, no. 5, article number 155047.

² J.S. Chiu, "Better education and training in apologies to resolve medical mishaps disputes", in *Medicine and Law*, 2019, vol. 38, no. 1, p. 59-72.

athletic qualities³.

Thus, any athlete during training becomes an absolute subordinate of the coach in all the manifestations of any of his personal life, and thus there is a direct dependence of the athlete on the coach at all levels, both physical, psycho-emotional, and social⁴. Based on the existing criteria of sports associations, any training process should be built in such a way that, based on various training parameters, the main factors of their influence on the preservation of a prosperous component of athletes' lives would be calculated, both within the framework of preserving their physical health, and emotional, and social, since initially health can only be considered as the totality of these manifestations⁵. In the theoretical line of sports science, there are criteria that allow preserving this relationship of classes within the framework of professional sports and the personal well-being of an athlete, and this is expressed at the level of parameters of individual dosage of physical activity based on many different factors, both conditioned upon external manifestations and at the internal level of perception of elements of the training process.

An important role in this interaction is played by aspects of the athlete's understanding of coaching instructions, including based on his response to the athlete performing the necessary actions, which the athlete himself perceives at a deep ideomotor level, in the factor of recognition of his own talent, efforts, results of hard sports work, which is directed at them only in a single factor of future victory, in achieving a higher result in competitions⁶. There is a parallel in this at the psychological level of perception, considering the fact that any physical manifestation is necessary for a professional athlete as another step in achieving a better result, and so each training for him becomes a given stage in which, at the psycho-emotional level⁷, the athlete needs internal support and

³ N.I. Pak, L.B. Khegay, Z.K. Akkasynova, Y.Y. Bidaibekov, G.B. Kamalova, "Preservice teacher training program for working with network mega-projects", in *Journal of Educators Online*, vol. 18, no. 2, p. 107-118.

⁴ R. Bailey, D. Collins, "The standard model of talent development and its discontents", in *Kinesiology Review*, 2016, vol. 2, no. 4, p. 248-259; E. Kharytonov, O. Kharytonova, A. Kostruba, M. Tkalych, Y. Tolmachevska, "To the peculiarities of legal and non-legal regulation of social relations in the field of sport [A las peculiaridades de la regulación legal y no legal de las relaciones sociales en el ámbito del deporte]", in *Retos*, 2021, vol. 41, p. 131-137.

⁵ D. R. Nurjaya, A. Ma'mun, A. Rusdiana, "Indonesian Women's Rowing from 1986 to 2018: A historical, Social and Cultural Perspective", in *Journal of Physical Education and Sport*, 2020, vol. 5, no. 2, p. 218-232.

⁶ T. Smoljanovic, I. Bohacek, J. Hannafin, H. B. Nielsen, D. Hren, I. Bojanic, "Sport injuries in international masters rowers: a cross-sectional study", in *Croatian Medical Journal*, 2018, vol. 59, no. 5, p. 258-266; N.M. Stukalenko, S.A. Murzina, B.V. Kramarenko, Z.K. Ermekova, G.M. Rakisheva, "Implementation of competence approach in the professional education of prospective teachers in the higher education conditions", in *International Review of Management and Marketing*, 2016, vol. 6, no. 3, p. 175-181.

⁷ F. Hamidi, Z. Khodakarami, "Effect of psychodrama on reducing high-risk behaviors in

praise from the coach, which provides his inner confidence, then that sports activities allow him to develop and acquire the skills necessary for sports, strengthening his personal athletic qualities⁸.

It is known that self-confidence affects the nervous system in the stability factor, causing a response in the coordination system of the body, which also allows reproducing more clearly and competently the necessary movements, which together will reflect sports activities as a whole, and this will avoid injury to the athlete based on the natural increase in speed at various stages of training, as well as pre-competitive and competitive activities⁹. Notably, coordination in rowing is one of the important components in which it is important to be able not only to coordinate the athlete's body work, but also in the factor of his movement on an unstable sports equipment¹⁰.

Thus, it is important to maintain the interconnection of all components of the training process based on the coaching psychological and pedagogical support at the level of development of the necessary physical qualities of the athlete.

Materials and methods

This pedagogical study was conducted with the help of various functional tests that allow determining the level of development of the physical quality of coordination among athletes in rowing, which is an important component in the criteria for achieving high sports results. The property of coordination in rowing based on the possession of the necessary level of balance, possession in the factor of muscular interaction with one's own body, including in the aspect of working with the paddle, and in the team within the synchronicity of maintaining the pace, which directly depends on the clarity of performing special sports comb movements at the level of high productive work depend on the coordination abilities of athletes, and in fact determine

unsupervised adolescence”, in *Health Education and Health Promotion*, 2020, vol. 8, no. 4, p. 173-179.

⁸ M. Araban, K.H. Jafarpour, A.A. Arastoo, Z. Gholammnia-Shirvani, A. Montazeri, A.A. Haeri-Mehrizi, “The impact of a theory-based education on physical activity among ‘health volunteers’: A randomized controlled trial”, in *Health Education and Health Promotion*, 2021, vol. 9, no. 1, p. 11-18; Z.K. Ermekova, N.M. Stukalenko, Z.S. Tasbulatova, A.K. Kalymova, G.K. Kainikenova, D.U. Kulmakhanova, “Formation of future teachers' professional skills during the period of pedagogical practice”, in *Life Science Journal*, 2013, vol. 10, no. SPL.ISSUE 12, p. 131-133.

⁹ D. Caspi, D. Cojocar, “Intervention of a physical movement program “body management in safe ranges” enhances self-management in aging”, in *Revista De Cercetare Si Interventie Sociala*, vol. 72, p. 248-273.

¹⁰ J. Zheng, S. Chen, “Exploring China’s success at the Olympic Games: a competitive advantage approach”, in *European Sport Management Quarterly*, 2016, vol. 16, no. 2, p. 148-171.

their level of sports qualification¹¹.

So, for diagnostics in the parameter of the coordination characteristic, the results of functional coordination tests were used, which included a study using a coordination meter, which consists of a metal panel with various holes under a certain voltage, that at the level of the athlete's movement determines the level of touch of the panel walls based on the accuracy of a special object hitting these holes. As well as the Romberg test, which allows evaluating the balance retention factor at the level of statodynamic work, which is assessed on a 5-point scale, depending on the time and complexity of performing at the level of open or closed eyes. "Stork" testing, when an athlete stands on one leg, and the second bent knee is pressed into the supporting one, and the hands are on the belt - the evaluation component of this testing depends on the standing time and the belt preservation factor and is evaluated at a level from very low to high criteria. Next, the coefficient of coordination abilities (CCA) was determined, which is determined by the formula:

$$CCA = V_{CB} - V_{B30}, \quad (1)$$

where V_{CB} means the speed obtained as a result of the shuttle running test within a distance based on 4 by 6 meters, and V_{B30} is the speed of the running test by 30 meters.

On the basis of the selected results, based on the described functional tests, the coordination capabilities of rowing athletes were determined. When calculating the overall results of the study, the standard method of mathematical calculation and graphical representation of the results was used.

The pedagogical experiment was conducted based on Rowing Associations of China, Hong Kong, China. A diagnostic study was conducted among 49 athletes rowers, aged 18 to 25 years.

The highlighted problem was investigated in three stages. At the first stage, a theoretical and analytical study of the available scientific, research and methodological literature on the problem under consideration was carried out within the framework of developing a model of the training factor that allows, at the level of the ideomotor component, within the framework of psychological and pedagogical support, to unravel the physical quality of coordination among athletes rowers. In the course of this work, the existing problem, the main goal were identified, research methods were selected and an active work plan was developed. At the second stage, a diagnostic study of athletes and the basic part of this experimental work was carried out with a detailed analysis of the results and formulation of conclusions. At the final third stage, the data were verified and the conclusions were clarified, including

¹¹ G. P. Millet, O. Girard, A. Beard, F. Brocherie, "Repeated sprint training in hypoxia – an innovative method" in *German Journal of Sports Medicine*, 2019, vol. 70, p. 115-122.

the systematised results obtained.

Results and discussion

In this research paper, the obtained results of diagnostic functional testing were analysed in detail with the factors of pedagogical observation at the level of the necessary active clarifications, which made it possible to determine the constituent elements against the background of the ongoing active training activity of athletes rowers. It is reflected in the component of the development of their sports skills, which were also structured in the active factor of many components of the training process, in particular understanding the importance of each task element at the level of personal physical, athletic development of an athlete. Thus, sports activities within the framework of rowing were determined, which were reflected at the level of performance indicators based on various components of the sport at the level of development and possession by the athletes themselves of various physical qualities, such as endurance, strength, coordination, agility, speed. Pedagogical observations made it possible to determine that many achievements in rowing are based on the physical quality of coordination, which at the level of its sports application is reflected in the multifactorial nature of this¹².

Based on the known parameters of the body's work, physical qualities are a reflection of the health of a particular system of vital activity, in which the nervous system prevails within the framework of interrelated work at the level of an effective neuromuscular apparatus, in which coordination allows determining the main acting force in the application with muscular work, as a direct execution of dynamic or static action, in the considered in the case of sports movement.

In the sport skill of rowing, two components of the nervous system are necessary, both peripheral and central, which is responsible for all the coordination activity of the body at the level of performing this function¹³. So necessary factors of balance and coordination in sports rowing in their interaction are combined at the level of depth of this concept, as a continuation of one function, which largely depends on many components,

¹² J. Chen, H. Huang, "Analytic hierarchy process of the evaluation system of physical education teaching quality in colleges and universities", in *Educational Sciences in Theory and Practice*, 2018, vol. 18, no. 6, article number 3408-3416; P.B. Seitkazy, K.R. Kalkeyeva, R.K. Aimagambetova, N.S. Kassymbekova, A.A. Tashetov, G.S. Jexembayeva, "Civilizational and cultural approaches to the constructing of the education content in Kazakhstan", in *Review of European Studies*, 2015, vol. 7, no. 6, p. 100-107.

¹³ Y. M. Fan, J. W. Chen, S. F. Li, L. L. Zhao, Y. P. Zhang, C. M. Liu, "A novel fuzzy synthetic discrimination system for teaching ability of physical education majors based on analytic hierarchy process", in *Educational Sciences in Theory and Practice*, 2018, vol. 18, no. 5, article number 1025-1033.

including the autonomic nervous system. In turn, the autonomic nervous system is susceptible to any external manifestation at the level of evoked emotions, both internally and within the framework of their external consideration, considering the fact that any external stimulus affects the psychoemotional sphere of the individual, and so it directly depends on the factor of the psychoemotional component, which in sports activity is reflected at the level of psychological-pedagogical support and high, creative maintenance of team spirit. After all, each athlete at the level of evoked emotions affects the other, both in terms of personal emotional interaction, and based on the physical performance of sports actions at the level of team sports, which is rowing, and in this consideration, any athlete understands that his results of competitive activity will depend on the physical, psychoemotional training of other athletes from his commands¹⁴. So in this relationship, a large criterion based on the influence on the nervous system, which is responsible for the coordination ability of a person as a whole, is the factor of psycho-emotional impact.

External emotional influence based on physical parameters is also reflected at the level of heart rate, which affects endurance based on the elements of rapid fatigue, which, at the level of maintaining high intensity in the load in its necessary rhythm for training, will negatively affect the cardiovascular sphere of the athlete, reducing the factors of his healthy life¹⁵. This is also reflected in an increase in anxiety and nervousness, which, conditioned upon the adaptation system in the body, is reflected in the tremor of the muscular system, which also in turn does not allow it to fully affect sports activity at the level of the nervous system. Both of the described elements negatively affect coordination in its active expression even against the background of an initially healthy nervous system, but which in this reflection, conditioned upon a temporary change in this function in the component of negative emotions or psycho-emotional stress under consideration, will cause functional disorders¹⁶. With frequent or prolonged aspect, it will also affect the

¹⁴ F. J. Nugent, T. M. Comyns, N. J. Ni Cheilleachair, G. D. Warrington, "Within-session and between-session reliability of the seven-stroke maximal effort test in national level senior rowers", in *Journal of Australian Strength and Conditioning*, 2019, vol. 27, p. 22-28.

¹⁵ M. C. Kay, K. L. Kucera, "Mixed methods designs for sports medical research", in *Clinics in Sports Medicine*, 2018, vol. 37, no. 3, p. 401-412; O. Banyra, O. Ivanenko, O. Nikitin, A. Shulyak, "Mental status in patients with chronic bacterial prostatitis", in *Central European Journal of Urology*, 2013, vol. 66, no. 1, p. 93-100.

¹⁶ Z. Kovalchuk, "Personal reflection in constant conditions social change", in *Social and Legal Studies*, 2021, no. 4, p. 177-183; A.D. Syzdykbayeva, A.S. Mambetalina, A.S. Nuradinov, M.B. Kurmanbekova, Z.B. Kabyrbekova, "Collaborative environment as a means of forming success of a future teacher of elementary classes in project activity", in *Journal of Intellectual Disability - Diagnosis and Treatment*, 2020, vol. 8, no. 3, p. 370-376; A. Shulyak, I. Gorpynchenko, G. Drannik, T. Poroshina, V. Savchenko, K. Nurimanov, "The effectiveness of the combination of rectal electrostimulation and an antidepressant in the treatment of chronic abacterial

level of health, in the factor of the appearance of pathological conditions and possible symptoms that, with a long time interval, can cause various pathologies at the level of the nervous system, both vegetative and sympathetic, or in violation of muscle work, for example, in the parameter of tremor or tic, and in its effect on vascular tone, other diseases will appear regarding both the gastrointestinal tract and the heart-vascular system¹⁷.

Thus, there is a direct connection at the level of psychoemotional influence and within the framework of the health of the nervous system¹⁸, which reflects the main physical qualities of the athlete, including, among which the coordination function occupies one of their main positions, and which directly depends on the emotional state based on the above.

In this consideration, there is still a connection at the level of the ideomotor component of the impact. It is known that at the level of all sensory cognitions of life, all factors of external influence will be within the influence on the nervous system, based on the knowledge of neurophysiological aspects that are perceived by the right half of the brain, but in the reflection of this in the suggested interaction, the left half of the brain will reflect actions at the level of their physical manifestation, and so the two elements under consideration will be interconnected¹⁹. Therefore, any physical manifestation directly depends on the psycho-emotional impact, which, in a harmonious consideration based on a positive criterion of influence, will be reflected at the level of healthy life activity in creative, friendly, respectful criteria of communication at essentially any level and in any quality²⁰. Also, in the ideomotor consideration, all the factors that are reflected at the level of emotions, conversations, receiving any information in various forms and criteria will be reflected at the neurophysiological level of the individual in the factor of the implementation of this work equal to that given in the physical parameter of execution in the ideomotor mechanism of influence on any organism²¹.

prostatitis”, in *Central European Journal of Urology*, 2019, vol. 72, no. 1, p. 66-70.

¹⁷ I. Shigenori, “High-intensity interval training for health benefits and care of cardiac diseases: The key is an efficient exercise protocol”, in *World Journal of Cardiology*, 2019, vol. 11, p. 171-188.

¹⁸ K.E. Setyanti, D. Apriliawati, M.H. Latif, B. Sumintono, “Satisfaction of Indonesian health promotion and academic services in higher education”, in *Health Education and Health Promotion*, 2022, vol. 10, no. 1, p. 69-74.

¹⁹ T. J. Kauh, “Building a culture of health through research: The role of the physical activity research center”, in *Preventive Medicine*, 2020, vol. 130, article number 105894; Y. Bidaybekov, G. Kamalova, B. Bostanov, I. Salgozha, “Development of information competency in students during training in Al-Farabi's geometric heritage within the framework of supplementary school education”, in *European Journal of Contemporary Education*, 2017, vol. 6, no. 3, p. 479-496.

²⁰ I.P. Chajka, “Study concept “Quality of education in higher educational agency””, in *Scientific Bulletin of Mukachevo State University. Series “Economics”*, 2021, no. 2, p. 42-49.

²¹ A. A. Svet, “Philosophical and psychological foundations of the theory of self-regulation”, in

If any information part or external emotion in its manifestation in influencing the individual's body manifests itself only in the thought form of the given, but in the physical reflection from the human body, all the biophysical, biochemical, biomechanical and physiological components of various relevant components will occur, so if this happened at the physical level²². In this aspect, the ideomotor component at the level of the training process is a very important pedagogical tool in the factor of achieving the necessary success in training activities for the development of physical qualities in an athlete²³.

Also, based on the described, there are elements that combine an understanding of the influence of psychological and pedagogical support of athletes from the coaching staff, which is essentially reflected in any factor of communication and addressing an athlete at the level of any personality in the susceptibility of all athletes who witness this conversational or physical situation²⁴. Since all factors at the level of gestures, manifestations of emotions, colloquial speech, tempo, timbre and volume of voice, which are collectively reflected at the level of the nervous system in influencing its vegetative part, including based on the susceptibility of this personal emotional background, which can also be enhanced by associative chains of manifestation of this in the past to its own personalities²⁵.

Psychological and pedagogical support becomes a pedagogical training tool at the level of any component in the training process²⁶, and in this factor it should be noted that, based on the criteria of successful training at the level of achieving high performance indicators in the development of various physical qualities, it is necessary to observe parameters that will allow a creative impact

Caspian Region: Politics, Economy, Culture, 2021, vol. 1, no. 66, p. 132-137; I. Yessengabylov, S. Nurgozhayev, A. Aldabergenova, Y. Smagulov, L. Krivankova, "Factors in the productive use of information and communication technologies by mathematics teachers", in *World Transactions on Engineering and Technology Education*, 2021, vol. 19, no. 4, p. 392-397.

²² S. G. Farris, E. K Burr, M. M. Kibbey, A. M. Abrantes, A. M. DiBello, "Development and initial validation of the Exercise Sensitivity Questionnaire", in *Mental Health and Physical Activity*, 2020, vol. 19, article number 100346.

²³ C. A. Urbanczyk, E. Miller, A. H. McGregor, A. M. J. Bull, "Fatigue leads to altered spinal kinematics during high performance ergometer rowing" in *ISBS Conference Proceedings Archive*, 2020, vol. 38, no. 1, p. 256-259.

²⁴ V.V. Kondratenko, I.A. Zaitsev, A.M. Nesterenko, L.V. Homon, G.N. Chykolba, "Modern information technologies in the process of physical education in universities of Ukraine", in *Scientific Bulletin of Mukachevo State University. Series "Pedagogy and Psychology"*, 2021, vol. 7, no. 2, p. 101-108.

²⁵ N. Zhang, R. Su, "Longitudinal research on the application of sport education model to college physical education", in *Revista De Cercetare Si Interventie Sociala*, 2020, vol. 70, p. 354-367.

²⁶ N.M. Stukalenko, S.A. Murzina, L.N. Navy, S.K. Moldabekova, A.D. Raimbekova, "Research of ethnopedagogical approach in professional training of teachers", in *Life Science Journal*, 2013, vol. 10, no. SPL.ISSUE11, p. 205-207.

on the level of development and maintenance of health in athletes²⁷.

Based on the above, it is important to respect and friendly attitude of the coaching staff to athletes, in any of its manifestations, both at the level of expressing personal praise, highlighting aspects that will reflect the good achievements and results of athletes, and at the level of their diligence or positive self-expression in training within the framework of personal enthusiasm. This should also be maintained at the level of criteria that allow increasing self-confidence, talent, which will reveal and expand the personal potential of athletes at the ideomotor level, who will be inspired by the data and apply great diligence during the training process. Also, based on the ideomotor component in its mechanism of influence on the body, it will be important to interact between the athletes themselves at the level of a respectful and benevolent tone, which will allow them to work cooperatively at the ideomotor level for the factor of passing the distance in coordinated activities and mutual assistance, and support, which are necessary to achieve the best competitive results in team sports, in this case - rowing²⁸.

Thus, the next components in the psychological and pedagogical support of the coaching staff are the emotional components in the factor that enhances the cohesion of the sports team, in a friendly manifestation in relation to athletes to each other, which will strengthen the ideomotor components of the impact on the body of individuals during the training, pre-competition and competitive stages in the physical training of the sports team.

In turn, against the background of the described, coordination abilities in reflection with inner confidence, calmness, harmony will be reflected at a high level, including within the development of other physical qualities in the training process, which will allow athletes to achieve great heights at the level of indicative results, based on the fact that the internal components of the stability of the state, both emotional and nervous at the level of the autonomic and sympathetic nervous system, will be reflected in the clarity of the execution of actions, determination, which in a long-term factor at the level of a natural increase in speed capabilities will allow athletes to maintain purposeful accuracy of physical actions, including in the performance of special sports rowing movements, that will be maintained with a gradual increase in speed, and in the factor of increasing duration at the level of endurance enhancement²⁹.

²⁷ T. I. Gee, N. Caplan, K. C. Gibbon, G. Howatson, K. G. Thompson, "Investigating the effects of typical rowing strength training practices on strength and power development and 2.000 m rowing performance", in *Journal of Human Kinetics*, 2016, vol. 50, no. 1, p. 167-177.

²⁸ E. M. Buckeridge, A. M. J. Bull, A. H. McGregor, "Incremental training intensities increases loads on the lower back of elite female rowers", in *Journal of Sports Science*, 2016, vol. 34, p. 369-378.

²⁹ A. Sorriento, M. B. Porfido, S. Mazzoleni, G. Calvosa, M. Tenucci, G. Ciuti, P. Dario, "Optical and electromagnetic tracking systems for biomedical applications: A critical review on

Thus, there is a need to develop a model for the development of coordination properties in the ideomotor component of the impact at the level of psychological and pedagogical support from the coaching staff at the level of qualitative parameters that will improve the criteria for the physical training of athletes in rowing. And considering the above, all the selected parameters and features identified in this study were taken into account, and then analysed separately, based on both effective and active components, which in general opens up the process of forming a model of the training process in the ideomotor component of the impact for a significant improvement in coordination indicators in athletes rowers. The result of the study under consideration is the degree of development of the model in question at the level of its implementation in the field of rowing.

This experimental research work with the created pedagogical model that improves the physical quality of coordination among athletes rowers at the level of the ideomotor mechanism in the training process was introduced into the educational process in several stages, which included determining the initial level of physical data in coordination manifestations, conditioned upon the passage of the functional testing methods described above in the framework of control and measurement data from athletes rowers.

The results obtained were further statistically processed and then, at the next stage, an important model was developed and implemented based on the above parameters of the application of various factors that allow during training to influence the increase in coordination sports indicators for its subsequent implementation in the field of rowing, which made it possible to determine the level of its relevance and importance for solving many tasks in the improvement factor professional training of athletes in this sport.

The experimental study covered 52 athletes in rowing, and in order to identify the degree of development of coordination abilities, they underwent functional testing, which, with a general analysis, showed an average degree of their development at the level of coordination data. Figure 1 shows the average statistical data of the results based on the relevant parameters in determining the test with a coordination meter (57%), the Romberg test (4.2 points), the Stork test (average, 39 seconds), and the determination of the coefficient of coordination abilities (0.4).

Indicators at the level of average statistical data on coordination among rowing athletes at the initial stage in the corresponding parameters

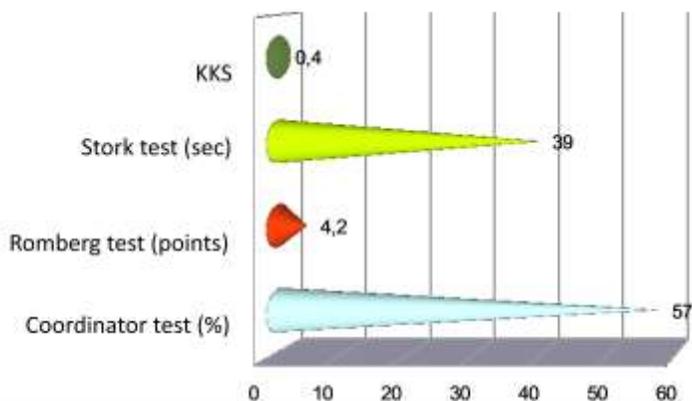


Figure 1: The distribution of athletes by indicators at the level of average statistical data based on the results of coordination tests at the initial stage

The pedagogical clarification made it possible to identify in the athletes of rowers that the attitude in communication at the level of psychological and pedagogical support from the coaching staff has a significant impact on them, on their state of inner confidence in their abilities and capabilities, creates a psycho-emotional adaptation to the training process and allows them to manifest themselves at a successful level of training and competitive activity, which is reflected in in Figure 2.

The attitude of athletes to the psychological and pedagogical support of the coaching staff at the level of respectful and constructive parameter

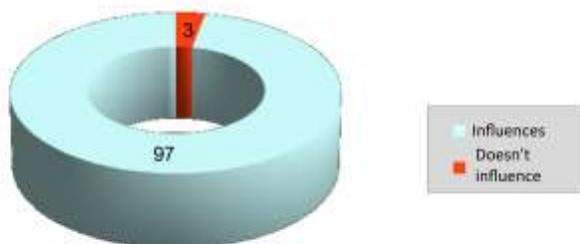


Figure 2: Distribution of athletes rowers by the influence on them of attitudes from the psychological and pedagogical support of the coaching staff

Thus, it was identified that the indicators of the emotional impact of the

coaching staff on athletes allow to strengthen motivation, avoid injuries of a physical and psychological nature, create a team spirit, and thanks to the use of parameters at the level of the ideomotor component, they are enhanced in the indicators of neurophysiological aspects that were described above³⁰. Notably, ideomotor training should also be extended at the level of special physical training of athletes, where at the mental level they work out their full-fledged movements in the biomechanical parameters they need, speed mode at the level of passing the entire distance, and also this supports at a high level the motivational component in expressing a positive emotional background, which is also determined at the ideomotor level. level in this part of the training process. Ideomotor training will allow athletes to realise all the elements of sports work that make up the distance at the physical level, and then continue to perform the necessary movements more purposefully and consciously at the level of highly coordinated work of the body as a whole.

The periodic use of ideomotor training will allow to form professional motor skills at the level of performing special rowing movements, including, which will strengthen the performance indicators at the level of competitive activity in their stable consideration³¹. It is also known that the ideomotor mechanism of working out movements allows creating conditions for the formation of a professional motor stereotype, and thus this training component acts as a pedagogical tool at the level of introducing new training methods, including within the framework of improving professional sports qualities. It is advisable to apply this method of ideomotor training at the initial stage when resuming sports activities after illness or break, and before competitions at the level of working out in the ideomotor aspect of a full-fledged performance in competitions, which will allow all systems of the athlete's body to adapt to the upcoming loads, and will facilitate sports competition or activity at the physical and psycho-emotional level³².

Based on the above, criteria and parameters were determined that dictate the need to improve the training process at the level of physical fitness of athletes in rowing, in the factor of their sustainable development and preservation of the parameter of physical quality, such as coordination. The implementation of the conditions of pedagogical research work required methodological analysis and allowed us to identify the main criteria that would

³⁰ Y. Zhang, S. Qing, I.S. Kravets, "The features of modern students' internal motivation for physical exercises", in *Scientific Bulletin of Mukachevo State University. Series "Pedagogy and Psychology"*, 2021, vol. 7, no. 2, p. 109-117.

³¹ M. Skublewska-Paszowska, J. Montusiewicz, E. Lukasik, I. Pszczola-Pasierbiewicz, K. Baran, J. Smolka, B. Pueo, "Motion capture as a modern technology for analysing ergometer rowing", in *Advances in Science and Technology Research Journal*, 2016, vol. 10, p. 132-140.

³² C. A. Urbanczyk, A. H. Mcgregor, A. M. J. Bull, "Modelling scapular biomechanics to enhance interpretation of kinematics and performance data in rowing", in *ISBS Conference Proceedings Archive*, 2019, vol. 37, no. 1, p. 133-136.

strengthen the functional abilities of athletes at the level of their habitual training activities, based on the introduction of qualitative parameters in substantiating the ideomotor mechanism of their influence on the stable functional state of athletes, as well as in the aspect of their relations with the coaching staff.

Thus, from the position described above, a model was developed for the development and stabilisation of the coordination abilities of athletes rowers at the level of the introduction of ideomotor training, which includes two aspects in the factor of the ideomotor justification of psychological and pedagogical support of athletes by the coaching staff, which in its essence will have an impact on the coordination ability within the framework of a clear performance of the necessary motor acts, and also at the level of detailed ideomotor study of all elements of passing the necessary distance, and in performing individual movements taking into account friendly teamwork, using motivational-value, cognitive-informational, sociable, emotionally respectful and cultural criteria.

At the control stage of the study, the dynamics of data at the level of development and stable indicator in the training activity of coordination abilities of athletes in rowing was identified after repeated functional testing aimed at identifying indicators within the framework of coordination after testing the developed model in the sports training process. Figure 3 shows the results of the functional tests carried out, which reveal a tendency to increase the indicators and increase the possibilities of the coordination component, so the test with the coordination meter was detected within 87%, the Romberg test within 5 points, the Stork test allowed to outstrip the effectiveness of its passage at the level of average statistical data in the parameter 52 seconds, and the identified the coefficient of coordination abilities was 0.3.

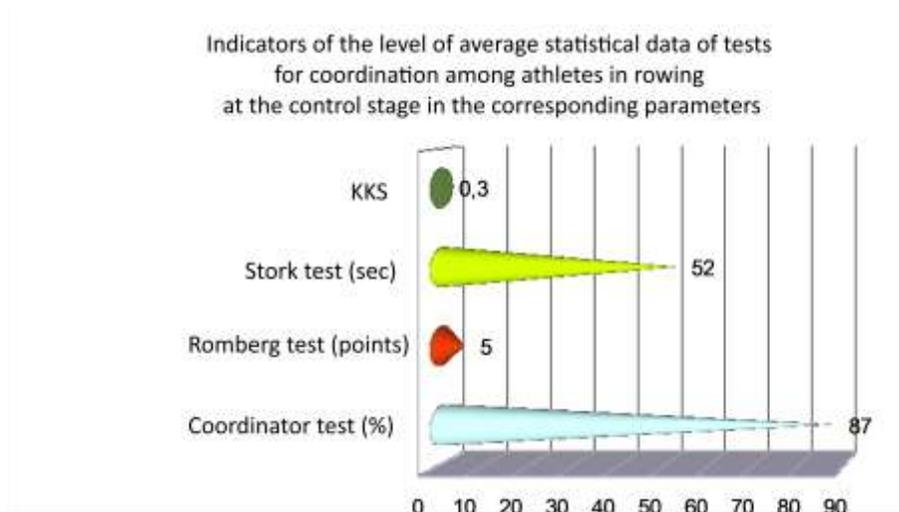


Figure 3: The distribution of athletes by indicators at the level of average statistical data based on the results of coordination tests at the initial stage

Also, the pedagogical clarification made it possible to identify the personal attitude of athletes to the introduction into the training process of the developed model of strengthening and stabilising coordination abilities against the background of their physical development in rowing. Figure 4 shows the data obtained, which reflect the positive attitude of all athletes to the developed method of ideomotor training.

The attitude of athletes to the developed ideomotor training at the control stage

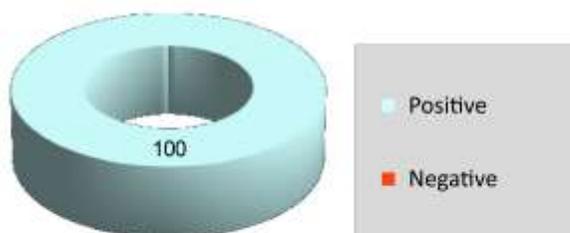


Figure 4: Distribution of rowing athletes according to their attitude to the introduction of the developed model into the training process at the control stage of experimental work

The analysis of the data obtained allows us to say that the selected criteria, parameters and the formed model of the development of coordination abilities with the help of ideomotor training was successful and caused a positive response from athletes, and also identified a positive trend in increasing qualitative indicators at the level of physical development of their coordination quality.

In this study, its correctness was ensured, since the characteristics, and the obtained effective parameters of functional studies and the developed elements of the model were comparable in the study correctly, and the analysis of the results allowed determining that the developed model for a steady increase in the physical quality of coordination within the training process at the level of its ideomotor part and related components allows us to improve sports performance at the level of improving the training process in rowing.

The training process at the level of physical fitness of athletes has many components, which together will reflect many indicators, both the level of maintaining the athletes' fitness, and in acquiring special sports skills characteristic of rowing. An important role in understanding the active components of the training process at the level of various movements is played by communication with the coach, from whom the guiding part comes with various accents that affect the development of many components in the athlete's body. Also, the coach needs to choose methods that would allow developing the necessary qualities and skills at the level of maintaining the athlete's health. Coordination in this consideration plays a special role, considering the peculiarities of sports manifestation in rowing, which functionally depends on the state of the nervous system, vegetative and sympathetic, which also depends on the emotional background in which the entire training process and the physical development of the athlete takes place³³.

Thus, professional psychological and pedagogical support at the level of a respectful and creative attitude within the framework of the developed criteria will contribute to the effectiveness of the training process, at the level of the most appropriate, adaptive forms that allow reproducing the creative communications of the entire sports team, which will strengthen the level of trust between athletes and the coach, and also allow the sports team to be on top for a long time showing a high level of competitive achievements. This will allow the athlete to realise personal characteristics and his capabilities at the level of manifestation and development of physical qualities, in which coordination abilities will be maintained at a stable and stable level of manifestation based on external conditions and obstacles that contribute to

³³ C. M. Sabiston, E. Pila, P. R. E Crocker, D. E. Mack, P. M. Wilson, J. Brunet, "Changes in body-related self-conscious emotions over time among youth female athletes", in *Body Image*, 2020, vol. 32, p. 24-33.

this, at the level of a calm and confident inner sense of understanding and support from other athletes of the team and coaches.

Thus, the developed ideomotor training and criteria for communicating with the coaching staff in an ideomotor manifestation will allow consciously forming sports skills in special movements in rowing and provide psychological comfort at the level of reducing anxiety, with increased motivation, will, attention and thinking aimed at achieving winning results in athletes based on stability in the ideomotor component of the training process³⁴. Athletes at the internal reflex level will understand the correct biomechanical chains of movements in their full-fledged manifestation of purposefulness to the ultimate victorious goal, at the level of coordinated and precise movements, stable balance, which allows to adequately increase personal speed abilities and ensure efficiency at the energy level of reproduction in the necessary sports movements³⁵.

Thus, the developed ideomotor training in the presented model makes it possible at a qualitative level to ensure the stability of the effectiveness of the training process at the level of improving the physical quality of coordination, which in turn will ensure the solution of many tasks in the physical training of athletes rowers at the level of motor and coordination development in successful manifestation in rowing.

Conclusions

The improvement of rowing training among athletes plays an important role at the level of development of their physical qualities, which, in terms of coordination activities, play a special role in the factor of achieving successful results in competitive activities. Thus, coordination in rowing is responsible for many indicators in the development of sports achievements, where at the level of body ownership all movements together will reflect the model of motor activity in a sports special skill in rowing at the level of successful patency of the required distance, in which balance and coordination will ensure the visibility of results in this sporting achievement.

Thus, the developed model of ideomotor training in the aspect that increases the coordination data of athletes at the level of their psychological and pedagogical support from the coaching staff in the criteria of motivational-value, cognitive-informational, sociable, emotionally respectful and cultural in the manifested parameters of communication, will allow at the level of the

³⁴ M. Sitsinska, A. Sitsinskiy, V. Nikolaiev, S. Khadzhyradieva, I. Hasiuk, "Legal and socio-economic aspects of reforming Ukraine's higher education system", in *Journal of the National Academy of Legal Sciences of Ukraine*, 2021, vol. 28, no. 1, p. 88-98.

³⁵ F. Moola, A. Krahn, "A dance with many secrets: the experience of emotional harm from the perspective of past professional female ballet dancers in Canada", in *Journal of Aggression, Maltreatment & Trauma*, vol. 201827, no. 3, p. 256-274.

ideomotor mechanism to maintain stability and clarity of performance of sports movements based on the influence on the nervous system in its coordination aspects, as well as the developed ideomotor training includes a mental study that provides an ideomotor mechanism for the impact of all sports movements necessary to overcome a sports distance at the level of teamwork of an athlete, which will allow to form a sports motor skill against the background of maintaining high internal self-confidence, which will contribute to the stabilization of all nervous systems at the ideomotor level. the processes responsible for the coordination actions of athletes, as well as this will contribute to the creation of a conscious and reflex-formed sports movement in the ideomotor component, and the mechanism of development, which is of practical importance for the field of rowing.

This article in its informational part within the framework of this research makes a great contribution to the field of sports education, and will be useful for coaches, athletes, methodologists and other sports workers, and can also be applied in practice, which will contribute to solving important tasks in the field of rowing.