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The monograph deals with the structural construction of the recreational industry, in which the mechanism of human motor culture turns into a function that ensures the maintenance or strengthening of human health based on the developmental impact of physical exercises, motion and movement in space on human organs and systems. This impact is activated systematically by fitness exercises on the basis of satisfying a person's need for improving psychological and physiological condition, strengthening the processes of reflex and mental mobility, restoring working capacity and extending the potential of the productive force. The methodological approach of the monograph combines the processes of preserving and increasing energy in a person through the application of a set of ideas based on the program provisions for the prevention of health conditions, the treatment of diseases and injuries, recovery and subsequent restoration of human strength according to the fitness methods that enhance the healing resource received from the natural environment, travel, tourism, rational modes of rehabilitation, work and rest. The involvement of fitness systems changes the effectiveness of external influences on both a healthy and a weakened person, because their architectonics includes such series of exercises, the implementation of which in the established sequence brings the simultaneous effect of healing, harmony of development and restoration of strength.

The monograph is intended for researchers, teachers and specialists, who are engaged in the processes of the formation of business, management tools and organic structure of activities on the methodological foundations of physical culture, civilizational support for strengthening human health and the complex impact of the recreational fitness industry on health.

ISBN: 978-83-66567-57-3

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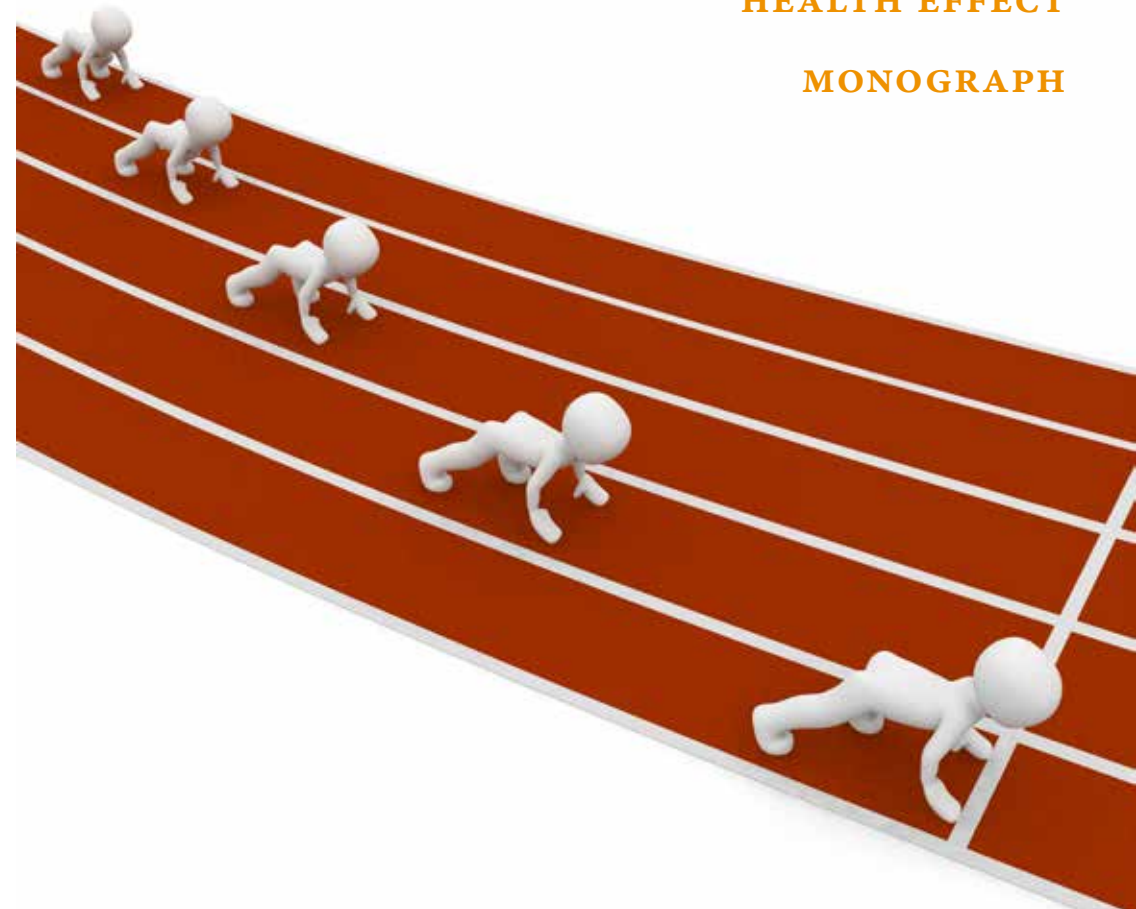
RECREATIONAL INDUSTRY SYSTEM

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BASIC MANAGEMENT
PEDAGOGICAL APPROACH
HEALTH EFFECT

MONOGRAPH



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Peggy und Marco Lachmann-Anke – Pixabay

ISBN: 978-83-66567-57-3

Format A5 (210x148 mm)

Conditional printed sheets 14,5

Opole 2023

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Publishing House:

Publishing House of the Academy of Applied Sciences –
Academy of Management and Administration in Opole
Poland, 45-085 Opole, st. Niedziałkowskiego 18

phone: +48 77 402 19 00 | e-mail: info@poczta.wszia.opole.pl | www.wszia.opole.pl

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INTRODUCTION

Each state faces the problem of replenishing the resource of productive forces. One of the ways to solve it is the accelerated development of the processes of improving health, recreation and preservation of the working capacity of a person, which shifts public attention to the activation of the consumption of services and the effectiveness of the action inherent in them, which is a priority of the healthcare system, based on a network of recreational industry organizations. Due to such cooperation, which is supported by organizational and methodological principles, the potential opportunities for replenishing the labor force are greatly expanded. These possibilities become a reality if measures of an extensive nature include systems that intensify the health-improving, developing and strengthening effect on a person.

The environment of the recreational industry has become enough publicly exposed, but still remains little known to the general population on the scale that it deserves, when viewed from the standpoint of the use of physical fitness systems and physical exercise complexes. Each of the physical fitness systems can become a way to improve, develop or strengthen a person's motor functions. Regardless of the physical and mental state of an individual, any such system can be adapted not only to the anthropometric and age characteristics of a person, but also to his/her experience, health and personal wishes.

This problem is in the focus of attention of a number of scientific centers and individual researchers. It is the study subject of such scientists as J. Hoffman, E.T. Howley, R.J. Shephard, D. Thompson, J.C. Whorton, L.A. Boiarska, Ye.I. Hrihorieva, O.S. Saipusheva, A.A. Chelnokov, A.A. Frolov, who support the positions of the creators of fitness systems – K.H. Cooper, J.S. Fonda, J. Kano, J. Pilates, C. Pinckney. Despite the fact that the scientific works of these researchers are well-grounded, critical consideration of the mechanisms of influence of physical culture on a person, human motor activity constructions and approaches to the intensification of loads disclosed in fitness are awaiting clarification. In addition, the time has come to establish scientific and methodological developments based on the motives and new qualities that are introduced by the processes of social life, the uncertainty of movement towards the progress of change, the intensity of production and labor, the preservation of interest in labor-intensive industries, the attractiveness and usefulness of action, and general restructuring of relations. Instead of the services of the recreational industry, which is distinguished by the freedom of choice of a systemic method of treatment and therapeutic effects, the society needs to reorient itself towards mastering the system of physical recovery and human development everywhere. It is one of the ways to achieve a higher level of effectiveness of medical and therapeutic effects, which often rely on the artificial effect of drugs and passive rest, contemplation and control of changes in the body. It is indisputable that the currently observed activities in the studied area won a sufficient army of proponents and supporters, bring enough benefits to humanity, and have few objections and arguments against their use, because they provide a number of well-known to specialists quite effective ways of restoring human strength. At the same time, the society expects the introduction of such a system that will reveal other, more larger-scale and intensive, approaches to provide an individual with new means and choices for a richer and more effective rest, a faster way to restore energy, to reconstruct habitual relationships. Not the last place in this list is occupied by more meaningful ways of spending time.

In order not to support from the first lines of the study the illusory and unambiguous perception of rest as the only factor in the restoration of human biological energy, we would like to attempt to con-

vince a reader that there are other ways of such restoration. There is, for example, a way to change the type of activity that differs in intensity, which is no worse than the way of the passive rest, and even much better than it, because time is not wasted, but is used productively. The body recovers to the same extent or even more, improves the physical reaction, and gets rid of muscle stiffness. The reaction not only to a simple, but also to a differentiated stimulus becomes more complicated, which is ideally perceived as an improvement in the functioning of the body. There are also other benefits to consider. We can talk about the inclusion of an individual in a short-term, well-measured and exciting environment for the performance of rhythmic physical exercises and movements accompanied by music.

Recreational activity as a function of restoring the productive forces of the society through health-improving, rest and restoration of a person's ability to work had proven itself not today or even yesterday, but a long time ago – in the 1950s. However, it has turned into a full-fledged field of activity since the beginning of the 21st century. There is evidence for such a transformation regarding the extension of the use of human capital and causes for the need of human recovery. This plays a big role not only in the field of replenishing the labor force resource, which is of interest to any state, but also expands the possibilities for including a person in the processes of social interaction. Such a view on the development of the problem of health improvement, recreation and preservation of a person's ability to work expands the potential opportunities for the scientific and industrial community to appeal to the attractive aspects of the recreational industry, which is entering the ranks of socially significant phenomena of modern society as a full-fledged industry. This raises the consideration of issues not only from the standpoint of restoring the strength of a single person, but also from the standpoint of restoring the working capacity of certain segments of the population. The above-mentioned allows moving on to obtaining characteristics to assess the benefits of activities from other angles of the studied service. Such characteristics are an inductive way of thinking, iterative interaction, quality of activity, and market cooperation. All together, they form a complex that includes utility, synergy, dynamic development of supply and demand for a service,

which manifests itself for a short time in a transformable space of social action.

For the sake of objectivity, it is necessary to pay attention to the following circumstance: at this level of the development of scientific thought and its dissemination, and until the moment of voicing the materials of this study, recreational activity, in order to talk about it from the position of recognizing it as an industry, comes down to solving individual issues of filling physical culture with motor systems for health improvement, development and active recreation. These questions can be solved by using the methodical forms of motor activities, which are now recognized by the society as fitness systems. These systems have had time (more than 70 years) to find proponents, to be tested and to prove their usefulness, consistency and effectiveness in wide layers of the society. These forms, which are considered in detail in this study, not only do not destroy the existing systems of medical and biological recovery, health promotion and preservation of human ability to work through drug intervention, but, on the contrary, are waiting for the time to be recognized because of their usefulness in therapeutic disease prevention activities due to their focus on the physical movement of an individual. To take its rightful place in the field of organizational systems sciences, fitness systems must be studied in more detail, and their methodological bases of usefulness for the field of strengthening the characteristics of the human body must be analyzed considering a wider range of palliative, therapeutic and purely motor techniques, procedures, methods and means of influencing a person, assisting an individual with regard to physical orientation.

Based on the above-mentioned warnings, and as long as recreation is presented to the consumer as nothing more than the form of a multitude of systemic processes of restoring vitality with a minimum of applied motor efforts, it is required to continue popularizing and explaining the benefits of using the studied phenomenon – the phenomenon of the birth of the organic system of the recreational industry determined by rhythmically performed physical exercises and repetitive movements.

The following statement of the methodological content also leads to the implementation of such an idea. This statement is known to

researchers as follows: the desired restoration of person's vitality occurs in the forms of loading and reloading the nervous-tense and emotional-mental components, while the physical and mental potentials of a person restores with the elimination of factors that burden the mobile environment. This study is based on the assumption that if more time was occupied by the systems of physical loading/unloading of the body and the nervous system of the body, in which the action is adjusted to the fitness methodology, where physical exercises put their methodological meaning into an effect to the rhythm of musical accompaniment, then the picture of a person's recovery would change radically to another one. The one that is developing along an exceptionally steep trajectory of progressive development.

There is no need for the cardinal rethinking of the phenomenological ideas of fitness culture. It is possible to adopt concepts that are characteristic of the canonical reflection of the impact on a person of measures of artificial and natural origin. Then, this includes the concepts of the processes of restoring the body, which is weakened by diseases, sprains of muscles, tendons and their destruction under external influence, linking this with the introduction of target modes of work and rest. However, already at the stage of introducing into the recreational industry new methods of influencing a person and helping him/her, attention is focused on a number of factors that are objective in nature. In this process of interaction:

1. the factor of rest plays its primary role, when, with the accepted identification of the phenomenon under study, this method of influencing a person is practically the only effective tool by which the perceived amplification is codified, while all the others remain therapeutic. The semantic load on the concept of "strengthening" here refers to both restorative functions and energy for the body, as well as any other renewal of its vitality, for which only the functions of rest in most known options for restoring energy are not enough. With the recognition of this fact, the missing link is found and the fitness system takes effect;
2. the productivity of the methodological approach called "rest", which in its essence corresponds to the extensive features of the development of this event, as well as of any other, is exhausted

as it is forced out of the environment of values by the moment of inclusion in circulation of a different methodological approach to ensuring the restoration of strength and health-improving of an individual. This approach is distinguished by a more intense way of influencing a person, and it consists in the following. The fitness system pre-supposes the entry into action of a non-violent approach to changing occupation or work. It is believed that this way, the regime of work and rest is automatically observed, which is subject to the natural need of a person for rest in order to promptly replenish energy. During this period, the possibility of adding a number of physical exercises is not excluded. The implementation of them involves musical rhythm and tempo with productive influence on the senses. In this way, both the expected emotions and the desire to proceed with the continuation of the movement are mechanically evoked in a person.

The monograph on the recreational industry, which is still presented in most works based on the images of two systems – the health care system that has a wide range of effects on a person of palliative, medical and surgical intervention means, in unity with the healing means of the biosphere, which has a natural reserve of recreational resources with their health-improving properties, is replenished with a means of physical influence, which acquired the name “fitness”. Now the system is replenished with a number of ordered motor and rhythmic physical culture activities. They propose the integrity of means called “fitness system”. The form of action deployment is the demand for a non-violent way of physical influence on the expansion of person’s motor and mental abilities, on strengthening health and motor adequacy. This allows a person to return to the sphere of activity with the feeling of a full-fledged citizen of the state, who has overcome weakness after testing all available means to restore the physical volume of strength and to get rid of physiological weakness by increasing the motor function of the body.

Finally, the following circumstance draws attention to fitness. The choice of fitness as a means of recovery, development and improvement, is influenced more by a psychological motive than a physical one. Psychological motivation is perceived as a hypothetical internal process of a person, in which the desire to achieve a specific plan

for inclusion in a social movement or in the environment of social activity appears after overcoming some vague time of loss of health or inspired thoughts about the need to improve mental or physical abilities. There are systematic approaches to correcting physical condition. In such a case, there must be an impetus to act, to start an activity, to change the place, to move towards the implementation of the plan in the real environment. That is, a person, whose thoughts are disturbed by the desire to become active, must dare to take the first step in order to make a move or change the style and rhythm of life. This is underlain by the desire for mobility, which involves cooperation of several persons, whose relations are based on personal inclinations of interaction, sympathy and liking, which are simple and understandable. There should be parity and tolerant attitude when choosing a means of activating the movement. A person begins to be agitated and pushed into the space of movement by the tendency of the development of social and consumer relations, behind which lies some dependence on the distribution of consumer substances, which consists in satisfying the growing needs of a person. Such dependence also manifests itself in the areas of health, possibility of health-improvement and desire to restore the energy of a person, which should instill in an individual the hope of increasing his/her abilities in the environment of production processes after the renewal of functions. On the way to the development and strengthening of some ability, once again, the systems of physical culture and strengthening of health take their place. In this way, fitness systems complement physical culture due to their attractiveness, usefulness and accessibility of movement perception. This is exactly the factor that activates attention and motivation to master fitness. Attention should be paid to the following dependence: *the higher the level of motivation is (and such motivation is provided by the need for health promotion), the greater is the commitment of the fitness follower to communication in physical groups based on interests in order to achieve a personal idea of improving or recovering the body. Further, the greater is the personal inclination to some physical system that steadily wins its place in a person’s life, the better the views and effects of a full life are for a mobile person who steadily moves forward.*

This study deals with the recreational sphere of human activity,

which, together with the medical achievements of the society, therapeutic measures of influence on a person, and natural expediences for recreation, reaches the level of industry. First and foremost, this sphere encourages to act, to move, to improve health, and to reproduce strength, those persons who do not abandon the hope of renewing themselves and increasing the drive and energy for action due to the voluntary performance of *physical exercises that comply with systematic and methodological requirements for the purpose of improving health and physiological and endurance characteristics. At the same time, fitness opens the way to improvement for those people who have a desire to improve their mental and physical characteristics. This is the second point.*

The monograph uses a well-known proposition – the best effects and current achievements are provided by training the physical qualities of an individual with the involvement of movement exercises and person's creative ability for critical self-analysis.

CHAPTER 1

Organization management basics and general conditions for the formation of the recreation industry

Scientific and technological progress governs the opinions of a wide range of specialists engaged in the study and development of 1) adaptive systems of human physical development, 2) classification levels of improvement of physical education specialists, 3) methodological basis of high-level sports, 4) health-improving and 5) recreational programs. There are enough directions for the study of human movement as a step to physical improvement. These directions are chosen to satisfy the ambitions, desires and interests of the consumer who wants to improve own health, develop certain muscle groups or regain strength, making movement a pleasure. To achieve this, the states have a) both technical and educational solutions that strengthen the effectiveness of health-improving and physical development systems using pedagogical means of communication, and b) new systems for the physical, mental and motor development of human abilities and possibilities, organs and systems of life support, used in the recreational industry.

1.1. Cognitive peculiarities of the formation of the organizations sphere and conditions for optimal management of the recreational industry structure

The modern society is on the way to replacing industrial relations and functions with post-industrial ones. This means that the intensity and uncertainty of labor increase in the conditions when the share of material production in the overall balance of goods and services decreases, and the share of intangible production increases¹. In itself, such a phenomenon is perceived as a process of replacing hard physical labor with a nervously intense, creative one, requiring the worker to mobilize skills, engineering knowledge and great energy of mental purpose. This means that in the general system of economic values, the productive forces are replenished with fundamentally new types of activities that activate not an annual, but a synergistic effect², and are synchronized with the solution of a number of problems that were within the competence of the austerity regime, compressing time, saving and preserving material resources. Now, they, these forces, go beyond the scope of physiological sensations, which can cause

- ¹ Greco, M., Cricelli, L., & Grimaldi, M. (2013). A strategic management framework of tangible and intangible assets. *European Management Journal*, 31(1), 55-66. Новаторов, Э. В. (2015). *Маркетинг услуг: теория и технология*: монография. Санкт-Петербург: ИП Петров Д.А. Хрусталева, Е. Ю. (2002). Взаимосвязи материального и нематериального производств с позиции теории экономического роста. *Проблемы прогнозирования*, 4, 149-151. Шевчук, Л. П. (2008). Мотиваційні механізми – джерело економічного зростання підприємства торгівлі та ефективного відтворення і нагромадження людського капіталу. *Вісник Хмельницького національного університету*, 5(2), 240-244.
- ² Dykan, V., Pakharensko, O., Saienko, V., Skomorovskyi, A., & Neskuba, T. (2021). Evaluating the efficiency of the synergistic effect in the business network. *Journal of Eastern European and Central Asian Research*, 8(1), 51-61. Lazorko, O., Virna, Z., Brytova, H., Tolchieva, H., Shastko, I., & Saienko, V. (2021). Professional safety of personality: system regularities of functioning and synergetic effects of self-organization. *Postmodern Openings*, 12(2), 170-190.

damage to a worker. In addition, a more active position is occupied by the processes of redistribution of the interaction potential, again, in favor of the intangible sphere and overloading the human body and its nervous system with the intensity of labor and performed operations. This is recorded due to an increase in the turnover of labor among the lower levels of the regional economy and individual production. In addition to the industrial production, which at all times has been characterized by a fairly high intensity of technological operations, service and support environments are also included in the aggregate, where sometimes it is not possible to earn enough funds for health restoration, family support and cultural events, and it is not uncommon for this reason that a worker must rush to complete the task, overstraining all functions, and getting into a traumatic situation or a situation of overloading. To provide such services, the practical sphere of the recreational industry and other spheres also receive impulses for development³. This means that in practice such an industry already exists, while science is only beginning to study its initial outlines. The desired beginning, which can be attributed to cognition, is based on the platform of entertaining tourism and transport industries⁴, i.e., basically, the scientific research in this sphere is subject to meeting the needs of a person who pays atten-

- ³ Киселева, Н. А. (2007). Рекреационные технологии в Псковском регионе. *Псковский регионологический журнал*, 4, 53-58. Кусков, А. С., Голубева, В. Л., & Одинцова, Т. Н. (2005). *Рекреационная география*. URL: <https://www.asu.ru/files/documents/00005786.pdf> (08.09.2022). Сидорук, А. В., & Васильчук, В. М. (2017). *Рекреология*. Запоріжжя: Запорізький національний університет. Силюянов, К. А., Алексева, О. В., & Артеев, Д. (2017). Рекреационно-оздоровительная деятельность различных категорий населения. *Студенческий научный форум*. URL: <https://scienceforum.ru/2017/article/2017039992> > <https://scienceforum.ru/2017/article/2017> (Vol. 39992).
- ⁴ Cherniavska, T. (2017). Transport and communication system of Ukraine self-reliant development challenges and prospects, monograph. Nowy Sącz, Nova Sandec, 493.

tion to the tourist and recreational resources of the territory⁵. The basis of such resources, including the methodological one, make:

- substances of recreation studies and recreational systems⁶. In a general view, the recreational industry involves the implementation of all types of activities that are somehow related to the processes of health-improving and physical recovery of a person;
- legislative basis for specially protected areas, recreation areas and resorts⁷. In a general view, a person is allowed to use the freedom of choice and find him/herself in the environment of action in areas where there are conditions for restoring health, strength and energy through the mobilization of an emotional resource;
- climate and recreational potential and resources of the state⁸. In a general view, in each state, the forces of the volunteer movement are mobilized to conduct propaganda in matters of expanding access to ecologically clean and protected areas of the territory;

⁵ Багрова, Л. А., Багров, Н. В., & Преображенский, В. С. (1977). Рекреационные ресурсы (подходы к анализу понятия). *Известия АН СССР. Серия Географическая*, 2, 5-12. Гировка, Н. Н. (2012). *Рекреационные ресурсы*. Нижний Новгород: ФГБОУ ВПО «Нижегородский гос. архитектурно-строительный ун-т».

⁶ Shcherbina, O., & Shembeleva, E. (2014). Modeling recreational systems using optimization techniques and information technologies. *Annals of Operations Research*, 221(1), 309-329. Рутинський, М. (2010). Концепція життєвого циклу територіальної рекреаційної системи в сучасному теоретичному арсеналі рекреаційної географії. *Вісник Львівського університету. Серія географічна*, 38, 310-317.

⁷ Bajda-Gołębiewska, M. (2011). Szlaki turystyczne na obszarach chronionych. *Ekonomia i Zarządzanie*, 3(1), 57-69. Dudek, A., & Kowalczyk, A. (2003). Turystyka na obszarach chronionych – szanse i zagrożenia. *Prace i Studia Geograficzne*, 32, 117-140. Sawicki, B., & Harasimiuk, M. (2014). *Rola obszarów chronionych w rozwoju edukacji, turystyki i gospodarki*. Wyd. FREL.

⁸ Викулов, В. Е. (2004). Рациональное природопользование: от теории к практике. *Вестник Бурятского государственного университета. Биология. География*, 3, 69-77.

- program directions for the development of sanatorium-resort and recreational industries⁹. In a general view, efforts are combined to systematize the conditions aimed at providing recreation, which should be beneficial on the scientific and methodological basis of interaction with nature and landscape of the largest and widest possible range of the population;
- specifics of hotel services in resort areas¹⁰. In a general view, business efforts are being made to expand the network of comfortable recreational services with the involvement of the entertainment transportation industry;
- modern market of the therapeutic rest¹¹. In a general view, an increasing number of medical and health-improving services, events and means with the properties of a motor character enter the market.

The analysis of scientific and methodological developments on the topic under study, for example¹², reveals a positive trend in the direction of a closer connection between the methodological positions of motor recreation and the theoretical approaches of physiology, physical culture and recreation studies. The value of educational and methodological developments is enhanced by reliable characteristics of the parameters, principles, means and functions of motor recreation. Nevertheless, it should be noted that despite the existence of a number of developments of a methodological orientation, for example, such as¹³ etc., it turns out that they underestimate fitness

⁹ Чекалин, В. С., & Кострюкова, О. Н. (2011). Туристско-рекреационная сфера в контексте структурной модернизации региональной экономики. *Теория и практика сервиса: экономика, социальная сфера, технологии*, 3(9), 16-28.

¹⁰ Шматько, Л. П., Жолобова, Л. В., Ляшко, Г. И., Рубаник, А. Н., Тахтамышев, В. Г., Ушаков, Д. С., & Хмелев, В. В. (2010). *Туризм и гостиничное хозяйство*. Ростов-на-Дону: Феникс.

¹¹ Walker, J. R. (2002). *Introduction to hospitality* (pp. 3-37). Prentice Hall.

¹² Боярская, Л. А. (2021). *Теоретические основы двигательной рекреации: учеб.-метод. пособ.* Екатеринбург: Изд-во Урал. ун-та.

¹³ Альмухамедова, О. А., & Чубко, Ю. В. (2014). Рекреационный комплекс: типы, задачи и условия формирования. *Современные наукоемкие техно-*

technologies and sets of exercises that have a significant record of use in a number of countries of the world.

It should be noted that the motor function of a person, as follows from the data in Table 1.1 and Table 1.2, occupied at all times one of the central places in all systems of health-improving recreation. Yet, until recently, it has not reached the social level of recognition of the quality of the productive force, according to the criteria of health-improvement and restoration, physical development, physiological and strengthening systemic effects on a person.

Table 1.1. Types of elementary recreational activities

No.	Name of the types of recreational activities	Examples of elementary recreational activities
1	Climate therapy	Insolation, air baths, sleeping in the open air, health path
2	Balneotherapy	Internal and external use of mineral waters, mud therapy
3	Indoor mobile games	Dancing, attractions, general physical training
4	Water procedures	Swimming in the pool, showers, baths
5	Low-motion games	Billiards, not active attractions
6	Motion water activities	Swimming, rowing, water skiing, paddle boat, sailing, diving, etc.
7	Fishing, hunting	Fishing, hunting
8	Passive indoor activities	Reading, TV, movies, conversations, passive games, lectures, theatre, collecting, etc.
9	Sports tourism	Hiking, cycling, mountain, and ski tourism
10	Sightseeing	Walking tours, bus tours
11	Sports games and exercises	Hockey, football, skiing, skating, volleyball, swimming, sports games

логии, 7-2, 150-152. Симонян, Г. А. (2009). Рекреационная отрасль, особенности ее регулирования в современных условиях. *Российское предпринимательство*, (5-1), 137-143.

Table 1.1. continued

No.	Name of the types of recreational activities	Examples of elementary recreational activities
12	Amateur outdoor activities	Gardening and horticulture, beekeeping, herbarium collection, etc.
13	Walks	Walks in the forest, picking mushrooms, berries, etc.

Source: Lück, M. (Ed.). (2008). *The encyclopedia of tourism and recreation in marine environments*. Cabi.

Studying the glossary (Appendix 1) and linking the definitions given in it to the basics of physical culture in terms of the usefulness of the action as, for example, shown by researchers¹⁴ and others, further, the recreational industry must be attributed to the environment of social activity, as its full-fledged productive force. The field of such activity is known – it is aimed at maintaining, preserving and strengthening human health based on the development of conscious motor activity and reaction to a motor stimulus. There is every reason to continue this thought. Thus, there is a well-known position that physical activity is formed in a person who absorbs the processes of 1) conscious comprehension of the totality of spiritual principles, knowledge and values, culminating in activity, and 2) development of physical skills and abilities that allow one to improve health, act and provide own living. Both are intended for the general or targeted development

¹⁴ Антонова, Э. Р. (2021). Общеразвивающие упражнения. Комплексы. URL: <http://elib.cspu.ru/xmlui/handle/123456789/10918> (08.09.2022). Мискевич, Т. В., & Старовойтова, Т. Е. (2019). *Оздоровительные системы физической культуры*. Могилев: МГУ им. А.А. Кулешова. Саенко, В. Г., Саенко, Г. В., & Толчева, А. В. (2017). Фактор здоровья, физической и мыслительной способности человека: глобализационные процессы приведения в действие. *Modern Problems of Improve Living Standards in a Globalized World. Opole-Berdiansk-Tbilisi-Slovyansk-Kropyvnytsky*, 316-321. Шишина, Е. В., Башкирова, Л. Н., Костенко, И. М. (2021). Лечебная физическая культура. Лечебные комплексы для укрепления здоровья. URL: <https://books.mts.ru/ereader/483299> (08.09.2022).

of the potential of motor and intellectual abilities, mental and executive mechanisms of perfection, necessary for the use in home and public environments.

Table 1.2. Types of recreational activities

Index	Name of the type of recreational activity	Examples of the types of recreational activities
β1	Swimming	Open water swimming, indoor pool swimming, winter swimming, bathing in springs
β2	Water attractions	Water slides, waterfalls, hot tubs, water games
β3	Water procedures	Sauna, shower, baths, water massage, etc.
β4	Sunbathing	Sunbathing, insolation, etc.
β5	Ski slope	Slalom, downhill, snowboarding, etc.
β6	Winter rides	Skiing, skating, sledding, snowmobile riding
β7	Ski instruction	Instruction, training, education, etc.
β8	Mountaineering	Ascent, traverse, descent
β9	Rock climbing	Rock climbing
β10	Cave tourism	Cave tourism
β11	Tourist trip	Non-categorical trips: hiking, mountain hiking, ski, water trips, car drives, cycling, motorcycling, horse riding, etc.
β12	Walk	Walking in gentle mode
β13	Motion games	General physical training, bowling, bodybuilding, etc.
β14	Communication	Conversation, chatting, exchange of opinions, etc.
β15	Participation in exhibitions	Exhibition, presentation, etc.
β16	Business meetings	Negotiations, signing of an agreement, discussion of programs, etc.
β17	Shopping	Retail purchases, wholesale purchases, purchase of souvenirs, etc.

Table 1.2. continued

Index	Name of the type of recreational activity	Examples of the types of recreational activities
β18	Climate therapy	Use of climatic factors: healing air, ultraviolet radiation, comfortable weather, etc.
β19	Balneotherapy	Use of mineral water, spring water, koumiss, kefir, etc.
β20	Mud therapy	Use of brine, silt, mineral mud
β21	Health path	Dosed walking
β22	Bus tour	Local educational trips accompanied by a guide using a bus
β23	Walking tour	Local educational walks with a guide
β24	Visiting museums	Informative visits to museums, house-museums, exhibitions, etc.
β25	Information and cognitive activity	Individual development of the route, the use of maps, booklets, guides
β26	Picking berries, mushrooms	Picking berries, mushrooms, nuts, herbs, etc.
β27	Fishing	Winter fishing, spinning, etc.
β28	Hunting	Winter hunting, summer hunting, dog hunting, dog training
β29	Stocking	Stocking of berries, mushrooms, vegetables, fruits, herbs
β30	Visiting holy places	Visiting monasteries, holy places, etc.
β31	Religious sacraments	Baptism, communion, confession, etc.
β32	Participation in religious holidays	Liturgy, main religious holidays
β33	Voyage	River, sea, lake voyage
β34	Sea trips	Scooter trips, boat trips, water skiing, jet ski, etc.
β35	Diving	Scuba diving, spearfishing, underwater filming, etc.
β36	Yachting	Yachting, boating, etc.
β37	Expedition	Specially organized trips, research and search trips

Table 1.2. continued

Index	Name of the type of recreational activity	Examples of the types of recreational activities
β38	Air flight	Hot air balloon, hang glider, monoplane, parachute, helicopter, airplane
β39	Robinsonade	Adventures in solitude
β40	Horse ride	Horse, camel, deer rides
β41	Road trip	Travel by private car, car rally
β42	Theater	Visiting performances, shows, concerts
β43	Show	Visiting nightclubs, shows, festivals
β44	Recreational nutrition	Visiting famous restaurants, cafes, bars, national cuisine, etc.
β45	Low-motion games, casino	Casino, billiards, etc.
β46	Dancing	Dancing, ball, etc.
β47	Category trips	Category trips: hiking, mountain trips, water trips, skiing, horse riding, etc.
β48	Sport games	Football, volleyball, gorodki, lapta, etc.
β49	Tourist, sports training	Educational and training trips, training
β50	Instructor training	Secondary and higher instructor training
β51	Qualification training	Acquisition of new professional knowledge, skills, abilities, etc.
β52	Incentive tourism	Combining the tasks of training, advanced training and recreation
β53	Participation in scientific congresses	Seminars, sections, congresses, conferences, etc.
β54	Participation in art festivals	Speeches, exhibitions, presentations, etc.
β55	Attending sports competitions	Attending Olympics, championships, competitions, matches, etc.
β56	Scientific discussions	Discussion of scientific problems, symposia

Table 1.2. continued

Index	Name of the type of recreational activity	Examples of the types of recreational activities
β57	Participation in memorials	Visiting memorable places and events
β58	Trekking	Hiking without luggage
β59	Environmental activities	Restoration of violations of the landscape, natural complex, biocenosis, etc.
β60	Landscape observations	Observation of unique, typical, attractive landscapes
β61	Scientific environmental activities	Nature conservation for scientific purposes
β62	Participation in local holidays	Participation in holidays: wedding, birthday, etc.
β63	Observation of unusual phenomena	Observation of unusual animal behavior, plants, activities, etc.
β64	Amateur labor	Gardening, horticulture, animal husbandry, floriculture, etc.
β65	Craft training	Pottery, embroidery, knitting, carving
β66	Participation in folk holidays	Folklore, ethnic holidays, concerts, etc.
β67	Creative activities	Literary studies, painting, etc.

Source: Кусков, А. С., Голубева, В. Л., & Одинцова, Т. Н. (2005). *Рекреационная география*. URL: <https://www.asu.ru/files/documents/00005786.pdf> (08.09.2022).

The formation of an organic network of the recreational industry can be facilitated by scientific and methodological developments transferred from the sphere of physical culture and sports. This is indicated by the similarity, acceptability and identity of definitions and approaches to the organization and management of processes, which is proved in the sources¹⁵ and others. It should only be added

¹⁵ Butenko, H., Goncharova, N., Saienko, V., & Tolchieva, H. (2017). Use of health tourism as a basis for improving physical condition of primary school age children. *Journal of Physical Education and Sport*, 17(1), Art. 6, 34-39. Kuba, L.,

to this opinion that physical culture was originally intended not only to create a potential opportunity to meet the natural needs of a person in motor activity and to ensure, on this basis, the necessary physical capacity in life. It should be perceived even more broadly, namely, as a source of supply for the society of citizens adapted to an active position in the socio-economic system, mobilizing in it not just activity efforts, but those that are subject to the conditions of self-sufficiency and self-provision. In particular, in the field of production, physically hardy workers are required, and in the field of sports – physically gifted athletes¹⁶ who have passed selection and testing. In order to take a less labor-intensive path and transfer organizational and managerial positions from the environment of physical culture and sports to the environment of recreational industry organizations, it is necessary:

1. to borrow certain provisions of organization and management from the structures of physical culture, which seems more loyal to the enthusiast who begins his movement, who wants to master the selected elements of motor culture, leaving for some time without attention the provisions put forward by the field of sports and higher skill;
2. to develop several physical systems that are distinguished by a variety of structures in order to find a consumer at the early stages of choosing one of them and attract consumer's attention by combining physical exercises and movements into a series of technological elements of an attractive action, including: a) a training complex of single physical exercises, their series and ways of performing, b) the educational structure of interaction, c) the sports

& Paruzel-Dyja, M. (2013). *Fitness: nowoczesne formy gimnastyki: podstawy teoretyczne*: podręcznik. Katowice: Wyd. Akademii Wychowania Fizycznego im. Jerzego Kukuczki. Тулайдан, В. Г. (2020). *Оздоровчий фітнес*: навч. посіб. Ужгород: ТОВ «Бест-Принт». Чеховська, Л. (2019). *Оздоровчий фітнес у сучасному суспільстві*: монографія. Львів: ЛДУФК ім. Івана Боберського.

¹⁶ Pokusa, T., & Pokusa, F. (2015). *Zawodnik na rynku sportowym w Polsce. Ekonomiczno-społeczne uwarunkowania rozwoju gospodarczego – zarządzanie informacją i nowymi technologiami: Collective Scientific Monograph. Opole: WSZiA, 376-399.*

and activity sequence of performance, d) the recreational and health-improving function, e) the motor-rehabilitation component of efficiency.

From the named conditions, parts and approaches to the systems of restoring health, maintaining working capacity, strengthening the motor and mental abilities, and the like, an idea is formed about the methodological approach to the study of the recreational environment of human activity. That is, for the implementation of the analyzed activities, not even in full, but in terms of its staging, a system of associations, organizations and schools should be formed, which face a number of specialized functions put forward by the recreational industry, supplemented by motor expediency. It is necessary to form:

- *scientific foundations and knowledge in the field of physical education*. Method of achievement: a pedagogical process, which is subject to: 1) the development of target knowledge, skills and abilities in order to develop adequate behavior in the environment of physical events, 2) the development of primary, turning into versatile physical and mental abilities of perception of the performed action. Knowledge forms the worldview of an individual, which strengthens his/her psychological stability and aspiration to complete the started work successfully, skills. Skills ensure preparation for the implementation of the target action, brought to automatism after conscious repeated movements and provide for the development of the “individual reflex-algorithmic arc”, and abilities facilitate further application of the method of performing the action mastered by a person. The scale of the personification of the function is determined by the needs of the society for physically prepared citizens who are able to activate energy and direct it to mastering new labor processes, improving individual skills and mastering related activities;
- *a system of familiarization with physical exercises at cognitive levels of training*. Method of achievement: an educational process to move to 1) mastering the means of physical improvement and transformation of body organs, using the pedagogical method of performing exercises “from simple to complex”, and 2) motor memorization of movement, action or motion in space, which

form the basis for the development of physical qualities of the body, internal organs and systems. Initial skills develop conditions for reflex memorization of the order in which movements are performed in an exercise. The scale of the personification of the considered function is supported by the proper general culture of the population, the prosperity of families, and then, by the privileges created for this purpose in the state for certain categories and strata of the population;

- *environment of the training process of personal physical training.* Method of achievement: an educational process aimed 1) to develop and improve motor skills and 2) to improve physical qualities. Skills and qualities are developed in accordance with the qualification requirements put forward for the assignment of a special category to athletes in relation to the program for mastering a specific physical direction of ability development. The scale of the personification of the function is identified with the demand for the type of general physical fitness of an athlete and the relevance of professional or sports activities;
- *paradigm of strengthening the positions of the physical development of the body.* Method of achievement: the process of changing the parameters, sizes, shapes and functions of the body under the influence of: 1) natural conditions for the organization of physical activity, alternation of nutrition, compliance with the regime of work and rest and favorable 2) purposeful impact of scientifically based and methodically verified complexes of physical exercises. The dimensions, forms and functions of the body are brought to the correspondence of the proportions of the biological and psychophysiological essence of a person. The scale of the personification of the function depends on the volitional qualities of an individual and the level of material accessibility to the social system of interaction;
- *methodological basis for advancing along the chain of physical perfection and sportsmanship of an individual.* Method of achievement: implementation of a pedagogical and training program: 1) to master the level of sports and competitive activity and 2) to prepare to gain the highest sports result in competitions and tournaments. Sports mastery is based on the physical perfection

of an individual and results in a sports achievement based on the use of the methodological impact of physical exercises, their complexes and series, on mental and physiological qualities, which allow revealing reserve capabilities and evaluating the limiting levels of the body according to the criterion of motor activity. The scale of the personification of the function is determined by the factors of the internal state of the athlete's psyche through the fusion of the energy of the intellectual, social and emotional phenomena, and, after this, the external stimulus, which can be entertainment, attractiveness and enthusiasm of the population for the sport and competitive processes, the state's interest in financing the movement and development of specialization, focus on the highest achievements in sports;

- *environment of physical recreation.* Method of achievement: mainly based on the tourism and health-improvement system in the form of 1) travel, 2) excursions and 3) hiking trips. Health-improvement within this system is based on therapeutic measures, mass forms of physical culture, physical exercises, their complexes and series, borrowed from simplified sport games, entertainment and training systems used for active pastime of a person in nature or in entertainment places where active movement is allowed. The scale of the personification of a function is oriented towards the usefulness of switching the attention of an employee from one type of activity to another, which has restorative qualities or an effect that reduces the intensity of production and labor, or getting pleasure from a newly chosen occupation, outdoor entertainment, etc.;
- *way to restore motor functions of the body.* Method of achievement is based on the: 1) rehabilitation of an employee through a targeted recovery process, 2) compensation to the employee for temporarily or partially lost motor abilities, 3) treatment of an employee in case of injury and manifestation of consequences. The recovery process is multifaceted. It requires a regulated impact of specially selected physical exercises performed through iterative repetition according to the structure of recommendations, combining massage, water procedures, physiotherapy and many other procedures, activities, technical devices and means

of influencing the cause of the disease. The scale of the personification of the function of restorative activity is determined by the factors of intensification of production and labor, industrial accidents, domestic and industrial injuries, general and occupational diseases.

Thus, the tasks of the recreational industry are amenable to accounting and classification, and, consequently, the development of demand dynamics. This allows them to be included in a wide range of research tasks to be solved in order to start considering the features of educational and applied functions, which not only help to accelerate the development of a person who is guided by his/her own needs in the field of physical formation, but also turns own interests to solving the specific functions of a rare character. These functions include not only tasks for preparing for work and service in extreme conditions based on the physical and moral-volitional qualities revealed and developed in a person, but also on the achieved reactive and health-improving and rehabilitation functions that are associated with the use of physical culture for organizing meaningful leisure, preventing fatigue and discomfort, and mobile restoration of temporarily lost body resistance. The following circumstance should be also remembered¹⁷: *strong-willed, educational, disciplinary, aesthetic and purely professional training of an*

¹⁷ Bakhmat, N., Kruty, K., Tolchieva, H., & Pushkarova, T. (2022). Modernization of future teachers' professional training: on the role of immersive technologies. *Futurity Education*, 2(1), 28-37. Vlasov, V., Kazimierz, Ł., & Tolchieva, H. (2022). *Socio-psychological adaptation and coping-strategies of the individual in different conditions of socialization. Socio-Economic Systems of the Region in the Conditions of Sustainable Development: Realities and Prospects*: monograph. Opole: The Academy of Management and Administration in Opole, 265-292. Полулященко, Ю. М., Саєнко, В. Г., Толчева, Г. В., & Śliwa, S. (2020). Педагогічні засоби фізичного виховання та оздоровчих систем й практик в сучасному застосуванні. *Вісник Луганського національного університету імені Тараса Шевченка (педагогічні науки)*, 1(332), 177-193. Саєнко, В. Г., & Толчева, Г. В. (2021). Організація педагогічної діяльності вчителя з фізичної культури за когнітивними цінностями. *Педагогіка й сучасні аспекти фізичного виховання. Краматорськ: ДДМА*, 132-145.

individual takes its place among the functions inherent in the general culture, in the performance of which the means of physical culture are directly used. This allows us to talk about the beginning of a person's movement towards harmonious development. The source for such a movement is the formation of the recreational industry with its natural pedagogical approach to the development and formation of an individual. However, it is impossible to achieve the goal using only one way. This point should be taken into consideration and be correlated with the dialectical way of the development of society.

Therefore, in order to complete the consideration of the evidence-based foundations for the establishment of the recreational industry in society, the dialectical spheres of physical culture enrichment should be noted, because they bring other areas of activity into the study. Then, in the interpretation of the perception of these areas in the recreational industry, physical culture is:

1. the part of the culture of the society, which has a set of values, norms and knowledge created and used for the purposes of: a) physical, b) mental and c) spiritual development of a person based on increasing his/her motor activity, and, along with this, and appealing to healthy life systems and ways of mastering adaptive systems. The needed tools are provided by the environments that are used in medical and physical culture sphere, and which are consistent with the means of physical education, physical training and physical development of an individual. There is a similar challenge in the recreational industry;
2. the keeper of a number of specific features that are perceived by the society as an active motor activity of a person in the field of industrial relations and connections, as positive emotions and possessions in the field of person's physical well-being, and, finally, as a complex of material and spiritual values in the field of effective development of a person's physical potential. The above-mentioned is also observed in the recreational industry, because this integrity is created by educational, pedagogical and training methods of influencing motor accuracy;
3. the carrier of the following components: a) physical education as a mechanism for the formation and filling of a person's worldview, b) sports readiness as a scheme for realizing person's aspirations

for physical perfection, c) physical recreation as rest and physical normalization of body functions, and, finally, d) motor rehabilitation as a mechanism for health-improvement of a person, restoring the functions and working capacity of an employee. The same components are retained even after leaving the organic system of the recreational industry.

All above-presented thoughts allow getting closer to the resolution of the specific function of physical culture, which can be now conditionally called “physically developing”, in which the organization of the recreational industry, as an activity, is at present assigned an auxiliary role due to the recognition of its strengthening properties and not taking into account its developmental purpose. Its current role, in our opinion, is reduced to *creating the possibility of satisfying the natural needs of a person not only in physical activity, but also in ensuring the strengthening of the physical capacity resource of an individual on this basis*. Its auxiliary role will turn into a leading one from the moment when the recreational industry takes a full-fledged place among the productive forces of the society. To do this, it is necessary to set in motion the named set of functions that prepare a person for the transition to a new, higher level of mastering physical exercises. This will make it possible to benefit from this transition, because the time has come to use a more effective system for regulating the functions of the body, and this means the transition of a person to a more effective stage of development in the environment of the recreational industry. It is possible to implement this in the recreational system of activity, if the effective methodological basis of motor exercises, arranged in a methodical sequence that provides person’s usefulness, is found. In addition, this also means that the recreational system is capable of preparing a person for action at its own level, but, after exhausting its resource, it must transfer a person for development to a more structured environment: 1) to the environment of physical training, 2) or to the sports environment, 3) or to the environment of preparation for the productive activities of the state. Each of these environments is characterized by special systems of organization, management, pedagogical and recreational support. Many positions of these environments are known.

1.2. Substantiation of organizational approaches to process management

To achieve the goal of choosing a means of regulating relations in the environment of recreational industry organizations, we should delve into the subject of research, hidden behind the content of the choice of elements and provisions of management systems. Practice shows that the scientific and methodological environment in the field of physical culture and sports has the leading position for ensuring activities within the recreational industry. In this variant of the search, the clear moment is the coordinate of the beginning of the movement. It includes: 1) physical exercises recommended for implementation, 2) the quality and skill of their implementation, 3) the general scientific and pedagogical configuration of their implementation.

The communication between specialists employed in such areas as sports and recreational organizations has long been formally an integral part in this environment. This is evidenced by the materials of sources¹⁸ and others. However, in the end, if we are talking about the recognition of the methodological significance of the phenomenon, then only two general concepts remain in circulation – “management” and “administration”. These concepts set the course for the methodological support of the development of functional relations in the recreational industry.

These concepts are perceived as synonyms, or a broader methodological meaning is invested in the concept of “administration”. With

¹⁸ Olex-Zarychta, D. (2005). *Fitness teoretyczne i metodyczne podstawy prowadzenia zajęć*. Katowice: Fundacja Akademii Wychowania Fizycznego. Иванов, В. Д., & Салькова, Н. А. (2019). Фитнес-программы в системе занятий по физической культуре в вузе. *Физическая культура. Спорт. Туризм. Двигательная рекреация*, 4(2), 49-59. Незгодинская, В. В. (2013). Использование фитнес-аэробики для оптимизации физического воспитания студенток вузов. *Вестник Полоцкого государственного университета. Педагогические науки: науч.-теорет. журнал*. Новополоцк: ПГУ, 15, 155-159. Южакова, Н. В., & Удалова, Е. П. (2016). Использование фитнес-программ в практике физического воспитания студенток. *Молодой ученый*, 3, 1037-1040.

regard to these concepts, there is a need to pay attention first to the distinctive features of: 1) separately “administration”; 2) separately “management”.

This study pays attention to those developments that are used in organizations of physical culture and sports, which presumably can be spread among organizations of the recreational industry, while developments of a more general nature can serve as a theoretical basis for the movement of the system towards interaction. The consideration of these concepts can be performed in the following manner – for position A – administration, for position B – management.

Position A. The concept of “administration” in general terms is considered as an element and even as a function of organizational systems of various nature, among which the priority are biological, social and technical, which ensure the preservation of the target structure, the maintenance of the mode of activity and the implementation of the programs being set. This interpretation of the concept allows each time to single out its following feature – this concept is used by specialists to characterize the specific managerial activity of a person in various fields of interaction¹⁹. Therefore, returning to the environment of physical culture and sports, it is legitimate to use the concept of “administration” in relation to all known types, branches, varieties and families of physical activity. It is appropriate to state this for the reason that an athlete (or a future athlete) affects objects by:

- *interaction* with representatives of the living environment. For example, dealing with camels, zebras, horses, deer, dogs, elephants, etc. In the activities of the recreational industry, a healing effect has been noticed due to human interaction with dolphins, zebras, cats, horses, dogs and other animals;
- *communication* with inanimate objects. For example, dealing with sports vehicles and devices such as cars, buggies, bicycles, helicopters, boats, motorcycles, sailboats, airplanes, sleds, yachts,

¹⁹ Voropayeva, T., Jarvis, M., Boiko, S., Tolchieva, H., & Statsenko, N. (2022). European experience in implementing innovative educational technologies in the training of management specialists: current problems and prospects for improvement. *IJCSNS International Journal of Computer Science and Network Security*, 22(7), 294-300.

etc. In the activities of the recreational industry, a healing effect has been also noticed in the process of riding run bikes, bicycles, scooters, stilts and other mechanisms, devices, and simulators.

It should be noted that notions “influence on an object” and “communication with such an object” mean the technology of controlling an object by an athlete or a student in motion. For example, in the dictionary²⁰, “controlling a horse” means a combination of the interaction of a rider with a horse by such means of control as the actions of the body, reins, leg. The concept of “a sociobiological object” also appears in the same series of concepts. It means direct participation of an athlete in the physical process, which is described by a different concept – the concept of “managing the preparation of an athlete” or “interaction with another athlete”. In the same perspective, the processes of optimizing the behavior of an athlete and its expedient development according to the plan of general physical training, ensuring the achievement of the highest possible level of sports results, are perceived. Achieving such a result is possible if scrupulous fulfillment of the tasks of the training process is ensured. In such a process, a complex of operations can be provided, the task of which is to perform and meet: 1) a structured sequence of exercises and their series, 2) the conditions of the calendar of sports results, 3) the parameters of competitive activity, the level of preparedness and development of the functional systems of the body, 4) testing according to the scheme and comprehensive monitoring of the level of preparedness and health status. If to pay attention to details, it turns out that in recreational systems there are elements that are perceived in a similar way. For example, there is a) a training program, b) a functional fitness system with its conditions for performing movements, c) a system for monitoring the rhythm of performing physical exercises and movements, d) a means of testing the neuro-psychic state of the body.

In order to advance in the research, it is necessary to pay attention to the fixation of the natural moment of interest shown by the society to the new system of motor training, which is offered in

²⁰ Суслов, Ф. П., & Вайцеховский, С. М. (1993). *Толковый словарь спортивных терминов*. Москва: Физкультура и спорт.

the recreational industry. For comparison, it should be said that in the environment of physical culture and sports as a kind of useful activity, the attention of the society is focused on the totality of parameters and characteristics of economic utility that accompanies relationships. In the near future, the social system will also turn to explaining this phenomenon, when a discussion begins about the formation of an independent opinion about the usefulness of the recreational industry, which is gradually dividing into three branches: the health-improving industry, the sport-development industry and the sports-entertainment industry. Therefore, physical culture and sports as a branch of the economy have long been taking their place among the types of activities in the field of non-material production, in which there is an economic function, but in it, so far, the social function of the society remains a priority. The same attitude prevails in relation to organizations of the recreational industry. Yet, the state of its movement towards progress allows joining the definition given in the textbook²¹, which says that the management of physical culture and sports is a system of specific forms and methods of conscious activity aimed at ensuring the effective functioning and systematic development of the industry ... in order to most fully meet the needs of people in physical improvement. Replacing further the term “Management of physical culture and sports” with the term “Management of the recreational industry”, it is easy to verify the acceptability of this definition in relation to the subject of this research. However, it is required to question the value of management to reflect the completeness of the organization of intercompany relations. On the one hand, it is required to maintain the priority for the environment of intra-company interaction regulation, and on the other hand, the methodical nature of non-violent management should be ousted from circulation by management tools, which are based on the proposal of a management decision. For this reason, the search for evidence in favor of management should continue.

It is appropriate to initially pay attention to the following circum-

²¹ Wise, A. N., & Meyer, B. S. (1997). *International sports law and business* (Vol. 1). Kluwer Law International BV.

stance: management in physical culture and sports is characterized by a number of patterns and only few of them can be transferred to the recreational activities. One of them should be named and transferred for use without evidence. It is about *differentiation*. That is, the same factor as differentiation in physical culture is inherent in the recreational industry, but in a more concentrated form, which will be shown below. The essence of this pattern is manifested in the fact that management, originating initially as production management, can be traced in the chain of management schools in the process of its historical development. For example, these are the school of human relations, the school of behavioral sciences, the school of social systems, etc. This means that humanity is increasingly shifting its attention to the management of people and their teams, which plays a leading role in shaping not only the economic sphere²², but also the sphere of social life²³. Therefore, it is no coincidence that within the framework of the management of the social sphere in general and the management of physical culture and sports in particular, which includes, so far, the recreational industry, more and more importance is attached to management as one of the specific types of activity within the framework of a specific functional physical education and sports organization.

It is necessary to stress here that in the recreational industry a large share is occupied by pedagogical management, personified in the interaction of the object and the subject of activity. This defines the peculiarities of marketing²⁴, which also initially originated as

²² Zahorodna, O., Saienko, V., Tolchieva, H., Tymoshchuk, N., Kulinich, T., & Shvets, N. (2022). Developing communicative professional competence in future economic specialists in the conditions of postmodernism. *Postmodern Openings*, 13(2), 77-96.

²³ Толчева, Г. В., Саєнко, В. Г., & Śliwa, S. (2021). Управління процесами педагогічної соціалізації особистості на засадах фізичної культури. *Вісник Луганського національного університету імені Тараса Шевченка (педагогічні науки)*, 2(340), Ч. 1, 38-54.

²⁴ Покуса, Т. (2008). *Логистическо-маркетинговые процессы обслуживания клиента в управлении цепочкой поставок*. Катовице–Ополе: Wydawnictwo Instytut Śląski Sp. z o.o., 2008.

a production-economic specific type of demand management for the manufactured product and its promotion to the market. By turning the product into a commodity, and connecting to it non-commercial products, which include a variety of socio-cultural services provided in the field of physical culture and sports, and, consequently, the recreational industry, which is intangible, the importance of marketing has risen to scientific heights. Without reducing the importance of marketing functions, it is required to move on to the consideration of the content of management.

B. The concept of “management” has become widespread in the field of human interaction as a wider range of entrepreneurs, commodity producers and service organizations are involved in market relations. The basic understanding of the concept of “management” is based on the knowledge that involves the following clarifications.

Management is rather:

1. a *description* than a precise definition of the concept of “administration” that already existed and was previously widespread;
2. a *term* from the field of administration, which is at the stage of clarifying its meaning in regards of the functions of organizing interaction.

As it follows from the clarifications, both do not bring closer to the perception of their essence by the general population in the required perspective. Despite the fact that in the scientific sources²⁵ and others, there are enough ideas that the *meaning, perception and presentation*

²⁵ Saienko, V. G., & Tolchieva, H. V. (2019). Conceptual community of psychological pedagogy challenges of human intelligence by influence of development of enterprise function. *Mechanisms of stimulation of socio-economic development of regions in conditions of transformation: monograph*. Opole: *The Academy of Management and Administration in Opole*, 302-313. Блюм, М. А., Коробова, О. В., & Уляхин, Т. М. (2016). *HR-менеджмент в системе управления коммерческим предприятием*: монография. Тамбов: ООО «Консалтинговая компания Юком». Гуляев Г. Ю. (2018). *Экономика и современный менеджмент: теория, методология, практика*: монография. Пенза: МЦНС «Наука и Просвещение». Коваленко, Б. Б. (2015). *Современные проблемы менеджмента*: учеб. пособ. Санкт-Петербург: Университет ИТМО.

to the society of the content of management is almost continuously expanding and displacing the concept of management. The same can be said if to pay attention to the interpretation of the term in reference books. Thus, in the reference book²⁶ the concept of “management” is defined as the effective use and coordination of resources such as capital, buildings, materials and labor in order to achieve specified goals with maximum efficiency. This definition has a theoretical value for the studied industry for the following reasons: a) this value partially acts as a background for organizing its functions, which are nature, fauna, climate, minerals, water expanses of rivers, lakes and seas, etc., and partially – b) creative connection of fiction and creative thoughts of a person, and this is a physical system of movement, a mechanism for performing physical exercises and movements, rhythmic accompaniment of an action. At the same time, the dictionary²⁷ gives a broader interpretation of the concept of “management”. This is 1) a way, a manner of dealing with people; 2) power and art of management; 3) a special kind of mastery and administrative skills; 4) management body, administrative unit. In our opinion, this representation of management should go through a filtering procedure in order to take its rightful place in the recreational system, where the functions of managing a person’s health have priority, and all other functions are relegated to the background of intra-company management. An important point in our conclusion about the content of management in the recreational industry is to define it as just a tool recognized by the society as an independent branch of science, which is on the next round of development and approval. That is, the processes of assessing the dynamics of its usefulness come to the fore. This is stated, for example, in the sources²⁸ and others.

²⁶ Петров, Ю. А., & Петрова, Г. И. (2022). Терминологический словарь-справочник: экономика, маркетинг, менеджмент. А–М. URL: <https://ru.bookmate.com/reader/l06xBdra?resource=book>

²⁷ Dictionary, O. E. (1994). *OUP. También pueden traer Cambridge Learner’s Dictionary*, CUP.

²⁸ Griffin, R. W. (2021). *Management*. Cengage Learning. Daft, R. L. (2015). *Management*. Cengage Learning. Schermerhorn Jr, J. R., Bachrach, D. G., & Wright, B. (2020). *Management*. John Wiley & Sons. Щербина, О. В. (2011).

From the works accumulated in the field of management, for example, sources²⁹ and others, it follows that the content of management is identified with the solution of specific tasks and problems posed to an organization³⁰. The revealed provision introduces a new feature of management – *management in a particular organization or “intra-company” management*.

This content of management, in fact, indicates the existence of a fundamental difference between management and administration as interaction processes that must be applied in the right place and in the proper sense. The most acceptable definition of this process is given by E.A. Utkin³¹, who considers this term as “... a special type of professional activity aimed at achieving optimal economic results by an enterprise operating in market conditions based on the application of diverse principles, functions and methods of the socio-economic mechanism of management”. A similar point of view is defended by specialists involved in management in physical culture and sports. These include works³²

Менеджмент. Презентаційний курс: навч. посіб. Київ: КНЕУ.

- ²⁹ Drucker, P. (2012). *Post-capitalist society*. Routledge. Taylor, F. W. (1914). Scientific management: reply from Mr. FW Taylor. *The Sociological Review*, 7(3), 266-269. Van den Berg, G. J. (2001). Duration models: specification, identification and multiple durations. In *Handbook of econometrics* (Vol. 5, pp. 3381-3460). Elsevier. Мескон, М. Х., Альберт, М., & Хедоури, Ф. (2007). *Основы менеджмента: учеб.* Москва: Вильямс.
- ³⁰ Baecker, D. (2003). *Organisation und management*. Frankfurt am Main: Suhrkamp. Kräkel, M. (2007). *Organisation und management*. Mohr Siebeck. Nicolescu, O., & Lloyd-Reason, L. (Eds.). (2016). *Challenges, performances and tendencies in organisation management*. World Scientific. Wolf, J. (2020). *Organisation, Management, Unternehmensführung: Theorien, Praxisbeispiele und Kritik*. Springer-Verlag.
- ³¹ Бомин, В. А. (2010). *Менеджмент физической культуры и спорта: учеб.-метод. пособ.* Иркутск: Оперативная типография «Перекресток».
- ³² Chelladurai, P., & Kim, A. C. H. (2022). *Human resource management in sport and recreation*. Human Kinetics. Hermanns, A., & Riedmüller, F. (Eds.). (2011). *Management-Handbuch Sport-Marketing*. Vahlen. Iasechko, S., Zaitsev, O., Pokusa, F., Saienko, V., & Harashchuk, I. (2022). Legal regulation of intel-

and others, which consider the social nature of the studied phenomenon.

Based on the accumulated experience, it should be hypothesized that the organizational components of *administration from the position of recreational activities* include a way of developing the movement of the socio-economic industry, united by the conditions of applied theory and practice of effective management of organizations with purely athletic and health-improving performance functions, while *management* is a supplier of systems for the rational organization of managing intra-company activities, in which the effective achievement of known results of human recovery is indicated and recorded. In order to arm ourselves with such a perception of the organizational mechanism for institutions of the recreational industry, in which there are elements of administration and management, then, in addition to general reasoning, we should engage in a detailed study of management. To do this, it is necessary to combine the thought with its perception as 1) a field of human knowledge that helps to carry out reasonable and effective administration, 2) a social layer of people performing operations and functions to manage and subordinate them, and, finally, as 3) a system of measures on reorientation of action towards effective business management, organization of providing means of interaction in the form of associations, enterprises and firms that can function only if modern methodological developments and scientific recommendations are used. Along with this, in order for the study to meet the requirement of objectivity, it is necessary to continue to define management based on the functions of spatial economics, economic cybernetics, digitalization of processes and events, culminating in the globalization of relations. However, there is still not enough data for this.

Therefore, based on the presented experience and linking the general positions of the theory and its essence according to the data of informatization of social structures, it becomes possible to complete the generalization of the common processes of logistical connections

lectual property in sports. *SPORT TK-EuroAmerican Journal of Sport Sciences*, 11, 45. Обожина, Д. А. (2017). *Управление физкультурно-спортивной организацией: учеб. пособ.* Екатеринбург: Изд-во Урал. ун-та.

regarding the content and use of the terms “administration” and “management”, as follows:

1. the concept of *administration*, from which it is expected to transfer the functional features of the organization of activity to the recreational industry, is designed to identify and evaluate the characteristics of a specific human activity, whatever it may concern, if it is consistent with the structure of the interaction itself in all variants of the natural and artificial environment. It strengthens the role and importance of a person in public, social and economic life. For this reason, this term should be perceived more broadly than the term ‘management’, because administration extends to the functions of any administrative activity, and in this case, with the industry under study, we should focus on the development of schemes and connections with a person’s social and economic life, i.e. on the development of an enclosing environment that provides life;
2. the concept of *administration in physical culture and sports*, from which it is expected to transfer the functional features of the organization of activity to the recreational industry, is intended to highlight the functional essence of a specific human activity in the same types of interaction. For this reason, this term is extended to the type of activity, i.e. on ways of organizing activities in the environment of institutions operating in the studied industry;
3. the concept of *management in physical culture and sports*, from which it is expected to transfer rational features of the organization of activity to the recreational industry, would be most correctly used to denote “intra-company” administration of activity processes. For this reason, in the indicated environment, there are no restrictions for this concept both in terms of their variety of techniques, and in terms of the diverse differences between the organizations themselves, if market relations and ties prevail in relations.

Everything that is presented here has a targeted evidence base, so that in further research the justification of ideas on the studied topic should be carried out using the following tools regarding the activities of an organization: a) management from the standpoint of the needs of “intra-company” managing of processes and

functions and b) administration from the standpoint of interaction with the external socio-economic environment. This operates under the condition of taking into account the specific structures of action and relying on industry interests. These prerequisites make it possible to introduce into the study the basic essential characteristics, among which management is considered together with the functions:

1. *scientific development of knowledge*. Management acquired this function a long time ago – at the moment, when it turned into an independent field of human knowledge, i.e. into the scientific branch. This scientific branch has concepts and theories that are based on laws and patterns, principles, forms and methods of purposeful activities of organizations in the administration process³³. A number of *general perception trends* should be brought into the recreational industry. They are based on a) effective administrative structures, b) forms of humanization and democratization of transformational administration for innovative technologies, c) mobility and professionalism of administration, d) a flexible system of freedom of action put forward by the market and exchange activities and conditions for the development of business and entrepreneurship. This means that the society dictates its own conditions for the development of the recreational industry, and this allows obtaining, understanding, explaining and systematizing scientific facts for the perception of the nature of managerial work from new positions. These positions are formed in health centers, territorial conglomerates, fitness clubs and other initiative associations. It remains to identify the cause and effect of the development of the phenomenon of the recreational industry and establish links between the factors and conditions under which joint physical exercises with a given rhythm of performance can provide the most effective result in improving a person and restoring his/her strength, which opens up for a person a different horizon of life support. In the meantime, while the scientific research on the studied topic is at the stage of inception, it is

³³ Duczmal, M. (2014). *Metody optymalizacji w zarządzaniu*. Opole: WSZiA.

possible to determine only the areas of data collection, the formation of public policy and solution of the problems of investing in activities;

2. *the art of human activity and development due to managerial canons*. The perception of management as an art of activity in the developed industry is possible, but only from the moment of effective application of knowledge and experience in the practice of administrative activities in this area. The subject of the study is the recreational industry, which has unlimited possibilities in the field of human health and recuperation. For example, these possibilities include a favorable climate, a sufficient number of sunny days, the saturation of nature with rich fauna and colorful flora. In regards with this, we should decide on the question whether the situation with endowing management with a characteristic of art in the recreational industry is really so relevant for the society. This statement is confirmed by the fact that in this industry the movement towards the consumer begins from the moment the *grounded recognition of the attractiveness and openness* of the proposed systems of physical development and improvement, health-improvement, recovery and restoration of human strength acting on a person from the position of fascinating complicity starts. To confirm this position, it is required to have information about: a) the effectiveness of the functioning of recreational institutions both in natural and artificial human habitats, b) potential factors of both external and internal interaction. This allows expanding the boundaries for the inclusion of fantasy and the formation of ideas in order to present to the public for discussion the special nature of recreational activities, substantiate its own system of values, and promote specific motives put forward by the structure of tasks into the monitoring environment. The process is united by management tools, in which the science and art of administration represent a kind of fusion of action that requires manufacturers not only to systematically replenish updated scientific knowledge, but also to constantly develop the personal qualities of an individual. It can be a manager, teacher or business organizer who can timely mobilize own ability to critically assess the situation and to take

action. There are plenty of goals for including such phenomena in the research. Primary among them are the successful application of knowledge in non-standard situations of practical activity, trusting interaction with temporary teams, the creation of an author's fitness system, etc.;

3. *activity process*. According to the economic law of cooperation and division of labor, the managerial function differs from the production one, but it is also implemented if it has a number of actions that are arranged in a single sequence, integrating into a type of activity. In this case, the type of activity, or as it will be further designated – the “fitness system”, is embodied in reality, saturated with a set of physical exercises and movements performed to rhythmic music. In each variant of the established interaction, managerial problems are solved, but with the involvement of the educational, pedagogical and professional experience of an instructor, the managerial process is personified in the functions of managing the fitness system. There are other essential characteristics, but for the organizations of the recreational industry, these are the main ones. In addition, these functions have already been developed in methodological works³⁴ and others. This circumstance allows drawing attention to the features of differences: it seems that they arise sporadically, are accepted by researchers intuitively, without providing a sufficient analysis of the achievements obtained through the application of technological management features. In contrast to what has been said, there is also a feeling about the existence of a motive for the validity of interest in such physical systems, which is put for-

³⁴ Saienko, V. (2019). *Relationship processes in business*: monograph. Opole: Publishing house of the Academy of management and administration in Opole. Watson, P., Davies, S., & Thilmany, D. (2008). Determining economic contributions in a recreational industry: An application to Colorado's golf industry. *Journal of Sports Economics*, 9(6), 571-591. Боярская, Л. А. (2017). *Методика и организация физкультурно-оздоровительной работы*: учеб. пособ. Екатеринбург: Изд-во Урал. ун-та, 2017. Бекетов, Н. В., & Денисова, А. С. (2008). Проблемы развития рынка рекреационных услуг. *Вестник ассоциации вузов туризма и сервиса*, (2), 2-8.

ward by science in relation to the scientific representativeness. It is reflected in sources³⁵ and others. Considering the conclusions presented in these sources, we can talk about the fact that the system of the recreational industry has a number of characteristic conditions of parametric value, which are interconnected and contribute to the exchange activity.

The driving forces include:

1. *recreational needs of an individual*. Their essence: satisfaction of individual needs in the restoration and development of the physical and mental properties, strengths and energy of a person, combined with the methods of his/her physical, intellectual and spiritual calmness and improvement;
2. *recreational needs of the society*. Their essence: satisfaction of the social needs of production and labor through the improvement, preservation and return to the productive environment of the socio-labor and socio-cultural resources;
3. *personifying phenomena*. Their essence: satisfaction of the needs of a healthy person in strengthening health and faith in the physical activation of motor functions, in addition, they include:
 - ◆ restoration of physical and spiritual forces exhausted or weakened in the process of labor, educational or household activities;
 - ◆ *development* of the physical and spiritual forces of a person, which fill the social, labor, cultural and defense potential of the society;
 - ◆ *preparation* of a person to be useful for work and communication with people;
 - ◆ *formation* of new traits and qualities of an individual, of a new way of life;

³⁵ Mandziuk, A., & Janeczko, K. (2009). Turystyczne i rekreacyjne funkcje lasu w aspekcie marketingowym. *Studia i Materiały Centrum Edukacji Przyrodniczo-Leśnej*, 11(4[23]), 65-71. Ryan, C. (2003). *Recreational tourism: Demand and impacts* (Vol. 11). Channel View Publications. Сайпушева, О. С. (2017). Мониторинг потребности населения в рекреационно-оздоровительных услугах. *Вестник БирГСПА: научный журнал*, 15, 45-52. Фролов, А. (2010). Рекреационные потребности населения как фактор современного развития общества. *РИСК: Ресурсы, информация, снабжение, конкуренция*, 4, 246-250.

- ◆ *expansion* of inter-age, interpersonal and interethnic contacts³⁶;
- ◆ *perception* of universal and cultural values, intelligent skills of transferring information and productive use of it.

With such a perception of the basics of management in the recreational industry, then it becomes possible to talk about management as a general function of the labor of individual organizers, groups of workers and their associations in the management apparatus. However, this process should be approached from a different position. It is the position of having recreational culture and fitness systems of the physical and educational process. They should adequately replenish a certain share of labor costs to the society and provide the distribution of “duties” in accordance with the new requirements put forward by the scientific and technological progress to the productive force involved in the environment of physical education. However, in this case, it is required to pay due attention to the methodological developments that operate in social and service provision environments, but are not subject to expert assessments. Such accentuated attention is paid to these environments here for the reason that recreational activities in terms of the composition of functions should be classified as a service industry. It should be said that many of the functions presented in the recreational activities look similar to those that form the basis of a single tariff and qualification guide that operates within each state, for example, in the European Union³⁷. Such a document is required 1) to regulate relations in the field of remuneration of officials and specialists in production and service sectors, and in the sector of health-improvement of the population, etc.; 2) to put in order relations that have been established on the basis of social contracts and complexes in the official fixation of the division of labor³⁸; 3) to establish control

³⁶ Famuła-Jurczak, A., Gejdos, M., & Kobiałka, A. (2020). The role of interpersonal communication in education. *Rocznik Lubuski*, 46(1), 175-190.

³⁷ Directive 2005/36/EC of the European Parliament and of the Council of 7 September 2005 on the recognition of professional qualifications. URL: [https://www.legislation.gov.uk/eudr/2005/36/contents# \(17.09/2022\)](https://www.legislation.gov.uk/eudr/2005/36/contents# (17.09/2022)).

³⁸ Анохов, И. В. (2016). Разделение труда и эволюция фирмы. *Вестник УрФУ*.

over the operation and appropriation of the produced product for a long-term period. In a general view, this protects the interests of the organization in state and public bodies, in the environment for the implementation of programs for the development of relations, in the education system, in relations with financial authorities regarding the types of health and rehabilitation activities, etc.³⁹. All this, which is presented here for review, brings the functional content of an organization taken from the recreational industry closer to the analogues of those functions that are characteristic of general education schools⁴⁰, educational institutions of various types, sports and recreation institutions with different levels of physical fitness in the sectors of sports and physical education⁴¹. For some functions and tasks, management approaches coincide with the effectiveness and content of fitness system technologies offered to the population for mastering.

Summarizing the meaning of the concepts of “administration” and “management”, attention should be paid to the following: *they are systems that differ in the way they influence the environment*. This means that the subject of the research is precisely the *system as a whole, consisting of interrelated and interdependent parts, the interaction of which generates some integrative qualities that are not*

Серия: Экономика и управление, 1(1), 135-151.

³⁹ Kliuchnyk, A., Shebanin, V., Shebanina, O., Kormyshkin, Y., Rybachuk, V., & Buryk, Z. (2021). Strategic factors quality of public administration in regional development: the experience of EU countries. *International Journal for Quality Research*, 15(4), 1317–1332. Гончаров, М. М., & Терновсков, В. Б. (2018). Контроль и оценка деятельности персонала организации в социальном управлении. *Наука и образование сегодня*, 12(35), 56-61.

⁴⁰ Śliwa, S. (2017). Challenges to prophylaxis in modern school. *The Journal of Education, Culture, and Society*, 2, 103-115.

⁴¹ Kubitskyi, S., Saienko, V., Demianiuk, V., & Mykhasiuk, K. (2022). Management of pedagogical and sports educational institutions in Ukraine. *SPORT TK-Revista EuroAmericana de Ciencias del Deporte*, 11, 19. Radziievska, I., Trepet, G., Radzikhovska, N., Sukhostavets, N., Yuryk, O., & Saienko, V. (2022). Modern achievements and prospects for the development of higher medical education: Ukrainian realities. *Amazonia Investiga*, 11(55), 114-123.

inherent in separate, previously known components. If we talk about meaningful characteristics, then their functions are confirmed by two indicators. They are:

1. *integrity*. In an organization of the recreational industry, a set of specific components can be stated, each of which must have its own qualities and the nature of the relationship. Depending on the scale of demand for the service, for an organization taken from this sphere, several constructions can be considered, which are *a set of interrelated elements of the activity linked in a certain way to improve functions and restore human energy*. This can be: a) a strictly linear organizational structure, which is based on the relationship of the “leadership-subordination” model, b) a strictly functional organizational structure, which is based on the “cross-functional relations” model, c) a linear-staff organizational structure, which is based on the relations of the “staff functions under the head” model, d) a linear-functional organizational structure, which is based on the relations of the “general management of resources from above – management of the expenditure of resources from below” model. During the periods of highly organized society structures, the activation of which is reflected in the criteria for the commercialization of services, any other organizational system that works under the pressure of market canons and connections may turn out to be more effective;
2. *divisibility*. In an organization of the recreational industry, a number of subsystems can be fixed and take their special place. They also have systemic properties and can be represented in their chain of connections by final levels, which makes them important to strengthen the motive for the process of growing into a “business technology”. However, it is not possible to present such a characteristic from the standpoint of reliability until the technological content of management inherent in a fitness object is clarified.

We should also mention the fact that the structured association, which is represented in this research as a recreational industry, can function in some countries as a subsystem that is subordinated to a larger organizational system or a specialized territorial entity,

endowed with the authority to manage processes with a higher level of the organization of interaction, which can be called a “super-system”. A “super-system” that absorbs a “subsystem” can be: a) the state system for distributing finances and resources, b) the system of physical culture and sports, c) the system of healthcare, health-improvement and medical institutions, d) the system of recreation, travel and sports, and, finally, e) the system of public associations and partnerships. In this case, the system of financing activities remains changeable, because it is subject to the ratio of shares of state and private property. An important provision for the inclusion of an organization in the system environment is the factor of recognizing it as a system. In such a system, *the correlation of the functions of administration, management and self-management is subject to implementation. The moment of control can be represented by one of the ways to implement communication with the external environment, the moment of management – with the internal environment, and the moment of self-management – with interest in movement.* For organizations of the recreational industry, all moments are of interest, because there is a mobility of the development of events, which sets in motion the moment of external relations that cannot be self-realized without methodological approaches, provisions and principles of marketing, and the moment of internal relations, which cannot be self-realized without intra-company management platforms. There are necessary for this scientific recommendations⁴² and others, and they are valuable not only for theory development, but also for service practice⁴³ and others. At-

⁴² Ansoff, H. (2007). *Strategic management*. Springer. Krupski, R. (2007). *Zarządzanie strategiczne. Koncepcje – metody*. Wrocław: Akademia Ekonomiczna we Wrocławiu. Saienko, V., Saienko, G., & Tolchieva, H. (2021). Sources of basic transformations in the fields of strategic management of entrepreneurial action. *Modern management: theories, concepts, implementation: monograph. Opole: The Academy of Management and Administration in Opole*, 75-86. Saloner, G., Shepard, A., & Podolny, J. (2005). *Strategic management*. John Wiley & Sons.

⁴³ Brennan, N., & Connell, B. (2000). Intellectual capital: current issues and policy implications. *Journal of Intellectual Capital*, 1(3), 206-240. Simões, C., &

tention should also be paid to their goal setting: their main purpose is to ensure successful movement in the market environment, using the tools of intra-company management.

The goal of the organization's impact on the environment should be clarified here. This goal is always changeable, so to predict it means to start 1) eliminating specific obstacles to presenting a product to a wide range of potential consumers, 2) activating the desire to fulfill a social mission, or 3) embarking on a path to making a profit. Each goal on the initial path turns out to be a difficult task. This is beyond the scope of the study, and for this reason, it is necessary to dwell further only on the development of national goals for recognizing the movement of the studied industry, which is often determined by the “mission”, “politics”, and “philosophy” accepted by the society and supported in the organization teams.

The starting point for substantiating the progressive movement of management in the field of the recreational industry and revealing its driving force is the conviction of researchers that the fundamental principle of such an industry is subject not to a spontaneous surge or even chaotic interaction in the areas of recovery, improvement and restoration of human strength, but to a purposeful impact on the prehistory of the development of a negative event. That is, the course of understanding and the procedure for formulating the goal of management in the recreational industry is determined, again, through goal setting, during which, in accordance with the selected criteria, a hierarchy of goals is formed in the likeness of a “tree of goals”, which has a systemic, mathematical content⁴⁴: it allows establishing and linking together the priorities of goals and sub-goals,

Dibb, S. (2008). Illustrations of the internal management of corporate identity. In *Facets of corporate identity, communication and reputation* (pp. 84-98). Routledge. Блюм, М. А., Коробова, О. В., & Уляхин, Т. М. (2016). *HR-менеджмент в системе управления коммерческим предприятием: монография*. Тамбов: ООО «Консалтинговая компания Юком». Припуляк, Н. М. (2015). Класифікація інтелектуального капіталу – методологічний аспект внутрішньофірмового управління. *Економіка України*, 10, 23-31.

⁴⁴ Яппарова, Г. Г. (2016). Роль дерева целей во внутрифирменном менеджменте. *Проблемы экономики и менеджмента*, 1(53), 13-15.

tasks and subtasks with an assessment of the probability of their achievement with known resources.

It should be mentioned that the beginning of movement in the goal-setting environment is fixed from the moment a) the problem is stated, and continues in b) the description of the materialized situation, c) the formulation of the general idea and d) the specification of the goal of the aspiration, and the end – after e) the decomposition of the general goal into sub-goals, f) exclusion of alternative and unnecessary sub-goals, g) establishment of criteria for achieving the plan, h) exposure of the objects of management, control tools and selection of tasks to be solved for the review of interested persons. That is, if to look closely at the structuring of functions in the recreational industry, then a priori it is argued that it is structurally formalized, because it has goal-setting at any point of the organic movement environment. For the environment of organizations of the recreational industry, the moment of the beginning of the movement becomes the coordinate of the disclosure of the consumer start of the movement of the recreational service⁴⁵. Mastering the method of optimizing the studied industry, the target function of the human life resource is put into circulation. It, as it is known, includes two factors: a) the factor of the ability of a person to work and b) the factor of the recreational restoration of lost functions of a person. Then, in the model view, this can be presented in the following way:

The mechanism of human activity // intensifies and compacts the time during the day // goes towards // free time = "A recreational service // is implemented according to the mechanism of a person's structural demand // goes towards // the choice of a way to restore, retrain and develop a person in their free time" = "A product // creates a new quality of life // as a practical sum of recreational effects on which the productivity of the life of a part of the society depends" = "The mechanism of interaction // operates in a single case when the movement of technology and organization of the recreational industry // go towards // recreational services, both existing and emerging" = "The mechanism for gaining quality goes before the event and // goes towards // the outcome: active labor activity" = "The prerequisite for maintaining the existence of a recreational

(1.1)

⁴⁵ Фролов, А. (2010). Рекреационные потребности населения как фактор современного развития общества. *РИСК: Ресурсы, информация, снабжение, конкуренция*, 4, 246-250.

service // comes down to submission // to the process of consumer demand" = "The value of a service // is due to the possibility of // the freedom of movement of a person within a certain territory, a successful arrangement of life, and the solvency of demand" = "The biosocial potential of recreation // goes towards the unity of the biological and social qualities of an individual // ensuring a number of prerequisites – the reproduction of the productive forces of the society, the growth of labor productivity, the replenishment of the consumption fund of the population, the reduction of accidents, morbidity and injuries, the reduction of costs for treatment and maintenance of patients and injured" = "The perspective of the recreational industry is physical fitness systems // saturating the universal demands of the population for the health-improvement services.

(1.1)
continued

Along with this, the importance of a number of other elements inherent in "recreational management" is also not disputed. These elements, both at the initial and operational levels of management in this industry, are the types of organizational activities for: a) the introduction of new management systems and activities, b) creating conditions for the scale development of the object, c) developing the system of incentives, d) testing the execution of processes, e) ensuring the continuity of the process. The functions of organizational management are effective if they are based on technological management. Then, the action of intentions turns into an organic one and is identified according to the methodological complexes of the:

1. pedagogy of physical education;
2. organization of recreational activities;
3. management of entertainment programs, events and broadcast classes;
4. bringing to perfection the environment of scientific and methodological support of the movement.

The environment of the recreational industry is subject to the conditions that are put forward in each country and may differ in their structure. In addition to going through the organizational and founding procedures, the teams of its organizations are guided by *codes, regulations, rules and norms of conduct that are common in government bodies and are applied in the system of managerial influence and subordination*. Attention should be paid to the main ones. These include those that follow the principles of: a) effectiveness, b) hierarchy, c) scientific character, d) planning, e) responsibility, f) mobility, g) combination of incen-

tives, h) economy and, finally, i) efficiency. The named positions speak for themselves, and therefore do not need to provide evidence of usefulness.

Since the principles of effectiveness and efficiency of functioning of any organizational structural unit of the recreational industry determine the success of the movement, manifesting themselves along the chain of energy accumulation, the mechanism of interaction ultimately depends only *on the way the subject influences the object*. In this version of the movement, a combination of several methods is productive. These include the methods: 1) of direct influence, ensuring the achievement of an immediate result, grouping in parallel, 2) of indirect influence, leading to the creation of favorable conditions for achieving a result, developing in parallel, and 3) of informal influence, ensuring the transition of action to an explanatory-democratic style of interaction and creating a buffer between movement and inaction. Each of these methods is enhanced if the action is combined with premises of a) organizational (methods of disciplinary, organizational-stabilizing and administrative influence), b) economic (methods of budget financing, capital investments, tax holiday, funding of material savings, cooperation of financial resources, bonuses and subsidies) and, finally, c) socio-psychological (methods of team cohesion, creating and maintaining a favorable socio-psychological climate, public regulation of interests, their unity and diversity, social regulation of behavior, social stimulation of activities, advanced training, cultural growth and creative attitude to work, satisfaction of cultural and social and domestic needs of employees) fusion of relations.

1.3. Choice of the management system for a recreational organization in changing environment

The modern structure of organizations in any sphere of human activity is undergoing a transformation, which is based on substitution processes by ousting from their environment the functions of material relations by irrational ones. This phenomenon of modernity is

known⁴⁶, used and causes changes in thinking⁴⁷. However, rationality still prevails over irrationality⁴⁸. This happens for the reason that the technologization of processes in the society still occupies a higher place in the organic structure than the organization of processes.

This phenomenon also directs the process of administration in the recreational industry, where the emergence of the technological component dominates the organizational one, but the patterns of interaction change almost continuously and with the participation of different factors. The nature of the transformations is similar to the transformations that are observed in the service sphere of interaction⁴⁹, but the resulting action approaches not the irrational in relations, but the concretization of the methodological beginning of the action⁵⁰.

Such a concretization of the action environment is possible, and this happens mainly due to the replenishment of its information mechanisms. These mechanisms are associated with the discovery of:

- ⁴⁶ Шевченко, И. В., & Бондарев, Д. Г. (2010). Феномен иррациональной экономики: ее трактовки, признаки, противоречия. *Финансы и кредит*, 22(406), 60-67.
- ⁴⁷ Лемещенко, П. (2013). Иррациональность современного экономического мышления и проблема диалога научного сообщества и хозяйственной практики. *Фінансовий простір*, 3(11), 40-45.
- ⁴⁸ Baron, J. (2005). *Rationality and intelligence*. Cambridge University Press. Рыжкова, М. В. (2012). Иррациональное потребительское поведение как предмет экономической науки. *Вестник Томского государственного университета. Экономика*, 4(20), 64-72.
- ⁴⁹ Saienko, V. (2019). *Relationship processes in business: monograph*. Opole: Publishing house of the Academy of management and administration in Opole.
- ⁵⁰ Shkola, O. M., Otravenko, O. V., Donchenko, V. I., Zhamardiy, V. O., Saienko, V. G., & Tolchieva, H. V. (2022). The influence of tae-bo on the development of motor potential of students of medical and pedagogical specialties and its efficiency in the process of extracurricular activities. *Wiadomości Lekarskie*, 75(4 p1), 865-870. Zhamardiy, V., Shkola, O., Saienko, V., & Tolchieva, H. (2020). Fitness technologies in the system of physical qualities development by young students. *Journal of Physical Education and Sport*, 20(1), Art 19, 142-149.

1. original places of interest in the newly developed territories, which ensures, as far as possible, evaluation of this environment from the standpoint of the attractiveness of travel and getting the unexpected vivid emotions and cognitive effects;
2. new medicinal substances and therapeutic agents, methods of therapy and methods of preventive interaction between the system and the population, if to consider this environment from the standpoint of a therapeutic effect;
3. original fitness systems, if to perceive this environment from the position of an entertaining and regulating rhythmic impact of an ordered load on a person to achieve a synergistic effect.

It should be noted that such a movement is subject to the theory of the development of relations and processes that work to transform most types of activities from the spheres of cultural, political, industrial, social and economic life of the society based on the mobilization of specific funds⁵¹.

The specific means are consistent with the usefulness of the systemic action, represented by the scientific and technological progress of our time, which enhances the usefulness of the systemic past. The specificity lies in the fact that such a new process transforms the morally obsolete process of the past with an innovation that arose in the present, and such a process has always existed before and continues to subjugate the present and work for the future by updating the conditions for the technologization of relations, because such an update is personified not in the innovation itself, but in the activity function of such an innovation. However, it is innovation that forms the basis of the organic movement of any event or phenomenon that receives energy for movement in the social life. This energy is

⁵¹ Алетдинова, А. А., Аренков, И. А., Афанасьева, Р. Р., Бабкин, А. В., Байков, Е. А., Бакаев, М. А., ... & Эльдяева, Н. А. (2017). *Цифровая трансформация экономики и промышленности: проблемы и перспективы*. Васильев, А. А., Шпоппер, Д., Стоилов, Я. Б., Ибрагимов, Ж. И., Матаева, М. Х., Мамычев, А. Ю., ... & Реммих, Е. А. (2020). Трансформация права в цифровую эпоху. Лапаева, М. Г., & Масленникова, А. Ю. (2014). Трансформация экономических систем: теория и закономерности. *Вестник Оренбургского государственного университета*, 8(169), 228-233.

generated by the cause-and-effect dependence of the confrontation between the old and the new and is the result of changes. Both the form and the content of such energy replace the existing ones, mainly due to the new mechanisms, on which the consumer focuses and which give impetus to the formation in one way or another of the next round of demand for a product or service.

In the environment of recreational organizations, such demand correlates with the inclusion of the health-improving or developing techniques in the current system. These techniques include exercises based on the rhythmic and intensive motor performance. Intensity has a special methodological value. It regulates the increase or decrease in the physiological load on the human body as a whole and on its functional organs and systems. Control is carried out by registering: a) the action of external stimuli or b) the heart rate. Sound signals or signals of motor content can act as external stimuli, causing a reaction of the auditory and visual analyzers.

This fact is worth paying attention because *the combination of movements, exercises and signals in a single ensemble allows designing a service* that is relatively well known and different in terms of functionality. The following is natural here: such a service is based on a combination of health-improving and developing properties that have a strengthening effect on a person. If we evaluate such a system from the standpoint of methodological value, then it turns out that in its configuration it is an ordinary consequence of the process of replacing obsolete variants of organizational schemes and systems that were used before and filled *adaptive physical culture*⁵². In this culture, the position of the domination of special principles and methods of therapeutic recovery, the use of treatment and rehabilitation programs, preventive-inertial rest measures and criteria for monitoring the effectiveness of changes and shifts occurring in the body, its organs and the nervous system has been implemented for many years. The system under consideration is stable and cannot be destroyed, but it, although with difficulty, still lends itself to

⁵² Трояновська, М. М. (2018). *Адаптивна фізична культура*: навч. посіб. Чернігів: Національний університет «Чернігівський колегіум» ім. Т.Г. Шевченка.

competitive influence, because additions and balancing changes are made to some of its elements according to an endless list of proposed measures, activities and influencing functions aimed at improving the provision of help to a person. Whatever such measures, methods and techniques of assistance may be, a general trend has been noticed that should be paid attention to – this system is increasingly turning to the use of approaches and methods inherent in the method of civilizational provision of human health. It is mentioned in sources⁵³ and others.

The basis remains the same and means that we should be guided mainly by traditional civilizational knowledge, which is being formed in the areas of human physiology, sports services and fitness providing intensity and control of the upcoming load for a person. However, the driving force of progress both in the current system of health improvement and restoration of human functions, which is still quite effective, and in the system of health promotion and restoration of human physical strength, which is only beginning to develop, and which is generally called *fitness*, the main goal is the fast rehabilitation of motor human potential. The consequence of such an impact on a person is the return to the productive activity, as well as to the usual rhythm of life. From a technical point of view, this phenomenon is reflected in reality in terms of a decrease in the number of disabled people and an increase in the proportion of those who regained their ability to work after overcoming general physical weakness, illness, or restoration of function after an injury. From an economic point of view, this means restoration of strength, development of mood and passion for work, which certainly reflects in the level of labor productivity and in the growth of the welfare of the state.

The above-mentioned transfers the study to the environment of that part of the structural content of the recreational industry,

⁵³ Баландин, В. М. (2017). Валеология: учеб. пособ. Владимир: Влгу. Басыйров, А. М. (2010). Валеология: учеб. пособ. Казань: ЗАО «Новое знание». Шуканов, П. В., & Яковлева, Ю. К. (2013). Традиционно-цивилизационные аспекты здоровья общества и человека. *Географический вестник*, 3(26), 11-19.

in which the intensification of the restoration of the desired functions is supported through the influence of two factors – a) the factor of physical exercises, b) the factor of controllability of physical load on a person. It remains to make necessary corrections. This brings the activity in the studied area to the basics of correction and complication of recreational relations, returning it to the path of the development of the health-improvement process. The generalization of the accumulated experience allows relying on the modern achievements of the society, accumulated in the environments of socio-economic activity and determining the basis for the form of further movement in the field of human health-improvement, depending on the natural wealth of individual territories of the state. The consolidating link in the recreational need of a person is the ability to implement the motor function. Before giving explanations to certain provisions of the author's tree of the development of the health-improvement process shown in Fig. 1.1, attention should be paid to clarifying the essence of person's recreational needs. Such needs are sufficiently well described in source⁵⁴. They include the following positions:

1. *restoration of the worker's strength*, absorbed by the sphere of work and other mandatory activities. The ways to achieve the result include high-calorie nutrition, soft drinks, restful sleep, a sufficient level of hygienic provision;
2. *treatment and prevention of diseases*, regardless of the source of their origin. The ways to achieve the result include sanatorium-resort treatment in the forms of balneology-, mud-, climate-therapy, with the use of therapeutic procedures and herbs;
3. *recovery after injuries*, regardless of their origin. The way to achieve the result include forms of communication with friends, games, swimming, hiking and walking, water, air and sun baths;
4. *physical development and self-affirmation*. The ways to achieve the result include sports and gaming activities, climbing high-altitude peaks, cycling, swimming, skiing, hiking and excursions;

⁵⁴ Фролов, А. (2010). Рекреационные потребности населения как фактор современного развития общества. *РИСК: Ресурсы, информация, снабжение, конкуренция*, 4, 246-250.

5. *new knowledge and spiritual expansion of the worldview* through planned events and trips. The ways to achieve the result include visiting places of worship, museums and theaters, participating in amateur performances, viewing cultural monuments and getting acquainted with rarities, traveling to the places of historical events.

There is a tendency of the increase of the number of participants in the above-mentioned activities. The participants in these activities are those who:

1. *have health issues*, including the disabled people who need psychological and therapeutic assistance. This initially leads to a shift in the focus of the problems being solved to the area of a special educational process and the processes of psychophysiological rehabilitation, the expansion of social practice and the use of social experience that guides a participant in the areas of choice of possible employment;
2. *need adaptive physical culture activities*, which should be carried out in special educational institutions, preventive treatment and constant monitoring of the progress of therapeutic care. This methodologically includes in action those areas of the society, the basis of action in which is combined with clearly expressed restrictions in behavior and the violent nature of the impact on a person;
3. *expect a physical method of recovery*, which can have a fruitful effect on the restoration of individual muscle groups, without which it is practically impossible to restore strength, restore health and renew the function of working capacity. This is designed for measures of influence that need to be applied in a dosed manner, in a safe mode and subject to the performance of the simplest motor exercise in the background of a distracting rhythmic stimulus;
4. *are involved on a voluntary basis in physical systems of rest, recuperation and development of individual functions*, which, along with active forms, can also be carried out in the form of observation and even monotonous entertainment.

Therefore, there is enough information about the recreational industry to present it in a detailed form of goal-setting intentions and performance functions. The usefulness of motor exercises in the

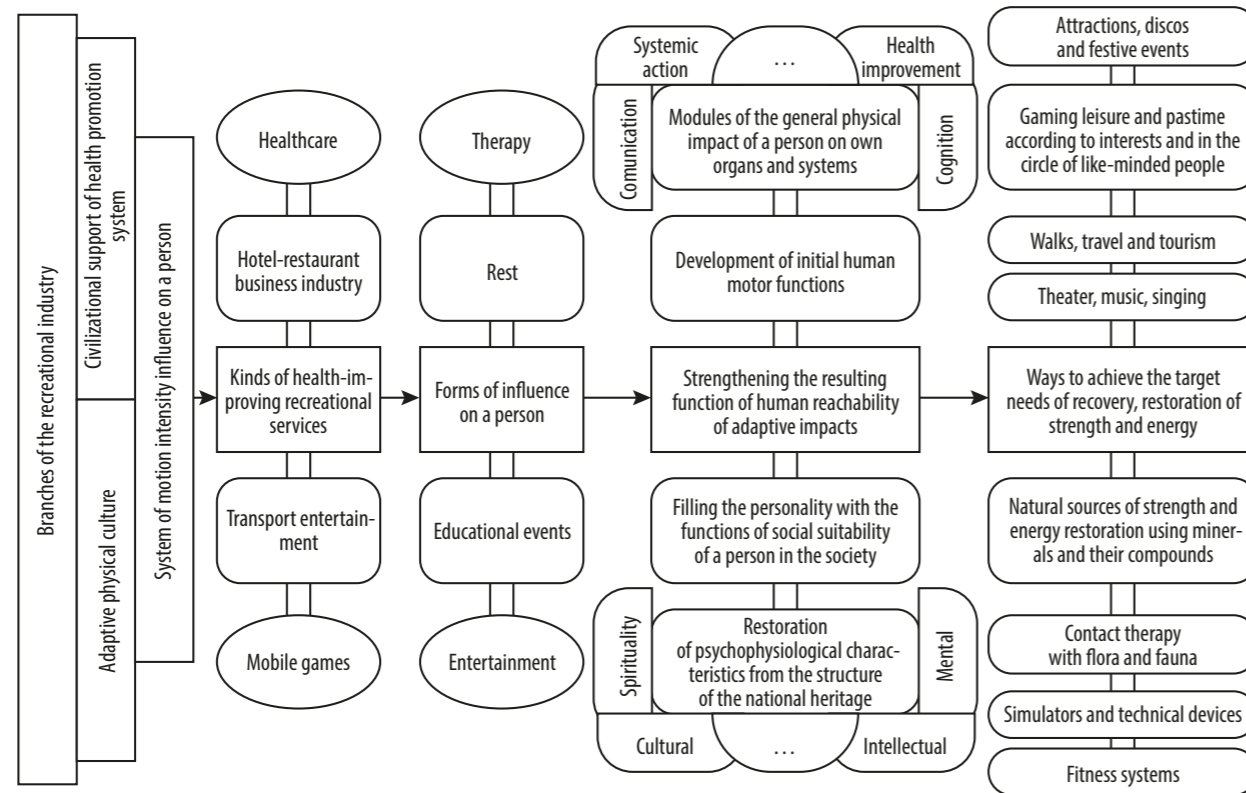
health-improvement process acts as a consolidator of the selection of such information. The structure of the goal setting in the recreational industry is shown in Fig. 1.1. (next page).

Clarification of the fundamental approaches to meeting the needs of those belonging to a particular group established differences that should be taken into account when organizing services of appropriate quality for them. Thus, *the first and second of these groups* attract the most complex in its composition contingent of clients, who are waiting for the completion of an event to restore health through: a) the complex use of specially designed means of physical impact on the body, aimed at maximizing the restoration of disturbed physiological functions, and b) the development of compensatory and replacement devices to be used to replace the lost ones, for example, aimed at creating artificial prostheses, while *the third and fourth groups* are focused on individual commercial motives for satisfying demand with supply in the environment for the formation and execution of individual requests.

With this perception of health-improvement, the organizational moment of management must support two features, when:

- *the first and second groups* of clients and their derivatives need the help of a health-improving system of state purpose, in which the background role is assigned to the ways the recreational industry influences a person. The mechanisms of influence on a person are subject to the recommendations of the system of *adaptive physical culture*, which has been functioning successfully in different states for a long time. According to its content and purpose, this system is a complex of sports and recreational activities aimed at rehabilitation and adaptation to a normal social environment of persons with disabilities according to the classification of physical condition and health. They need to overcome the consequences of traumas and psychosomatic barriers that prevent the feeling of a full life, which leaves a person for some time in an environment of psychological discomfort, etc. A feature inherent in them is the awareness of the inevitability of the inclusion of action in the social environment of the state, with the assistance of which, in fact, it becomes possible to achieve the required recovery. Attention should be paid to the following circumstance – due to

Fig. 1.1. Goal setting in the recreational industry



the adaptability of the body with the remaining functions, the goal of physical transformation of a part of the functions related to defects in the physical and mental state of the body and the nervous system is achieved, due to which, in fact, the possibilities of self-sufficiency are limited. Then, physical culture should determine the priority areas of restoration activities, create organizational and methodological centers and bodies endowed with targeted functions, provided with professional personnel, capable of being put into action if there is special technical equipment and methodological instructions for handling it. This is enough to ensure in these organizations the restorative function that stimulates the development of positive morphological and functional changes in the body, the muscular format of movement and the nervous system. The goal is the formation of the necessary motor coordination, and after that, the physical qualities and skills that allow increasing and strengthening the life support resource at a certain level of distinctive interaction with the environment, helping the development of the personality and adaptation to the new general abilities of the body, but of a different, adaptive content⁵⁵. The final result is also known. Such a result can be the repeated development and consolidation of motor skills and mental distinctive features as biological and social factors that affect the restoration of the body and the consolidation of the personal position in the chosen environment. That is, in the environment of the recreational industry, adaptive physical culture takes the place of a methodically characteristic type of general physical preparation for action of persons who have deviations in the body structure or motor apparatus disorders. The natural goal for it is to achieve the maximum possible development of the vital function of a person who has stable, irreparable deviations in anthropometry and the psyche by ensuring the optimal mode of functioning

⁵⁵ Малюга, А. А. (2015). Проблемы вовлечения людей с ограниченными возможностями в трудовую деятельность. *Современные проблемы науки и образования*, 1-2, 21-21. Сабанов, З. М. (2017). Социально-экономическая адаптация инвалидов. *Азимут научных исследований: педагогика и психология*, 6, 1(18), 345-348.

of physical-motor qualities and mental cells released by available means of physical influence on the subject. The initial influence is based on the knowledge borrowed from the fields of therapeutic medicine, correctional pedagogy, pedagogical practice and physical education, which form the basis of theories and methods for restoring motor activity and physical rehabilitation;

- *the third and fourth groups of clients and their derivatives* need the help of recreational industry organizations. The mechanisms of influence on a person are subject to the mechanisms of the *system of civilizational support for strengthening human health with the use of fitness programs*. Section 2 of this monograph is fully devoted to the consideration of the elements of this system, and for this reason, further attention is drawn here only to the organizational reasons for establishing support for the system. These reasons usually move from a state of opposition to a state of interaction. The process of the accumulation of person's life experience regarding the adaptation of the body to work indicates that the system is amenable to transformation to the same extent as any other part of the society that is subject to the law of consumption⁵⁶. For this reason, the society has accumulated a significant potential of professional knowledge in the field of interaction with people with a distorted view of reality or with impaired health⁵⁷. This interaction satisfies with its service such a comprehensive scientific and social phenomenon, the purpose of which is the socialization or resocialization of a person with limited physical

⁵⁶ Omelchuk, O., Ivanashko, O., Sipko, L., Virna, Z., Saienko, V., & Tolchieva, H. (2022). Economic behavior of consumers during instability. *AD ALTA: Journal of Interdisciplinary Research*, Special Issue 12/02-XXVIII, 89-95.

⁵⁷ Krigger, K. W. (2006). Cerebral palsy: an overview. *American family physician*, 73(1), 91-100. Xalimovich, X. B. (2022). Developing student's readiness to use adaptive physical culture. *International Journal of Advanced Research in Management and Social Sciences*, 11(2). Альошина, А. І. (2015). *Профілактика й корекція функціональних порушень опорно-рухового апарату дітей та молоді у процесі фізичного виховання*. Луцьк: Вежа-Друк. Деделюк, Н. А. (2014). *Теорія і методика адаптивної фізичної культури*: навч.-метод. посіб. Луцьк: Вежа-Друк.

abilities, and on an equal basis with this, any other person who has mental problems or loss of interest in work. In this service, it is necessary to maintain the conditions of recovery, creating opportunities for returning a person to one of the variations of reality – a) to a more prosperous material life, b) to the possession of conditions of a higher-level quality of mental interaction, c) to filling everyday life with new content, emotions and senses regarding the environment. In order to achieve at least one of these positions, it is required to offer a certain ability of a citizen to work in the exchange environment of the state. This ability can be achieved even at the level of simple movements. The discussion about the return to a person of their ability to perform simple movements and operations is needed here for the reason that the residual platform of a person who has undergone procedures for restoring physical sufficiency after recovering from the consequences of industrial injuries and occupational diseases becomes impossible to the originally possible level. However, partial recovery is possible. It is possible not only with treatment, but also due to the development of certain sequences of physical exercises and movements. The recovery process is refined and enhanced if a combination of targeted health and physiotherapy procedures, phyto-saturation of the body and high-calorie nutrition, etc. is used. This combination acts as a methodology of fundamental impact both on the human body as a whole and on its psyche, and also allows reconsidering approaches to the development of motor functions of both a healthy person and a person who has partially lost their ability to work, if psychophysiological or physical diagnoses are established regarding the degree of health disorder or signs of ongoing development of disability due to health problems. This is what unites action in the health-improvement sector and the recreational industry.

To complete the consideration of the organic environments of the recreational industry, we should mention some of the interaction differences built on the platforms of:

1. *adaptive physical culture*;
2. *civilizational provision of human health promotion*;
3. *motor intensity of impact on a person*.

Each of the above systems has been used for a long time, because a person is constantly exposed to diseases and injuries. Such a process is explained by the predisposition of the human organism and its protective functions, which remain helpless against bacteria, epidemics, the severity and intensity of labor. For the health-improvement of a person, each of these systems offers the ratio of measures, activities, procedures and methods of restorative impact, which have a preventive, therapeutic and health-improving purpose. Their structures are different, and each structure includes all kinds of means and techniques to make a person's life easier, and if there is a need for this, to relieve person's suffering. These are therapeutic-motor, energy-saturating and analgesic-neutralizing means. Recently, fitness systems, fitness programs and training processes have joined them in the form of performing one exercise or even movement in turn, and all this is combined into a single whole according to the resulting methodical goal of health-improvement⁵⁸ while their structures change according to the needs of wide layers population, distributed by age, gender, socio-economic wealth, health status and a number of well-known interests in the society. In the current environment of human health-improvement, these systems follow the recommendations of the management of the processes of recovery and development of strength. This allows creating new niches in the recreational industry and filling them with activities for the reason that it has a slightly different quality that affects the processes of restoration, healing, development and improvement of a person throughout the range of their physical and mental functions. It should be noted that the organic system of this industry by now has sufficient experience of interaction with both non-integrated⁵⁹ and integrated⁶⁰ popula-

⁵⁸ Білецька, В. В., & Бондаренко, І. Б. (2013). *Фізичне виховання. Оздоровчий фітнес: практикум*. Київ: НАУ. Григорьев, В. И. (2008). Методологические аспекты технологизации фитнес-индустрии. *Фитнес в инновационных процессах современной физической культуры*, 17-24.

⁵⁹ Жабокрицька, О. В., & Язловецький, В. С. (2001). *Нетрадиційні методи й системи оздоровлення*: навч. посіб. Кіровоград: РВЦ КДПУ ім. В. Винниченка.

⁶⁰ Ivanchykova, S., Saienko, V., Goncharova, N., Tolchieva, H., & Poluliashchen-

tion, and in terms of its content it has acquired a medium-level comprehensive scientific and social significance for the society whose often goal is to return to the production and economic environment *an employee who has restored the target range of physiological and mental abilities for work*. All this is achieved and introduced by technological programs and sequences of performing physical exercises in the proper rhythm required by the training regime. This was known before, for example⁶¹, but in the current environment of human health-improvement, it has reached the level of a phenomenon, and has taken the place of the methodological platform for the fundamental restructuring of the physical impact on the human body and psyche. As a result, such an effect allows structuring the work of organs and, at a minimum, synchronizing and accelerating blood circulation, i.e. the rhythmic inclusion of muscles and their groups in the movement, and after this, the actual movement of individual parts of the body, limbs and torso, favorably normalizes the general state of the functional characteristics of the body.

Therefore, it is time to draw an intermediate conclusion: the society has verified old and new means of helping a person. However, this demand changes, does not stand still and puts forward other

ko, I. (2018). Comparative analysis of changes in the body composition of female students under the influence of the various kinds of fitness training load. *Journal of Physical Education and Sport*, 18(2), Art 142, 961-965. Корносенко, О. К. (2014). *Теорія і практика жіночого оздоровчого фітнесу*: навч. посіб. Полтава: «ФОП Болотін». Усатова, І. А., & Цаподой, С. В. (2014). *Сучасні фітнес-технології, як засіб виконання завдань з фізичного виховання для студентів з порушенням у стані здоров'я*. Черкаси: ЧНУ ім. Богдана Хмельницького.

⁶¹ Bonny, H. L. (1986). Music and healing. *Music Therapy*, 6(1), 3-12. Gouk, P. (Ed.). (2017). *Musical healing in cultural contexts*. Routledge. Бермудес, Д. В. (2009). *Музична ритміка і хореографія. Практикум*: навч.-метод. посіб. Суми: Вид-во СумДПУ ім. А.С.Макаренка. Гарбузюк, Т. В., & Мурсамітова, І. А. (2015). Музична терапія або лікувальні властивості музики. *Еколого-валеологічне виховання дітей дошкільного та молодшого шкільного віку в сучасному освітньому просторі*. Суми: СумДПУ ім. А.С.Макаренка, 150-153.

conditions for replenishing the environment. These means outwardly look better, more productive and effective, and are brought to life by higher levels of labor intensity, economic growth and the growth of the well-being of the people. The characteristics of intensity and well-being are recognized by scientists not only as separate indicators of person's material well-being, but they also take the place of the main parameter among the indicators of individual's psychophysical stamina and activity⁶². This is a motive, which is fundamental in the formation of other structures of organizations and active functions due to the complexity of the activity and tasks to be solved in it. Among these tasks, the requirement of developing a higher level of physical endurance in a person and confronting the intensity caused by stress on the body and nervous system is of paramount importance. This means that the society should prepare a productive force of a new quality. Without showing increased attention to the deployment of a network of sports and recreational services, it turns out to be impossible to achieve the appropriate quality.

The following circumstance also testifies in favor of the deployment of this network: the share of production in the structure of GDP has increased significantly due to the expansion of rehabilitation and recreational activities and the use of the labor of those who have retired. This replenishment of labor resources is completed with an annual effect. Observation of the development of such a trend and its results allows naming the studied industry not only an important part of ensuring the income of each state, but also replenishing the productive force of the society. As a rule, such a productive force takes jobs with low wages, which intensifies the conditions of the

⁶² Amichai-Hamburger, Y. (Ed.). (2009). *Technology and psychological well-being*. Cambridge University Press. Белоусова, А. В. (2018). Методический инструментальный оценки благосостояния населения: межрегиональное сопоставление. *Экономика региона*, 14(1), 53-68. Втюрина, Е. В., & Никулина, Е. В. (2013). Взаимосвязь психологического благополучия и стрессоустойчивости личности. *Студенческий научный форум–2014*. URL: <http://www.scienceforum.ru/2014/760/1613>. Скорынин, А. А. (2020). К вопросу о структуре психологического благополучия личности. *Гуманитарные исследования. Педагогика и психология*, 2, 87-93.

austerity regime, which are tightened, and such tightening is increasing steadily. This means that theoretical understanding and applied substantiation of the sports and recreational profile of services, just like the management of their production and quality regulation, is successfully included in the practice of management that performs a sociocultural function. This function needs innovative transformations to the same extent as any other area of non-technological human activity⁶³, generated in the general infrastructure of service sphere. It remains only to regulate the processes of human adaptation to the changing conditions of the production and economic environment and the adaptation of their management tools. All this follows the pace of scientific and technological progress, according to which competitive priorities and advantages are formed. The connection does not end there as the further interest in the service and the demand for the service in some near future among a wide range of the population rise. To achieve this effect, it is necessary to develop necessary tools for action with the condition that their application is productive.

Achieving success in the studied interaction environment is facilitated by the correct perception of the conceptual apparatus, which has already been developed by now and allows describing the management system of the organization of the recreational industry from two positions – a) from the position of the “administration system” and b) from the position of the “organizational structure of administration”. Then, to develop *an administration system*, composition and a list of management bodies and positions should be adopted. It is required to fulfill the following condition – they must obey the technological management tools, which ensures the movement of functions related to the interconnection, which is mandatory for an elementary control system. The form of such a system is:

- “construction of the organizational system”. It characterizes the mutual connection that appears between the links of administration and execution. Usually they are an object and a subject of control;

⁶³ Duczmal, W., & Żurawska, J. (2014). *Nietechnologiczne innowacje w teorii i praktyce*. Opole: WSZiA.

- “structure of the administration system”. It combines the method of internal organization and connection of the elements of the administration with each other. Usually this is the order of location, and subordination of individual links of the administrative apparatus, which can be bureaus, departments, creative groups;
- “elements of the general system of administration”. They reflect its connections and integral properties. Usually these are goals and objectives, functions and solutions;
- “composition of the subjects of administration”. It combines rights, responsibilities and relationships. Usually these are intermediaries, suppliers and consumers.

There are three features that are the most important in the phase of the development of the sports and recreational industry. In modern conditions of the existing recreational industry, it is more correct to consider: 1) *administration system* not only as a formal prehistory of the identification of relations, but also as a means of developing its variants in dynamics, which in the market environment are increasingly dependent on external rather than internal factors, from which the flexibility of the system is formed, the effect of adaptation to it accumulates, and after this, problems with the accuracy, timeliness and efficiency of making managerial decisions appear; 2) *organization*, regardless of the type of economic activity, from the point of view of the systematic interaction between the management object and the management body, which is subject to the goal; 3) *the object of administration* as a process or an incomplete set of activities, where the control action manifests itself from all sides, which are of an objective nature; 4) *organizational structure of administration*, which should be developed and accepted for execution as a hierarchically ordered set of complex management elements. The composition of such a system is presented in a certain way, but due to the high degree of its uncertainty and the assertion of entrepreneurial action, it is possible to present here an approximate version of it. Thus, it includes the subjects of administration, represented by the administrative-managerial and linear-functional services of the organization and its specialists, who are in a relationship with each other according to the principle of subordination.

There are five peculiarities to take into account for the developing of the recreational industry. They include: 1) *an administration structure*, which is the most statically stable for decision making, 2) *an administration system* that is consolidated on the terms of business plans and business processes according to a set of operations united by a control action, being subject to the validity of links with external objects of interaction, 3) *openness of the system*, which makes it possible to perceive the interaction according to its dynamic nature of the relations that develop between the subjects and objects of administration, which alternately include customers, suppliers, competitors, public authorities, regulation and management, 4) *the external environment* with the conditions and factors of the ubiquitous market environment, 5) *a system of mutual relations*, where the object of administration is in contact with the material mechanism of product turnover, and the mutual relations of the administration body with the same environment are faced with an information vacuum or, conversely, with the absence of resistance to the marketing promotion of the service on the market⁶⁴.

Any kind of existing organizations is not able to manage the changes taking place in the external environment, but is only able to adjust and adapt to its requirements through: a) the transition to the modern system of management, b) use of the innovative techniques, c) ways to include in circulation a variety of organic systems for making a profit, influencing competitors, timely replenishment of the resource due to a cheaper and higher-quality assortment. The above is personified in the virtuosity, skill and creativity of a manager. For this reason, in the administration process, the effectiveness of action is achieved only if the necessary set of factors acting in the external environment is known. Such a complex consists of a number of subsystems and administration functions that are in correlation with the specifics of the formation of the object of activity. For example⁶⁵, if the strategic level of the administration system

⁶⁴ Koshova, S., Parkhomenko-Kutsevil, O., & Buryk, Z. (2022). Challenges and prospects for introducing space technology into the services market. *Economic Affairs (New Delhi)*, 67(4), 907-913.

⁶⁵ Bader, A., Vovk, S., Novoskoltseva, L., Rusanova, M., & Saienko, V. (2022). For-

focuses only on the action of internal factors of the evolutionary development of the organizational structure of administration, then unique conditions can be obtained for typifying the organizational structure of management in its pure form. Therefore, for a sports and recreational organization, a certain number of such characteristics appears from the perception of technological management according to:

1. *the administration function*. Then such a perception is subject to the general criterion of *departmentalization*. The totality includes the general conditions of action regarding the use of resources, which services are engaged in a) accounting and personnel records, b) marketing, planning and distribution organizational interaction, and, finally, c) performing operations and work, which are subject mainly to educational-pedagogical and health-improving and training content of executive functions. The last point of technological management is mentioned here for the reason that it is relevant specifically for organizations of the recreational industry that implement the action of the active movement of the consumer of the service. That is, for it, an important moment in the formation of the administration function is the technological operation of the original management⁶⁶, which make up the basis of health-improving and training sessions, the selection of individual and group recovery programs and motor exercise schemes, which are rated as effective, and this should be supplemented by the development of rational nutrition, work and rest regimes. This is true in reality, but the discussion here revolves more around physical exercises, their combination in sequence, the implementation of which obeys the musical rhythm

mation of priority tasks and strategies for education highly qualified political scientists: European experience, and Ukrainian practice. *Cuestiones Políticas*, 40(73), 260-273. Ladonko, L., Mozhaikina, N., Buryk, Z., Ostrovskyi, I., & Sa-ienko, V. (2022). Regional aspects of the economy modernization: the qualitative evidence from EU countries. *International Journal for Quality Research*, 16(3), 851-862.

⁶⁶ Омельченко, Л. П., & Омельченко, О. В. (2008). *Здоров'ятворча педагогіка*. Харків: Вид. група «Основа».

and correlates with the criterion of physical benefit for a recovering person. That is, guided by this, we can further talk about the parameter of recovery or restoration of human strength;

2. *the type of administration structure*. Then such a perception is subject to a general *selection* criterion. The totality includes the general conditions for the distribution of the most effective action administration scheme. Among them, there are divisional, linear-functional and process-oriented systems for organizing interaction, in which the matrix, network schemes or even schemes for remote provision of services are used. Despite the fact that this was discussed above, the solution of this issue remains at the formal level. With a more detailed consideration of this motive for establishing interaction, it becomes clear that for organizations of the recreational industry, this is not such an important point when choosing the type or structure of administration. An important point is whether the action is based on educational, pedagogical and motor ways of maintaining the connection of the object with the subject of administration. These connections differ in their straightforwardness and simplicity. It would be easier in this place to rename the "subject of administration" and present it as "the subject of physical culture interaction" or "the subject of the motor activity process", endowed with controllable characteristics. However, the problem of perception of the phenomenon of the *physical impact of physical exercise on a person* from the position of the type of structural administration does not end there. The last attempt to reflect its essence, nevertheless, arises for the reason that the study revolves around the variation of two human functions – motor and mental, and on a par with this, around the search for a way to comply with the limits of the physiologically permissible and possible influence of physical activity on the human body. The set goal is to provide that such an impact does not harm a person, but, on the contrary, to ensure the strengthening of the body and its motor perfection and thoroughness. However, if we evaluate this search from the position of information load, then the above-mentioned does not give the desired function of reflecting the meaning. Such a thought does not arise for the reason that the physiological character-

istics of a person have already been formed. For example, this is stated in the sources⁶⁷. The perception of the essence of the interaction between the object and the subject of administration and their connection with the intensity of physical exercises and individual movements cannot be explained this way. Such a barrier exists until the actual technological system of the transition of influencing states is built, which is represented in the study by the general name “fitness”. Attention should be paid to the fact that this action of fitness manifests itself within the internal environment of the human body that masters it, but such a process of mastering is personified in the external environment. There is a mechanism for this. It happens through human behavior on the trajectory of a little-known future, which at the moment remains inaccessible. That is, guided by this, we can further speak separately about the parameter of physical load on a person, about the parameter of person’s recovery after performing an exercise, a set of exercises, a series of exercises and movements, and, further, about a variety of mental, physical and physiological parameters that manifest themselves in intermediate phases of completing tasks set before the fitness program;

3. *the ways to control the desired result*. Then such a perception is subject to the general criterion for *testing* the characteristics of the organism of a person who undergoes recovery or restoration of strength and energy. For organizations of the recreational industry, important points when choosing a testing methodology are mainly profile knowledge, experience and conviction of an expert. They are recognized as informative. The information

⁶⁷ Craig, A. D. (2003). Interoception: the sense of the physiological condition of the body. *Current opinion in neurobiology*, 13(4), 500-505. Kolokoltsev, M. M., Iermakov, S. S., & Jagiello, M. (2018). Physical condition of female students with different level of body mass deficiency. *Physical education of students*, 22(2), 63-69. Макеева, В. С. (2014). *Мониторинг физического состояния человека: учеб. пособ.* Орел: ФГБОУ ВПО «Госуниверситет – УНПК». Ситдииков, Ф. Г., Зиятдинова, Н. И., & Зефиоров, Т. Л. (2019). *Физиологические основы диагностики функционального состояния организма: учеб. пособ.* Казань, КФУ.

coming from specialists, observers and the fitness participants themselves is recognized as background information. The information received using electronic devices and mathematical methods for assessing the condition of fitness participants and the results obtained from sources of monitoring the situation is recognized as analytical and reliable. Such approaches are suggested in source⁶⁸, and there is no need to continue the research in this direction.

At present, everything said here has certainty and is mentioned here in order to be involved in the formation of the recreational industry and its administration on the scientific and methodological basis. At the same time, the scientific community is concerned about several sub-problems. If they are not taken into account, the productive value of the studied service sector may remain insignificant. They include:

- a. requirements for the organizational mechanism for building the internal environment of interaction with the functional environment⁶⁹;
- b. marketing functions in the field of promotion of the product of the recreational industry to the service market and their advertising⁷⁰;
- c. means of supplying the activities of the organization with reliable information⁷¹;

⁶⁸ Абакумова, Н. Н. (2009). Мониторинговое исследование как составляющая современного образования: к постановке проблемы. *Международный научный журнал Acta Universitatis Pontifica Euxinus. Специальный выпуск. Варна*, 2, 14-17.

⁶⁹ Годик, М. А., Бальсевич, В. К., & Тимошкин, В. Н. (1994). Система общеевропейских тестов для оценки физического состояния человека. *Теория и практика физической культуры*, 5, 24.

⁷⁰ Вавилов, В. (2022). *Основы менеджмента в фитнес-индустрии*. Litres. Куричин, С. А. (2019). Развитие маркетинга на рынке фитнес-услуг. *Стратегии бизнеса*, 4(60), 11-14.

⁷¹ Селуянов, В. Н., Сарсания, С. К., Конрад, А. Н., & Мякинченко, Е. Б. (1991). Классификация физических нагрузок в теории физической подготовки. *Теория и практика физической культуры*, 12, 2-8.

- d. selection of technological exercises and fitness devices⁷²;
- e. conditions for training professional personnel⁷³.

1.4. Management tools for organizations of the recreational industry

A separate place in the formation of the administration tools of the recreational industry and its organizations is occupied by the functions of not only management, but also marketing, which is why it is appropriate to give an explanation in a concise form here. Thus, recreational marketing, according to researchers⁷⁴ and others, has been widely developed in the field of promoting products, goods and services to the market. This development is facilitated in many ways by its inextricable connection with the services that are char-

acteristic of tourism and travel⁷⁵ and others. Many of these forms are initially combined with the hopes of the organizers that they are directing their efforts towards improving the health of the population and counting on income. That is, a product is put on the market and it is a special product. Even such concepts as “tourism” and “travel”, which mean the possibility of “moving around the territory”, calling a person to move and “to be more mobile”, differ in their content. Thus, in the Explanatory Dictionary of V.I. Dal⁷⁶ the concept of “travel” is endowed with the meaning of “wandering, walking or visiting previously unexplored places”, while in the Big Encyclopedic Dictionary⁷⁷ the same concept is perceived as moving around any territory or water area with the aim of studying them. That is, the studied process is associated with general educational⁷⁸, cognitive, sports and other goals. The dictionary by S.I. Ozhegov⁷⁹ says that trips or walking trips to some places and countries are conditioned by the need to become acquainted with something new

⁷² Бернштейн, Н. А. (2008). *Биомеханика и физиология движений*.

⁷³ Kornosenko, O., Khomenko, P., Taranenko, I., Zhamardiy, V., Shkola, O., Tolchieva, H., Saienko, V., Batiieva, N., & Kyzim, P. (2021). Professional competencies as a component of professional training of a fitness trainer-teacher in higher education institutions. *Journal for Educators, Teachers and Trainers*, 12(1), 72-81.

⁷⁴ Pokusa, T., & Pokusa, F. (2020). Marketing value of a sportsman – selected aspects. *Problems and prospects of physical culture and sports development and healthy lifestyle formation of different population groups: Collective Scientific Monograph. Opole: The Academy of Management and Administration in Opole*, 191-197. Габулян, В. А. (2014). Теоретические аспекты стратегического планирования маркетинга организаций рекреационных услуг. *Социально-экономические явления и процессы*, 9(11), 28-33. Ковалевский, В. П., & Вязикова, Г. В. (2014). Особенности маркетинговой деятельности физкультурно-оздоровительных организаций. *Вестник Оренбургского государственного университета*, 14(175), 186-193. Шереметьева, Е. Н., & Митропольская-Родионова, Н. В. (2014). Маркетинговые стратегические альтернативы и конкурентные преимущества рекреационных услуг санаторно-курортной организации. *Наука о человеке: гуманитарные исследования*, 4(18), 271-276.

⁷⁵ Armstrong, G., & Kotler, Ph. (2012). *Marketing – wprowadzenie*. Warszawa: Oficyna a Wolters Kluwer business. Житенёв, С. Ю., & Новиков, В. С. (2010). Путешествие и туризм: содержание понятий. Приоритеты и перспективы научных исследований международного туризма в XXI веке. *Труды Международной Туристской Академии*, 5, 8. Король, О. Д., & Крачило, М. П. (2009). *Менеджмент туризму: навч. посіб.* Київ: Знання. Тхамитлокова, З. О. (2013). Особенности и роль маркетинга в сфере туристско-рекреационных услуг. *Журнал научных публикаций аспирантов и докторантов*, 1, 16-18.

⁷⁶ Даль, В. (1998). *Толковый словарь живого великорусского языка*. Москва: Рус. Язык, В 4-х тт.

⁷⁷ *Большой энциклопедический словарь* (1993). / Гл. ред. А. М. Прохоров, Москва: Большая Российская энциклопедия, Фонд «Ленинградская галерея», Санкт-Петербург: Норинт.

⁷⁸ Gejdoš, M., & Prachárová, I. (2020). Fröbel's book „The education of man“ and its pedagogical legacy. *International Journal of New Economics and Social Sciences*, 11, 339-346. Saienko, V., Kurysh, N., & Siliutina, I. (2022). Digital competence of higher education applicants: new opportunities and challenges for future education. *Futurity Education*, 2(1), 37-46.

⁷⁹ Ожегов, С. И., & Шведова, Н. Ю. (1995). *Толковый словарь русского языка*.

or relaxation. In our opinion, their combination and the motives of their mobility should be united into a general set and it should be unambiguously assumed that *the very movement of a traveler in space without adding other meanings to it already has the property of physical motor health-improving activity for a person*. This motor health-improving activity would be even more useful if travelers from time to time turned to fitness systems during moments of rest.

Thus, besides commercial goals, the promotion of the purely functional goals of health-improvement and replenishing energy with vigor are introduced into the subsequent perception of marketing, and this is precisely what corresponds to the subject of health-improvement in the recreational industry. The object of health-improvement until the moment of establishing all its characteristics is identified by signs that are connected with healing, restoration of energy or physical recharge of a person. This fact is rarely paid attention to from the standpoint of the function of developing person's physical abilities. However, this fact enhances several of person's qualities – self-sufficiency, self-defense and safety of life, which is important in the life of a tourist or traveler. Outwardly, everything looks as if, for the sake of the level of physical readiness for prolonging life and activity, a person subordinates almost all the efforts to maintain his/her current health, damaged by industrial exhaustion, endured difficult wanderings, illnesses, and injuries. No attention is paid to the physical development and strengthening of the body to the extent that this problem deserves attention.

Therefore, in order for marketing to meet the goals of the sports and recreational industry, the achievement of which follows the subject of research, it must combine several levels of process administration, conceptually combined in a specially created network of organizations, services and firms, each of which is moving to the market with its product. Such a product includes a) a health-improving system, which is presented to the consumer in therapeutic and prophylactic forms, b) a physically developing system, which is presented to the consumer in fitness forms, and c) their combination, which does not harm any group of consumers, following their interests and preferences. The theoretical approaches and provisions have already been studied, and should be built by analogy with the

conditions presented in a number of works⁸⁰. Attention should be paid to the fact that these sources examine several options regarding the needs of clients: a) restoring body functions through rest, b) their most complete satisfaction, and c) monitoring the progress of recovery. The implementation of such functions is based on the complex efforts of the society in the production, sale and movement of sports and recreational services and its accessories in a competitive market. This allows talking about marketing as an engine of 1) a commercial goal, which should not be forgotten under any circumstances, and 2) a purely functional goal of facilitating the mental, physical or physiological existence of a person. The goal of high-quality physical development of a person is connected to the level of health promotion and activation of certain physiological functions. For example, a person who has partially lost an organ or limb under aggravating circumstances of production and labor has the opportunity to prepare for operations in the workplace, where the movement of the lost limb is not required. Such ways of providing assistance to the injured person are officially fixed in codes relating to labor protection⁸¹.

⁸⁰ Chang, K., & Chelladurai, P. (2003). System-based quality dimensions in fitness services: development of the scale of quality. *The Service Industries Journal*, 23(5), 65-83. Srivastava, R. K., Shervani, T. A., & Fahey, L. (1999). Marketing, business processes, and shareholder value: an organizationally embedded view of marketing activities and the discipline of marketing. *Journal of marketing*, 63(4_suppl1), 168-179. Мичуда, А. В., & Мичуда, Ю. П. (2003). Стимулирование потребления физкультурно-оздоровительных услуг как процесс. *Современный олимпийский спорт и спорт для всех*, 7, 315-316. Степанова, О. Н. (2005). Управление маркетинговой деятельностью в физкультурно-спортивной организации: концептуальный подход и элементы технологии. *Теория и практика физической культуры*, 2, 42-46.

⁸¹ Goetsch, D. L., & Ozon, G. (2019). *Occupational safety and health for technologists, engineers, and managers* (p. 720). New York: Pearson. Feldman, G. (2011). *The migration apparatus: Security, labor, and policymaking in the European Union*. Stanford University Press. Friend, M. A., & Kohn, J. P. (2018). *Fundamentals of occupational safety and health*. Rowman & Littlefield. Koradecka, D. (Ed.). (2010). *Handbook of occupational safety and health*. CRC Press.

Directing the action in the field of physical culture and recreational activities along the path of the presented motives, it is required to have at the initial stage:

- organizational conditions and tools that ensure the real preservation of the relationship between the possibilities of the recreational system and the needs of customers in terms of put forward both quantity and quality conditions;
- scientific and methodological provisions and organizational mechanisms that ensure the proper functioning of the environment for the restoration of physical strength and energy of a person, general health improvement and strengthening of the functions of working capacity and neuro-psyche⁸² through the intensification of physical load on the body.

To achieve these goals, there are execution bodies, medical, sports and recreation services and top entertainment centers, which are feasible to implement tasks according to 1) their place in exchange activity, 2) the functional meaning of energy expenditure by the society. Consequently, the motives for the implementation of fitness systems converge on the fact that they are united both by the economic needs of the society and by the hopes of a person for recovery, restoration or adaptation of the balance of health in a transformed organism to the process of partial self-sufficiency. The above-mentioned transfers the study into the area of discussion about the essence of the recreational industry. Whatever the outcome of such a discussion, it becomes clear that its strength lies in the development of a person's motor inclination, consistent with the direction of the usefulness of the movement itself. At this stage of reasoning about such an industry, the processes of commercialization of action and social protection of a person also merge into a single process, and the service market is the only way to regulate relations. *This puts the marketing of the recreational industry into the environment of a com-*

⁸² Tsymbal-Slatvinska, S., Maksymchuk, B., Saienko, V., Babii, I., Behas, L., Lemeshchuk, M., Chepka, O., Dychok, T., & Maksymchuk, I. (2022). Psycho-Pedagogical Experience of Intellectual Education in the Views of Ukrainian and Foreign Pedagogues as the Basis of Modern Neuropedagogy. *BRAIN. Broad Research in Artificial Intelligence and Neuroscience*, 13(4), 321-346.

plex combination of several goals of spiritual, political, economic and even landscape content established in the society, with the hopes of an individual who is waiting for the completion of a health-improvement event, following own emotional motives.

From the point of view of the recreational industry, despite the fact that such attitudes have only emotional motives, they are nevertheless amenable to systematization and are distributed not along one, but along several directions of axiology. This study defines three such directions: 1) social value, 2) physiological usefulness and 3) sensual attractiveness of the fitness movement, which transfers the recreational industry into the quality of the sports-recreational industry. This is reflected in the test results:

- a. the prevalence of information about the benefits of physical culture, sports, fitness forms and ways of a healthy lifestyle for improving a person among the population;
- b. preferences of the population, tied to the worldview provisions and involvement in the process of health-improvement and restoring the vitality of a natural resource endowed with healing properties;
- c. the effectiveness of providing the monitoring system information to interested parties, with regard to methods and techniques of maintaining health and funds allocated for the improvement of the body and psyche in the region;
- d. familiarization of the population with the methods of the influence of motor load and physical impact on the human body taking into account time and availability.

Thus, a modern sports and recreational organization is understood as one that “functions on the basis of the fitness industry, the unit of which is a fitness clubs”⁸³. These fitness clubs can be “united under a common brand”⁸⁴ fulfilling a business function. Such organizations have, in comparison with the other types, advantages in the

⁸³ Березина, Н. А. (2021). Проактивная позиция при инвестировании проектов сферы рекреации и туризма. *Туризм и рекреация: инновации и ИИС-технологии*. Астрахань: Астраханский гос. ун-т, 125-129.

⁸⁴ Kotler, P. (1992). Marketing's new paradigms: What's really happening out there. *Planning review*.

service market for the reason that they participate in the development of its mid-price consumer segment. That is, in the development of the sports-recreational industry, the organizational and economic form of creating fitness clubs with a resource of accessibility to the service for both teams and consumers of individual and family fitness has the best prospects. It can be concluded that such an area has unlimited opportunities for any contingent of customers. In addition to the main interaction, it also has at its disposal the ability to offer additional and related services, which can meet the demand of the consumers. This applies to the:

1. regulation of the fitness program, organization of group or individual classes with customers;
2. services in the form of amenities, general and dietary nutrition, supplies of accessories, equipment, sports clothes and footwear;
3. exclusive development of insurance devices.

The above-mentioned returns the study of the sports-recreational industry a) to the environment of intra-company management and b) to the environment of technological management. A number of provisions need to be clarified regarding both positions.

A. From the standpoint of *intra-company management* of the sports-recreational industry, *the natural condition for the movement of such an industry is the problem of developing an organization with the preservation of "... real opportunities, structural changes focused on quality work at the lowest cost"*. This condition is supported in a number of publications⁸⁵. The basis for the effective movement

⁸⁵ Pokusa, T. (2017). Teoretyczne problemy wartości marketingowej sportowca. *Problems and prospects of territories' socio-economic development: 6th International Scientific Conference Poland. Opole: The Academy of Management and Administration in Opole*, 27-31. Voropayeva, T., Jarvis, M., Boiko, S., Tolchivaya, H., & Statsenko, N. (2022). European experience in implementing innovative educational technologies in the training of management specialists: current problems and prospects for improvement. *IJCSNS International Journal of Computer Science and Network Security*, 22(7), 294-300. Саєнко, В. Г., & Толчева, Г. В. (2019). Управління оздоровчим ресурсом спортсмена на шляху до вищої майстерності. *Стратегічне управління розвитком фізичної культури і спорту. Харків: ХДАФК*, 114-118. Толчева, Г. В., Саєнко, В.

of the industry is the results of the analysis of the factors of the host environment, which requires a firm consideration of their majority in the processes of improving the administration system, without going beyond the theory⁸⁶. The defining moment in such an environment, which is conditionally considered external, is the establishment of balanced relations not only with partner organizations, but also with competitor organizations, service consumers and groups of influence on the development of the scale of the action. The intra-company management efforts are known to address customer demand in several ways – through 1) creating brands and logos, 2) strengthening of administration policies and a wide publicity network, and finally 3) creating a sustainable platform for commercial efficiency, price attractiveness and aesthetics of perception of motor culture. This also applies to the fitness service, but the consumer environment, in turn, requires the founders of the fitness service to have reliable knowledge about:

- a. market features according to the markers of demand for the service, correspondence to the quantity, quality, composition and structure;
- b. presence in the region of personnel with sufficient skill and knowledge in the provided service, able to attract contingents of consumers;
- c. expansion of relationships to the appropriate scale, providing a team of like-minded people with a special focus on the main segments of the activity, about how to predict development of consumer demand for the service and achieve success;
- d. how to educate the staff to perceive motives, to intuitively process the information coming from outside about the trends in the development of interests, how to use the moment to improve the

Г., Червоняк, В. В., & Колибенко, В. В. (2019). Структура управління спортивно-оздоровчою організацією. *Актуальні проблеми фізичної культури, спорту, фізичної терапії та ерготерапії: біомеханічні, психофізіологічні та метрологічні аспекти*. Київ: НУФВСУ, 110-112.

⁸⁶ Kotler, P. (1992). Marketing's new paradigms: What's really happening out there. *Planning review*.

quality of services, how to take into account the solvency of the population, etc.

According to the above-mentioned provisions, which are perceived as quite general, an organization representing the fitness industry receives the status of an “object of administration influence”, which requires compliance with a number of functions that are common to all entrepreneurs. These include functions of:

1. *production and technological content*. Then, based on the fitness technology, an organization develops a business plan for a sports and recreational service, equips itself technically and includes in its staff fitness instructors;
2. *economic nature*. Then, an organization is seen as an organic system, endowed with specific resources that define profitability/loss, rights and obligations;
3. *legal character*. Then, an organization as a legal entity has a status and a range of responsibilities in the field of production, labor and implementation of regulatory guarantees that ensure safe interaction;
4. *social and psychological purpose*. Then, an organization as a team of specialists with its distribution and maintenance personnel has a resource for establishing and maintaining organizational cycles of communicative relations at all levels of interaction.

After reviewing the arguments regarding the general conditions for the movement of intra-company management in the studied industry, which were presented in part above and are given here, it is time to connect its tasks with the tasks of technological management. These aspects are supported by many researchers, including the source⁸⁷, which states the following, “Any fitness organization develops over time, going through four successive stages: creation-formation, formalization of relations (creation of a documentary base, organizational structure, reporting system, etc.), delegation of authority (planning from responsibility centers to profit centers), consolidation of efforts (planning by investment centers)”.

⁸⁷ Бутова, Т. Г., & Казаков, А. А. (2005). Исследование предпочтений потребителей физкультурно-оздоровительных услуг. *Маркетинг услуг*, (3), 41-46.

These stages correlate with the so-called “life cycle of a fitness organization”, which, in turn, correlates with the well-known phases of “birth”, “youth”, “maturity”, “aging” and “dying out” of a niche of activity.

B. From the position of *technological management* of the sports-recreational industry, a natural condition for including such an industry in the state register is the problem of developing an organization while maintaining the specifics of the product offered to the consumer. This product is due to the pedagogical interaction of a specialist with the energy of an educator with a person. In this interaction, the efforts of the team, its organizational and managerial structures, are subordinated to the processes of performing physical exercises and movements to rhythmic music. In the aggregate of the principles of formation of such an organizational and managerial structure, several orientation factors become relevant. These factors include: a) the purpose of physical action; b) the scale of corporate manageability; c) coverage of the territory by activity; d) cost-effectiveness of interaction in the host environment; e) the flexibility of adapting the action to the market environment. Such a combination of them is considered effective, which allows the recreational industry to adapt to one of the organizational and managerial structures according to the properties of physical activity. The last provision is of fundamental importance for this analysis, because such activities are personified in fitness culture. If we take the opinion expressed in source⁸⁸ that “modern sports, physical culture and health organizations in their administration strategy are actively striving to unite and cooperate with *education, food industry, culture, show business, the entertainment industry and other related industries that are in demand by the population*, and are increasingly turning into multifunctional sports-recreational-health-improving-entertainment-cultural centers”, then a wide range of organizational systems, forms and formations opens up before the sports-recreational industry, each of which can be self-sustaining and effective.

⁸⁸ Зенкина, И. В. (2009). Учетно-аналитическое обеспечение стратегического управления коммерческой организацией. *Аудит и финансовый анализ*, 2, 290-293.

In this case, the following assumption also looks interesting: *organizations of the sports-recreational industry have the expediency and specificity of administration, which allows them to form own network of niches, and this further allows filling own management with full-fledged functions, personalize them and connect their internal activity environment with external consumer environment.* In this regard, it is further required to take a fresh look at the common features of this industry. First, these are the features of the following environments: 1) physical education of a person as a method of moving an action, 2) physical influence on a person as a mechanism of interaction, and 3) technological management as a consolidator of a developing event. Each of these environments is endowed with organic factors of interaction, and is subject to the goal setting. In order to correctly perceive the justified provisions, attention should be paid to the specifics of the tasks. This specificity is considered according to the spheres of:

1. physical education of a person. It consists in the fact that the perceived information becomes a motivator and an instigator regarding the performance of physical exercises with a target orientation, regarding the methodical use of physiological factors according to their health-improving parameters and regarding the formation of such a lifestyle that contributes to the achievement of both one's own (the primary motive) and public (the secondary motive) goals for a single person. By analogy with *physical education, where management is understood as the process of directed, controlled and regulated change of physical and spiritual traits and capabilities of a person in accordance with the set goal*, the same opinion is perceived here. The criteria for the effectiveness of the process are: a) the level of human health, b) the level of physical capacity, and c) the level of social capacity⁸⁹;
2. physical impact on a person. It consists in the fact that the methodology for the development of reproductive traits of a person includes: a) *physical exercises* that end in strengthening health in any place, whether it is equipped as a training room, a glade with

⁸⁹ Бальсевич, В. К., & Запорожанов, В. А. (1987). *Физическая активность человека*. Киев: Здоров'я, 224, 65.

open air, a natural reservoir or something else, the main thing in this belongs to the space, sufficient to organize the movement of a group of people; b) *performing artificially created procedures* that develop, load, heal and restore the functions of the body and psyche by choosing physical means of influence, such as animal-, art-, helio-, dolphin-, music-, chromotherapy, biotic recreational resources, treatment with ozokerite, light, hill and sulfite muds, etc., obtained from solar-air, water-salt environments and mineral deposits; c) *compliance with hygienic measures* that contribute to the optimization of living conditions from a health perspective, among which compliance with the requirements set forth by sanitary standards regarding the general regime of life, work and rest, nutrition, body care, and the psychological state that develops in everyday communication, etc; d) *provision of conditions sufficient for physical exercises*, so that they ensure compliance with safety standards, pedagogical and physiological restrictions, which are put forward to the regime of classes and recovery conditions, to the state of the place of classes, equipment, inventory, clothes and shoes, timely nutrition with proper amount of vitamins, normalization of the body's condition due to the regime of exercise in the sauna, relaxing massage, ultraviolet irradiation, etc.; e) *paying attention to the value of a person's mental response to movement*, which helps the development of the phenomenon of specific adaptive changes of the human body to physical exertion, which combines strengthening the body's ability to make appropriate changes in activity, compliance with the systemic character of physical exercises, control of the body's reaction to physical exercise or for recreational, educational or training classes and their adjusted content. The main component of physical impact on a person is the concept of physiological perception of an action⁹⁰;

3. technological management. In contrast to background management⁹¹ with its multitude of management objectives, which are

⁹⁰ Маліков, М. В. (2003). *Фізіологія фізичних вправ*: навч. посіб. Запоріжжя: ЗДУ.

⁹¹ Цветков, А. Н. (2009). *Менеджмент*: учеб. пособ. Санкт-Петербург:

sometimes conventionally equated with the concept of “technological management”, the methods of combining physical exercises and movements with the means of their implementation and the rules for compliance with the requirements put forward for action according to criteria are transferred to the pedagogical and educational action the intensity and tension of the load on the one who masters it. Assuming the function of a factor, their mutual effect depends on the content and structure of the exercises performed by a person, divided into “physical movements”. These “physical movements” are assigned with the function of a product carrier in the physical culture and recreation industry. This function of physical movement is related to the qualities of organized muscle activity, which are variables. In turn, such activity is personified in physiological mechanisms that are registered in numerous morphological and functional systems of the body. The purposefulness of the adopted movements is determined by the combination of short-term, current and long-term goals of physical education with the help of pedagogical means of establishing the relationship between the subject and the object of action, which was discussed above. That is, technological management provides movement to the result of a certain number of classes filled with physical exercises according to the target program of physical education with the load gradient. The program becomes complete due to the unity of physical exercises and the intensity of the load extracted from them. This is a means of strengthening and uniting the action, which consists of exercises, movements and their series, which turn into methodical complexes, forms, and sequences. This combination is regulated by the parameters of physical exertion and rest, because they represent a system consisting of several classes. Such a mixture of occupations contributes to increasing the level of person’s physical potential, shaping individual health, cultivating tenacity, diligence, self-discipline and other moral and willpower qualities of a person. Achieving the goal of physical education is determined by a number of circumstances that are

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in cause-and-effect relationships, and is subject to the influence of a number of other, random factors. According to the general effect on a person, these relationships are:

- a. *biological*. They include morphologic-functional differences of individual age-sex groups, individual features of the organism and the heredity;
- b. *pedagogical*. They include perfect means and methods of teaching movement by a professionally trained⁹², competent fitness instructor;
- c. *social*. They include the means of perception of physical culture, health systems and fitness programs that are available to a wide range of the population and are supported by program and normative codes, health care organizations and physical education systems in secondary schools, higher and secondary educational institutions;
- d. *personal*. They include the quality of persistent interest in the health of the body, motivated behavior of the perception of action by the population, their ability to implement an opinion in view of the ability to pay, compliance with existing hygiene recommendations, compliance with the daily routine, physical activity and timely nutrition.

It is precisely according to such a multifactorial dependence that the appropriate reliability of the system of physical education and rehabilitation of a person is created, from which the physical culture and recreation industry benefits due to the saturation of action with new capabilities.

Thus, the recreational system as a whole acquires new abilities in comparison with the components of its subsystems that are created in it, which suggests the idea carried out in this research about its physical and psychological sense of usefulness. This idea is connected with the following: *physical exercising uses the motive of the developing*

⁹² Babych, V., Dubovoi, O., Zaitsev, V., Rydzal, Y., Saienko, V., Dubovoi, V., & Babych, L. (2022). Improvement of teaching methods of theoretical component of physical education (with the application of author teaching techniques) in the context of improving the level of social health of students of the special medical group. *Journal for Educators, Teachers and Trainers*, 13(5), 1-9.

motor loads that influence the human body and psyche; however, this does not explicitly mean the development of thought. It is enough in this case that human body acquires other properties, for example, such as a) hypoxia, b) general resistance to colds, c) physical and mental capacity, d) resistance to stress, etc. In order to achieve at least such a state, it is necessary to choose a balanced program of exercises and combine it with the alternation of both simple and complicated forms of exercises, many of which have already been developed and are being used. Taking into account the last statement regarding the multitude of means of pedagogical implementation of programs and their possible influence on a person, it is necessary to use the adaptive changes inherent in the functioning mechanisms of the body. We mean here that a person is able:

1. to respond to pressure with one of the possible adaptive reactions to an external stimulus, and so the action of controlling the system continues indefinitely according to the biological locators of human protection;
2. not to accept the given commands, and thus violate the controllability, which is so necessary for the system.

The effectiveness of the action is influenced by the means of voicing the training and health program, which is a verbal description of the necessary motion and movement in space of the person taking part in the class. The method is as follows: *the fitness instructor gives a verbal description of the exercise and demonstrates its execution with gestures and movements.* Based on this, the same wording of the task to the action can be perceived differently by different participants. This looks like a natural event. Such a perception depends on two factors, namely:

- on the life and cultural experience of a person, the level of their general scientific and special knowledge, degree of attention and type of nervous system, etc.;
- on the fact that feedback, which should be perceived as unanimous even taking into account the collective nature of the system, fails to exist or is interfered with the musical background, which is often perceived as noise.

Yet, the knowledge of the system-forming factors of action management, the basis for which is mostly drawn from the fields of biology

and pedagogy, economics and the social environment, facilitates the action, because it allows identifying the generally necessary conditions under which the action can be feasible. The just-named fields that underlie the formation of interaction in a person create the conditions for the effectiveness of cooperation according to the model of two links, namely:

an instructing person – an instructed person | (1.2)

In this model, the quality of the administration chain ensures the perfection of the product that the consumer approaches. This is exactly the feedback of the recreational industry from the needs of an individual in health, and therefore, from the state – in the production force. In order not to return to the consideration of relations in the internal sphere of technological management, we will first recall here the peculiarities of the interaction between the controlling link, i.e. an instructor, and the controlled link, i.e. an instructed person. In this environment:

1. interaction is supported by a non-contact means of regulating behavior, which is subject to orderly movement physical in nature;
2. the relations of professional and legislative responsibility are formed on the national legal basis;
3. control of positive changes is carried out according to the indicator of the health condition at the end of the adaptive functioning of the organism in relation to the initial stage.

If we build the study according to the scheme in which the system of physical education and health improvement of a person in the recreation industry is recognized as a social phenomenon, then it is necessary to identify the factors of operational activity and point to them. These are the following factors:

- *productive activity itself.* It moves along the pedagogic and didactic directions of the development of the processes of recovery, physical development and improvement of human motor functions;
- *physical education.* It is driven by the needs of a person in strengthening health, improving physical condition, prepara-

tion for life activities, fruitful filling of free time and perception of joy from greater saturation of life;

- *physical recreation*. It follows the interests of a person in the re-production of their energy, the formation of a worldview, the attraction to active recreation and entertainment;
- *physical rehabilitation together with a medical and physical culture complex*. It moves towards optimization processes of human recovery and restoration of mobility skills;
- *valeology together with hygienic requirements*. This factor moves towards the expansion of information about movements in nature and the immediate environment of a person, and the development of the qualities of focusing attention on knowledge about a healthy lifestyle and communication.

The implementation model is unchanged, its effect also extends to the organization of the physical culture and recreation industry. It is reproduced according to the movement of the chain of events and theoretical requirements, which are canonical and inviolable under any conditions of establishment of social relations. It looks as follows:

demand (needs) → supply → process → result | (1.3)

where: *demand* → moves according to the needs and wishes of citizens and social groups for physical education, health improvement and recreation; *supply* → is formed based on the demand for health promotion, rehabilitation and improvement of body functions; *process* → is carried out by pedagogical interaction in the form of training and improvement; *result* → is evaluated according to the degree of satisfaction of the individual needs of a person.

In addition to the above-mentioned, it is necessary to combine consideration of specific features of physical education and technological management, because they actively promote elements for creating a product of the recreational industry. These elements are the simplest physical exercises and their complexes, which in terms of physical content are loaders for muscles and muscle groups. They are included in the entire process if they meet the requirements of the impact on health improvement according to the properties

of anthropometric development and physiological changes in the human condition, which are correlated with the load, movements and intensity of the proposed exercises. Everything mentioned here is combined in the mental potential of a person. It remains only to give such movements a methodological meaning, imagine a form of practical gain and methodically perform physical complexes according to the chosen rhythm and tempo.

The technological management of the physical culture and recreation industry moves methodically according to the predetermined goals, the mode of their achievement, the motivation of the mutual action of the object and the subject, and the accepted nature of the motor behavior of the participants. The following factors become the activators of action – a) individual's personal needs and desires, which are unlimited in number, b) a person's physiological resource, the quantitative characteristics of which are limited, c) an acceptable effective physical system, d) methodological program guidelines in the field of mental correction of behavior perceived by an individual. The dominant effect of a certain factor is determined by the objective patterns of person's mental adaptation to action. Here we should remind of the following – adaptation must provide the physical impact and a person should be aware of the need for improvement. In addition to the person's perception of such an action, there are a number of external factors that often inhibit the implementation of intentions. Therefore, it is necessary to constantly pay attention to the degree of solving health and educational tasks, the economic and moral orientation of the society to the preservation of the labor force, and to calculate the reach of health improvement according to the requirements of expediency. The experience shows⁹³ that the level of efficiency exists in all without exception socio-economic processes, and its definition is connected with the impact of physical action on the human body by special means. In this case, *in the process of accumulative adaptation, self-development of the organism takes place, increasing its functional capabilities, ability to move, etc.* Guided by such provisions, it is proved that *the task of physical*

⁹³ Щедрина, А. Г. (1989). *Онтогенез и теория здоровья: методол. аспекты*. Новосибирск: Наука. Сиб. отд-ние.

education in the environment of the physical culture and recreation industry is beneficial if it includes:

- mastering motor skills and techniques according to the method of movement from simple to complicated, which improves the features of human viability and self-sufficiency;
- knowledge from the researched field, which improves person's movement towards mastering spiritual assets and means of physical self-improvement;
- strengthening of health, which increases not only the characteristics of the level of vital activity, but also the resistance of the body to the influence of adverse factors of the natural environment;
- increase in the functional capabilities of the body, which ensures the physical stability of the body.

The combination of the methods of pedagogical techniques with the technologies of motor influence, which in unity is precisely perceived as technological management, allows achieving changes in the field of human physical capacity. It is known that the basis of such a pedagogical process is biological phenomena that ensure the activation of precise, concrete, morphological, functional and psychological adaptation of a person to movement⁹⁴. Proceeding from this statement, technological management is strengthened by the *pedagogical system*, in which there is a mechanism for combining the means of educating a person according to the scheme of loading him/her with physical exercises, which must be performed in a certain rhythm for a balanced time during the lesson. The purpose of each of these classes is to direct person's movement in the desired methodological direction while maintaining proper muscle tension and attention to movement processes. Such a combination affects the development of person's physical abilities if the means of training a person in physical exercise ensure the absorption of energy of physi-

⁹⁴ Honchar, L., Derkachova, O., Shakhrai, V., Saienko, V., Hladoshchuk, O., & Voropayeva, T. (2021). Formation of psychological readiness of the teacher to implement information and communication technologies in professional activities. *International Journal of Education and Information Technologies*, 15(38), 364-371.

cal quality by the body. Both are combined in a physical system that has acquired the name "Aerobics", which, according to the researchers⁹⁵, over time has taken the place of a management tool in fitness organizations⁹⁶ and most health and recreation activities, measures and processes⁹⁷.

Considering aerobics as a tool of movement in the methodological space of fitness systems, its basis can be determined. This basis consists of two parts – physical movements that are natural to a person, and musical accompaniment that is perceptible in terms of volume, rhythm, timbre and tempo for a person who responds to an ordered sound or noise. Over time, some simplest steps in fitness have acquired a purpose and have been recognized as leading in the likeness of the existing ones. This can be said about "plie" or "chasse",

⁹⁵ Grodzka-Kubiak, E. (2002). *Aerobik czy fitness: podręcznik szkoleniowy*. DDK Edition. Ellison, J. (2009). Not Jane Fonda. *The fat studies reader*, 312-319. Lloyd, M. (1996). Feminism, aerobics and the politics of the body. *Body & Society*, 2(2), 79-98. Skopová, M. (2008). *Aerobik-kompletní průvodce*. Grada Publishing as.

⁹⁶ Толчева, Г. В., Саєнко, В. Г., & Śliwa, S. (2022). Педагогічний вплив на управлінські процеси у галузі фітнес-культури. *Вісник Луганського національного університету імені Тараса Шевченка (педагогічні науки)*, 3(351), 70-88.

⁹⁷ Golod, N., Tolchieva, H., Bilyk, V., Romanenko, V., Boiagina, O., & Biriukova, T. (2022). The state of health of female students of a special medical group: factors of deterioration and educational ways to improve. *Revista Romaneasca Pentru Educatie Multidimensionala*, 14(3), 325-346. Беляк, Ю., Грибовська, І., & Музика, Ф. та ін. (2018). *Теоретико-методичні основи оздоровчого фітнесу: навч. посіб.* Львів: ЛДУФК. Саєнко, В. Г., Толчева, Г. В., & Шабанова, Н. С. (2010). Фітнес на основі східних оздоровчих систем. *Проблеми та перспективи розвитку культури здоров'я особистості в соціальному контексті*. Луганськ: Вид-во ДЗ „ЛНУ імені Тараса Шевченка”, 116-121. Шинкар'єв, С. І., & Толчева, Г. В. (2012). Оздоровчі технології в системі фізичного виховання в позааудиторній роботі зі студентами вищих навчальних закладів. *Олімпійський спорт, фізическая культура, здоров'я нації в сучасних умовах*. Луганськ: Изд-во ЛНУ имени Тараса Шевченко, 371-375.

which were borrowed from classical dance, and some others, for example, mambo from ballroom dances, or even fragments of music and songs of the nations of different continents. Fitness uses a feature of dances, which shows the following peculiarity: each of the dances, taken separately from the others, has its main steps, based on which the dancer creates excellent choreographies that differ from each other in their performance. It is only necessary to observe the repetition of certain rhythm, tact or tempo, and according to this, the dynamics of movement in the plane. That is, connecting what has been said with fitness, the important thing about this is that each dance gives the opportunity to create variations of steps and movements that are initially recognized as unique, and over time become standard in fitness. Similar features are picked up everywhere, because they characterize the modern forms of the movement itself and the musicality of the movement. It should be noted that specialists have a characteristic of fitness, according to which its perception is determined as a “dance-aerobic” type of occupation of the population. This leads to the fact that the meaning of fitness as a “choreographic system” is recognized automatically. Each choreographic system is created by a fitness specialist and is tested in training groups, but is primarily perceived as nothing more than the rhythm of the dance. This is indicated by the close coordination of music with the physical movement of a person, which iteratively repeats, being tied to the time and space of movement. This allows generalizing the idea of physical fitness systems and their use as a methodological chain mechanism:

$$\text{AEROBICS} = \text{COORDINATED MUSIC WITH PHYSICAL MOVEMENTS IN TIME AND SPACE} \cup \text{CHOREOGRAPHY} \cup \text{MOVEMENT DANCE} \quad (1.4)$$

Conclusions to chapter 1

1. The presented concepts allow approaching the resolution of such an important and specific function of physical culture as strengthening human health, based on the development of the physical qualities of a person, taking into account his/her real physical

condition. In this regard, organizations of the recreational industry are assigned an effective role, which should connect physical systems for the restoration of human functions to their natural resources. So far, the strengthening, and not the healing and developing effects is taken into account. Its important role is *to create in the society the possibility of satisfying the physiological need of a person to restore motor activity, and on this basis, to ensure the processes of strengthening the resource of physical and mental capacity, which in the environment of social relations acquires the property of a productive force*. Proceeding from this, the opinion has long existed in the society that the usefulness of its supporting role can, with some changes, turn into a leading branch of activity. This will happen from the moment when the recreational industry takes a full-fledged place in the environment of replenishing the productive forces of the society. In order to achieve such a property, this environment should fully include the phenomenon of human recovery and restoration of human strength with the help of different fitness systems, and undergo the process of commercialization. The inclusion of fitness systems in human health programs changes some approaches to the perception of physical processes and the effects of movement on a person who is weakened for some reason. It happens so because their constructions include exercises and their systems, the implementation of which in an established sequence in the rhythm of a dance brings a healing effect, development and recuperation. To ensure such an action, it is necessary to set in motion a lot of social ideas that have become outdated, and a set of personal nervous, mental and physiological functions that prepare a person for the transition to a new, higher level of mastering physical exercises on the basis of conscious perception of their strengthening and developing values. It is also necessary to create conditions for the formation of an impetus and the transition to a new way of thinking, which allows one to benefit from the system, because this movement allows putting into circulation a more effective system for regulating body functions based on the free choice of regulations and the fulfillment of the requirements put forward in handling them. The useful-

ness of the action does not end there, because such a change in the saturation of life changes its image, which allows a person to rise to a more effective stage of development, spontaneously including him/herself in a new environment – the environment of territorial organizations of the sports and recreational industry. This convinces the society of the theoretical value of the named industry. However, its significance should not be overestimated: the recreational system prepares a person for action at its own level, and it is natural to recognize here that it will exhaust itself at a certain level, and must then transfer a person either to the environment for further training using the methods of physical culture and sports, or to the environment of vocational education and productive activities. In such environments, an activity can be subject to the laws of the general progress in the development of social relations. That is, in these environments there will be conditions for the subsequent development of mastery, improvement and strengthening the skills of a person with any of his/her initial anthropometric inclinations. Each of these environments is characterized by special systems of organization, management, pedagogical and rehabilitation support. Many positions of these environments are known, but there are also less mastered, but more effective ones. The following needs to be said about the latter: *such environments are organizational and methodological in nature and are at the stage of verification, refinement and development of methodological provisions, qualities and advantages, and therefore await explanation and choice of the path of events. Fitness systems belong to such environments.*

2. The modern recreational industry is stable, according to its essence and purpose, it changes slowly, and this happens mainly due to the replenishment of it with new means of medical and therapeutic treatment, which should be perceived in a proper way, because they differ in their effectiveness of the provided assistance. The systems of physical influence on a person, affecting an individual in a healing way, have been given a certain importance since the 19th century, when motor exercises began to be introduced into health programs with and without simulators. Since the middle of the 20th century, this has grown into a systemic

and complex use of physical rehabilitation and motor recovery of a person. Such a transformation of health-improving activity is carried out in the conditions of the struggle of opposites, which includes the stages of the origin, formation and development of any social phenomenon that adapts to the needs of the society and transforms, for most of its parameters and characteristics, into the demand for services that are newly formed, based on the new types and spheres of cultural, political, social and economic life that are amenable to transformation. These include the services of the recreational industry, which have recently been intensively determined by the systems of physical culture, adaptive activity and fitness. Choosing one of these systems, a person can restore strength, develop the physiological ability to work, and then join one of the branches of interaction as a full-fledged productive force of the society.

3. The prerequisites confirming the usefulness of the studied activity are the following:
 - a. the specific function of physical culture. This function is called fitness due to the fact that it forms the basis of health-improving and therapeutic measures, which take into account the strengthening beginning of physical exercises, movements and motion of a person in space along with therapeutic and healing interventions. The methodological basis for the development of recreational and health-improving activities in medicine, and in the physical therapy and recreational environment is a mechanism that provides the creation of a certain opportunity to strengthen the recovery functions of a person as he/she masters the stages of comprehending the basics of motor activity and turning an individual into an active and thinking person on the basis of such strengthening, and over time – into a generator of a resource of physical capacity in the self-sustaining environment;
 - b. the structure of the recreational industry. This structure is replenished with new fitness systems that have motor and developmental properties. Such a replenishment happens by analogy with the processes that transform most spheres of cultural, political, social and economic life with new phenomena.

This turns out to be useful for identifying an effective environment for managing the processes and functions of strengthening human health, establishing the value of the identified field of activity and turning it not only into a type of activity, but also into a sphere of the economy after recognizing its developing qualities that bring usefulness to a person through the combination of physical culture and recreational value.

CHAPTER 2

Fitness systems as a component of the recreation industry

Fitness combines recreational forms of physical exercising and developed from aerobics and rhythmic gymnastics. The word “fitness” derived from the verb “to fit” and means “the condition of being physically fit and healthy”. During the time of formation and movement across the continents, fitness has acquired a sufficient scale in terms of its variety, and has taken a prominent place in the environment of physical culture as the health-improving system, which has a specific effect on the strengthening of person’s motor and resistance capacity, and on the provision of health and entertainment pleasure among broad strata of population. The mechanism of the system development is based on motor action, the influence of which on a person contributes to and improves the general physical condition of the body, and therefore, of the nervous system. Such a mechanism is supported by a person’s ability to successfully resist the negative effects of environmental factors by performing movement exercises accompanied by music, which determines the rhythm and speed of the exercise, movement in the environment or motion in space. The result of the action of fitness is the correction of the physique, shape and weight of the body, development of physical qualities, accumulation of biological energy, general improvement of a person’s health, and rehabilitation of person’s physiological and mental properties. The physical meaning of fitness includes

the prospects of person's physical improvement and the acquisition of motor or even athletic skill levels. The general definition of fitness in the study can be stated as follows: "Fitness is a set of physical exercises, the purpose of which is to improve the health of the body". Fitness is a phenomenon that provides the physical preparation of a person for movement and development. The prospects of the fitness development in the future may also be related to solving the problem of human aging, as presented in sources⁹⁸ and others, but this is a subject for independent research.

There is a sufficient number of physical fitness systems to group them according to scientific principles and make generalizations of the methodological content. In this regard, there is an opportunity to divide all such systems in the study into two groups in order to begin studying them. The first group of the introductory list includes those in which it is recommended to comply with the systemic didactic-pedagogical requirements set forth by the technological management for conducting a pedagogical-educational class, and the second group includes those with an individual-educational approach to the implementation of the program or complex of physical exercises. The first group, group A, includes a) *low-impact aerobics*, b) *step aerobics*, c) *FBC as a fat-burning process*, d) *TBC as the most acceptable means of body shaping*, e) *funk as an alternative to aerobics*, and f) *AQUA FITNESS as a means of strengthening health in water*. The second, group B, includes those that can be performed at any pace and in any sequence of complexes, supplementing the series with movements taken from the personal experience. These are fitness systems a) *with a ball*, b) *with a ribbon*, as well as such physical systems as c) *Pilates*, d) *Tabata*, e) *one exercise*, g) *combinations of different types of physical impact on a person* and h) *summer tubing*

⁹⁸ McDonnell, O., Lohan, M., & Hyde, A. (2009). *Social theory, health and health-care*. Bloomsbury Publishing. Takahashi, Y., Kuro-o, M., & Ishikawa, F. (2000). Aging mechanisms. *Proceedings of the National Academy of Sciences*, 97(23), 12407-12408. Донцов, В. И., Крутько, В. Н., & Потемкина, Н. С. (2017). Принципы профилактических, оздоровительных и биоактивирующих мероприятий в антивозрастной медицине. *Международные обзоры: клиническая практика и здоровье*, 5-6, 93-113.

as a seasonal means of fitness. A critical analysis of positive features and characteristics of such representatives of the recreational industry as physical improvement of a person and improvement of the motor apparatus according to the variety of fitness systems, their physical exercises and movements, is provided in the sources⁹⁹.

2.1. Scientific and methodological provisions of managing fitness as a system of influence on human health

The components of fitness represent a set of methodological indicators, among which the parameters of aerobic load, endurance, flexibility and strength are recognized as derived from the physical basis of human training, and the characteristics of caloric nutrition, compliance with work and rest schedules, and compliance with requirements are derived from the observance of hygienic order in the environment, personal hygiene and sanitation. Such a combination leads to the synchronization of the regulation of the functions of the respiratory, circulatory and cardiovascular systems due to the performance of exercises and movements to the accompaniment of music and determines the pace of mobility of those included in the class. Fitness control involves the physical training of a person and the unification of systemic efforts for the person's recovery.

⁹⁹ Byrko, N., Tolchieva, H., Babiak, O., Zamsha, A., Fedorenko, O., & Adamiuk, N. (2022). Training of teachers for the implementation of universal design in educational activities. *AD ALTA: Journal of Interdisciplinary Research*, Special Issue 12/02-XXVIII, 117-125. Golod, N., Tolchieva, H., Bilyk, V., Romanenko, V., Boiagina, O., & Biriukova, T. (2022). The state of health of female students of a special medical group: factors of deterioration and educational ways to improve. *Revista Românească pentru Educație Multidimensională*, 14(3), 325-346. Zhamardiy, V., Shkola, O., Saienko, V., & Tolchieva, H. (2020). Fitness technologies in the system of physical qualities development by young students. *Journal of Physical Education and Sport*, 20(1), Art 19, 142-149. Толчева, Г. В. (2011). *Програма занять з хатха-йоги для студенток початкового рівня підготовленості: метод. реком.* Луганськ: Вид-во ДЗ „ЛНУ імені Тараса Шевченка”.

From such a judgment, it follows that the term “Physical training” and the concepts derived from this term, namely “physical fitness” and “health”, occupy a leading place in the content of fitness, because they include features of the development of physical condition and improvement of a person’s functional ability to move. Based on this, it forms appropriate training schemes for a person and determines the content of the targeted impact of physical exercises, movements and their combinations aimed at “perfection”, that is, at the “ability to effectively perform muscle work”.

The term “ability to efficiently perform muscle work” is perceived as a leading concept. It reflects the characteristic of a rather high level of current physical activity and motor abilities of a person, including the ability to lead an active life in all, without exception, spheres of human activity. The concept of person’s physical readiness, which is connected with the development of the motor, mental and physical abilities by means and systems of fitness, is related to the adequate influence of the recreational fitness training. However, fitness is not exactly what was said above and corresponds to the physiological and medical health concepts of physical recovery of a person. In this environment, the concept of “health” takes the central place. Taking this into account and combining the content of physical culture and health training, during the last few decades, the society has become convinced of the usefulness of purposeful fitness activities, which significantly enhances the health of a person. The latter is associated with cases of prevention of civilizational diseases¹⁰⁰, individual involution processes and processes of therapeutic influence. In this and other cases, the impact of exercises and movements on a person based on their pace is associated with the resulting change in the body, which is registered according to the features of mobility, excess weight, osteoporosis or else. In addition, the organic mechanism of influence is necessarily the systems of motor activity, which are developed by means of fitness. Such a mechanism allows talking not only about a person’s physical training, which can be both general

and targeted, but also about individual’s health. The term “Health” is unambiguously recognized as follows: it is “not only the absence of disease and infirmity, but also a state of good physical, mental and social well-being”. If we compare the studied terms, the connection can be stated as follows: *physical training of a person is a necessary condition for their health*. According to this perception of the terms, many other components are included in the action, among which the effectiveness of the respiratory and circulatory functions of the body, the relative “readiness” of the body, endurance, flexibility, and muscle strength are considered to be the leading ones. In order to consider successfully person’s physical training, its indicators must meet the adequate requirements set forth by the standard. In addition to a good physiological condition of the body, a person must have a certain range of mastered primary motor skills and mental capacity. Therefore, the general goal of person’s physical development from the point of view of fitness is as follows: – *to achieve a positive condition of physical health due to a low risk of arising problems with health*. Movement skills are recognized as achievements according to the criterion of mastery of their execution. There is also an artificial moment of relativity due to the extraordinary external influence on a person. They are aimed at the registration of such a mixture of coincidences, according to which the ability to perform daily tasks with appropriate energy and dedication is acquired, a sense of perfection is produced, and satisfaction is achieved from participating in the implementation of selected types of exercises and movements that are inherent in the type of physical culture and sports.

There is another factor to pay attention to. In fitness, the concept of “physical training”, which has taken a prominent place in sports as the final value of an action and “value in itself”, should be treated with caution. The reason is as follows. Among the multitude of human movements of person’s development, there is a peculiar fashion for leading an active way of life and activity. It means preventive, stimulating or even therapeutic action. Therefore, adhering to the slogan “to be fit”, which is the main idea of fitness, means the return to the long-forgotten ancient Greek ideal of *kalokagathia* – maintaining the perfect harmony of body and spirit. Guided by this slogan, fitness classes do not serve to achieve the goal of acquiring

¹⁰⁰ Śliwa, S., Saienko, V., & Kowalski, M. (2021). Educating students during a pandemic in the light of research. *International Journal of Educational Development*, 87, 102504, 1-5.

clearly defined specific skills, but they serve to develop the personality of the participant in all areas of his/her emotional, mental and physical preparation for the perception of means of life support. Only in this case can the idea of harmony be achieved, according to which the factors integral to health coincide with the stimulating ones, and under such circumstances the set of physical exertion will be fully realized for its purpose. Therefore, we can assume here that *under certain circumstances, which must be observed on a non-violent basis, fitness is the way that should satisfy measurable benefits from the point of view of physical readiness*, and after that, be accompanied with joy and pleasure, influence positive self-esteem from participation in the event. The expectation of regular participation in the next class should also cause a feeling of desire for physical development and social affirmation, balance behavior and manage irritation in stressful situations¹⁰¹ that arise both in everyday life and in business affairs and relationships.

Accepting the above definition of physical readiness, we can further assume that all recreational physical activities serve to preserve or develop such readiness in a person. In the environment of the people, who lead an active lifestyle, forms of movement, which are more often considered as forms of physical recreation, enjoy special recognition. These forms can be named “Fitness”. According to its physical meaning, fitness includes a variety of types of purposeful physical exercises and activities, which have specific technical tasks and targeted physiological bases and which are different in structure, but are carried out according to the uniform rules of some form of group training, are accompanied with the appropriate musical accompaniment with a selected or specially composed melody and chosen rhythm of mobility. In the first view, it is the musical accompaniment that distinguishes fitness classes from many existing forms and recreational techniques. However, the popularity of fitness is affected by not only the external visual and auditory appeal. Let us consider some features recognized as general.

One of the first and leading characteristic features of fitness class-

es is that fitness does not mean sports training, that is, classes do not acquire a sports character and do not obey sports goals. Participation in group fitness classes is in no way associated with the results that must be ensured according to the methodological guidelines that are characteristic of sports competitions and the struggle for achievements. During a fitness class, participants overcome only their own weakness or clumsiness. That is, in order to participate in fitness classes, a person of any age does not need to have any predetermined special skills. To prove the above, it is enough to remind that, even in such systems of physical activities as golf, recreational volleyball or tennis, which belong to the most accessible ones, a person must still have specific movement skills and perception of the reality of changes in the environment.

Another valuable characteristic of fitness is its versatility. According to the plan of the organizers of the class, there is a unique opportunity to adjust the type and parameters of a single exercise or their complex to the individual needs and mood of each participant of the interaction, which is consistent with person’s age, health condition or mobility of the body and nervous system.

Further, we should consider a number of features that distinguish fitness classes from other forms of physical recreation. First, attention should be drawn to nature, which is favorable for the free location of equipment or inventory. It is about the peculiarity of fitness classes: *most health and entertainment activities, and fitness is a representative of such activities, are carried out in the existing environment*. Second, scientists understand fitness not only as a set of physical exercises performed according to a certain scheme, but also as a multiple physiological load on the nervous system, mind, and parts of the body. This connects fitness to the global movement, turning it into a continuous flow of knowledge about the development and improvement of a human being as a creating person. That is, a person develops dynamically under the influence of some guiding idea, which is associated with the conscious influence of movement on emotional, mental and physical health, on mental readiness, physical mobility and acceptance in the environment. Third, fitness has returned relations to the civilizational rails, which is registered according to changes dictated by the increase in the pace of life,

¹⁰¹ Чернявская, Т. П. (2010). *Психология успешности личности в бизнесе, монография*. Одесса, Астропринт.

the level of stress in professional and social life, the requirements of the environment for the physical readiness of a person to perceive a different level of quality of life, etc. Therefore, the organization of life according to fitness is often the basis for the disclosure and affirmation of some other, unknown, but stable abilities that ensure proper quality and stability of life.

Comparing fitness with sports training and competitions, we can state the following *in the competition process*, to which such forms of fitness as sports aerobics and individual fitness competitions with elements of acrobatics and bodybuilding belong, *there is a common feature of sports specialization, which does not affect the harmonious development of the personality, but aims at a maximum possible development of physical and mental characteristics. This should ensure that a person achieves the best sports result at the tournament.* In fitness, there is no such a requirement. *In fitness, according to its rules, a training class is not related to the processes of specialized sports training of a person, participation in competitions is not expected (competitive fitness disciplines are not taken into account here), and the form of the class is considered one of the means for the spiritual development or psycho-physiological rest from everyday life.* Along with this, attention should be paid to a number of features when:

- the movement from the existing condition of a person to the desired condition is recorded;
- the features of orientation towards some reference point movement manifest themselves;
- the quality of action and movement is subject to control;
- there is systemic character, consistency and smoothness in the field of movement culture, exclusive concentration on the image, mind or part of the body;
- there is a feeling of harmony of the extended activation of diverse human capabilities based on the signs of maximum reach, preventive or rehabilitative benefit.

As in any specialized sports training process, this is achieved in fitness classes if the general principles of its implementation are used. The most important principles of education are: a) the principle of continuity, b) the principle of progress and c) the principle of specialization. Their content is considered in the following order:

- a. *the principle of continuity in training.* Each of the fitness classes is a complete and integral organizational and technological process, the implementation of which by interested consumers is aimed at their positive, measurable results. The expected signs are the following: year-round or even multi-year training in order to achieve harmony in the performance of exercises and movements, subjugating them to systemic character, mobility and rhythm through repetition and change of mobile load. Since fitness is a means of forming motor skills, it requires constant repetition of motor actions and provision of their systemic and cycle character. Continuity is associated with the elements of timely restoration of body functions, with repeated and intense training, preceding restorative activities and rest. As a result, the condition of muscle elasticity is registered, which is perceived as an indicator of functional compliance and adaptability of the body to certain motor and physical loads. In addition, according to the mentioned principle, the formation of the participant's figure, the relief of the muscles and posture are among the signs of training. The results also include the accelerated recovery of functions, more economical expenditure of biological energy, mastering new exercises and increasing loads. However, it should be noted that such signs or *physical results* are achieved only in such a case, when the training process is carried out systematically and methodically correctly and when it corresponds to the studied principle. Violations of the regularity of exercise, wrong parameters that do not correspond to the needs of the participant, and inconsistency of the possibilities inherent in physical exercises and movements, usually lead not to an increase, but to a decrease in the level of fitness and/or health risk. At best, there is hope for some development of skill and physical fitness, but even then, this does not mean consistent development. However, the latter is actually the goal of most fitness followers who attend classes according to their schedule and preferences. However, it is difficult in fitness to decide after what time of regular attendance of classes and constant performance of physical fitness exercises a recommendation can be given to start registering the result. Visual comparison allows us to talk only about the achievement

of changes in body components, which, for example, are quantitative representations of muscle or fat tissue in the human body or a specific condition of physical readiness. Such a result depends on the individual needs of a person and on many factors related to the body type. These factors include the physiological speed of metabolism, innate motility, perseverance in completing the task, attitude to self-training, etc. The influence of the latter is more often not subject to control in the training program and is always somewhat limited. However, it is possible to predict the future fitness effects on a person. For this, it is necessary to resort to the means of a thorough comprehensive diagnosis of the condition of health and physical readiness of a person for action both at the start and during the current participation in classes. Due to the violation of the continuity of training, failures in movements and perception of musical rhythm are visually registered, and in such a case, there is no need for prediction. Interest arises in measuring the time of missing classes. The period of time after which there is usually a regression of productivity in a person comparing to the average level, when attending classes takes place twice a week, is associated with 2-3 weeks of absence, that is, after missing 4-6 classes;

- b. *the principle of progress in training.* If the action involves physical exercises or their complexes and systems that are associated with the strengthening of general health, some systems or muscle groups of a person, then it is necessary to talk about the dynamics of progress in the chosen direction. The principle of progress towards high achievements in fitness comes down to the content, composition of exercises and movements, and the perfection of their execution. During training according to the fitness system, the development of the adaptation mechanisms of the body, which is caused by the alternation of training loads, is primarily stimulated. The adaptation mechanisms of the organism mean a deeper perception of:
- ◆ near, intermediate and final perspective. That is, it is necessary to take into account the phasing of the goals of person's training. Since in fitness there are indicators by which quantitative achievements are evaluated and visually fixed, the model na-

ture of mastering exercises and movements and their variants is also perceived;

- ◆ stages of person's specialized training, which is related to the age and level of readiness for movement;
- ◆ elements of the program, their connection in a combination of movements, technical means and devices to improve physical and functional readiness, to take into account individual characteristics and increase activity, which is characteristic of an individual;
- ◆ merging into a single process of different actions on education, training and increasing the functional capabilities of the organism, which is solved due to the fulfillment of narrower tasks, which must be addressed after assessing the systemic unity of a person with the environment, the impact of exercises on the local development of functions that are subject to improvement, and combination of general development exercises with exercises of local action. In order to preserve the positive influence of such mechanisms, which are caused by the principle of training progress, it is necessary to constantly increase the scale of the complexity and intensity of the exercises. This develops the adaptation to personal needs that grow over time. There is a dependence, namely: *both too easy and too difficult exercises after some time cause a decrease in motivation to continue classes, and soon after this, the lack of achievements from the performed exercises is also registered.* It should be mentioned that regulation of the scale and complexity of the exercises concerns three components of the coaching intervention. This is a choice of a) the intensity of the pace of execution of a set of exercises, b) volume load of this complex and c) technical complexity. The above is fruitful when in the group includes people for whom physical exercises are achievable, they are almost the same age, have approximately the same level of health and initial physical readiness. The progress of loads in such cases is ensured frontally, but all other options for organizing fitness classes require the instructor to form and apply methodological techniques of an individual nature;

- c. *the principle of specialized in training.* Each of the types and modules of fitness classes has clearly defined goals. For these purposes, the parameters of the exercises developed for each session should be synchronized in such a way that they obey the achievement of the intended specific goal. The leading goals are:
- ◆ harmonious physical development and ensuring human health;
 - ◆ current development of motor skills and tempo qualities;
 - ◆ mastering the flexibility characteristics of physical exercises;
 - ◆ education of emotional traits and psychological stability;
 - ◆ acquisition of practical skills and methodological knowledge of muscle group management.

In fitness, there is a feature that is invariably associated with the principle of specialization of training. In order to establish a truly effective and real goal for an individual participant of the class, which is adequate for the condition of health and physical readiness, it is necessary to connect the course of the exercises with time and age. Most often, the participants of the development process expect an impressive and quick effect from the exercises. In most cases, this is expected regarding the improvement of the figure and relief of the body, and a significant increase in the resource of physical development of the body. This can be achieved quickly if there is understanding of the functional capabilities of a person, then, depending on this condition, the prospect of involving a certain fitness scheme should be evaluated.

A scientifically based, correctly organized and conducted fitness class, which is included in an unchanging system of a training program, in the end result harmoniously covers all spheres of the personality. The improvement of the constructive structure of the body, muscles and movements, influences the emotional, physical, mental and social spheres. For example, the physical influence causes functional and structural changes in the body, the content of which includes the following:

- *emotional impact.* It means an increase in the motivational ability to develop oneself, the development of a tendency to work on one's own satisfaction in relation to one's own achievements, the development of perseverance;

- *physical impact.* It means burning excess fat, building muscle tissue, increasing bone density, increasing cardiovascular and respiratory efficiency, developing muscle strength and endurance, increasing VO₂max, synchronizing coordination movements, expanding the range of mobility and stability of joints, stimulating the adaptive properties of the immune system and increasing the body's energy level;
- *kinesthetic influence.* It means a brighter feeling regarding one's body, natural health-improvement, improvement in the level of controllability of body functions and the efficiency of performing own movements, gaining the experience of realizing own physical superiority over the environment;
- *mental influence.* It means the appearance of a feeling of stress reduction and increased ability to relax, improvement of well-being, increase in the quality of self-perception, increase in motivation to act fruitfully under any circumstances, both on oneself and on the environment, a more stable awareness of the need for movement;
- *social influence.* It means the development of concentration of attention on abilities for accelerated integration into interest groups, establishment of new social contacts, exchange of opinions, tolerant connection of other personalities into a private circle of relationships.

Here, we give a description of the influences based on their superficial perception, but further, when referring to them, a scientific and methodological description will also be provided.

Each type of fitness is technologically associated with the training of controlled and rhythmic exercises and movements, which are systematically and consistently connected to each other. Such a connection between them does not arise out of nowhere, but is united by four functional components. They are as follows:

- a. *periodicity of classes.* The leading characteristic of determining the appropriate frequency of fitness classes is the frequency of physical units of classes or the number of training classes;
- b. *intensity of classes.* The leading characteristic of determining the appropriate intensity of fitness classes is the degree of load on the body during the implementation of a set of exercises;

c. volume of classes. The leading characteristic of determining the appropriate volume of fitness classes is the duration of one class;

d. class module. There are no unified modular characteristics and each group chooses such a content and such a form of classes that correspond to the wishes and sophisticated tastes of the majority. The periodicity of classes is related to their frequency, which is associated with the calculation of their number during the week. This number is determined depending on the current level of preparedness of both the potentially evaluated group of participants and one of them. Following this element, which determines the frequency of fitness classes, the goal to which the entire team strives is taken into account. The goals of fitness training classes can include the following: *a*) maintaining the condition of physical fitness at the current level, *b*) improving this condition, *c*) changing the figure or improving participant's mental condition. To maintain general physical fitness at a relatively constant level, it is enough to adhere to approximately 90 minutes of aerobic exercises per week, which corresponds to three or two training sessions.

When positive changes in the parameters of person's physical readiness are established according to the goal of classes, it is recommended to increase the frequency of classes. For beginners who lead a sedentary lifestyle, classes lasting 45 or even 60 minutes are recommended. The choice of classes depends on the type of module. There are modules of classes, which are carried out three times a week during the adaptation period and a gradual increase in the number of classes to 4-5 trainings per week is expected. To increase the number of classes, one should be guided by the rule of progress of training effects. At the same time, this rule applies not only to planning the number of classes, but also to regulating the intensity of the exercises and the scale of the difficulties that arise when performing them. In addition, the risk of overloading must be avoided. That is, the intensity of classes should be adjusted to a number of individual characteristics. These are the age of the participant, gender factor, level of health, condition of the physical readiness of an individual, and goal of fitness classes. Considering the above, it is possible to combine the amount of time allocated to an individual fitness class, the goals of actions, and the intensity of efforts

mobilized to perform a set of exercises and movements.

The general principle for intensity control regarding the duration of the session is that *the more intense the exercises are, the shorter their duration should be*. Table 2.1 shows the energy level needed by the body depending on the duration of efforts.

Table 2.1. The energy level needed by the body depending on the duration of efforts

Duration	Intensity level	Energy supply system	Type of energy transformations (%)	
			anaerobic	aerobic
up to 15 seconds	sub maximum	anaerobic	95–100	0–5
15–60 seconds	maximum	anaerobic	80–90	10–20
1–6 minutes	sub maximum	mixed	70–40	30–60
6–30 minutes	medium	aerobic	10–40	60–90
more than 30 minutes	low	aerobic	5	95

Developed based on source: Szade, D., & Szade, B. (2005). The evaluation of offensive tactical efficiency by a specific volleyball test. *Journal of Human Kinetics*, 13, 73.

The amount of training load should coincide with obtaining the expected fitness results, which can include: *a*) development of aerobic influence, *b*) stimulation of fat burning processes, *c*) increase in muscle strength and endurance, *d*) development of motor coordination or something similar.

If to move to the methodological recommendations, we can talk about the following cases. The optimal time of efforts aimed at the development of aerobic fitness (for example, in aerobics) reaches 15 minutes at an average intensity of 65–75% max. HR. To activate the fat metabolism, which should lead to the reduction of excess fat (for example, in the FBC classes), the amount of physical exercise should be bigger – at least 20-25 minutes of continuous effort, but with a rather low intensity within the range of 55-65% max. If we add about 10 minutes of warm-up, additional strengthening exercises and a set of calming exercises to the time of the main part of a fitness

class, the average total time of an aerobics class should be between 45 and 60 minutes, the step aerobics class should last about 60 minutes, and the FBC class – up to 75 minutes.

The module of the fitness course should be adapted to both the objective and subjective needs of the potential participant in the training process, with a special emphasis on his/her well-being and health condition. Those who feel overweight, have a significant loss of muscle strength and endurance are advised to do modules in which they can effectively burn unwanted fat and/or strengthen muscles. For example, FBC or TBC systems include such exercises. On the other hand, one should refrain from taking aerobics classes, the parameters and nature of which are designed for people with different physical readiness and health condition, and with different set goals. Cross training is recommended for both beginners and advanced fitness participants. Cross training can also be called combined training. This is a training process based on the diversity and versatility of the modules of individual classes in the fitness program. This guarantees the uniform development of all aspects of physical readiness and attractiveness of exercises.

There are other important factors: individual training modules differ in the type of the background music, other equipment and tools used during the exercises, and above all, they are differentiated by the specifics of the goals and learning effects. If we talk in general about the introduction of active movement into the everyday life of people, then all types of modern fitness classes can be divided into methodologically diverse groups, namely: 1) those directed to the developing the physiological readiness of the body and 2) those directed to the formation of muscle strength and endurance. Other classification motives can also be singled out, for example, those that motivate the perception of movement as a means of achieving pleasure.

Fitness systems oriented to the development of fast and effective relaxation skills, mental and physical leisure include stretching, yoga, tai chi, and others performed to calm and slow music. To choose an exercise module, one should consider the most popular fitness systems. These are:

- Aerobics – aerobic exercises without equipment;

- Low Impact – low-intensity aerobics with exercises without jumping;
- High Impact – aerobics with lots of jumping and running;
- Hi/Lo – aerobics of medium intensity with elements of low and high impact;
- Funk – aerobics of medium intensity with characteristic choreographic elements and musical accompaniment in the style of funk or hip-hop;
- Boxing – aerobics of medium intensity of exercises, which gradually increases according to the rhythm;
- Afro – aerobics supported by the rhythms of African and Latin dances;
- Step – aerobic exercises performed on a special Super Step platform, which include complex choreography, power elements and music with a tempo of up to 135 BPM;
- Sport Step – a set of endurance exercises, which include running exercises, alternating running with jumps on the floor interspersed with step exercises, composed in the form of a short choreography;
- Funky Step – step aerobics to music in the style of funk, when characteristic mostly asymmetrical hand movements are added to the choreography;
- Double Step – choreography classes that use two platforms at the same time: TBC (Total Body Condition) with its strength and endurance exercises and ABT (Abdominis, Buttocks, Thighs) focusing mainly on the abdomen, buttocks and thighs;
- Fat Burning Class – aerobic training with medium intensity aimed at burning excess fat;
- Body Pump – strength and endurance training using a 10 kg barbell;
- Aqua Fitness – fitness training that includes a complex of strengthening exercises in water, also known as aqua aerobics;
- Sport Aerobics – sports aerobics, the exercises of which include a set of semi-acrobatic elements;
- Yoga Fit – training based on the foundations of yoga;
- Taeco – aerobic training with elements of martial arts and defense.

Before considering the general achievements in the fitness environment, that is, the marketing dynamics of the movement of the fitness system to the consumer, it is necessary to realize the following thesis: *The wisdom of a fitness specialist provides him/her with many followers and respect.* Therefore, in order to get an idea about the features of the modules of fitness classes, of which there are much more in the world than are listed here, and to spread the progress and development of the influence of fitness on the population, it is necessary to involve in the system the experience of the well-known masters. The cooperation will be successful if the organizational experience and management skills in the field of human health-improvement are sufficient¹⁰². In order to confirm this, it is enough to pay attention to the content of aerobics in sources¹⁰³ and others.

To explain the above, attention should be paid to the following: fitness followers, who start classes for the first time, move to the realization of their dreams in different ways. Thus, some of them thoroughly carry out the proposed program, mobilizing their energy in each session. This means that they exercise every time with maximum intensity, but such an attitude must be maintained with care. Such persons, who have a pronounced orientation of the psyche and a fanatical attitude to action, should be considered separately, they should not be included the general totality and their indicators should be studied using a different methodology. There is an explanation for this: they need to have special conditions for physical

¹⁰² Terebessy, A., Czeglédi, E., Balla, B. C., Horváth, F., & Balázs, P. (2016). Medical students' health behaviour and self-reported mental health status by their country of origin: a cross-sectional study. *BMC psychiatry*, 16(1), 1-9.

¹⁰³ Shkola, O. M., Otravenko, O. V., Donchenko, V. I., Zhamardiy, V. O., Saienko, V. G., & Tolchieva, H. V. (2022). The influence of tae-bo on the development of motor potential of students of medical and pedagogical specialties and its efficiency in the process of extracurricular activities. *Wiadomości Lekarskie*, 75(4 p1), 865-870. Алаева, Л. (2022). *Основы организации и проведения занятий по оздоровительной аэробике*. Litres. Белокопытова, Ж. А. (2006). *Содержание и методика оздоровительных занятий по аэробике: учеб. пособие*. Киев: НУФВСУ. Синиця, С. В., & Шестерова, Л. Є. (2010). *Оздоровча аеробіка. Спортивно-педагогічне вдосконалення*. Полтава: ПНПУ, 2010.

development that are artificial and that are beyond the limits of recognized practice, since they are moving not toward the acquisition, but toward the loss of health at an accelerated rate. The same applies to overzealous instructors, organizers and trainers who are overly focused on achieving exceptional intensity in classes.

That is, at all stages of preparing the class for its implementation, it is worth remembering the value of minimum physical exertion at the initial level and carefully relating it to the gains and consequences of the impact on health at all other levels. First, it is necessary to remember the following: *it is the achievement of the goal of improving health or recovery that is a priority for the participant of the fitness program.* Determining the minimum level of physical exertion is then the starting point for planning training loads according to the principle of achievable progress. At the same time, a question arises before the organizers of the classes – how much energy, measured in kilocalories, should be burned per day, week or month so that the efforts invested in the exercises bring noticeable benefits in terms of general health. Scientific studies prove the information that the energy expenditure calculated for weekly motor activity varies in the range from 500 to 3500 kcal, that is, it reaches approximately 70 kcal per day. This, if to assess the situation in general, results in a progressive reduction in the risk of death due to health emergencies such as heart attack or stroke. For example, a person whose energy consumption during a week of physical activity reaches 2000 kcal, that is, 286 kcal per day, the risk of premature death is reduced by almost 28% compared to those people who continue a sedentary lifestyle. In addition, there is a calculation that people who burn less than 500 kcal per week lead the sedentary lifestyle. The structure of fitness classes may include walking, physical work, running, etc., but the type of physical activity is not an important indicator here.

It is natural that specialists pay attention to the fitness training program, which is recognized as recreational. One need to have skills for the development of it. These skills can be described as follows. Such work should always begin with a clear and precise definition of the range of goals that a person wants to achieve by participating in regular physical exercising. The choice of all other training components depends on this. These components include,

as stated above, the number of training sessions per week, their intensity and duration. The form, or the module, of classes is chosen at the final stage, when the goals and preferences of the consumer are known, the state of general health is known and verified by the apparatus-medical method, and the physical readiness of the motor apparatus has been examined. If the goal of physical activity is the comprehensive development of physical readiness, improvement of well-being and prevention of health problems, then the best means is to create a training program that is a combination of various training modules. This is the so-called “combined training”.

However, most often the participants of the classes are not interested in the multitude of different forms, but in one specific form of the class. They set goals in sufficient detail according to their simplified version. For example, they may look for the means of reducing excess fat, modeling the body or compensating for muscle insufficiency caused by sedentary work. In this case, a training program should be offered considering the individually chosen goal. This program involves a method of gradual increasing of loading exercises, taking into account the outcomes of the classes.

For the development of fitness programs, ligamentous, bone-joint and muscular systems are important factors. Their importance can be explained as follows. The ligamentous system, which includes the respiratory, immune, circulatory, muscular, nervous systems, etc., plays a leading role in fitness. The support for movement is the bone-joint system that can be considered the passive motor organ, which is connected with such activators of the movement organs as skeletal muscles. Due to the ability of the latter to contract and stretch according to impulses given by a person, they perform so-called “free movements”. Each element of the movement apparatus is a separate organ and represents both a different structure and a different activity, and their totality forms an inseparable functional, mechanical and biological whole, which determines all human movements. The interdependence of the components of the musculoskeletal system is based on the principle of interconnection. That is, *for the organic development of muscles and their strength, it is necessary to have a sufficient functional state of the skeletal system, and accordingly, the correct structure and adaptation of the joints to the*

performed functions, and vice versa, the functional state of the joints largely depends on the performance of the muscular system and correct structure of connective bones. Thus, when working on increasing the level of physical readiness, the essence and role of the musculoskeletal system as a whole is considered through the interrelationships within the elements of this system, which excludes the expediency of focusing attention and efforts exclusively on muscle development. Finally, muscle building quite often becomes a common practice in health-improving fitness training, but it does not lead to the fulfillment of the goals. Each physical exercise most clearly affects the muscles of the body, and, at the same time, affects the joints, bones, tendons, ligaments, links and other smaller, but no less important, parts of the musculoskeletal system. Specialists should pay close attention and not forget this fact when choosing the further exercises to increase the physical significance of the class.

The human skeleton consists of more than two hundred individual bones. They can perform various functions in the body: support, protection, allow movement, serve to retain mineral salts, produce erythrocytes and granulocytes. In contrast to its appearance, a bone is a living tissue both in ontogeny and in connection with constant adaptation to the current biomechanical situation associated with physical exertion, and therefore it constantly undergoes changes. This means that any bone in the human skeleton can become weaker or stronger, and it depends on what kind of load or mechanical pressure it has to overcome. When the load on a given part of the motor system increases, the bone in that area gets an incentive to strengthen its structure. This happens mainly due to the activation of the tendency to mineralization or precipitation of mineral salts. As a result of this ability of bones, bone structures become thicker and are located in the direction of influence of mechanical pressure. By analogy, it is possible to interpret another mechanism of influence, namely, load does not cause a decrease in bone density. The effect of bone demineralization is directly caused by the limitation of blood flow through the bone, because during motor activity the local blood flow increases, which contributes to the leaching of mineral salt ions along with the outflow of blood from the bone. The effect of prolonged immobility of the musculoskeletal system, for

example, immobility due to sedentary work, is usually a progressive decalcification and thinning of the bones, and therefore a violation of their mechanical stability.

The composition of a healthy bone must meet both the requirements for the mentioned mechanical strength or hardness, and for its flexibility. The combination of these characteristics guarantees the safety of movements. A living bone contains about 25–30% of water and 60–70% of mineral salts (mainly calcium and phosphorus), as well as the necessary amount of collagen fibers, which allows it to be flexible. The internal structure of the bone includes bone tissue in the form of a compact substance in the surface part of the bone and spongy substance in the inner part. In addition, each bone is protected from the outside by periosteal tissue, which is highly vascularized and supplied with blood. The cavities are also filled with bone marrow, and it is the red bone marrow at the base of the long bones that is the only place in the human body where erythrocytes and granulocytes are produced.

Joints ensure the mobility of individual parts of the human skeleton. Because of their structure and function, they are called slow or synovial ligaments. A joint formed by two articular surfaces, which are formed from the cartilage-covered ends of connecting bones, as well as a joint capsule that surrounds the entire joint, strengthens the entire structure of ligaments and sometimes other formations, such as articular discs and meniscus. All these elements exist to ensure the proper stability and mobility of each bone joint. Inside the capsule of the joint, there is some free space that forms the joint cavity. The joint cavity is filled with a lubricant – a substance that not only nourishes the surfaces of the joints, but also makes the movements in the joints smooth and free, which reduces the force of friction on the surfaces of the joints. The joints inside the musculoskeletal system of a person have different structures, which depends on the shape of the bone ends that form the joint surfaces. There are nine types of joints of different structures that provide different ranges of mobility.

Some of the factors allow determining how many and which movements are possible to be performed in a given joint. Three factors are considered the most important among others. These are:

1) the shape of the joint surfaces, 2) the construction of the joint capsule, and 3) the system of ligaments that stabilize the joint. The range of motion in each joint is determined by individual features of the musculoskeletal system of a person, for example, the innate elasticity of ligaments. There are individuals who have a high level of flexibility, which determines the passive range of motion in the joints. Scientists, who develop methods of physical education of a person, recognize the higher and average levels of flexibility. There are also opposite situations when the range of motion in joints of some people is less than average, and even the most persistent stretching exercises cannot change it. The process of gradual loss of joint stability and reduction of the range of motion in the joints, which occurs with age, is considered from another angle. This, if we deepen the consideration, is a natural phenomenon in ontogenesis, caused by the degeneration of collagen fibers during the process of aging. A corresponding change in the number of performed exercises is a reasonable means of influence; however, in order to delay the development of such a number of processes and to strengthen the bones, it is necessary to use means of joint movement of a number of organs.

The most vulnerable elements of a joint are their soft parts, that is, the joint capsule and ligaments. In fitness activities, the joints of the lower extremities tend to be subjected to the greatest stress, and ankle injuries are among the most common.

Skeletal muscles are those muscles in the human body that make up the active organs of movement, which is driven by the mechanism of spasm. Outwardly, this looks as follows: they are attached to the bones by tendons and have the ability to shorten as their length changes. A muscle spasm leads to both their attachment and visible movement in the joint. Skeletal muscles reach an average of 44–51% of the body weight of men and 35–42% of the body weight of women. This ratio largely determines the weight of the human body. The contraction of skeletal muscles is possible due to a characteristic structure that shows a transverse stripe under the microscope. These strips form threads of contractile proteins located alternately in the muscle fibers. Thicker threads are made up of myosin protein and thinner ones include actin protein. During

contraction, the actin filaments “slide” between the myosin filaments in areas of the muscle fiber called sarcomeres and, as a result, the entire muscle contracts. This phenomenon is described in the sliding theory of contraction. This phenomenon can be explained in the following way.

The contraction of human muscles each time during a conscious movement, for example, during physical exercising, is initiated by an impulse coming from the center of movement of the central nervous system, located in the brain. The information from the brain is sent to the muscles through nerve fibers and reaches the nerve cell. A nerve cell and its innervated muscle fiber is defined as a motor (or “movement”) unit, which received the name “aggregate”. Due to branching at the end, one nerve cell can innervate several, and sometimes even a larger mass of muscle fibers. When the impulse for movement (to muscle contraction) comes from the brain, all muscle fibers innervated by a single nerve cell simultaneously contract on an all-or-nothing basis. The rule is simple: *the more such motor units are activated in one muscle, the stronger the muscle contraction will be.*

Muscle strength training is mainly about increasing the number of innervated muscle fibers. The mechanism of action is as follows: *the number of contractile fibers determines the ability of a muscle to contract strongly and thereby indicates its strength.* In the physiological professional nomenclature, the formation of muscle strength is associated with the so-called “recruitment”, that is, the introduction of an increasing number of motor units into receiving stimuli. Regular strength training brings very high results in this regard.

Human skeletal muscles consist of two types of fibers: FT and ST. *FT fibers* are those that contract quickly. They are able to perform a strong contraction in a short period of time, but they are also subject to rapid fatigue. *ST fibers* contract more slowly, but the quality of their contraction is stable for a longer period of time. The ratio of FT and ST fibers in human muscles is an innate and individual matter of each individual. However, these fibers behave differently. Thus, FT fibers can be trained based on performing very intense but short-term efforts. They require the involvement of such exercises in which the muscles must perform fast, maximal or submaximal contractions. For example, this can be lifting weights. People who

have more FT muscle fibers quickly achieve athletic results in body-building training. Their achievements are manifested in a relatively rapid and significant increase in muscle mass. However, ST fibers also lend themselves well to training, but the outcomes are not so visible at first sight. For example, regular classes in aerobics or TBC with a light load increase their efficiency due to the production of derivative force, that is, strength endurance.

Muscle efforts can be based on different types of spasm, including *isometric, isotonic or auxotonic*. *Isometric contraction* occurs when the tension of the muscle increases, but its length does not change – then the movement in the joint is not visible. In this case, the work of the muscles stabilizes. *Isotonic contraction* is characterized by the fact that the length of the muscle changes during its work, but the tension does not change. There are two forms of muscle activity: eccentric (the muscles are lengthened and slender) and concentric (the muscles are shortened and thickened). When an increase in muscle tone is accompanied by a change in its length, it is called an *auxotonic contraction*. This type of skeletal muscle contraction is characteristic of most movements performed in both everyday life and when performing strength exercises used in fitness training.

In theory, it looks like this, but in practice, generalized knowledge about the location of the main muscle groups in the body and specific knowledge about muscle movements are important. Body movements, as a rule, do not rely on the isolated action of individual muscles, as they usually involve groups or muscle chains. In each movement, both of these muscle groups are active, but one of them works much more intensively than the other one. This is inherent in the forward bending of the trunk, for example, when the trunk is tilted back in a supine position, when the abdominal muscles are shortened, that is, compressed, but their antagonists, that is, the deep muscles of the back, are stretched at the same time. If the latter were not stretched, it would not be possible to bend the trunk at all. Thus, the harmonious movement of this part of the body is the result of the interaction of muscles, both synergists and antagonists. Most often, this exercise in fitness classes, especially to achieve the goal of strengthening, is given only from the point of view of the main muscles that perform this movement. However, one must take into

account the limitations of the physiological basis of participation in the movement of other muscle groups, remember the differences when choosing the starting positions of the body for the performed exercises, and select the achievable parameters. From this comes an intermediate generalization that there is a need to train fitness instructors taking into account knowledge of the anatomy of the human musculoskeletal system and an accented study of muscle topography.

To perform any, even the smallest, movement, human skeletal muscles need a certain amount of energy. If we evaluate such a thesis based on general features, then we need to carry out a critical analysis and decide on the position that the energy used by a person to perform the work of a muscle is solar energy transformed into chemical energy.

A human being is able to use solar energy indirectly, only through the consumption of green plants. Guided by this, for energy production, the human body uses energy substrates found in plants and consumed by so-called “vegetarians”, or a combination of plant and animal products, which are consumed simultaneously by the majority of the population. The energy from food is consumed directly and/or stored as proteins, fats and carbohydrates. Scientific studies have shown that a person has more than half of the energy produced in the body in the form of heat. From this, it becomes known that part of the energy in small doses enters the body for spending it on muscle work. With a low-active way of providing life support and in combination with significant food consumption, a significant amount of energy is saved in the body, primarily in the form of adipose tissue. The latter in most cases leads to excess weight and the development of obesity.

The body's energy expenditure depends on the amount and quality of performed work, the choice of energy substrates used in biochemical transformations that lead to energy production, and the type of effort involved in performing technological operations and functions. A person is able to produce the energy necessary to support life processes in various ways, that is, both in aerobic and anaerobic conditions. This draws attention to the nature of work and to the parameters of the efforts involved in accordance with its

structure and nature. As for muscular efforts, the method of generating the energy necessary for effective contraction of fibers depends primarily on the duration of movement and the intensity of efforts, and subsequently on the state of the body's training, the diet of nutrition and the structure of the performed physical exercises. The goal of energy transformations, which lead to the implementation of a given movement, is always to release energy from a given energy substrate and transform it into the chemical compound adenosine triphosphate (ATP). ATP is the direct source of energy needed for muscle contraction. About 10 kcal of energy is released from one ATP molecule, i.e. from its decay. Different substances can be used to restore and resynthesize ATP resources necessary for muscle work. They are glucose in the blood, muscle glycogen and phosphocreatine, free fatty acids, as well as keto acids and amino acids. Thus, their ascending compound can be synthesized from many different substrates, but each time the metabolic pathway of energy-efficient changes is different. If to evaluate the processes as a whole, then we can state that various biological and chemical processes take place in the human body, which leads to the synthesis of ATP. Let us recall here that these processes are both anaerobic, that is, without the participation of oxygen, and aerobic – those that occur with the use of oxygen absorbed by the body during respiration. In some situations, aerobic and anaerobic processes can complement each other, which is associated with providing the body's energy needs for long and intensive efforts. The processes of energy production are subject to more detailed research.

Anaerobic energy production processes intended to activate skeletal muscles are carried out without the use of oxygen. However, their functioning is short, because the energy produced in this way exists and supports efforts only for a few tens of seconds. Therefore, they extend to the mobilization of extremely intensive but short-term efforts. Anaerobic transformations also support the processes of aerobic energy production in the event that there is a need for long-term, high-intensity efforts.

The simplest system of anaerobic energy-efficient processes manifests itself in the production of energy reserves from the ATP

substrate and phosphocreatine, the compounds of which are locally stored in muscles. However, the reserves of such energy do not last long. They depend on the weight of the person doing the muscular effort and provide only the first 20-30 seconds of added effort. The transformation mechanism is as follows: this is the decay of ATP stored in the muscles, followed by the decay of phosphocreatine into creatine and a phosphorus group, which releases energy. The energy from the decay of ATP is directly used by the working muscles, and the energy from the decay of phosphocreatine is used for re-synthesis of ATP. The whole process is controlled by enzymes, among which creatine kinase, which initiates the whole process, is of particular importance.

Such a system of energy release is used by the body both in the first seconds of adding all possible efforts, and during short, intense exercises, such as in athletics, running for 100 and 200 m, jumping, throwing and pressing with equipment or lifting balance. The effectiveness of this system among men reaches almost 40 kcal/min, and among women – almost 28 kcal/min.

Another substrate for energy production under anaerobic conditions can be glucose in the blood or glycogen stored in the muscles. The metabolic pathway leading to ATP, which is the only direct source of energy for working muscles, is quite short, fast and efficient. In addition to ATP, the final product of this transformation system is also lactic acid – a substance that is not well tolerated by the body and causes muscle fatigue and inhibition of energy-efficient changes in muscles. This method of supplying energy to the muscles works in the range of 30-60 seconds, but intensively. For experienced people who have developed a better tolerance to lactic acid in the blood, the time of effort is longer and reaches 90 seconds. The lactic acid energy production system requires more chemical reactions (at least nine of them) in the body than the previously discussed one. The whole process is called anaerobic glycolysis (it should be mentioned that there is also oxygen glycolysis). The energy efficiency of anaerobic glycolysis depends primarily on the body's tolerance of acidification. There is a dependency: *the better a person is trained, the more effectively he/she can resist fatigue*. This is also due to the manifestation of more effective buffering processes,

which means the neutralization of lactic acid accumulated in the blood. To illustrate, it can be noted that the output of anaerobic glycolysis is approximately 15 kcal/min among women and about 20 kcal/min among men. This process is of primary importance when performing efforts of submaximal and extra-maximal intensity with a duration of 60 to 90 seconds. The examples include 400 m and 800 m running, 100 m and 200 m swimming and some team sports such as volleyball, basketball and handball.

Substrates for obtaining energy (designated as ATP above) by means of biochemical transformations with the participation of oxygen can be various substances extracted directly from food. These are proteins, carbohydrates and fats. This method of energy production meets the needs of the human body in terms of performing all low- and medium-intensity efforts. These are standing, sleeping, walking and physical efforts associated with physical preparation for movement in everyday life. In the case when the effort exceeds a certain degree of intensity (most often this is registered when the corresponding effort exceeds 85% of the maximum physical capacity of a person), then with the help of energy supply to the muscles, anaerobic energy processes are activated, which does not act as a mechanism for blocking further work of the oxygen system. Regardless of whether the substrate for energy conversion is protein, fat, or sugar compounds, such processes are complex, as they require the activation of many specific biochemical reactions. Their detailed description is beyond the scope of this study, so they can be considered independently.

When considering the issue of the effect of changes, it is necessary to mention that it is achieved with the participation of carbon dioxide, water and a certain amount of energy. Constant elements of change are the Krebs cycle and electron transport. If the energy substrate is blood glucose or carbohydrates, then the first stage of transformation is oxygen glycolysis, and if the substrate contains fats, then the process begins with the oxidation of fats and their dissolution into so-called free fatty acids. They undergo further changes in the cycle. Finally, if energy must be produced from proteins, which is inherent in an extreme situation, then they must first undergo metabolism, releasing amino acids.

When comparing the aerobic and anaerobic systems of energy production in the human body, it is impossible not to notice how well they complement each other, giving a human the opportunity to perform movements with different parameters. Anaerobic energy systems have an advantage over aerobic ones, because their action is very fast, because it is based on short metabolic pathways. It is due to them that a human is able to quickly react with movement in emergencies and perform short-term intensive efforts with the appropriate force. The advantage of oxygen processes lies in their practically unlimited ability to produce energy, providing the possibility to exert sustained effort. The goal of most types of aerobic fitness classes is to develop blood circulation and the body's breathing capacity, and to reduce excess fat at the same time. Such training effects can be achieved only if muscle effort requires oxygen metabolism, i.e. activation of the oxygen circulation system in the body and when fats are the substrate for muscle work. Therefore, fitness classes should be based on the processes of aerobic energy production in the body. In order to activate fat-burning processes during exercise throughout the training, the appropriate parameters should be maintained. These are a long time, i.e. more than 20 minutes of continuous effort, and a relatively low intensity to eliminate the minimization of the inclusion of anaerobic energy transformations, corresponding to the level of 65-75% of the maximum physical capacity of a person.

When developing sets of exercises, it is necessary to pay primary attention to the muscle groups, which are involved in each training effect. The mechanism of such a connection is as follows: *during the exercise, opposite muscle groups should be equally loaded*, especially within the same joint, for example, flexors and extensors, biceps and triceps of the arm, adductors and abductors, slender and broad fascia in lower extremities. When one group of muscles is weaker than other muscles acting within a given joint, the comprehensive effect of physical exercises on the body does not occur. In addition, such a situation can lead to the injury of the joints and violation of their stability. The correct selection of loads when carrying out activities, the purpose of which is the mobility of several muscle groups at the same time, is of particular importance for safety reasons. The acquired experience confirms the following: an imbal-

ance in the amount of muscle strength is not a favorable factor here, since stronger muscles take over the functions of weaker ones. An example of this is doing push-ups. The implementation of such an exercise involves the introduction of several muscle groups into motion: shoulder muscle groups (especially the triceps) and chest muscles (especially the pectoralis major). In this movement, isolation of one muscle group is practically impossible. That is, if the muscles of the hands of the person performing this movement task are weaker than the chest muscles, then the stronger group takes on most of the work throughout the exercise, which is explained by the compensation process. Due to the further strengthening of the pectoral muscles, this deepens the existing difference in strength. In the case of significant differences in the strength of muscle groups involved in the movement, weaker muscles should be strengthened with appropriate exercises until the existing difference between them disappears and a state of relative balance of forces is reached. Only in this case, one can safely use loads covering both muscle groups synchronously. The principle of muscle balance applies to all types and types of fitness classes and is recognized as the main one when it comes to ensuring the safe performance of exercises by class participants.

Everything that has been said above plays a canonical role of a rule and extends to the symmetry of blows applied to all limbs without exception and to both halves of the body. This is especially important to understand in classes based on an asymmetric choreographic system.

There is also a word of warning: *in each fitness training, regardless of the chosen exercise module, all specified muscle groups should be taken into account – only then the principle of muscle balance will be fully implemented*. Both the rule and the warning apply to other muscle groups that have antagonistic activity, that is, not only adductors and abductors, but also those responsible for rotational movements.

The physical content of the pedagogical action regarding the verified selection for performing a set of physical exercises is subject to the following goal – *they are intended for the relative equalization of strength and endurance of individual muscle groups of the body*. Special attention is paid here to the concept of muscle strength rela-

tivity. This is explained as follows: *there is an opinion that in practice it is impossible to perfectly align the parameters of the antagonistic muscles*. However, some factors should be taken into account. Thus, when programming sets of exercises, one should always consider the fact that the extensor muscles are usually weaker than the flexors, which is a completely natural phenomenon in every person.

The following must also be stipulated here: each individual has a certain quality of individual physical capabilities that introduce him/her to the environment of professionally trained performers. This quality can be called *the motor potential of a person*. This movement set depends on the natural conditions of the muscular and skeletal structures, as well as on the influence of artificial factors on the development. The combination of both factors is manifested when performing motor actions, which are based on the need to bring the general structure, which moves the body in a certain direction by activating the systems and functions of the body. Such a set of physiological properties determines the direction of person's action, and is a kind of differentiation of motor skills for the purpose of self-sufficiency of an individual who, in his/her production environment or at home, performs technologically specified operations, mechanical supporting work, and management and exchange functions. If to adopt this classification of information about the structure of human action, the motor potential of a person includes *acquired mechanical motor skills and own reflex motor skills* of the body. The *acquired mechanical movement skills* (also known as motor skills) include endurance, flexibility, coordination, strength, agility, and speed. On the other hand, movement skills include all movements that are known as related to different sports disciplines and to everyday life-saving and life-supporting movement. Therefore, the *level of motor skills and their resource* are distinguished; they are perceived as elements that determine both the course of each motor activity and its final effect. The state of a person's motor potential is influenced not by one factor, but by a number of them. This aggregate includes body structure, metabolic efficiency, and emotional, cognitive, perceptual, and mental processes. Some of these factors are determined genetically, but many of their variants and compounds can be stimulated by the methodology of human physical development.

During fitness classes, there is an opportunity to create conditions for the development of both motor and specific motor skills. According to the purpose of fitness, these skills are not athletic, but are considered emotionally developing. Yet, motor skills, which are particularly suited to the physical environment of fitness training and are susceptible to influencing human development, the establishment of traits or the stability of the behavior in generally recognized social settings, include endurance, flexibility, coordination and strength. Thus, movement skills acquired in fitness, although not related to sports disciplines (with the exception of Tae Bo and some others), have appropriate utility for both everyday and professional activities. It should be mentioned here that they relate mainly to mastering the hidden energy reserves of the body. In other words, this is registered in the abilities and skills to pull up, turn over, turn, relax stiff muscle groups, as well as in the ability to control mechanical equipment and machinery, perform targeted movements and operations with skillful use of various parts and organs of the body. The methodological purpose of fitness is connected with the development of *motor coordination of an individual*. This characteristic reflects a wide range of meanings, namely:

- a. *according to the general plan*. Coordination is perceived as the ability to perform precise movements that require adaptation of a person's ability to the external conditions of work or movement in the surrounding space. Based on this perception, the concept of fitness is based on the speed of learning and the quality of the execution of new movements, their arrangement, and use of motor activity in household, industrial and economic environment. The coordination of movements is recognized as unique, even when it comes to maintaining daily life support;
- b. *according to the general fitness plan*. Coordination is perceived as the basis for the correct, effective and safe performance of all physical exercises and understanding their meaning. Specialists pay attention to the following: *each individual with a rather high organizational ability of personal coordination is also able to fully and consciously control their own movements, their speed, strength, amplitude of movement, etc.* This is a characteristic of a human, the mastery of which provides the correctness of the technique

of performing each exercise and reproduction of the movement load;

- c. *according to the plan of the physical content of training the function of movement coordination.*

There are two rules, namely:

- the first rule. The functions of the central nervous system and the processes inherent in the human psyche are subject to influence. They are of key importance for the formation of a training program, because movement coordination training is a type of nervous system stability training. This is indicated by careful personal perception of the importance of physical exercises and active participation in the field of cognitive activity with recognition of the usefulness of each physical activity;
- the second rule. Innate biological tendencies, the so-called “motor skills”, inhibit mastering of the physical exercise. The training process has the possibility of improving the ability with the reserve of raising it to a higher level.

In order to effectively continue the development and adjustment of the fitness program according to the criterion of movement coordination, it is recommended to follow several general recommendations, which include careful monitoring of the execution of the exercise, careful observation of the correct and diligent implementation of such a process, motivation of action, correction of technical errors during the exercise, use of technique a sufficient number of repetitions of the exercise, and timely transition to a new exercise after mastering the previous one.

If we consider the physical mechanism of the development of the quality of coordination of movements, then it is necessary to find out the parameters of *an individual's ability to maintain body balance, to produce rhythmic movements, to combine and differentiate exercises according to the musical component, etc.:*

1. *ability to maintain body balance.* This ability allows a person to find a balanced position of the body according to the so-called static balance, maintain it for some time and restore the previous movements according to the structure of the physical load or immediately after stopping, which is called “dynamic balance” in fitness. The researched ability of a person can be trained if

attention is focused on the pattern of movement development associated with the body's mobility, the change in the position of the body in space and the effect of person's body weight relative to the center of balance. In the very first classes, the problem of mastering own body arises in the process of performing some sequence of exercises, for which it is necessary to apply the deviation of the body from the axis of its location. Even the simplest points are not clear: from which leg and on which leg should the weight of the body be transferred at a certain step, how to determine the expediency of maintaining balance when changing the direction of movement, how to fix attention on efforts, etc. It is necessary to master separate exercises that are designed to perform one movement, turn or to fix a certain position of the body. This makes methodological sense, because it gives the muscles a sufficient load. However, each individual has natural anthropometric characteristics, such as weight, height, limb length, etc., so for especially heavy and tall fitness followers, problems arise with maintaining both static and dynamic balance of the body when performing exercises that require deviations. It is recommended to observe the following set of instructions. It is necessary to:

- ◆ start such a process without leaving the place, and already after that, gradually add migration movements both in the main direction and in intermediate directions. The correct position of the knees, hips and spine are important;
 - ◆ return to familiar and neutral exercises and steps, in which body weight is evenly distributed between both legs;
 - ◆ carefully control the position of the pelvis when performing an individual exercise because the control of the position of the pelvis helps maintain a stable body posture. This stability is facilitated by the correct position of the spine during movement;
 - ◆ first use music at a tempo no higher than 148 BPM. In each class, it is desirable to perform one or more static equivalent exercises in isolated positions;
2. *ability to perform rhythmic movements.* This ability allows a participant to fix on a certain movement structure, remember and reproduce it, without paying attention to the fact that it is time-dynamic. In fitness, it manifests itself in the processes of adapting

movement to an external rhythm that is artificially chosen and set, or in adopting a purposeful rhythm for performing own exercises. Regardless of whether the movement is accelerated or slowed down, this ability is manifested in observing and sustaining a certain proportion of time between phases of movement. In group fitness classes, keeping the rhythm means adapting the movement of the body or its limbs and parts of the body to the appropriate rhythm of the instructor's movement and/or to the rhythm of the selected background music.

The sense of rhythm is determined by the presence of a developed perception of rhythm, which is transmitted to the center of activation of mobility. Such ability is determined with the help of many factors. The auditory ability to perceive sounds and distinguish them by tones is recognized as a leading factor. This ability is most often innate, but its level is also affected by *a*) processes of auditory perception, *b*) the lateralization model of the upper and lower limbs (according to the innate tendency of a person, according to the priority of movement, there are left-handed or right-handed people, that is, there are people with priority movements of the right arm and right leg, and they just have an almost perfect sense of rhythm) and *c*) the ability to conduct stimuli in the nervous system. In addition, there is another problem. The problem for some participants lies in their reflection of the instructor's rhythm. This problem is associated with the fact that movements are not synchronized and are performed either too quickly or too slowly.

There is one more problem, to which attention should be paid. This is the impossibility of continuing to follow the set rhythm when the instructor stops showing the exercise for a moment. In this case, a person confuses the movements and stops performing the exercise program. If this happens repeatedly, a person loses faith in success and stops doing physical exercises of this kind. To avoid this, a participant should bring movements to the level of independence from the instructor.

The rhythm level is chosen by the instructor depending on the experience and preparedness of the group members. This approach is extremely important for the formation of a sense of rhythm for all training course participants. People participating in educational

activities for the first time, and especially untrained beginners, rarely pay attention to the structure of the background music, to the sounds of which exercises must be performed. In addition, they lack a sense of concentration and rely solely on the imitation of the movement demonstrated by the instructor. Only after a certain period of time they manage to follow the music in the class, its rhythm, tempo and phrasing, with their hearing sensors. From such a moment, called the "threshold of recognition", a situation occurs quite often in which one of the class participants reflexively begins to repeat fragments of the exercise system uniformly, reacting exactly to the beginning of the melodic phrase, even if for some reason the instructor does not give an indication of the beginning of the movement. This indicates such a motive of interaction, according to which the ability to reproduce and maintain a certain rhythm of performing exercises should be formed consistently at each session.

It is recommended to observe the following set of instructions. It is necessary to:

- introduce a rhythm-accent tool by clapping your hands, stomping your feet, or shouting loudly. At the same time, it is recommended to control the observance of the rhythm by the participants;
 - repeat each new movement many times until all participants learn its rhythmic structure;
 - accurately determine the moment of the beginning of each movement, intervening at a critical moment, helping with an exclamation or a gesture and emphasizing the change of the rhythm of the execution of the exercise with a nod of the head;
 - increase the difficulty of the exercises from class to class;
 - reinforce the clear rhythm of the background music with a song in some cases to help participants emphasize and recognize more clearly the dynamic structure of individual exercises and facilitate both their perception and performance.
3. *ability to combine movements.* This ability provides arbitrary connection to the movement of adjacent parts of the body, which is explained by the integration of time, space and dynamic parameters of movement. This allows performing the general movement of the body accurately and precisely in sync with the rhythm. This ability to combine multiple movements is the quintessence

of coordination. It is the property of coordination that allows a person to smoothly combine the movements of the arms, legs and body during the execution of exercise systems, regardless of their complexity and structure. The ability of the human psyche to perform difficult movements plays a special role during learning and repetition of choreographic systems in aerobics or step classes and everywhere where the movement involves connecting the simultaneous work of arms and legs, movement for the purpose of motion in the space of the sports hall, when the direction of the movement is changed with the simultaneous change of rhythm and accompaniment of musical instruments. Attention should also be paid to the “grapevine” exercises or the movements of raising weapons, which seems like an impossible task, not to mention the performance of four blocks of the choreographic system, which are full of many changes of steps and directions of movement. These exercises combine leg movements depending on the movements of the hand, especially asymmetric movements that must be accompanied by the mobilization of significant biological energy, which makes their performance particularly difficult. In order not to upset the participants of the class, it is necessary to use a pedagogical technique, according to which before the class, not the entire system of exercises should be demonstrated, but part of them. Such a tool changes the very attitude to overcoming difficulties, facilitates the study of the presented physical composition and does not seem so difficult. In addition, this eliminates the effect of the syndrome of weakness, inability and impossibility to overcome a problem. This is the correct move of the instructor, which acquires a procedural and educational character, especially if his/her action is evaluated from the point of view of achieving the goal of creating logical methodical sequence of teaching the fitness system and awareness of the work on forming the ability to pair skillful movements. Such a technique ensures success. It is recommended to observe the following set of instructions. It is necessary to:

- ◆ combine movements into a single action. For this, it is extremely important to observe the principles of availability and regularity of training. This gives advantages to the pedagogical

process, in which new transitions are constantly being built according to the scheme from easy to difficult, from simple to complex, from known to unknown;

- ◆ develop the imagination of fitness participants. To do this, one must adhere to the principles of accessibility and regularity of learning how to perform arm, leg and trunk movements separately, i.e. not combining them together at first. These exercises should be simple, but satisfy the condition of diversity. It must be remembered that the *imaginatively enriched resource of simple skills is the basis for the further stages of the formation of the ability to combine movements*.
- 4. *ability to combine movements according to their differentiation.* This ability determines the proper accuracy and energy-effectiveness of performing both a complete set of exercises and individual phases of the motor cycle. If fitness is evaluated according to its general features, then this physical system can be attributed to artificial organic integrity. The basis of differentiation of movements is the mechanism of accurate perception of parameters of space, force and time, according to which the planned processes of performance of motor activity must be carried out. The conditions for the most favorable solution to the task of mobility, which would be effective and useful for the development of a person's physical quality, should be observed.

This ability to distinguish elements of movement correlates with both choreography classes and classes where exercises are to be performed in isolated positions. The ability is even higher when tools, equipment and machinery are used, which increases the loading effect. There remains only the problem of maintaining the correct trajectory of the movement, its amplitude, and dosage force. It is recommended to observe the following set of instructions. It is necessary to:

- start each session with such a complex of exercises and movements that include multiple muscle groups at the same time, gradually moving to those that require warm-up and gradual activation;
- increase attention to control over-expenditure of energy and greater efforts to perform the exercise than it is determined to be necessary;

- use the equipment of mirror walls in the gym to establish effective self-control;
- timely include verbal comments, prompts and cues for making needed changes;
- receive feedback, for which to conduct thorough preparation for demonstrating the course of movement in each of the performed exercises, marking along the way the most important phases of the development of the event with a word or gesture;
- teach the participants to feel conscious tension and relaxation of individual muscles and their groups.

2.2. Organization of fitness classes and characteristics of their components

The principle of health-oriented physical education had existed even before the appearance of fitness. It was perceived in physical culture and health-improvement technologies as an element of rest or returning the energy of physical forces to the initial level. The concept of physical culture and health-improvement technology unites the process of using the means of physical education not only for developing, but also for health purposes. Therefore scientific and methodological developments in fitness, the purpose of which is to deepen and improve the environment for building physical culture, health-improvement and restorative-reproductive process of physical functions and mental abilities of a person, is different from the classical ones used in training processes. The practical implementation of such a technology in physical education according to the fitness scheme are physical systems and methodological fitness programs that are created under these systems and are perceived according to their classification in the process of movement in the functioning of physical culture and health groups. Such groups are created by the organizers anywhere, but most often, within the equipped grounds of physical culture and sports societies or even spontaneously among the nature. The processes of 1) classification of fitness programs, 2) creation of more advanced or those programs in which the direction of physical development of a person changes,

and, finally, 3) updating of computer fitness programs, which are used everywhere, are subject to the analysis. The data set is so representative that it does not require refinement of the evidence base for reliability. The task of the analysis is to establish the conceptual features of recreational and restorative functions of a person. Let us consider:

1. *classifications of fitness programs*. Such programs as forms of motor activity, specially organized within the framework of group or personal classes, can have both a health-improvement and conditioning orientation, which means reducing the risk of developing diseases, achieving and maintaining a certain level of physical condition, and pursue the goals of developing abilities to solve motor and sports problems tasks at a rather high level. In the first case, fitness programs are focused on health-improving fitness goals, in the second – on the sports-orientated or movement goals¹⁰⁴. The general classification of fitness programs is based on:
 - a. one type of motor activity. These are aerobics, fitness running, swimming, etc.;
 - b. combination of several types of motor activity. These are aerobics and bodybuilding; aerobics and stretching, recreational swimming and running, etc.;
 - c. on the combination of one movement and several types of motor activity with an emphasis on the selected factors of a healthy lifestyle. These are aerobics and development of the resistance to the cold, bodybuilding and massage, recreational swimming and a complex of hydrotherapeutic restorative procedures, etc.

In turn, fitness programs based on one type of motor activity can, if such a need arises, also be divided into categories based on: types of aerobic motor activity, recreational types of gymnastics, types of power motor activity, types of motor activities in water, recreational types of motor activity, and means of psycho-emotional regulation. In addition, scientists recognize integrative, generalized fitness programs that are aimed at special population groups,

¹⁰⁴ Хоули, Э. Т., & Френкс, Б. Д. (2000). *Оздоровительный фитнес*. Киев: Олимп. литер.

namely: for children, for the elderly, for women during prenatal and postpartum periods, for persons at high risk of diseases or who already have diseases, and therefore include programs for correction of body weight, muscles, physique, etc. The above allows stating that *the process of compiling a fitness program obeys the need to satisfy the targeted physical culture and sports, health-improvement and recovery interests of broad segments and strata of the population.*

Considering that the content of the concept of fitness includes multifactorial components, which can be life career planning, body hygiene, physical readiness, rational nutrition, disease prevention, social activity, psycho-emotional regulation, stress management and other factors of a healthy lifestyle, the number of the possible fitness programs is practically unlimited. However, the variety of fitness programs does not mean that their development is arbitrary. The use of various types of motor activity must correspond to the basic principles of physical education. No matter how original a certain fitness program is, its structure must include mandatory components. Their sequence in a model form can be represented as follows:

"workout" → "aerobic part" → "cardiorespiratory component"
 U part of the program focused on the development of aerobic performance
 → "power part" → "flexibility development component" U stretching
 → "final part" U restorative part.

(2.1)

The generalized structure of the fitness program (2.1) may undergo some changes. This depends on the target orientation of the class, the level of physical condition of the participants and a number of other factors. For example, eight target components or blocks are distinguished in fitness programs based on recreational gymnastics. They include:

"warm-up" Ψ preparation of the person's body for the class → and "aerobic" Ψ development of the cardiovascular and respiratory systems of the body → "dance and choreography" Ψ implementation of aesthetic motives and principles, and development of coordination abilities → "correction" Ψ body shape correction and strength exercises → "prophylaxis" Ψ prevention of various diseases → "additional part" Ψ development of dexterity, flexibility, vestibular stability → "arbitrary part" Ψ development of musical and rhythmic abilities → "relaxation" Ψ restoration after the class, stress relief and relaxation.

(2.2)

Model (2.2) does not reflect the phenomenon of stretching, which means a system of positions of certain parts of the body that are specially fixed in order to improve muscle elasticity or develop joint mobility. Stretching exercises, which are organized after the main warm-up, after the end of the aerobic or strength part of training, and sometimes in the form of an independent exercise, reduce excessive neuropsychological stress, eliminate the syndrome of delayed muscle pain after exertion, and help to prevent injuries. According to the physiological basis, stretching is a myotonic reflex, which causes an active contraction of fibers in a forcibly stretched muscle and strengthening of metabolic processes in it. As a result of systematic training, the elasticity of muscle tissue, the connection of impulses, and the amplitude of movements in the joint increase significantly;

2. *creation of new fitness programs.* The main factors that cause the need to create a new fitness program arise when new motives appear in one of the three areas of demand formation. These are:
 - scientific research on the development of motor activity and improvement of physical exercises and movements;
 - development of sports equipment and equipment for physical improvement of a person;
 - proactive search for more effective ideas for fitness development.

The creation of a fitness program is accompanied by a well-thought-out marketing policy and it is connected not only with the publication of methodological manuals and recommendations, but also with extensive advertising of inventory and equipment for sale, the issuance of audio and video products, holding of educational seminars and courses on the appropriate training by health fitness instructors. *International physical culture and health organizations* such as the International Health, Racquet and Sports Clubs Association (IHRSA), IDEA Health and Fitness Association, the World Fitness Organization (WFO), the European Sports and Health Confederation (CESS) and others, focus their attention on such commercial activity. Research organizations have been established in some countries. Such leading research centers include the K. Cooper Institute of Aerobic Research (USA), the scientific center of the University of U. Kekkonen (Finland), the Kyiv Research Institute of Medical Problems of Physical Culture (Ukraine);

3. *updating of computer fitness programs.* Such programs and demonstration videos are aimed at providing assistance to the population in conducting independent classes. There are several types of computer programs aimed at: a) training, i.e. preparation of specialists in the field of health and physical culture, b) technical modeling, i.e. computer equipment of simulators, fitness centers and informatization of business entities, and c) teaching modeling, that is, creating amateur means of drawing attention to fitness. Individual health condition, physical condition, physical development, and the risk of diseases are also determined with the help of computer programs. There are also professionals who are engaged in the development of consulting programs, which focus on the issues of creating an individual health-improvement training program, physical development, increasing work capacity during industrial activity or after work recovery, active recreation on weekends or during vacation, correction of individual psychological features, rational physical activity in general, etc. There are such programs that can be used as a model. They make the movement visible and provide an opportunity to review each exercise. They attract the viewers by the flawless execution of the movement, colorful surroundings and rhythmic music.

Thus, the “Aerobik” program (CYBEX) is a computer version of a video lesson on aerobics. In it, the movements are depicted in the form of video animations; the amplitude and pace of the execution correspond to real ones. The program activates three options for classes lasting up to 16 minutes each. They are used in the development of an individual complex. Each class includes more than 20 exercises (596 ± 29.3 elements) and consists of four parts, namely: 1) warm-up – 7 exercises (276 ± 13.3 elements); 2) aerobic part – 5–6 exercises (174 ± 6.7 elements); 3) strength part – 4 exercises (94.7 ± 1.1 elements); 4) restorative part – 6–7 exercises (52.3 ± 24.4 elements).

Each fitness class has the following features:

- formation of a group of participants in the educational process is based on the principles of free choice. The consolidation of the followers of the chosen physical system has a spontaneous character. The disciplinary status of the system has the emotional basis, in which the participants are not subject to any legal obli-

gations. The starting situation is not regulated. The participants are united by the concept of “group”, which is ethically endowed with the condition of voluntary association, which a participant can leave at any time;

- the structure of the class is known in advance, because its type, module and functional links are known. In fitness, regardless of the type and module of the activity, five leading elements are distinguished. They are presented in Table 2.2. Such a class is designed for 52–63 minutes. They all have the same structure. Each class consists of three parts (introductory, aerobic and final) and five positions (introductory instructions, warm-up, aerobic exercises, strengthening exercises, stretching, and relaxation exercises).

Table 2.2. Fitness class structure

INTRODUCTORY PART OF THE CLASS	
1. Preliminary notes or introductory instructions	2–3 minutes
2. Warm-up	up to 10 minutes
MAIN PART OF THE CLASS	
3. Aerobic exercises	25–35 minutes
4. Strengthening exercises	10 minutes
FINAL PART OF THE CLASS	
5. Stretching and relaxation exercises	about 5 minutes

Source: Own study.

The data of Table 2.2 can be used as the basis for an algorithm that reproduces the individual action of a physical education instructor, who:

- implements the pedagogical process according to the requirements for classes in sports sections. This allows using general behavioral recommendations in fitness classes, according to both educational and pedagogical requirements;
- adheres in his/her work to both methodological and technical content. This makes it possible to implement general recommendations regarding the duality of the technological use of fitness classes, to determine the commonality of action of educational,

pedagogical and technical requirements for fitness, to pay attention to the features of the researched means of strengthening health, mental and physical qualities of a person. The achievement of the result is facilitated by *the use of such a method of influence as the method of choice for performing exercises and fitness movements of the body*. The effectiveness of the mentioned method depends precisely on the experience and expertise of a specialist who knows the methodological basics of using a physical fitness program.

The data given in Table 2.2 needs clarification. Each of the above positions of action in a fitness class is perceived as a single physical culture-pedagogical chain, which has its beginning and end according to a peculiar composition of exercises and movements and with its own mechanism of the performance to musical accompaniment. This accompaniment includes a special subtext of the intensity of performance, for which a specific task is determined according to the functional purpose of movement and functional impact on a person. Let us consider the data of Table 2.2:

- *introductory instructions*. This part of the class is aimed at familiarization of the participants with the instructions regarding the performance during the class and *does not influence* their development;
- *warm-up*. This part of the class focuses on the initial physical action of a person, after which his/her attention *is activated and directed* to the physical and mental preparation of the body to perform intensive tasks during the main part of the class. *Physical preparation*, first and foremost, concerns the motor system, and its purpose is the selection and performance of such exercises, which allow achieving a certain increase in temperature in the muscles and increase in their reactivity and flexibility. The use of such a mechanism is explained as follows: *due to the use of such a tool, a properly elevated muscle temperature guarantees safe performance of the task based on the selected physical exercises, reducing the risk of tissue injury*. Easy stretching exercises should be included in each set of exercises and movements to complete the warm-up, which plays the role of a preventive measure. According to the physiological requirements, it is recommended to use any exer-

cises that involve the movement of main zones and parts of the body, which include chest, arms, back, hips, neck, and then, buttocks, lower legs, feet and ankle joints. The order of stimulation of muscle parts is arbitrary, since most of the performed exercises allow warming up several parts of the body at once. There are also recommendations regarding the benefit of stimulating large muscle groups first, exerting influence on them in a certain sequence and starting the movement from the head to the feet, or vice versa. Mental preparation for performing further exercises is also an important component of the warm-up. Conditions should be created for the participant of the class so that he/she can adapt to the difficulty of the exercise gradually and properly engage in work according to the individual program. There are also other tasks to be fulfilled during the warm-up. Thus, warm-up at recreational fitness classes is a purposefully allocated time to divert thoughts from everyday life and its problems, time to relax and concentrate on strengthening oneself and on exercises that must be performed fully and perfectly. In this part of the class, which can be attributed to psychological relaxation, an important role is played by correctly chosen music that facilitates the activation of the body. A person prepares for the performance of the exercises that are attractive and at the same time technically proven and simple. That is, the warm-up is usually a balanced combination of simple actions that helps to achieve the task of the main part of the class. During the warm-up, it is necessary to include in the work those muscle groups of the body that will be functionally involved in the following parts of the same class. For example, the shoulder warm-up should be based on simple, symmetrical, warm-up movements of all muscle parts of the arms, and include shoulder, biceps, triceps, and forearm muscles. If to talk about recommendations of technological importance, which include the choice of exercises and movements, then we should mention the following. During the first three minutes of the warm-up, in order to avoid injury to the muscles, *it is necessary to raise the arms no higher than the level of the shoulders*. The amplitude of the movement should be increased gradually from movement to movement, and the so-called “short levers”, for example, contraction of the

forearm, should be transferred slowly to long levers, for example, raising straight arms to the side or up. Following this rule ensures that a person reaches the appropriate intensity levels during the warm-up. *Jumping exercises should not be used during muscle warm-up.* Each fitness warm-up ends with a set of such exercises that allow a person to stretch their legs, arms and body using a static method. Stretching exercises should be aimed not so much at increasing the range of motion in the joints, for example, in the lower extremities, but at preventing further injury during the session. It is common knowledge that a slightly stretched muscle has better flexibility and adaptability to changes in load. Finally, one must *adhere to the needed warm-up time, which should be at least eight minutes.* In addition, the following general principle should be observed: in no case should one introduce stretching exercises without first warming up certain parts of the muscles that are connected to the movement, as this can lead to injure. The order of performing the exercises should be as follows. *Muscle stretching exercises are introduced at the end of the warm-up, always using a static method.* It is advisable to *implement the warm-up in a group mode even if mirrors are installed in the fitness hall.* Such an action allows full control over the group, which is especially important if it is constantly replenished with new participants;

- *aerobic exercises.* These exercises are focused on the functional action, which *subsequently affects* the performance of the task, which is put forward by the health-improvement, physical or mental programs of preparing the body to perform intensive tasks professionally and skillfully. The aerobic part of a fitness training should last at least 20 minutes. Otherwise, allocating a shorter time to performing exercises of functional importance does not provide proper stimulation of the activation of the adaptation mechanisms of the body, and therefore, does not bring the expected results in the form of an increase in the working capacity of the body or its recovery. The optimal duration of this part of the class can reach 35–45 minutes for more trained fitness participants. To ensure the attractiveness of classes at a productive level, aerobic exercises are often combined with choreographic systems, because the complexity of coordination and the intensity of the physical system

depends precisely on the level of progression of the group's skills and on the chosen module of classes, which differ in their intensity. It is appropriate to remind here that *in aerobics and step aerobics, there are no steps with a flight phase, that is, one leg is constantly in contact with the ground.* However, *in high-impact aerobics, there is an endless amount of jumping, moving and running, which significantly increases the intensity of the training.* That is, it is necessary to choose the choreography exercises under such conditions that the intensity of the exercises reaches the range from 55 to 85 percent of the maximum speed of contraction of the heart of the participants. Taking into account these requirements, the following is clear: *classes in the health-improvement age diverse group should be individualized.* For example, some participants should perform a given step in the high version, which is more complex and difficult, and others in the low version, which is easier and at a less aggressive pace.

Again, regardless of the module of the class, the intensity of the exercises in the aerobic part of the class should increase slowly, gradually and steadily. However, the most difficult steps and combinations should be transferred to further blocks of the program, at the beginning of which simpler exercises and movements take their place. They are performed according to the instructions for their less intense implementation. It is necessary to remember the following: *during the first 3 minutes, one should avoid exercises that end with an accelerated or strong impact. Such exercises include running, grapevine, sideways swing or jumping.* The ankles and legs need to adapt to more intensive work after the warm-up and during the further course of the class. With such a combination of requirements, the intensity of the class automatically and gradually increases, and the participants of the class continue to successfully strengthen the mobilization of energy to maintain the set pace of the exercises within the so-called “exhaustive state of the body”, ensuring functional balance. There is a *physiological moment, according to which the body's oxygen consumption is easily compensated automatically by regulating breathing.* The operation of such a mechanism can be checked visually. If the increase in load in this training is greater than the adaptability of the participants of the class, then the participants

show early signs of fatigue. The load balance in the following minutes of the aerobic exercises is achieved by adjusting the tempo of the background music. This fitness tool requires following the musical tempo that accelerates by no more than 1-2 BPM during several minutes of exercise, while renewing the rhythm and synchronizing the intensity of the physical exercises;

- *strengthening exercises.* The motor load is focused on the *normalization* of its effect on all parts and muscle groups of the body. In the physical sense, the performed exercises should include those parts of the body and those of the muscles that were less tense in the previous phase of the class, that is, during the implementation of the aerobic part. The goal is to maintain the principle of muscle balance in the body. Such exercises should usually be started in a standing position, moving to lower positions, namely: sitting, lying down, standing on the knees, leaning on the hands, etc. Preference should be given to performing complexes of strength exercises designed for passive body positions. Their respective benefit can be explained physically, namely, due to the manifestation of an intensifying effect. *Strengthening exercises usually last within 10 minutes, while the tempo of the background music should not exceed 135 BPM.* It should be remembered that certain exercises must be adjusted to the rhythm of the music, but this requirement is not absolute. To achieve a normative effect, it is recommended to repeat a series of exercises with eight repetitions to achieve the beginning and end of the series at the same level with the musical phrase;
- *relaxation and stretching exercises.* These exercises focus on *balancing* breathing and muscle traffic at the end of the class. The purpose of relaxation and stretching exercises is to stabilize the heart rate to the resting heart mode, relax the muscles, strengthen the flexibility and increase the range of motion in the joints, and reduce the level of metabolic products accumulated in the muscles. These exercises should last at least 4 minutes, and *the music is recommended to be used at a tempo of 80-100 BPM, but it should necessarily have a relaxing character.* Stretching exercises are usually performed by a static method, less often by the method of active muscle isolation. Unlike the stretching exercises performed in the warm-up section, where the action also refers

to the static method, at the final stage of the class, a participant should hold each pose in a stationary position for at least 15-20 seconds, without inserting a movement in this interval. There is also a general recommendation that a set of stretching exercises should include in movement those muscle groups that were most involved during the class, and especially the muscles of the calf, the front part of the thigh (the quadriceps muscle) and the back group of thigh muscles (biceps, semitendinosus and semimembranosus muscles). Attention should also be paid to the correction of the body posture.

Despite the clarity of the presented ideas regarding a) organization of the group work in fitness classes, and b) formal filling of a fitness class with physical load, two more issues remain overlooked. These are the issue of the *development of the scientific and technical course of action in fitness* and the issue of *ensuring the effectiveness of fitness*. Let us consider them: the issue of the *development of the scientific and technical course of action in fitness* is considered according to the signs and features of 1) the technological process of choosing exercises and movements and technical requirements for the implementation of musical accompaniment, choreography and arrangements and 2) the formation of requirements for the organizational system and management of interaction. It is necessary to state the following thesis – in fitness, *there comes a moment when the external motivation of the participant turns into internal motivation, which is the result of the penetration of the value of classes into the mental health and well-being of a person.* However, achieving such a state depends on the skill of a fitness instructor. To ensure this, it is desirable to develop a training or rehabilitation program, which is based on a chain of classes that are connected to each other with the general goal of improving the health of a person or developing a specific function. With such an approach, the task follows the movement of a person in a spiral – from the execution of a simple movement to the execution of a complex movement, from the execution of an easy movement to the execution of a loaded movement. In addition, the intensity of action accelerates both from the beginning of the class to its end, and from the beginning of the physical training program to its end. There is a *regularity in the course of a fitness event, according*

to which the development of intensity in a typical fitness session should approach the Gaussian curve in exactly the same way as in a standard physical education class. If to consider the practical side of the issue, the following becomes clear: it is extremely difficult to obtain an ideal intensity curve. This is hindered by the intensity of exercises, which is objectively recognized as average, but is fundamentally individual in nature and may be perceived by one participant as low, and by others as extremely high. The individual differences that exist in the tolerance for effort between individual members of the group force the instructor to develop own imagination regarding various fields of interaction, and first of all, regarding the individual selection of the load for each lesson depending on a rather large-scale range of factors.

It is a well-known fact that the distribution of specific intensity is registered in those classes in which high and low intensity exercises are alternately used. Such an action is called “interval training”, and an example of such activities can be spinning, that is, aerobics performed on a stationary bicycle. The interval training can also be organized by combining aerobic exercises with other training blocks.

The intensity of a class should gradually increase both during the warm-up and in the main part of the class. The highest intensity should be achieved in three parts of the session out of four, and reach the peak at the end of the aerobic training part. In order for such intensity to increase during the class in direct proportion, one must remember the basic rules for choosing exercises both for the warm-up and for the main part of the class. There are the following recommendations: to start each session with walking without any shoulder work or combine the movement with low-intensity exercises, such as free circulation of the shoulders or deflection of the forearms. This ensures compliance with the provision that each subsequent exercise should be more intense. The right tempo of the background music for the exercise should also be carefully chosen, taking into account that both in the warm-up and in the main part of the class, the music accelerates slowly and gradually. It is necessary to follow the practical recommendations according to which:

- regarding its tempo, the background music during the class should increase linearly during the warm-up and aerobic exercises;

- steps with a high impact should not be used immediately, but from the fourth minute of performing aerobic exercises;
- the performance of the exercises for the shoulders should be methodologically grounded, and first involve the so-called “short levers”, and then the movements of the so-called “long levers”;
- before performing the exercise, its coordination complexity should be determined, and during the performance of the task, interruptions should be avoided.

The training program should be designed in such a way that it takes into account the equal involvement of all working muscle parts of the body in work according to the principle of muscle balance. Technologically, the uniform load looks as follows: it is provided by symmetrical exercises, for example, by the combination “step – touch”, which is carried out in both directions together with the simultaneous raising of both hands and spreading them to the sides. In the case of performing choreographic steps, which are known to be asymmetrical, the repetition should be performed starting from the other end of the movement. In this case, it should be remembered that fitness is a methodological combination of skills and experience according to the extensive dynamics of the content and resource. So, *the more directions of movement are introduced into the choreographic fitness system, the more attractive it will be both for the group and for individuals*. This is a regularity, and the level of the complexity of the program fully correlates with it. The emphasis on increasing the complexity of the exercises also arouses keen interest in fitness and attracts a larger mass of participants. In addition, the high level of coordination of the participants’ movement, as well as multi-directional movement compositions, make a person more interested in the spatial scheme of fitness, saturated with sufficient universality of choreography. To obtain such sufficiency, a fitness program may include:

1. *element HIGH*. Jumps of medium and high intensity are performed. The goal is to increase the intensity to stimulate breathing and the circulatory system;
2. *element SOFT*. Sequences of steps of lower intensity are performed. They are supposed to have aesthetic value. The goal is to relax without interrupting the efforts;

3. *element LEVEL*. Steps are performed with the simultaneous lowering of the body. The goal is to strengthen muscles and buttocks, and to increase the intensity of exercises without stimulating breathing and the circulatory system;
4. *element COMPLEX*. Fragments of choreography combining various arm and leg exercises are performed. The goal is to develop motor coordination.

The combination of the mentioned elements is intended to provide a comprehensive effect on mobility and to guarantee the attractiveness of the choreographic system for both participants and spectators. However, in order to preserve the variability of the work and the correct gradation of efforts during the lesson, the HIGH block should not immediately follow the LEVEL block. The COMPLEX block should be the third, or even the fourth, because its content is the most difficult regarding coordination, and the group must prepare for its performance not only physically, but also mentally.

Therefore, in order to observe the principle of muscle balance, which is the basis for the universality of the effect of exercises on the motor apparatus, it is necessary to combine the work of the legs with the correctly executed movements of the arms. When a difficult step is introduced into the fitness system, the work of the arms should be relatively easy to master; otherwise, the participants will not be able to smoothly combine the movement of both limbs at the same time. Symmetrical movements are always the simplest, since they are innate and do not cause problems with the coordination abilities of the participants. There are other recommendations that should be taken into account, but their use should be based on the physical content. For example, the physical content of strength is explained by a person's ability to overcome the external resistance of the environment or counteract it due to the mobilization of the muscle effort. In order to put muscle effort into action, one must first develop motor skills. This means that the level of strength depends primarily on the growing muscles and the processes of energy production in them, which should be sufficient for the movement and work. This means that the level of strength in a physical sense is determined mostly by the cross-sectional area of the muscle and the resource of thickening (hypertrophy) of muscle fibers, that is, the physiological process is subject to stimulation until late age.

If we continue to consider the issue of strength development, we must decide on the following: in recreational fitness training, more importance is given not to training any kind of strength, but to the formation of basic strength endurance. For this, not only a set of exercises is chosen, but also the appropriate tempo of the music. The same is relevant in the case when the property of flexibility is considered. The only difference regarding the human body structure is that the goal is to increase the range of motion in one or more joints. This is primarily determined by the genetic structure of the joint, the structure of the connective tissue, the properties of the tendons, etc. Further, it is connected with the natural biological function of tissue elasticity, processes of aging, and restoration of functions. This is known from many sources¹⁰⁵. Turning to the research of the emotional side of fitness – the musical aspect of action – the following is also taken into account: the right choice of background music for the exercise is almost half of the overall success. If to consider this from the scientific point of view, it can be stated as follows. Methodologically, the process moves from the quantitative measurement of the achievements of fitness parameters to such changes that are associated with the charismatic qualitative reflection of the gains of the physical system. This process can be presented as follows:

CHOICE OF A COMPLEX OF PHYSICAL EXERCISES = formation of body development proportions U increasing the volume of the cardiovascular and respiratory systems U deeper structural changes of muscles, which have more influence in terms of physiological content € on the psyche, € on the behavior, € on the condition of both participants S and surrounding people J, provided that the action involves a full cycle of interaction Ω, which includes MELODY Ψ RHYTHM Ψ TIME SIGNATURE Ψ HARMONY Ψ TIMBRE OF SOUND Ψ DYNAMICS Ψ ARCHITECTONICS Ψ MUSICAL PHRASE Ψ MOTIF Ψ BEAT (2.3)

¹⁰⁵ Carmona, J. J., & Michan, S. (2016). Biology of healthy aging and longevity. *Revista de investigacion clinica*, 68(1), 7-16. Govindaraju, D., Atzmon, G., & Barzilai, N. (2015). Genetics, lifestyle and longevity: lessons from centenarians. *Applied & Translational Genomics*, 4, 23-32. Rattan, S. I. (Ed.). (2003). *Modulating aging and longevity* (Vol. 5). Springer Science & Business Media. Satariano, W. (2006). *Epidemiology of aging: An ecological approach*. Jones & Bartlett Learning.

Model (2.3) includes the background components of technological management, which are based on the combination of fragments of musical works, becoming an independent and original piece of music. This process involves melody, rhythm, harmony, sound timbre, dynamics, architectonics, etc. In case of fitness, their content can be described as follows:

- *melody*. It includes a sequence of sounds of different steps with adjustable duration, i.e. “rhythm”, which form a certain line and evoke a musical feeling. The material from which the melody is created is the sound scale. The type, style, and character of a melody depend on its structure, time signature, tempo, recording method, and dynamics. The correlation between rhythm and tempo in a piece of music is high, and a change in tempo causes a complete modification of the nature of the rhythmic movement;
- *tempo*. It determines the specific duration of the rhythmic units and the speed of the melody. The duration of the rhythmic units and the speed of the melody are determined by the rhythmic pulsation, that is, the number of beats per minute. In the process of measuring activity, the term BPM (beats per minute) is used to describe the rate of human movement. For different types of movement, the following classification of tempos is adopted: 70–80 BPM – slow walking; 100–120 BPM – walking; 130–140 BPM – fast walking; 140–170 BPM – running; 170–190 BPM – fast running. In aerobics classes, the tempo is the basis for the choice of music and it depends on the type and nature of the class, the skill level of the recruited group, the inclination of the group leader, the temperature of the environment and other external factors. The above factors differ in the range of indicators regarding individual segments, fragments and parts of the class. For example, the optimal tempo for the warm-up is 130–135 BPM. However, depending on the form of the class, this tempo varies between 120–160 BPM and can gradually increase or remain at the selected level. The tempo is characterized by variability during some kinds of mixed classes, such as interval training or spinning. In the final part of the class, when the group moves to calming exercises, the tempo drops to a level below 100 BPM. The following must also be stipulated: for muscle stretching exercises

that end the class and exercises related to the Mind&Body forms, music that does not contain a rhythmic pulse is used. In the traditional fitness system, the tempo corresponds to the following classification: 124–134 BPM – strengthening; 124–134 BPM – step (strengthening); 128–136 BPM – stepped (blood and respiratory systems); 135–140 BPM – low impact; 140–150 BPM – hi/lo, aero boxing; 120–140 BPM – funk, hip-hop;

- *rhythm*. It organizes and regulates the time of successive sounds with a fixed relative duration, which is the so-called rhythmic value expressed as musical notes in a piece of music;
- *time signature*. It consists of various strong (accented) and weak (unaccented) sounds. This is the principle of arranging various rhythmic forms with the help of accents. This creates constant groups of stressed and unstressed rhythmic units with a varied internal structure arranged in constant rhythmic patterns called time signature. There are duple meter, marked as 2/4, 4/4, and triple meter – 3/4, 6/8, time signatures. In this notation, the lower number indicates the type and metric units of time signature, and the upper number indicates their number;
- *harmony*. It is reflected in the consonance of sounds in relation to the consequences of these consonances. This is especially true of polyphonic music, in which chords are the result of combining many melodic lines;
- *timbre of sound or “sound coloring of the song”*. It is recognized as the result of a different nature of performance and a combination of means. All sounds, including the sounds of instruments and the human voice, have a certain timbre. Interacting in the target performance sets, they create the sonic colors of the effects. The timbre of the sound depends on the dynamics and articulation of the sound;
- *dynamics*. It refers to changing the volume of the sound within the melody (song), changing the intensity of the sound by gradually reducing or increasing its strength, alternating the opposite contrasts of loud and quiet sounds, and a number of other indirect nuances. In music theory, this is called “using strong accents”;
- *architectonics*. It reflects the form that relates to the formation of the music piece as a whole, and therefore is the result of the

content realized in the piece. In fitness, this is the result of the interaction of the elements of a musical piece that obeys the movement in a sequence of physical exercises. In addition, the architectonics in the fitness system refers to the internal arrangement of fragments and phases of the musical piece and to the principle of the compositional technique used in it. It allows combining different sets of songs, changing the style and nature of the background accompaniment, and synchronizing the performance of exercises with the favorite kind music. Frequent changes in music allow introducing new, more attractive steps to choreographic compositions, and developing the feeling of the value of the action;

- *musical phrase or “melodic phrase”*. It is perceived as a structure arising from the mutual action of musical elements, mainly melody, rhythm and harmony, consisting of two or more motifs. There are motif-homogeneous phrases, in which every other motif arises from the first on the basis of simple or sequential repetition, and motif-various phrases, in which the action is connected with the process of accumulation of various motifs;
- *motif*. It refers to the structure created due to the interaction of musical elements, which are mainly melody, rhythms and harmony. Its themes can consist of a combination of two or more sounds, and each theme, in turn, has stressed (Arsis) and unstressed (Thesis) parts, and each part of a theme in fitness can also consist of one or more sounds. Based on the above, background music in fitness is considered to be a fragment of a piece of music, as a piece that consists of smaller units called musical motifs, and these motifs must be repeated at least twice in a phrase. In addition, each motif can be divided into smaller structures, which usually use four melodic motifs with eight sounds in each. It means that a complete musical phrase includes 32 bars of music;
- *beat*. It is used in the sense of an *ordinary rhythmic unit*, but in its fitness meaning, another concept is introduced – the concept of *rhythmic beat*. This is a neologism created for the needs of fitness and is synonymous with the term “musical beat”. It was introduced to simplify the perception of musical rules, and to support the rules of music selection in the simplest and clearest ideas for

a non-professional in music. In order to facilitate the choice of the musical accompaniment, which is a difficult task, concessions and simplifications were introduced by music specialists, which makes it easier to perform exercises. Each phrase forms a compact, audible whole, which is especially noticeable in melodies with vocals. It remains to acquire the ability to hear the beginning of each motif and phrase and combine such perception with physical movement. In order to perfectly adjust the movement to the rhythm of the song, each exercise should be calculated for 2, 4 or 8 bars, and each repeated fragment of the choreography, the so-called “system block”, should contain a complete musical phrase, that is, 32 bars of music. It should be mentioned that some types of music evenly formulate 32 bars, but the musical accents, nevertheless, are unevenly distributed in the following melodic motifs. Such a shift of the musical accent in the melodic motif to a sound not emphasized by the lengthening of the rhythmic meaning is called syncope, which is more difficult for performing exercises.

Therefore, music in fitness preserves and expands the attractiveness of fitness systems. In addition, it plays another role of an auditory functional load and takes the place of the leading component for the optimal conduct of the class. It sets the rhythm of movement and adjusts the participants to skillful and rational performance of physical exercises. Moreover, music changes the environment of fitness, because its chosen style determines the selection of exercises according to the choreographic scheme. It is especially true regarding exercise systems, which mechanically obey the rhythm of the melodies of such Latin America kinds of music as bachata, jive, mambo, paso doble, rumba, salsa, samba, cha-cha-cha, etc. Latin American elements combined with rock or pop music always look grotesque. That is, the leading requirement of fitness is fulfilled – *the exercises should form a harmonious whole together with the music, which encourages the participants to unique systematized movements filled with meaning based on the personal intentions and the scientific and methodological content invested in it.*

In fitness, there are conventions of action control, which are based on verbal and non-verbal means of monitoring changes.

The *basis of verbal control* of action is the “word”. In order to reduce the amount of information, an international system of keywords was created and approved. In it, the basic stages of exercises and movements are assigned names that act as passwords, and the exclamation meaning a “step” at the right time during the class informs the group that it is necessary to focus on exactly such an exercise. The most usual passwords include the following:

- step-touch. It means activation of the movement according to the structure: step with the right foot to the side and putting the left foot near, the same from LN;
- grapevine. It means activation of the movement according to the structure: right foot step to side, left foot step will cross behind right foot, right foot side step and putting left foot near;
- heel-back. It means activation of the movement according to the structure: PN step to the side and lift the heel of the left foot, bent back, slightly outward, higher than LN;
- knee-up. It means activation of the movement according to the structure: PN step forward and lift of the left leg, bent at the knee at an angle of about 90 degrees upwards, the same as with the left leg. There is a variation of starting the exercise with a step to the side;
- side-to-side. It means activation of the movement according to the structure: on the spot, in a spreading position, balancing from the right leg to the left leg and vice versa with an emphasis on the toes with a straight;
- chasse. It means activation of the movement according to the structure: two steps from the right leg to the side and moving the left leg back to the bend in the turn, bending the leg to an angle of up to 90 degrees at the knee joints;
- mambo. It means activation of the movement according to the structure: moving the right leg forward and then back from the left foot while keeping contact with the ground, same as the left foot;
- A-step. It means activation of the movement according to the structure: resembles a V-step, only in the form of the letter A, the final position is a split-step;

- V-step. It means activation of the movement according to the structure: from a standing position, step forward diagonally to the right with the right foot, step forward diagonally to the left with the left foot, step back with the right foot to the starting position, step back with the left foot, the same with the left foot. In addition, verbal monitoring indicates from which leg to start the exercise, for example, “march to the right”, or in which direction to make the next movement, for example, “two steps to the left”, and finally, when to start the exercise. The following must also be mastered: technologically, this is done by counting down, which begins with the last 8 bars of the phrase, counting every two bars. *The counting is 4-3-2. The count never goes to 1.* The last two bars of the phrase are the command of the fitness instructor, who must signal what movement should take place from the beginning of the next phrase. Bringing information to the group is done as follows: “4-3-2 – grapevine”, and control of movement by the participants “fast-fast-slow”, “single-single-double”, etc. That is, when the fitness instructor starts the time count, all participants focus on the step change because they know that after the count of “2” a new exercise will be announced.

The basis of verbal control of the action obeys the “gesture”. To achieve the goal, it is enough to give a movement signal at the right moment, and this moment are the last 2 bars of the phrase after counting the time, and to show with the head, shoulder, leg, or arm a usual sign which serves as an explanation of the next step. In this case, the communication uses a code. There are several rules of communication between a fitness instructor and a group, among them:

The principle of communication with a group according to the 7-38-55 rule. This rule means that 7% of the work of a fitness instructor during a class should be related to the word, 38% – to the form in which it was pronounced (volume, tonality, voice speed, etc.), and the last 55% – to the system of conditional signals and body movements (movements of body parts, facial expressions, gestures of limbs, body tilts, body balance, etc.). Another ratio of gradients can also be chosen.

2.3. Methodological foundations for developing a fitness exercise and management of performance technique

The path to fitness opens up to a person based on internal motivation and attraction to physical improvement. This idea is supported by a number of scholars¹⁰⁶.

The appropriate motivation to act arises in a person, if he/she has achieved self-understanding and awareness of own needs, interests and actions. The guarantee of such a state, which outlines the behavior of choosing a path of movement according to an internal claim, is, first of all, acceptance of one's own life as it has already developed, that is, as the life of an individual endowed with dignity, intelligence and understanding of own characteristics, traits and defects, which can be improved by means of motor influence and filling the mind with reliable knowledge, experience and information. The leading way to improve oneself is to change the type of activity, which can be helped by the physical system of recovery, development or improvement of the body. We are talking about the choice of fitness or another physical system of motor activity, which is approved by specialists, that is, by those who are endowed with professional knowledge in the direction in which a person, who is faced with the choice of a means of life support, moves. This is about a person who stands at the crossroads of choice what physical system to follow. Fitness can become such a system. This choice, on the one hand, and the fitness environment on the other hand takes the place of the

¹⁰⁶ Attridge, T., & Felice, M. (2015). *Fitness Trainer Essentials: for the Personal Trainer with Online Study Tools 12 Months*. Cengage AU. Kornosenko, O., Khomenko, P., Taranenko, I., Zhamardiy, V., Shkola, O., Tolchieva, H., Saienko, V., Batiieva, N., & Kyzim, P. (2021). Professional competencies as a component of professional training of a fitness trainer-teacher in higher education institutions. *Journal for Educators, Teachers and Trainers*, 12(1), 72-81. Mokmin, N. A. M., & Jamiat, N. (2021). The effectiveness of a virtual fitness trainer app in motivating and engaging students for fitness activity by applying motor learning theory. *Education and Information Technologies*, 26(2), 1847-1864. Левченкова, Т. В. (2014). Профессиональные педагогические качества инструктора по детскому фитнесу. *Спортивный психолог*, 4, 33-36.

initiator of the movement. Fitness has a flexible system of adaptive physical exercises and movements and rhythms of their execution. This is how it is perceived by both a specialist and a person who, by own position, inner drive or character, adheres to an active lifestyle, promotes this way everywhere and acts as a vivid example of the follower of the "approach of the development of health-improvement activities and regimes of work and rest". A person may not be a professional educator or teacher, but know the basics of pedagogy and didactics¹⁰⁷. A person may not be a psychologist, but have such a feature that it seems natural to encourage and establish fruitful relationships and gather people around. Such a person follows trends in physical education and conducts demonstrative classes, showing own desire with all his body, mind and spirit, bringing the completion of the action to such an event that all the participants of the class are calmed and satisfied, because this person looks kind and smiling, and remembers the needs of the class participants. It is all about a person who has knowledge in various fields and skills of social communication, who can learn, carry out and demonstrate the course of action, and teach it to be performed by personal example to all those who wish. This person is called a "fitness instructor". A fitness instructor is a regulator of physical movements and their complexes, subjecting them to the rhythm of musical accompaniment.

The primary link of action in fitness is movement, in which all parts of the body should take place, both those that are easily moved and those that outwardly look immobile, but they are consolidated by posture. That is, maintaining a physiologically appropriate body posture in fitness is a necessary condition for keeping the technical correctness of the physique, and based on this, it is possible to perform physical exercises, movements and motion. All load from movement is concentrated on the spine, skeletal muscles and joints of a person. Both a fitness instructor and all fitness participants must be well aware of the health consequences arising from forced movement under load if careful behavior and control of the body posture are neglected during exercising. There are many reasons of spinal

¹⁰⁷ Gejdoš, M., & Korčeková, A. (2015). *A description of the interaction style of the teacher on the educational results of pupils*. Milan, EDUCatt.

overload, but the most common is the unconditional disregard of the requirement to observe the technical correctness of exercises and movements due regarding body posture. In addition, if the action involves people who lead a sedentary and inactive lifestyle, and usually have the wrong body posture, such people are exposed to negative consequences. This is explained by the imbalance of the muscles located on both sides of the body and in the limbs.

During fitness classes, constant correction of posture can have both preventive and corrective effect, so its constant control is a priority task when performing each exercise or movement. Due to this, the following instruction should be kept in mind: *a correct body posture is the basis of safety and technical correctness in every exercise*. Based on this, it is necessary to learn the appropriate body posture system.

The technique and methodology of maintaining the correct posture of the body can be described as follows. *The support technique*: this is, first of all, a straight silhouette, a straight neck, an elongated figure. the body is relaxed according to the natural silhouette; the legs are set straight at the width of the hips so that the weight of the body is evenly distributed on both sides of the spine. In order to stabilize the posture, the abdominal muscles should be deliberately tense, and the back should be straightened so that the chest is above the pelvis; the pelvis should be neutral, and the buttocks slightly taut; the location of the knees should be free. *The support methodology*: using the visualization method, the fitness instructor describes the image of the correct posture, demonstrates the posture and slenderness of the posture, which makes it memorable. The content of the verbal message to the group may include the following: “Imagine that you are suspended by a thread that passes through the spine. The thread is very thin and it can be easily torn by changing the posture of the body to the wrong one, deviated from the axis”. That is, *the method of visualization* is perceived from the outside as a cheerful means of influencing the imagination of the participants, because it is reinforced by a vivid description of the phenomenon. However, it is also extremely effective when it is used in the practice of action. One can also be guided by the following reminder: *Visualization is an effective method of teaching a correct body posture*. In order to move towards

the selection of exercises and movements, it is necessary to decide on the steps that are the basis of the movement.

Steps in fitness have the function of a basic, main or strengthening movement. Each of the aerobic steps has a corresponding technical level of performance, which is why it takes a certain place in the formation of a choreographic composition, movement module or physical exercise. Regardless of the function of the step, attention is focused on the fact that *the correct technique of its execution ensures, first of all, safety in the environment of those engaged in fitness, during their movement and motion*. This technique is also important in secondary plan for the aesthetic perception of the physical system by the followers and for achieving the economy of movements in their complexes.

Now, when we have described the importance of correct body posture and fitness steps, it is possible to decide on the following position: *the leading principle of technical correctness of all the main stages of training is the constant maintenance of a correct, vertical posture, which ensures body stability and uniform axial pressure on the entire spine*. What is special about such an action is the need to avoid reflex forward bending of the body when performing leg exercises in combination with arm movements. This position puts an unnatural load on the lumbar spine and can cause pain. For this reason, the back should be kept straight and the abdominal muscles tense during the exercises. That is, the following should be observed: “*Do not bend the body forward – the spine should always be straight, and the abdomen should be tense*”.

Regardless of the step that is set to be performed, the heel of the foot must be in constant contact with the floor. It must be remembered that performing elements “on the toes” or with an energetic separation of the heel, constantly reaching the so-called “springiness” is a very common and unjustified mistake among beginners. Such a movement overloads the calf muscles and Achilles tendon. Keep to the following warning: “*Do not lift the heel of the foot off the floor regardless of the exercise being performed*”. According to this warning, one must carefully control *the technique of performing steps*. There are many kinds of steps in fitness, and each system tends to create something peculiar to increase its attractiveness. Based on the above,

it is necessary to proceed to the consideration of individual basic steps. Steps with their structure and movements are distinguished according to their characteristics and features. Let us consider some of their kinds:

1. *march*. It includes the following features: correct position of the trunk and spine, i.e. the silhouette is straight; tense stomach; placing the corrected foot on the floor; knees in a free position;
2. *running*. It includes the following features: correct body posture; metatarsal position, not on the toes; avoiding body movement forward or sideways; knees all the time in line with the hips or slightly ahead; bending the leg back to the buttock is not allowed;
3. *step-touch*. It includes the following features: correct body posture; leaning forward is not allowed; knees and torso are always facing forward; a complex step in which all parts of the leg muscles participate; placing the leg exactly to the side, not diagonally; the foot stands as if “glued to the floor” without lifting the heel;
4. *v-step*. It includes the following features: the posture of the body, as stated above, is balanced; forward steps are taken diagonally from the heel; placing the whole leg on the floor; knees are slightly bent, without overexertion; the step is wide, without body balance; heels together, toes pointing outwards, knees together;
5. *heel-back*. It includes the following features: body posture as above; legs in a wide spread; knees relaxed, no hyperextension; when bending the legs back towards the buttocks, they shift slightly outward, and the lower leg touches the thigh; the heel is in constant contact with the floor; the torso is not moved to the side, and when the weight of the body is transferred, the silhouette is kept vertically all the time in the center above the pelvis;
6. *side-to-side*. It includes the following features: body posture as above; wide split-step; relaxed knees; the body is not directed to the side, and the spine is always straightened in the center above the pelvis; the accent with the touch of the floor consists only of touching it with the toes of the foot;
7. *knee-up*. It includes the following features: body posture as above; a wide step forward, from heels to feet; both legs are parallel; the knees rise only to the level of the thigh, reaching a right angle between the thigh and the lower leg;

8. *chasse*. It includes the following features: body posture as above; wide movements, wide steps; move the legs strictly back with emphasis on the toes, a wide lunge forward with a straightened leg behind;
9. *mambo*. It includes the following features: body posture as above; one leg remains in the same place; the movement forward and backward is performed with a high amplitude, but without balancing the body; the legs are kept in a parallel state as far as possible.

In fitness, there is a group of strengthening exercises, the perception of which is tied to the logic of their impact on a) health-improvement or b) on the physical development of a person. Their goal, based on the essence of fitness, is to stimulate the development of strength and endurance of muscle groups and parts of the body by means of tempo load regulation. Exercises can be conducted taking into account two requirements, namely:

1. a static position of the body, which is presented as an isolated one, according to which the movement of muscles that are not included in the exercise is limited;
2. the framework of limitations put forward to the training program according to the system of aerobic exercises.

The technique of a physical exercise depends on these requirements. Such a technique includes the positions, which must be adhered to, namely:

- a. starting position of the body for performing the exercise;
- b. the technique of performing individual basic steps;
- c. range of movement.

Each of the mentioned techniques has a meaning that needs to be considered in more detail.

1. *Starting position of the body for performing the exercise*. As indicated above, the primary concern of those who are involved in fitness training at the level of mastering exercises, movements and motion is the implementation of the function, according to which it is necessary to constantly check the posture of the body during the performance of all exercises, especially strength exercises. Those exercises that are performed in a standing position should be paid attention to most carefully. Any uncontrolled movement

of the trunk instantly causes changes in the load system of the spine, and this is a potential factor for the risk of injury.

The most favorable starting positions for performing exercises affecting muscle strengthening are middle and low body positions. In such body postures, by stabilizing the spine and leveling the adverse effects of gravity, the knees are supported while standing on the knees and while lying on the support. In these starting body positions, it is also much easier to target specific muscle groups – especially in leg, arm or thigh exercises. It is very difficult to isolate one physical group of muscles to put the load on it, and in many cases, it is simply impossible. In practice, appropriate isolation can be applied to such movements, which are performed with individual joints. The mechanism of the action is as follows: *usually several muscle groups are involved simultaneously by motor tension*. For example, performing arms exercises in a lying position, the so-called “push-ups”, involves both the muscles of the arms, mainly the triceps and deltoids, and the muscles of the chest – mainly the pectorals.

2. *The technique of performing individual basic steps*. These techniques can be different because they depend on the tempo of the chosen music. Thus, for music between 125 and 135 BPM, a slow or medium tempo is recommended. However, the pace of the exercises should not be excessively fast, so that the exercise can reach the full amplitude in each movement and concentrate on the exact execution of the alternating exercises. In addition, a too fast tempo causes incorrect execution of movements, and makes it necessary to increase the performance of another function – keeping the rhythm of the music, giving it priority over how skillfully the exercise itself is performed. Performing exercises at a too fast pace leads to the loss of attentiveness and control over movement. The following mechanism influences a person who moves – *the amplitude or range of movement is not achieved by concentric muscle work, but by the action of a force impulse at the first moment of movement and inertia in its later phase*. The consequences are as follows: such exercises threaten the safety of those who perform the exercise nearby.
3. *Range of movement*. In case of a strength exercise, it should be performed for a specific joint in the full range of motion. This

is limited by the mobility of the joints and the flexibility of the soft tissues surrounding the joint. Achieving the maximum possible range of motion in each exercise is a necessary condition for increasing the strength of the muscles acting on the joint after training exposure. This acts as a methodological principle, because it is a methodically important point of action, which guarantees the stability of the joint or even indirectly ensures the safety of a fitness participant. The full range of motion must be controlled by a person. The following should be taken into account: “It is forbidden to bring the situation to hyper-stress in the joint, that is, to reach a state of hyperextension”. This is caused by too fast movement regarding the resource capacity of the exercise. It is necessary to pay attention to the fact that *loss of vigilance can always lead to severe and acute muscle or joint injury*, or lead to fatigue.

The general mechanism of activation of strengthening exercises in fitness is associated with the activation of movement with load or resistance. Resistance in strengthening exercises can be increased by dosing the load or get it with:

- a. the introduction of accessories. This affects the increase in stability;
- b. the use of own body weight. This affects the formation of relative strength;
- c. the application of static muscle tension in the most favorable upward position of the body, which is located in accordance with the force of gravity. Isometric exercises are performed, which affects endurance, flexibility and achievement of own goals.

If the content of the means *the use of own body weight and the application of static muscle tension in the most favorable upward position of the body* is well-known, then it remains to consider the option of *the introduction of accessories* to clarify some details.

Weights, expanders, flexible Thera-Band® and light barbells that develop resistance up to 10 kg can be used as such accessories. Their use in the training mode affects not only the development of strength, but also the relief of the physique.

From the point of view of fitness, these accessories are perceived as equipment that makes the exercise look more attractive, but their

main purpose is to mobilize the working muscles for more efficient performance according to the functional purpose of the load. The use of various accessories in classes not only increases the motivation to do physical exercises, but also distracts the attention of the participants from efforts and fatigue, directing their efforts to more masterful execution of the exercise and to observing the correct execution of their own movements. That is, the appropriate use of various accessories increases both the effectiveness and safety of training. For example, a TBC (Total Body Condition) or FBC (Functional Body Composition) training section usually uses 2-3 different accessories, among which preference is given to kettlebells for arm loading and elastic bands for leg and stomach muscles loading. This approach allows adequate stimulating of individual muscle groups.

There is a number of proven recommendations. The exercise equipment should be chosen in such a way that its use is as versatile as possible. An example of such a universal accessory can be Dyna-Band or Thera-Band® latex bands. The rules for using them in exercising include:

- before starting the exercises, check whether there are no holes or tears in the equipment, whether the resistance of the accessory meets the requirements of the task, whether the band is of the right length;
- keep the correct body posture and remember that stabilization of the spine is the main condition for person's safety and working capacity;
- maintain a constant rhythm of movement during all exercises, regardless of the phase of the movement and the tension of the band. It is important, for example, when raising or lowering arms;
- firmly hold the ends of the tape in your hand, but do not bring the action to disrupt the blood flow in the tissues;
- maintain the same degree of tension on the band throughout the exercise, keeping it at the same level;
- keep forearms and wrists in line during those exercises in which the ends of the band are held in the hands;
- do not pull the tape over your face, because if you suddenly lose your grip, you can receive a blow to the face, which can be painful.

Taking into account the last recommendation, it is necessary to first pay attention to the indications and contraindications that exist in the technologies of strength training, considering the warnings of medical professionals. *Devices weighing up to 10 kg are used in fitness training in exercises that generate maximum strength.* When physical exercises with equipment is part of aerobic training, they help in the development of cardiorespiratory efficiency and muscular endurance. Exercising with resistance equipment are intended for healthy individuals without significant cardiovascular, respiratory, or osteoarticular impairment, and should be performed with caution. Special contraindications to exercises with external resistance are hypertension, past joint injuries, and tendinitis. It is clear that weight-bearing exercises cause an increase in blood pressure, especially systolic blood pressure. Due to this load, the risk of a sudden increase in blood pressure increases for sensitive people, which is extremely dangerous for health exactly during physical exertion. Such a condition can provoke a stroke or a heart attack, and may lead to other extreme consequences.

Another risk group for weight-bearing exercises is those individuals who work in a sedentary mode of operations and functions. For example, they take the position of an observer of the progress of the equipment technology for the production of a chemical substance. Such workers have problems with obtaining a full range of movements and motion, and therefore weight-bearing exercises to strengthen the mobile parts of the body are necessary for them. It is also necessary to remind here about the physiological needs of people, due to which they must periodically turn to physical movement load. This is caused by the shortening of some muscles, low elasticity of tendons and limited strength capabilities of people who begin to train after a long period of inactive life with the aim of acquiring an improvement in general regulation of external resistance in strengthening exercises. Performing these exercises, they expect to improve their general physical condition and the condition of the musculoskeletal system. There is a general rule that has fundamental importance, namely: *Fitness followers with a record of damage to bones, joints or tendons should consult an orthopedic specialist before starting training or health-improvement activities.*

Below, there are recommended lower and upper weight limits for equipment used in strengthening exercises for various types of fitness classes. These are mainly step aerobics, TBC and FBC. Such loads must guarantee the safety and effectiveness of strength exercises, provided that the technically and methodologically correct attitude to exercises, movements and motion is observed both during the initial period of familiarization with them and during their technical performance. Beginners are recommended to use the minimum permissible specified load range. It is also necessary to follow the recommendation of the experienced specialists who have been methodically engaged in fitness for many years. The recommendation is as follows: *The load can be increased only when the level of ability to correctly perform the exercise in the full range of motion, maintaining an isolated body position throughout the exercise during two sets of eight repetitions without muscle fatigue, is achieved.* In FBC classes, for example, in which strength training is included in the program of aerobic exercises, it is recommended to use a load of 0.5-1.0 kg.

The methodology of strengthening exercises consists of three sections, which include: 1) the course of the implementation of the action; 2) methods of ensuring the correct intensity of the exercise; 3) methodological advice. Therefore:

- according to *the course of the implementation of the action*, which is the first section of the methodology of the organization and conduct of training, it is necessary:
 - a. determine the mechanics of movement in the joint and muscles that are subject to formation, development or improvement;
 - b. to record the limit positions of the isolated starting position of the body;
 - c. to define the antagonistic muscles in order to later ensure muscle balance;
 - d. to decide on the type of exercise, for example, an isometric exercise;
 - e. to choose the number of repetitions and the number of sets of exercises and movements;
 - f. to find out the required movement speed, which guarantees optimal conditions;

- according to the *methods of ensuring the correct intensity of the exercise*, which is the second section of the methodology, it is necessary to trace the process of maintaining constant muscle tone during the entire exercise. Thus, the movement of a person performing the exercise with the equipment in the so-called “dead zone”, in which the equipment does not provide resistance, does not slow down the intensity of the performed exercise and does not allow receiving benefits from the equipment, making it useless. Accordingly, during exercises with weights, special attention is paid to maintaining muscle tone at the moment of reaching the passive phase of the exercise. There are many such situations and we could continue presenting them. Again, there is a remark. Fitness, unlike sports or physical culture, has the task of mastering health-improving, strengthening, or developing exercises and movements. Accordingly, it requires a healthy and effective way of ensuring the proper intensity of such exercises and their gentle rhythm of execution using the means of *partial repetitions*. Depending on the level of physical preparedness, the introduced changes must ensure that during the greatest muscle tension, the same movement is performed, for example, raising and lowering the shoulders, but with a lower amplitude. The same movements, which are called “ballistic” because they are performed while maintaining maximum muscle tone, increase the intensity of the entire exercise. Partial repetitions are used only in those groups that have acquired the appropriate training level, the participants of which have a sufficiently high level of general muscular preparedness. This can be considered the main way *to ensure the correct intensity of performing exercises*. Nevertheless, *the stimulation of exercise intensity* is carried out not only by reducing the load, but also in another way. *It can be based on the selection of BPM values of musical pieces* that form the basis for the musical accompaniment of exercise performance. It is a well-known fact that *too fast music provokes those who exercise* to act with a moment of force and inertia, not with concentrated muscle work. To “feel the exercise”, a person should act individually at a slow pace and moving carefully, repeating the movement several times. When performing such a task, it is recommended to use slow music

within the range 128–134 BPM. To increase the intensity of the muscles performance over time, a person should first try making the movements even slower by setting the up movement to 4, stopping at the peak point for four bars of the music and going down to 8.

For every person involved in fitness, it is a natural condition that the intensity of exercises can be adjusted independently, guided by personal assessment of the situation, which is formed by changing circumstances. In this case, it is necessary to turn to the function of the accessory, with which it is easier or more difficult to perform exercises. For example, it is necessary to extend the length of the rope, band or cord. One can also use another method, for example, to hold one end of the tape with the foot and at the same time raise the arm, holding the other end with the hand. There are many other techniques to perform exercises with a band. For example, there is a technique, according to which one must *hold both ends of the band in hands so that the body is in the middle of the band*. In this starting position, performing such an exercise as shoulder lift, the resistance of the band will increase the intensity of the exercise while maintaining the same range of motion in the joint. Weights and dumbbells are most often chosen for training using levers, which spatially change their positions in the hands during the exercise.

If to consider the general conditions for the effectiveness of the exercises, we must, once again, mention the following positions: correct body posture, correctly selected starting position, full range of motion in the joint, and careful control over the movement, which is carried out in all phases of the exercise. There are also purely functional instructions and recommendations. Thus, if it is planned to perform only a certain set of exercises with a load, then it should also include all the requirements that have just been listed. Any 10-20 minute section should include multiple muscle groups along with their antagonists. Over time, exercises are included in turn, especially those that stimulate other muscle groups and were missed in previous classes. The recommended minimum volume of exercises that have the effect of stimulating the development of muscle strength and endurance is at least one set of eight repetitions of each exercise. The guiding principle, which is constant in the selection of muscle groups

for the development of a program of shortened classes, is, again, the principle of muscle balance. According to this principle, exercises are adjusted to activate antagonist muscles with a similar load on flexors and extensors, abductors and adductors, etc. Despite the opinion that any order of strengthening exercises is justified, it is still best to start fitness classes with mastering exercises involving large muscles or muscle groups and gradually move to covering the smallest of them;

- according to the *methodological advice*, which is the third section of the methodology, it is necessary to determine the selection of methodological means of establishing and organizing relationships in fitness groups from the standpoint of their usefulness and social importance.

There are a number of features to which attention should be paid in the first place. They are the following:

1. If strengthening exercises in fitness are combined with aerobic exercises, then the choreographic combination of them should be simple enough so that both the instructor and the participants focus on achieving the requirements that relate to the correct execution of the exercise. Such an action manifests itself physiologically, because training in each case activates the opposite muscle groups, which are called “antagonists”. The main principle is to constantly maintain muscle balance.
2. When choosing the type and weight of the load for the exercise, the safety of the movement of the person engaged in fitness should be taken into account. Loads during aerobic exercises combined in a choreographic system can influence only for the arm or wrist. In no case is it recommended to use rubber bands, ropes, tapes or weights on the lower limbs, for example, around the ankles. It is necessary to follow and adhere to the rule: *the load on the leg is applied in static exercises and in isolated positions*.
3. After performing a series of exercises for a given muscle part, it is necessary to immediately perform a series of exercises with a balancing type of load and for a group of antagonistic muscles. This action pursues the goal of maintaining the principle of muscle balance, which provides the safety in the training environment.
4. When performing a series of exercises for each part of the body, that is, for opposing muscle groups, it is imperative to perform

several stretching exercises for the muscles that are affected by the exercise. Such an action is recognized as useful for preventing the accumulation of metabolic products, the so-called “lactic acid”, and for maintaining and further developing muscle flexibility and elasticity. However, regardless of such exercises, at the end of the class, a participant should always repeat a number of flexibility exercises, including the movement of those muscle groups that were trained.

5. For successful practicing with a load, it is necessary to use the correct breathing technique, which does not delay breathing when the muscles are tense. The person who moves should breathe rhythmically and slowly at all times, combining concentric muscle work with exhalation. In fitness, the rule to inhale air through the nose and exhale through the mouth is not necessary, and therefore one must learn to breathe freely so that concentration on breathing does not interfere with correct performance of the gymnastic exercises.

The following should also be taken into account: some recommendations in fitness are not strict, while others are mandatory. For example, there are some rules, which begin with the words “never and under no circumstances”:

- “do not use the load exercises (for example, with weights in the hands) for warm-up purposes, in stretching exercises and during sedation periods”;
- “do not use external loads in high-impact exercises such as jumping, running and similar activities”;
- “do not apply loads in exercises that require rapid movements based on the law of impulse force or inertia. Music when performing weightlifting exercises should not be fast and exceed the tempo of 134 BPM.”

Special attention should be paid to the exercises that affect the development of flexibility in a person, because they are a permanent element of rehabilitation therapy of the musculoskeletal system. The flexibility of soft tissues constantly determines not only the maintenance of the correct posture of the body, but also the economy and freedom of movement in all joints, which are the elements of the so-called “good quality of life”. The importance of adequate flexibility in

everyday life is clear. The purpose of performing flexibility exercises includes the following provisions:

1. maintenance of the correct range of motion in the joints, and then, its increase;
2. reducing the risk of injury to the musculoskeletal system.

The scientific research shows that a strong and flexible muscle better tolerates the load than a strong and not very flexible one. A correctly conducted training helps to develop flexibility and also affects corresponding motor coordination. This is achieved by increasing the mobility potential of a person engaged in physical exercises.

There are many methods of performing stretching exercises. Some of them are used exclusively for rehabilitation of the musculoskeletal system after injury, while others are used by athletes of higher skill and competitive achievements. The specificity of fitness training does not allow the free use of some time-consuming or technically difficult methods of flexibility development. Currently, methodological recommendations in the researched field are scientifically based, and this allows implementing such development techniques as a) static method and b) active muscle isolation method. That is, *two methods of flexibility development are used in fitness classes, namely: the static method and the method of active muscle isolation*. Their leading characteristics and features are the following:

1. *static method*. It manifests itself positively. According to the experience of practicing specialists, its use allows to increase not only the flexibility of muscles, but also the mobility of the joints, to significantly and quickly exclude the work of other muscle groups acting on this joint. The technological basis for the safety of performing exercises is the correct selection of the isolated starting position of the body and a sufficiently long time of maintaining such a position. Static stretching is not based on the neurological mechanisms of muscle work, and its basis for the effectiveness of exercises is the effect of external resistance on a given joint by the mechanism of gravity or body weight, which forces muscles and tendons to stretch passively. Static stretching, therefore, has nothing to do with the motor process of training or with increasing the skilled potential of a person performing the exercise. In

order this method to achieve the desired effect, the pose should be held in isolation for at least 20-25 seconds. However, it should be remembered that static positioning for 60 or more seconds reduces blood flow to the tissues, which can cause local ischemia or a decrease in muscle temperature. Ischemia, in turn, increases the risk of injury at the cellular level. This can cause damage to muscle fibers during the performance of the next exercises within the same training. As part of the main performance of tasks in fitness classes, static stretching should last 15-40 seconds, and during the warm-up – 8-10 seconds. The procedure for performing flexible exercises using this method consists of three positions, namely:

- ◆ defining the muscle or group of muscles to be stretched;
- ◆ determining the starting position and establishing the normal effect of gravity;
- ◆ maintaining the starting position of the body in the chosen pose, but not less than 8-10 seconds and not more than one minute;

2. *method of active muscle isolation.* It manifests itself in the general use of the phenomenon of the endogenous reduction of the reflex reaction of muscles after an attempt to stretch them. This phenomenon is commonly known as Sherrington's law. It postulates that if two antagonistic muscle groups are active at the same time, then the concentric work of one of them causes a neurological reaction of relaxation of the other. Muscle relaxation is essential for safe and effective stretching. Skillful control of the work of antagonistic muscle groups and stimulation of the neurological mechanism became the starting point for the creation of this method of flexibility development. It consists in stimulating the contraction of muscles, from antagonistic to stretched, which causes their natural relaxation. Only in this state, the relaxed muscles can be stretched using external forces. These external forces can be accessories or the interference from a partner. Since the effect of physiological muscle relaxation is short-term, the phase of static holding of the position during stretching cannot last longer 3-5 seconds. To achieve the appropriate effect, the exercise should be repeated 10-12 times. With each repetition, the range of motion should be slightly increased until the maximum

possible amplitude of motion is reached during the complete cycle. The short time of muscle stretching does not cause a decrease in tissue temperature or ischemia, which increases the safety of using this method in all types and forms of fitness. The procedure for performing flexible exercises using this method consists of six positions, namely:

- ◆ defining the muscle or group of muscles to be stretched;
- ◆ determining and disabling the effect of gravity on the selected muscles;
- ◆ activation of the antagonistic group of muscles for concentric work;
- ◆ determining the position of the body in which tension or increased stretching of muscles by external forces is felt;
- ◆ holding the position for 3-5 seconds and careful returning to the previous position;
- ◆ repeating the exercise 10-12 times with an increase in the amplitude of movement each time.

While performing each movement, it is necessary to remember that regular breathing is the basis for the delivery of oxygen both to the brain and to the muscles of a person. In fitness, this actually provides for the performance of the exercise, that is, determines the ability of a person to mobilize efforts and perform movement. To maintain proper breathing technique during a fitness exercise, a participant should focus primarily on maintaining a relatively constant, uninterrupted rhythm of breathing throughout the entire complex of movements, jumps and motion. Wrong breathing technique has a negative effect not only on movement, but can also be dangerous for the body.

For exercises with high intensity of performance, especially aerobic ones, it is better not to increase the speed, but to increase the depth of inhalation in both phases. In the case of ignoring this requirement, the phenomenon of hyperventilation may occur, which may lead to severe consequences such as deep shortness of breath, fainting, impaired consciousness, and less significant ones, for example, partial cessation of movement, temporary exit from rhythm or performance of the exercise. That is, a participant should consciously control the speed and depth of each inhalation and exhalation. It is

necessary to adapt the way of breathing to the type of effort. In fitness one needs to learn to breathe differently depending on the mode of performing exercises, on the intensity of movement and motion, on their complexity and severity. *When working with a load, there is a need to inhale air in a different way until the moment the body calms down.* The peculiarities of breathing depend on the classification of exercises, which includes a) *aerobic*, b) *strengthening*, c) *calming and stretching exercises*. Let us consider them:

- a. *aerobic exercises*. The correct breathing technique during aerobic exercise requires, first of all, inhaling the right amount of air through the nose, or through the nose and mouth, which allows for deep inhalations and exhalations. This way of breathing is primarily aimed at preventing hyperventilation and the feeling of suffocation during more intense exercises. Inhalation and exhalation should be approximately the same length, but it should be remembered that the shorter and faster the inhalation is, the worse a person tolerates it. It is especially important to avoid involuntary shortening of respiratory phases and an increase in the number of breaths due to their depth. Breathing based on short inhalation and short exhalation leads to rapid fatigue and weakness. In extreme cases, hyperventilation can even lead to loss of consciousness. The emphasis is on the following: *fast breathing during intense physical exercise does not mean a better technology for performing the task;*
- b. *strengthening exercises*. The correct breathing technique during strengthening exercises is based on a combination of concentric muscle work with a deep exhalation of air. This is a natural phenomenon for a person, and its observance is especially important when performing exercises with a load. In this case, inhalation and exhalation must be done through the nose and mouth. It is also beneficial to breathe only through the nose, but sometimes exhale through the mouth. This rule is recommended for use, but it is not a necessary condition for the correctness or safety of the exercise. The most important for the environment of strengthening exercises is the following rule: *a participant must observe the regularity of breathing while muscle work, without holding breath for even a moment;*

- c. *calming and stretching exercises*. During the performance of calming exercises, *breathing must ensure maintaining a state of active rest and relaxation of the muscles and body*, that is, to use such systems of breathing exercises that are aimed at accelerating the effect of slowing the heartbeat up to the registration of a state of complete equilibrium and rest. This condition of the human body is achieved when the heart rate is lower than 100 beats/min. The breathing technique for achieving this condition is based on very deep and frequent inhalations and exhalations. At the same time, the corresponding time proportions of both phases are preserved; inhalation should be approximately twice as long as exhalation.

In addition, it is necessary to control the process based on the starting position of the body before performing isolated exercises, the posture of the body in individual exercises, the amplitude and volume of movement, the way of breathing during the exercise, the appropriate skill of repeating the movement, etc. Fitness involves different levels of complexity and includes such physical exercises and movements that are recognized as difficult for movement control, even for a fitness instructor. Nevertheless, the audience interest of physical culture and sports followers depends primarily on the recognition of the complexity of fitness, which does not decrease over time, but increases even more.

2.4. Organic fitness modules and their structural and pedagogical construction

A person is faced with the question of the expediency of their entry into a certain system related to business and entrepreneurship¹⁰⁸. Something similar happens in the case when the decision concerns the choice of one of the many systems of health-improvement because of the possible pitfalls. When choosing a health-improvement

¹⁰⁸ Fischer, M. M., & Nijkamp, P. (2009). Entrepreneurship and regional development. In *Handbook of regional growth and development theories*. Edward Elgar Publishing.

system, a person relies on the knowledge of medical and pedagogical professionals and specialists employed in the field of physical culture and sports, such as fitness instructors¹⁰⁹. Such a situation should be accepted by the society without doubt, because the recommendations of these professionals support the movement to action. This support provides a methodological system of relationships that obeys the credibility of the risk. This system is scientifically based, because it includes organizational and methodological provisions, without which the educational process remains weak. The system is based on three provisions:

- a. organizational approach to the establishment of relations and mutual action of the fitness instructor and fitness group participants ,
- b. the educational influence of a variety of physical exercises, movements and motion,
- c. the desire to move in a given mode of operation of the human muscular system.

In this system of relations, the following issues occupy the leading place:

- development of a scientific and pedagogical systematic approach to the effect of fitness on a person according to didactic requirements;

¹⁰⁹ Ivanchykova, S., Saienko, V., Goncharova, N., Tolchieva, H., & Poluliashchenko, I. (2018). Comparative analysis of changes in the body composition of female students under the influence of the various kinds of fitness training load. *Journal of Physical Education and Sport*, 18(2), Art 142, 961-965. Shkola, O., Zhamardi, V., Saienko, V., Tolchieva, H., & Poluliashchenko, I. (2020). The structure model of methodical system usage fitness-technology in student physical education. *International Journal of Applied Exercise Physiology (IJAEP)*, 9(10), 89-96. Tolchieva, H. V. (2011). Assessment of psychophysiological state of students with the experience of hatha yoga. *Pedagogics Psychology Medical-Biological Problems of Physical Training and Sports*, 11, 128-131. Дубинська, О. Я., & Петренко, Н. В. (2016). *Сучасні-фітнес технології у фізичному вихованні учнівської і студентської молоді: проектування, розробка, специфічні особливості*: монографія. Суми: Вид-во СумДПУ ім. А.С.Макаренка.

- filling the system with physical exercises with their links and chains, taking into account the inductive method of influencing a person;
- gradual combination of movement elements into a single whole both according to the balanced physical qualities and the fragmentary choreographic implementation.

This requires the interested person to mobilize portions of biological energy to perform physical movement exercises and mental energy to perceive the mechanisms of the impact of a physical exercise on the disease and injury, as well as on the factors that activate the increased level of energy loss. These factors must be constantly paid attention to and studied, which will allow ensuring the proper level of motivation for the action and adjustment to it for those who are included in the development of the fitness system. It is the relevant knowledge that must be as large-scale as possible in terms of information that strengthens the idea of the existence of a proper effect from the inclusion of an interested person in physical exercise, inclusion in each class, and interaction in a team of like-minded people. The basic element of such an activity is the choreographic framing of the action, which consists of physical fragments that are connected in the so-called *choreography block*. *Such choreography should always include 32 bars of music, that is, a complete musical phrase*. The beginning and ending of each learned piece of choreography in line with the musical phrase allows repeating it several times for consolidation before learning the next piece. *It is recommended to create such 32-bar choreography blocks for each class, but there should be no more than four of them in one class*. There are also exceptions that apply to groups with highly qualified members. Longer programs of such combinations cause coordination fatigue and problems in memorizing all the elements of the composition and performing them in sequence. It all means that the connection of several system blocks together looks as follows

$$\text{CHOREOGRAPHIC SYSTEM} = 4 \text{ BLOCKS } 32 \text{ MUSICAL BARS,} \quad (2.4)$$

and requires a person to use intuition and react to a change in the direction of movement. That is, such an action means a *transition*,

which involves the change of one element of the choreography to another. In fitness, there are step changes, which are the basis for creating choreographic compositions. The mechanism of the possibility of a smooth change of movement is guaranteed by observing many features, namely, if: a) the floor covering allows changing the direction of movement, b) there is a program need to maintain the appropriate intensity of the exercise, c) it is necessary to achieve the appropriate effectiveness of the action in the implementation of composition components, d) conditions are created for maintaining safety, e) frontal control over all participants of the action is established, f) the movement of the fitness instructor is followed, and the commands are perceived.

The role of transitions is recognized as high, because they cover all elements of choreography, which include the movement of the legs, the movement of the arms, the directions of movement, as well as the rhythm and intensity of the exercises. The key to creating smooth movement changes is the application of the *principle of learning accessibility*, according to which one should gradually pass from simple to complex movements, from easy movements to complicated ones, from known movements to unknown ones. Guided by this instruction, a fitness instructor should follow in the practice a number of recommendations.

The first recommendation. *Start learning with simple steps, gradually combining them and creating a targeted combination of steps.* Example: the target step – jogging, the transition – walking (low impact) + pause (moderate impact) + running (high impact).

The second recommendation. *Try performing high steps starting from their low version (gradation of intensity).* Example: the target step – running, transit – march (low impact) + pause (moderate impact) + running (high impact).

The third recommendation. *To begin with, start learning asymmetric movements with their symmetrical versions.* Example: the combination of goals – “grapevine” right + left turn transit – “grapevine” right and left, several repetitions + group exercises, as before, the instructor shows the final version + attempts to complete the whole set + the final version repeated several times for consolidation.

The fourth recommendation. *Start a new move with the leg that was not steady on the last step. Ideal for transitions are so-called neutral steps, that is, steps on which both legs are equally weighted. The next step can be started from any leg. However, in most cases, the last step before the change determines from which foot the next step should be taken.* Example: the combination of goals is two steps to a right transition, when the previous step ends with the left foot loading, then the heel-to-back connection is in effect and then the right foot will be lifted at the end, which is a natural introduction to the step to the right.

Thus, in fitness, there is a means of comparing a training method with a scale of difficulty, which provides an appropriate assessment of the difficulty of performing a given step or sequence of steps. When teaching the elements of a new system, it is sometimes difficult to assess which of its elements is easier or more difficult for the student to perform. For this reason, the fitness instructor must trust his/her intuition to select the proper method of teaching the step to be mastered and methodologically explain its physical characteristics to the group. To achieve this, the organizational characteristics of the leading fitness modules should be considered. To present the information in the consecutive order, first, we need to consider the systems that make up Group A, and after that, the systems that make up Group B.

1. *According to the scientific and pedagogical parameters, Group A includes:*

Low impact aerobics (LIA), which is also known as “light aerobics”

It is a form of human physical training that stimulates the activity of the cardiovascular and respiratory systems and additionally develops muscle endurance. The characteristic feature of the low impact aerobics is that all exercises are performed while maintaining constant contact of one foot with the floor. The absence of a flight phase when performing a dance ensures the minimization of the load. Achieving such a property is ensured precisely by touching the floor with the foot. This property makes low impact aerobic exercises recommended for people who are overweight, have osteoporosis, or

have other health limitations. The technical characteristics of the class are as follows.

- *Duration of the class.* The proper training effect in the form of progression of cardio-pulmonary efficiency is added in the aerobic part of the class, which should last at least 20 minutes if the training block is not full, and up to 45 minutes if it is a full hour.
- *Music tempo.* The recommended pace of the aerobic part is 130–148 BPM and it should increase by 1 or 2 BPM every 4–5 minutes as required to follow the progression of the load. For elementary level groups, the minimum music tempo is 116 BPM at the beginning of the main part of the class.
- *Exercise intensity.* The intensity of the LIA exercises should be within the heart rate training range determined individually for each participant, reaching the level of 55–85% of the maximum heart rate. The intensity of the exercises is regulated by choosing: a) stages in the combination of exercises, movements and motion and their structure; b) the number of walking steps and raising arms and legs in a set of exercises; c) the length of the lever during arm and leg exercises. For example, raising the arms vertically upwards is more intense than raising a bent arm; d) pace of physical exercises; e) BPM music tempo.
- *Course of the class.* The training course is developed based on a 60-minute training session. In the case of a 45-minute training session, its components will be correspondingly shorter, but with the same time proportions. The course of the class is as follows:
 - ◆ Preliminary instructions, 1–2 minutes of the class.
 - ◆ Warm-up, 8–12 minutes.
 - ◆ Aerobic part, cardio, 45 minutes.
 - ◆ Strengthening exercises with or without weights, 8–10 minutes.
 - ◆ Relaxation and stretching exercises, 4–5 minutes;

Step aerobics as a form of low-intensity aerobic exercises.

It is one of the forms of low-intensity aerobic physical exercises with the use of a special platform that reaches a height of 10–25 cm. The purpose of step aerobics training is to stimulate the cardiovascular and respiratory systems of a person under the influence of fitness exercises and accelerate fat metabolism in the body. The technical

characteristics of the class are as follows.

- *Duration of the class.* In order to achieve a training effect, a step aerobics session should last at least 60 minutes, of which the aerobic part should take at least 20 minutes, even in groups for beginners. In more experienced groups with developed skills of performing cardio exercises, this part of the class can reach 45 minutes.
- *Music tempo.* The music tempo is within the range of 118–138 BPM, depending on the skill level of the group.
- *Exercise intensity.* In step aerobics classes, there are three options for controlling the intensity of training by changing the following characteristics. They are:
 - ◆ *the height of the exercise platform.* There is a linear dependence: the higher the platform, the higher the energy consumption during training;
 - ◆ *modification of choreography elements.* Basic low-impact steps can be modified to increase the intensity into dynamic forms, i.e. *the strength of movements changes*. It should be mentioned here that strength movement is characterized by the submaximal intensity and involvement of many motor units at the same time, which develops muscle strength. Power moves are all types of jumps and jumps onto a platform or onto the ground, holding the final position for several bars of music. This type of exercises should follow a low stroke sequence to avoid overloading the muscles and joints. Due to the complex performance technique and the high level of load on the musculoskeletal system, strength movements can be used only in advanced groups, where the participants of the classes are characterized by excellent health and general physical preparedness. However, each jump should always be done with a full foot landing and bent knees;
 - ◆ *music tempo.* The recommended music tempo for step aerobics classes is 120–128 BPM. Beginners often have problems performing physical exercises, even when the music is played at a tempo of 118 BPM. However, there is a dependency, according to which after 2–3 classes, it does not become more difficult to perform basic steps at a tempo higher than 120

BPM. After passing such a period of adaptation to training loads, the physical requirements for mobilizing efforts and coordination capabilities should methodically increase, which in turn causes the increase in the effectiveness of the action. The tempo of the music is then adjusted according to the group's capabilities and skills level. The principle of choosing the tempo of music for performing exercises is simple: it should be chosen in such a way that there is an objective ability to perform the technical parts of the choreography easily and without failures, while not losing the rhythm of the musical accompaniment and maintaining the correct body posture. If group participants are able to correctly perform the entire physical structure of movements at a speed of 138 BPM, then this means that the selected tempo is appropriate for them. Only experienced participants can perform *step aerobics classes* at a speed of over 130 BPM.

- *Course of the class:*
 - a. Preliminary instructions, 2–3 minutes of the class.
 - b. Warm-up, 8–12 minutes. In the step aerobics classes, two types of warm-up are used. They consist of mechanically arranged exercises involving:
 - a platform. This type includes the basic steps on the floor and the V-step on the platform with the upper and lower accents. The tempo of the exercises should not exceed 125 BPM. Stretching exercises at the end of the warm-up are usually also performed using a platform;
 - a floor. This type periodically uses the platform for variety. It can include, for example, accents of toes or heels, but does not include the use of basic steps. By analogy with the aforementioned warm-up, this type is performed at a musical tempo of 130–138 BPM; stretching exercises can be performed using a platform.
 - c. Aerobic part, cardio, 20–35 minutes.
 - d. Isolated exercises are designed for 5–30 minutes of the class. For beginners, for whom the aerobic part of the session is shorter, more time is devoted to strengthening exercises in isolated middle or lower body positions. To maintain mus-

cle balance, this set of exercises should include those muscle groups that were less involved in the choreography part. Special attention should be paid to exercises for the development of the chest and abdominal muscles. The tempo of the music should be 120–130 BPM.

- e. Relaxation and stretching exercises, 5–20 minutes. It is mandatory to do exercises to stretch the thigh and calf muscles to prevent pain;

Fat burning class (FBC).

FBC is the aerobic training of medium intensity aimed at effective burning of excess fat. The training module is similar to *hi/lo* training, that is, such type of aerobics that combines low steps with jumping, running, etc., which increases the load. The difference for this form of fitness is compliance with the duration of the class and its intensity. The technical characteristics of the class are as follows.

- *Class duration and intensity.* A condition for achieving a training effect of burning a certain amount of calories is a moderate intensity of physical exercises, which is approximately 65–75% of the maximum heart rate with a relatively long duration of efforts. The FBC aerobic block takes at least 40–50 minutes, which, in combination with the warm-up and the final part, makes one training session of 75 minutes. The FBC is a real challenge to show the perfect methodological skill because the fitness instructor has to create a choreographic composition that will fill the main part of the class with such exercises and movements that do not cause general fatigue, physical and/or coordination fatigue of the participants. In addition, the training action should be directed in such a way that it is possible to maintain an adequate intensity throughout the session and throughout the entire program. Heart rate monitors, which are called “sports testers”, are extremely useful in such an activity, since their use allows monitoring the heart rate during training in a continuous mode.
- *Music tempo.* The recommended tempo of the music in the aerobic part of the class reaches 130–148 BPM and correlates with the person's level of training.
- *Course of the class:*

- ◆ Preliminary instructions, 1–2 minutes of the class. The group should focus on fully conscious work throughout the entire training session.
- ◆ Warm-up, 8–12 minutes.
- ◆ Aerobic part, cardio, 35–50 minutes. 35 minutes is the minimum time aerobic exercises for beginners.
- ◆ Strengthening exercises, 10 minutes. Strengthening exercises supplement aerobic exercises; they can be interpreted as an introduction to the stage of calming the body's functions. These exercises should include the muscles of the abdomen, arms and those muscle parts that were less stressed during the choreographic composition. In this part of the class, exercises with and without load can be used.
- ◆ Relaxation and stretching exercises, 5–10 minutes;

Total body condition (TBC).

TBC is a module of fitness classes, the main task of which is the formation of muscle strength and endurance in order to improve the general physical condition of the body and optimize the proportions of its individual parts. This type of class is an ideal complement to aerobic training, in which changes are made to the structure of exercises in relation to traditional fitness, and usually up to ten minutes are devoted to strengthening muscles and correcting posture. It is best to combine aerobics, FBC aerobics, aqua aerobics, step aerobics with training for endurance and muscle development. It is recommended to alternate two aerobics classes a week with one class TBC. Such a combination of different exercise modules is called “cross-training” and it provides a comprehensive effect of physical exercising on the body. During the exercises, participants may widely use resistance equipment. These are hand weights, weights for the joints of the arms and legs, rubber bands, expanders, platforms for step aerobics, mini-trampolines or even ordinary chairs.

The appropriate selection of exercises and loads during systematic TBC training brings the effect of progression in the five aspects of biomechanics of each muscle, which are:

- *strength*, which is the ability to activate the maximum force generated during one repetition of the movement;

- *power*, which combines force with the speed aspect of movement;
- *endurance*, which is the ability to repeatedly perform the same level of strength;
- *tone*, which is the ability of muscle tension at rest, associated with the influence of nerve stimuli;
- *hypertrophy*, the ability to increase the number of muscle fibers, which is manifested in an increase in muscle size.

Classes consist of isolated sequentially performed exercises designed for individual muscles of the body. The number of series and repetitions of the exercise in each set depends on the selected loads. The performance of these series should be subject to full self-control of muscle work during physical exercises. There is a rule: *only the conscious activation of the muscles under the constant control of the mind affects the development of motor coordination and neuromuscular processes, which are responsible for the level of differentiation, motor adaptation and accuracy in strength exercises*. That is, it is necessary not only to understand the physical mechanisms of the development of the action, but also to have knowledge of the anatomy and biomechanics of each muscle involved in the exercise. The information is provided by means of verbal exchange and demonstration of motor activity. The technical characteristics of the class are as follows.

- *Class duration*. A typical TBC block lasts 60 minutes. Of these, at least 30–40 minutes are devoted to training muscle strength and endurance with load.
- *Music tempo*. The recommended tempo of the musical accompaniment in the main part of the class reaches 120–130 BPM.
- *Exercise intensity*. Regulation of exercise intensity is carried out according to two factors, namely: the amount of external load and the number of repetitions of the performed exercise. However, if the goal of training is related to increasing strength and muscle mass, then it is more appropriate to use higher loads with fewer repetitions. If the goal of the exercise is to increase strength endurance, then one should use small portions of the load, but with a greater number of repetitions of the exercise.
- *Course of the class*:
 - ◆ Preliminary instructions, 1 minute.

- ◆ Warm-up, 7–10 minutes. During the warm-up, special attention is paid to the correct preparation for shoulder girdle exercises.
- ◆ Performing upper body exercises in high positions, 10 minutes of the class. In this phase of the class, movements of the arms and trunk should be performed in different planes, including opposing muscle groups in each joint, which may involve flexors and extensors. For variety, RR strength exercises can be combined with NN work. The movement of the lower body should not affect the quality of movement of the upper body, and the best for this are cyclic movements in place or free motion. Walking or step-touch from one side to the other are effective. After finishing the exercises, a participant should perform static stretching, paying attention to the muscles of the arms.
- ◆ Performing exercises for the lower parts of the body in high positions, 10 minutes of the class. In this phase of the class, a participant should almost exclude the work of the arms and concentrate on exercises that strengthen the muscles of the pelvic girdle, hips, buttocks and calves. It is necessary to implement the principle of muscle balance, which is most effective in the case of equal loading of opposite muscle groups. Being subject to the action of the static method, which involves individual muscles that previously performed concentric work with the load, this part of the training ends with a set of stretching exercises.
- ◆ A combination of exercises for the upper and lower parts of the body in high positions, 10 minutes of the class. This is the most intense part of the TBC class. It involves the performance of arm and leg movements for strength and endurance with the use of a slight external load. Exercises are combined into simple patterns, repeated according to the 16 or 32 bars of music. Combinations are repeated until full exhaustion, that is, until the moment when the last series of exercises requires the participant not only to mobilize strength, but also to consciously resist muscle fatigue.
- ◆ Exercises for the upper or lower parts of the body, 5 minutes of the class. Depending on the goal of training, short series

of exercises is performed, which, according to the mechanism of action, should affect only the selected muscle groups in their isolated position. The purpose of such a tool is to give these muscles rest after the previous load, but without interrupting the stimulation of the body's physical work. Such exercises can be performed without accessories or with light weights. These exercises are performed in:

- middle positions. For example, exercises for the knee muscles in the sitting position;
- low positions. For example, exercises for the muscles of the abdomen and back, or those that must be performed with the legs in a position lying on the side or additional exercises for the buttocks;
- ◆ Relaxation and stretching exercises, 5 minutes. Static stretching exercises should involve all muscles groups that were stressed during the exercise, as well as those that were previously stretched immediately after the exercise;

Funk aerobics.

This type of aerobics, recognized as an alternative to classical, includes interweaving elements of classical, jazz, African and modern dance. Afro-dance movement is a characteristic feature of this physical system of health-improvement, which gives original energy to the performance of leg exercises and emphasizes the asymmetry of working with the hands in a fixed, that is, isolated position of the body. From classical funk dance, this fitness system borrowed symmetrical exercises in ballet foot positions, for example, “plie” and “releve”, and from other dances such positions as “pas de chat”, “battements”, etc. Such exercises require compliance with technical correctness and physiological body posture. The motifs of modern dances and jazz support rare wandering steps in a syncopated rhythm, which makes funk a more sporty type. Such elements and dance forms determine the unique and original content of the class, because they give the movement softness, volume and greater freedom. In addition, the diversity of movement is achieved due to the choreographic contrast, caused by the change of direction, rhythm and character of movements. Funk fitness has variations regarding

the criterion of music style; attention is also paid to its combinations.

The technical characteristics of the class are as follows.

- *Class duration.* The recommended class time is 60 minutes. For dance lovers, training can be extended for another quarter of an hour.
- *Music tempo.* The musical accompaniment includes fragments of reggae, rap, hip-hop, which are most often divided into 4 elements. Each musical motif has eight musical bars, and most often four elements of movement are performed. They are slower than in traditional aerobics, but wide and precise. A characteristic feature of the funk style is the creation of choreographies in which the exercises are performed in a different rhythm than the background music. To perform the exercises, relatively long intervals are used between different musical accents. Based on this, twice as many movements can be made as the rhythm of the music indicates, that is, 16 movements are often made within 8 bars.
- *Exercise intensity.* It is formed by the analogy of low-impact aerobics. However, in the aerobic form, one should pay attention to some independence of the tempo and intensity of the exercises from the tempo of the music. In funk, there is a dependence: *despite the slowness of the music, the more fast movements and elements are involved in the choreography, the more intense the movements will be.* The appropriate heart rhythm is maintained by careful and technically correct execution of combined movements of arms and legs.
- *Course of the class:*
 - ◆ Preliminary instructions, approximately 1 minute.
 - ◆ Warm-up, at least 10 minutes. Special attention should be paid to warming up the ankle, knee and shoulder joints, choosing for this all possible directions of movement in each joint. Stretching exercises should include neck, upper body, leg and arm exercises.
 - ◆ Aerobic exercises, 35–40 minutes. They have the following structure:
 - marching in place with arm exercises – 3–5 minutes;
 - exercises of the main stages necessary for creating funk choreography – 12–15 minutes. Recommendation: in this

part of the class, the correctness of the exercises should be observed, and the participants should be motivated to demonstrate as much freedom and “openness” of movement as possible.;

- composing a simple choreography from previously trained elements – 15 minutes;
- second “final” execution of the composition – 5–6 minutes. Recommendation: it is desirable to perform exercises with an accented ending; creative performance is allowed according to the individual interpretation of the exercises.
- ◆ Calming exercises, 3–4 minutes. Recommendation: calming the body after the aerobic part in the form of walking, step-touch or grapevine exercises; light stretching exercises can be added.
- ◆ Isolated exercises, approximately 5 minutes. Recommendation: to perform exercises for the abdominal muscles in low positions.
- ◆ Stretching exercises, 5 minutes;

Aqua fitness as a water health-improvement means.

Aqua fitness includes a number of physical fitness training systems in which exercises are performed in water. There are several features that determine the content and structure of classes. For example, when the water level reaches the middle of the chest, this is defined as training in shallow water, then the NN exercises are performed underwater, and the RR exercises are performed at or above the water level. All exercises are performed in constant contact of at least one foot with the bottom of the pool. Thus, even those who cannot swim are able to successfully participate in this type of activity. When the water level reaches the neck, it means that the exercises are performed in deep water, that is, all movements of the limbs are performed under water, which increases the resistance and, due to this, the intensity of the exercises. Deep water exercises include all exercises without contact with the bottom of the pool.

The purpose of performing exercises in water is to stimulate the circulatory and respiratory systems and/or to form muscle strength and endurance of the joints in the conditions of a changed system

of forces acting on the muscles in motion, for example, the force of buoyancy, which reduces the effect of gravity. Training in water is recommended mainly for those people who are overweight, suffer from osteoporosis, or need to recover after injuries to bones, joints or from hypertension. The mechanism of aqua fitness is based on the fact that in water conditions, not only the load on the bones is reduced, but also a high intensity of the exercise is achieved. There are also general requirements for *water temperature*: the recommended water temperature should reach 28–30 degrees Celsius. The aqua fitness training systems include the following types of exercises:

- *aquatic*: exercises are performed in the form of the simplified choreography or linear progression exercises that are performed with movement along the bottom of the pool;
- *walking in the pool*: the pool should be equipped with special weights to make it easier to move along its bottom. In addition, non-slip shoes should be worn;
- *combo*: a combination of aerobic and/or strengthening systems of exercises with swimming and exercises from various styles of games, using water flow and different movements, etc.;
- *training with pool noodles*: a system that uses different pool noodles and other equipment;
- *water walking*: it is aimed at cardiorespiratory strengthening of the body. It combines the benefits of walking and performing simple exercises at the same time, using the tonic and calming effect of the water environment;
- *running in water*: a system that uses running in the water environment. It can be performed in deep water or in the “suspended” body position, while sitting next to the pool noodle or holding on to a board or wheel. The advantage over other fitness systems is that it allows effective cardio-respiratory training in the pool.
- *Class duration*. The class can last from 30 to 60 minutes. The choice of its duration depends on the temperature of the water, age, sometimes gender and the ability of the participants to perform exercises, and on the module of the classes. However, the average duration of a water fitness class should be limited to 45 minutes.

- *Music tempo*. It is recommended to use music tempo in the range of 120–130 BPM, but in advanced groups, music can reach 140 BPM. The methodological requirement is to observe technical correctness and keep a certain range of movement according to the rhythm of the musical accompaniment.
- *Exercise intensity*. The frequency of heart rate should be defined taking into account the impact of the water environment. In the deep-water environment, the pressure of the water surrounding the body that is immersed in it improves the venous blood flow. According to this, the heart rate will always be lower than during similar exercises performed in the air. The difference usually reaches 10–15% in favor of the water regime. Thus, if the chosen training rhythm is between 142 and 192 BPM, then with the correction for water, the rhythm should range from 124 to 179 BPM. It should also be remembered that the heartbeat will always be faster in warmer water than in cooler water. In addition, to increase the intensity of the session, the participants may use special gloves, boards and pool noodles, weights, balls and buoyancy belts.
- *Course of the class*:
 - ◆ Preliminary instructions, up to 1 minute. They include safety notes and explaining the peculiarities of training in the pool.
 - ◆ Warm-up, 3–5 minutes. It includes exercises to adapt the body to the water temperature, depth and water environment. It is desirable to provide such a load that covers the movement of the muscles at the main stages of the class. All such exercises are performed without moving from the place.
 - ◆ Cardio warm-up, 2–3 minutes. The intensity increases if other movements are added to the warm-up exercises, such as walking forwards and backwards. It is mandatory to observe the correct posture of the body and standard performance of the exercises.
 - ◆ Main part of the class, 20–40 minutes. Depending on the training module and the set educational goals, this part includes a system of aerobic exercises called “aqua aerobics”, a set of strength and endurance exercises united by the concept of “aqua-toning”, a complex of mixed training called “combo”,

or other exercises that should be performed with medium or high intensity.

- ◆ Calming down, 2–3 minutes. This part includes calm relaxation and motor breathing exercises in place or with movement around the point in the pool at a slow pace.
 - ◆ Stretching exercises, 3–6 minutes. Stretching exercises, in addition to stretching the muscle groups, are alternated with active exercises to prevent excessive heat loss. This part can include arm stretching exercises or something else. The stretching exercises are considered successful if the participants leave the pool without feeling the cold.
2. *The scientific and pedagogical parameters of Group B are given in the simplified form.* It is necessary to remind here that the action is connected with the skillful execution of movements and correct posture in exercises with a) a ball, b) a ribbon, etc.; the physical systems of c) Pilates, d) Tabata, e) “one exercise”, f) a combination of different types of influence on a person, g) summer tubing as a seasonal means of fitness are also included in this group. Their description is reduced to highlighting the formal meaning of the application of the named approaches in fitness.

Physical system “fitness-ball”.

According to its methodological purpose and essence, it is a simulator system, because all physical movements are tied to the space in which the ball must rotate and move. It is the trajectory of its movement that determines the activity of the analyzers and muscles, and following this, a person, who is included in the environment of recreational activities, physical culture and sports, mobilizes biological energy to move to the expected point. This fitness system is aimed at personal health-improvement, rest and recovery on ball courts, which can be located anywhere.

The use of the ball as an object of influence on the movement of a person requires performing a variety of exercises that must be subjected to synchronous movement of the ball and the person, who has to organize needed movements that are appropriate for the location of the ball on the court or in the air. In addition, the movement of the ball in space determines some dynamics of the supply of vital

organs with tension and requires a different way of thinking, mobility, training, as well as to use other advantages than those in the fitness systems described above. All this arises from the functional purpose of the moving ball. Such a means of influencing a person as performing exercises with the ball can be limited only by the imagination of the person and the law of gravity. The ball can be used in order to achieve a wide range of goals: for the purposes of disease prevention, recovery, rehabilitation, physical therapy of a person, as well as for physical strengthening, mental development and spiritual improvement. The universality of the ball as the subject of influence allows stating the expanding the scope of its application in all spheres of private and public life. There are no restrictions of any kind for the use of the ball. It can be used by healthy people, pregnant women and people with physical disabilities. The ball can be used anywhere: in the industrial and social objects, in the premises of dispensaries, prophylactic clinics, sanatoriums, maternity wards. The effectiveness of its use is manifested in the sets of exercises recommended for treating the spine, correcting body posture, in the therapy of diseases, in rehabilitative gymnastics, as well as in different fitness classes on land and in water. Balls can be used in a variety of exercises, namely: in a sitting position, jumping up, throwing and catching, stretching the body, lying on the ball, doing exercises with a partner, dribbling, lifting, holding and carrying, balancing in various body positions, playing, relaxation and rest. The list of benefits and advantages of exercising with the ball does not end here, and it can be continued. The leading motives that lead a person to the path of *productive power* under the influence of the ball and the forms of its influence on a person are:

- *influence on a person's approach to action.* From the very beginning of familiarization with the ball and its purpose, the ball is an interesting object for observing its hovering in the air, perceiving its movement with a visual analyzer, processing the features of its use by the nervous centers of the body, because its presence in the field of vision or sounds delivered by it after being hit, encourage the person to activate mobility, that is, *to act*. Observations have repeatedly confirmed that even those who see the ball for the first time do not remain indifferent to what is happening and are

fascinated by it almost instantly, or adapt psychologically to it after a short period of time, constantly expressing their emotions and hopes. That is, the period of adaptation and getting used to the ball, the skill of handling it, and understanding of the quality of pleasure come to a person quickly and it happens spontaneously, without any instructions and lengthy explanations regarding its use. A person's imagination develops own ideas, which are immediately implemented. Therefore, the usefulness of owning a ball and its use manifest themselves visually, inducing the following dependence – *the presence of a ball activates a person, and active exercises with the ball lead a person to another level of physical and mental motivation for action and changes;*

- *influence on a person's approach to creativity.* Due to own creativity and readiness for designing something new and experimentation, a person discovers new methods of own development and improvement. To successfully achieve this, it is necessary to develop and introduce new forms of exercises. Due to its properties, the ball in fitness forces a person to make efforts, which leads to self-improvement. It is impossible to predict in advance what the motor reaction will be, because it depends only on the creativity, dexterity and mastery of a person who practices in order to improve own abilities. From the mentioned factors, *dexterity and mastery* are produced in a person after long-term and conscientious training of skills and abilities. The situation is different in relation to creativity, for the development of which it is necessary to use the factor of imagination. These factors of development depend rather on other people, in whose environment, before implementation, the ideas undergo verification and approval on the path of acquiring skills. For this reason, consideration of the usefulness of using the ball ends with new ideas that are connected with different interests, creative intentions and desires to be in a good mood and harmony of contemplating the beauty. In order such interests and intentions to gain scale, a person must first invent and form the vision of them, regarding both a philosophical and a pragmatic perception of the phenomenon, and only after that move on to stimulating own perception and sensual knowledge;

- *influence on a person's movement to mobilize cognitive ability.* With a ball, a person is given the opportunity to artificially stimulate various factors of sensory cognition, which were not acceptable before their formalization. It is worth noting that in everyday life, work and free time, attention is primarily focused on visual, auditory and tactile cognition of the environment. That is, the perception of the ball by sight, hearing, and touch expands the totality of knowledge of the world in different ways by activating new senses and obtaining new information. In addition to the above-mentioned, muscle and joint sensations, which inform the brain through nerve impulses and the central nervous system about movements in muscles and joints, are included in the action. This, in turn, involves in action *the kinesthetic sphere*, the sense of balance, *the vestibular sphere*, the sense of smell and *the whole sphere of smell perception*. These spheres are also part of the physical fitness systems;

Exercising with a band, such as Thera-Band®.

According to its purpose, it is a training device, the brand of which is reserved by The Hygenic Corporation. This brand is appreciated by physiotherapists, fitness instructors and followers of fitness, physical culture and sports for its artificial qualities of physical impact on a person. It should be noted that the tape is made of 100% latex; it is rubbed with powder and talc to maintain flexibility and strength for as long as possible, easily washed off dirt with water and detergents. The researchers proved the usefulness of the band for a person based on the multitude of effects on personal development, health improvement and preservation of biological energy. Generalized studies registered its effect in the following directions: 1) increase in strength; 2) improvement of movement balance; 3) improvement of body posture; 4) increase in dexterity and flexibility of the body; 5) reduction of movement restrictions; 6) increase in endurance; 7) impact on blood pressure; 8) reduction of pain; 9) prevention of falls. Technologically, the effect of the band depends on the quality of its strength. *Strength in fitness is the resistance of a band when it is stretched, and resistance to stretching is the force one must apply to reach a certain length.* The latter depends on the percentage of band

stretching. This principle is used in the physical fitness system with the proper strength of the band, and its overcoming depends on the condition of the person engaged in recovery or rehabilitation. It must be remembered that the same exercise with the band must be repeated 15-20 times. Bands are colored depending on their strength, and experience shows that beige and yellow tapes are best when used in rehabilitation after injury and for the elderly. When it comes to the training process, red and green bands are suitable for women, while men usually prefer green and blue bands, and only after reaching better physical shape, they choose the black band. Their silver and gold bands are usually used by people who do sports;

Pilates.

This method was developed by Joseph Pilates. The young man, engaged in bodybuilding in order to increase and develop muscle strength, designed a series of exercises for himself and proved its effectiveness to the society. The exercise system is designed for:

- *activation of the minds of thinking people.* In contrast to jump-like training to loud music, where the main task is to observe the rhythm of movement and motion mechanically, in Pilates method, each movement is subject to careful control not only of the movement itself, but also of the circumstances of the movement by feelings. This tool allows getting the effect and bringing it to the maximum. That is, learning requires a person to concentrate attention in all possible situations. Attention is focused more often on the factors of the anthropological origin, which are connected with:
 - ◆ balanced position of the body according to the criteria of vertical location and gravity;
 - ◆ tight and tense abdominal muscles;
 - ◆ properly stretched neck, in line with the spine;
 - ◆ breathing that remains rhythmic and sufficiently saturates the body with oxygen;
- *regulation of every part of the body that works in unity as an integrated system.* There is a dependency, according to which the learner should be directed to the state of proficiency in performing movements and motion. A correctly performed exercise

provides the proper fitness effect and ensures a more productive use of the body's energy for health-improvement and daily development of a person. At the same time, this system allows achieving other changes in the body, and helps in treating skeletal deviations, headaches, decreases the frequency of muscle spasms, and normalizes muscle tension, which is caused by improper body posture;

- *conceptualized concentration of attention on the object of movement, not leading the mental fatigue.* The latter is inherent in the control of movement to rhythmic music in other fitness systems, and in this version of fitness, on the contrary, the effect of deep relaxation is registered. That is, the chosen way of performing the exercises includes slow and rhythmic movements, which relieve stress and allow the person who exercises to feel both calmed and stimulated;
- *achievement of the tasks set before Pilates exercises,* the leading among which is the formation of strong and flexible muscles of the appropriate shape, and not an increase in their mass.

Guided by the above principles of Pilates, the theory and basics of this method of physical development of a person should be considered. There are some features of this fitness system that should always be remembered when choosing, learning and performing exercises. Every person who strives for self-improvement should get to know these basic features. Self-improvement in Pilates comes down to mastering a number of properties, foundations and peculiarities, which include:

- *concentration of a person.* This human property is the basis for the perception of a complete complex of physical exercises. The importance of concentration is explained by the fact that each part of the human body is an element of a synchronized whole organism. Each part of the human body must be correctly placed and move in space in order to ensure a) physiological self-sufficiency, b) everyday life self-sufficiency, c) social position in the environment of establishing relationships and, finally, d) appropriate entry into social processes. If the "*property of concentration*" is perceived in the social environment as a principle of socialization, then it turns into an extremely important factor in the or-

ganization of life, since it allows the implementation of processes of focusing attention on certain parts of the body, developing them and arranging them according to the appropriate requirements. This provides an impetus for the development of a person who acquires the quality of the productive force of the society. This is achieved by a person step by step as a result of training and gaining knowledge, skills and abilities, which free the mind from any current troubles, anxieties and problems, and allow a person to be free when communicating with the environment and when performing socially significant works, operations and functions. In Pilates, freeing the mind and relaxation are achieved with the help of the methodologically grounded sets of physical exercises and movements, which are mastered and performed according to the plan chosen by a person;

- *process of breathing.* The correct process of breathing is of crucial importance in this physical system of influence on person's physiological condition. During Pilates exercises, a participant should learn to breathe *a) deeply, b) fully and c) rhythmically*. At the same time, breathing cycles depend on the following factors: d) what the circumstances are, e) to what moments of movement they are connected, and, finally, f) how to inhale and exhale air correctly. In Pilates, a person inevitably exhales while performing exercises, and in order to keep to the recommended breathing mode, a person must master two of its functions: g) to learn to breathe correctly, h) to learn to relax the body during movement. The experience of mastering such a *breathing technique* shows that the automatic intake of air into the lungs during exercising causes excessive muscle tension;
- *organic basis of human movement.* According to the author's definition of Joseph Pilates, the organic basis of the movement is represented in the term "Hoop of strength", according to which the physical action is given a deep meaning when using the physical system of Pilates. This term includes a necessary component of the mechanism of bringing the human body into action. This "hoop" includes three links of the body's functioning, which, according to all their mechanical, strength and physiological properties, make up the elements of movement. These are *a) the spine,*

b) the abdomen and c) the buttocks. Their features, which are important for Pilates, are determined by three factors, namely: *1) in relation to the features of the spine – during everyday life, mainly the upper part of the spine is subject to overload, but when arms movements are properly developed, they are connected with the movement of the middle part of the spine, and not with the shoulders, in this case the excessive tension of the muscles disappears, 2) in relation to the features of the abdomen – almost every exercise in Pilates begins with a soft pull-in of the abdomen, which strengthens the muscles so that the abdomen remains always flat and because of this the spine is protected from overloads during physical exercises, which is always a harmful process, 3) in relation to the features of the buttocks – when the gluteal muscles are strained and included in the exercise, they help to correct the posture of the body and protect the spine from overloads and damage;*

- *the functional basis of the implementation of the action Flow of movements.* The comparison of various types of fitness allows stating the difference, which is associated with the phenomenal dynamic performance of movements. *Pilates*, unlike most other fitness systems of exercises, *does not methodologically support and recommend the use of sudden movements.* The transition from one exercise to another must be as slow as possible and the movement and motion in space must be natural. However, such a requirement does not exclude movement under the influence of rhythmic accompaniment. In addition, a proper rhythm of breathing determines the pace of movement, which contributes to *a) the improvement of muscle warm-up, b) muscle toning, c) burning of biological energy to the extent that the muscle mass does not increase.* In addition, the slow pace of movement provides time for mental evaluation of the action, that is, to be aware of the sensations of each part of the body, each muscle, which allows a person to perform the exercise accurately and in a fully controlled way;
- compliance with the *Relaxation feature.* This characteristic feature turns into one of the most important methodological elements of Pilates. The "Relaxation" feature helps to overcome

stress caused by the modern lifestyle. The following fact should be taken into account: stresses and deviations in the development of events in the production team or in everyday life are usually reflected in the constrained behavior and excessive muscle tension, which, in turn, *a)* causes a headache, *b)* accelerates the development of the process of overload and *c)* leads to the injury cases. Relaxing exercises, recommended in Pilates at the end of each session, adjust the body to the rhythm of everyday life and production process. In Pilates, relaxation also performs another function – the function of regulating the body, according to which it is possible to solve two issues: 1) restoring a certain level of energy, which may decrease during the class, and 2) balancing mental peace, which is an important factor for the long-term preservation of biological energy.

From the above, it can be concluded that the methodological basis of Pilates develops according to a number of factors of the physiological nature. These are the factors of the:

- *flat abdomen* as a general goal of combining physical means of systemic influence on a person and achieving a side effect;
- *hoop of strength* as a guarantee of the correct performance of a physical;
- *abdominal muscles* as the most important element of the whole system.

Each of these factors does not work without each other, because they all forms a chain of one action, in which Pilates manifests its physical essence – recovery, health-improvement and rehabilitation. The further development is carried out according to the own ideas of the fitness participant. According to the idea of the author of the physical system, which was proven during practical implementation, the *hoop of strength* in it is endowed with a mechanism of influence, which strengthens the spine and surrounding muscles of a person. Based on this, a model of fitness is created, in which the hoop of strength is assigned to perform the role of the center of the functional plexus of action, and all movements should begin from this center, regardless of their direction – restoration, rest, health, recreation, entertainment, education, etc. That is, Pilates, as an organic system, is methodologically built on the properties of the

physiological structure of the human body. This includes the mechanisms of mutual action aimed at strengthening the human body.

The consideration of the methodological structure of Pilates includes the physiological characteristics of the abdominal muscles. Four layers of these muscles are *a)* in the front part, *b)* on the sides and *c)* in the back part of the human body. They allow a person to perform bends or turns, and more importantly, if these muscles are well developed and used correctly, they protect the spine and deep muscles from damage and injury. However, their main function is the following: *strong abdominal muscles support the performance of all movements and ensure their proper range*. Unfortunately, for most of us, a sedentary lifestyle means that not only do we have weak or weakened muscles, but also we hardly realize the real situation. The situation can be explained as follows. Four layers of abdominal muscles form a rim between the chest and the pelvis. The aim of *Pilates* is to develop these muscles. The superficial layer consists of the rectus abdominis muscle, which runs vertically along the front of the body from the sternum to the pelvis. It pulls the front part of the pelvis up and plays a working role in maintaining the posture of the human body. In addition, it is divided into four parts, which makes it the most recognizable muscle, because its characteristic shape outwardly resembles a radiator. Next, the external oblique muscles of the abdomen pass with an inclination from the area that is slightly below the sternum and wrap around the waist; the internal oblique muscles, lying a little deeper, also with an oblique course of fibers, originate in the region of the lower ribs and descend to the pelvis. Both oblique muscle groups are used in the position of rotational movements and tilts. Further, the transversus abdominis is the inner layer. It runs horizontally along the waist to the spine at the back and to the pelvis at the front of the hip joints. This muscle and its functions are often missed, while strengthening it not only provides a strong, flat stomach, but also helps to relieve and stabilize the lower spine;

High-interval intensive fat-burning training system Tabata.

Physical exercises are composed by the developer into the complexes, which must be performed with the maximum speed of move-

ment available to the body. Each exercise, the number of which in a complex can initially be six, eight or more, is carried out by performing as many of its movements as possible in 20 seconds. Then the methodology envisages some balancing of the body and nervous system for 10 seconds. This balancing is also achieved in movement, and its task is to prepare the functional condition of the body for the next exercise. Exercises should be chosen depending on the person's physical preparedness and should be aimed at physical development, recovery, or rehabilitation. As the body strengthens, physical exercises should become more difficult or assisted with tools, their structure also expands both in terms of complexity and time of execution;

One exercise system.

This is a training system aimed at influencing muscle groups, for example, "Perform 100 squats", "Hold the bar", "Repeat a physical movement" or some other exercises. This physical exercise allows a person to combine the internal and external structures of action and physical impact on the body organ. The internal structure of this system is responsible for the interaction of the processes that occur in the body during the execution of exercises, and its external structure is responsible for maintaining the ratio of spatial, temporal and dynamic movement parameters. In the practice of physical education, there is a large number of physical exercises that differ from each other both in form and in content, but in the post-industrial society in which we live, little time is allocated to perform their complexes. Guided by time constraints, a person should choose such an exercise the movements and operations of which optimally affect the physiological processes that occur in the body during the execution. The aspects of optimization are known and they deal with biomechanical, biochemical, psychological, and physiological spheres. The psychological and pedagogical calculation of their effect depends on the form of movement performance. It should be carried out consciously and be aimed at achieving a functional effect that corresponds to the task of controlling physical education. If compared with the state of rest, then in terms of the physiological impact, physical exercises are characterized by the transition of the

body to a higher level of mental, physical and functional activity. The range of such changes depends on the specifics of the exercise and can be significant in terms of pulmonary ventilation, volume and intensity of metabolic, dissimilation and assimilation processes in the body. If we also consider the information about the changes that occur due to the influence of biochemical processes, which determine precisely the qualitative changes in the body due to an increase in muscle mass, an increase in the content of creatine phosphate in the muscles, etc., then the phenomenon of "one exercise" can be generalized on the basis of biochemical, psychological or physiological influence on changes occurring in the body or nervous system. It should be mentioned that against the background of biomechanical processes, there is the mechanism of the body's ability to self-regulate, which occurs due to the characteristic movements of the body and the movement of its individual parts not only in space, but also relative to each other. Based on this, the forms of physical exercises are determined. These exercises activate the function of blood flow to the organs and muscles. There are other examples, including *motor activity and health-improvement in the nature spots*. In this case, the mechanism of the body's ability of self-regulation is used, which occurs due to the adaptation to changes in the external environment. In this way, the body becomes more stable, lively and viable in nature, saturated with sunlight and charged with ozone. Physical exercises activate certain mechanisms, as a result of which the functions of not only the muscles, but also the respiratory, cardiovascular, nervous and digestive systems are strengthened;

Combination of the advantages of different fitness systems in one system

For example, the use of a Thera-Band® band, a Bodytrainer Tubing device and other equipment. For example, only the simultaneous use of the Thera-Band® with the Bodytrainer Tubing device methodologically involves the use of four different types, which differ in their reliability, strength and construction. They are suitable for group training with hard sports shoes, not only in the gym, but also outside, because they are less capricious in use. In addition, Thera-Band® bands come in a variety of lengths and can be used with all

Thera-Band® accessories. The Bodytrainer device has a length of 1.40 m and flexible handles, which gives it certain advantages;

Summer tubing as a seasonal means of fitness.

This is a sufficiently original means of physical impact on a person and body organs that uses a different psychophysical load. The system uses an inflatable rubber tube with handles. Such a tube, as a seasonal variant of using the water surface for the purpose of human health-improvement, is adapted for towing behind a water boat together with a person who stays on it and performs physical exercises during such a movement according to the predetermined program of movement. The tube is equipped with necessary elements for a person to stay on it. The classic position of the body is the following: the legs are spread slightly wider than the width of the hips, it is desirable to distribute the weight of the body evenly on both legs; the knees are slightly bent, and the pelvis is in a central position and acts as a gravity balancer. The mechanism of action is to raise the sternum as high as possible, the shoulders remain relaxed, moving back and down under the weight of the body, and the back of the head is pulled up so that the reactive force is lengthened. There are more than 120 exercises in tubing. They are recommended to be performed with different positions of the body and limbs according to the target directions of the physical effect on the person of the speed of movement on the water surface.

Conclusions to Chapter 2

1. The multitude of fitness systems allows stating a new sphere of human activity, which is the physical culture and recreation industry of human health-improvement, which is based on scientific and methodological provisions for managing the processes of physical movement and human health-improvement.
2. The methodologically grounded fitness programs are being developed; they have found their customers and can be used by both individuals and groups of fitness followers depending on the composition of physical exercises and movements, which

have the motor impact on the psychological, physical and mental state of a person.

3. There are requirements for the development of both individual physical fitness exercises and their complexes, as well as the methodological foundations of management of performance techniques. They are subject to scientific and methodological substantiation.
4. The organic fitness modules have a definite content and structure; at the same time, they are subject to dialectical changes driven by scientific and technological progress. They are also subject to the pedagogical and educational relations that the society observes in the systems of general and professional training of a person for work.
5. The organization of a fitness class is organic in nature. It has a number of characteristics and components, which are physical exercises, methodologically grounded combinations of them, rhythmic accompaniment, control over action.
6. The pedagogically grounded structure of fitness classes makes them available to everyone who is interested in their personal development and improving their physical and mental qualities. It provides a wide range of possibilities to saturate human life with cultural and territorial values, in which the development of freedom of action of fitness in the space of social objects of activity occupies a full-fledged place of productive power.

AFTERWORD

A commentary on some aspects of the research

The action discussed in the monograph helps the society to save part of the costs required to maintain the system of medical healthcare institutions and to reduce the burden on the educational system, which is subject to an accelerated schedule for the reproduction of the labor force that can turn into the productive force of the society. The labor force can maintain the quality of the productive force until a leap in the technological order is registered in the environment of social relations, which changes the balance of interests of both producers and consumers. This leap is accompanied by an increase in the level of industrial accidents, industrial injuries and occupational morbidity, which increases the demand for the services of the recreational industry. Adjusting to this, recreation in the environment of social relations is widely regarded as a means intended for a person to relax and restore their strength. To achieve these goals, recreational sphere is replenished with natural means of health-improvement, for which a network of facilities, clinics and dispensaries adapted to provide clients with therapeutic procedures and exercise, is created. However, the growth of recreation into an economic sector is a complex process connected with many conventions and inconsistencies. The studied environment has a large scale and a significant volume of fixed assets, working capital and movement of financial assets. In addition, to date, science has presented the recreational sphere in its developments as an interaction

environment in which different companies and organizations unite their efforts. At the same time, these companies and organizations remain divided and do not have a common communicative basis. This does not allow them either to establish mutually beneficial ties and links or to interact on a systematic basis. This is a striking fact if we pay attention to the organizational structure of recreational facilities in different territories.

At the same time, there are a number of common types of activities that are associated with providing recreation, health-improvement and recuperation of a person, as well as providing a person with a possibility of organizing entertainment. This conclusion can be reached with a more detailed study of the methodological basis for ensuring physical impact on a person due to the use of systems of physical exercises and movements. Considering this a useful activity, further ideas and conditions can be developed. These ideas and conditions bring the recreation system closer to its perception as the recreational industry with its transformation into a sphere according to the criterion of an economic resource of interaction.

Comment one, regarding general theoretical issues

A person, depending on the state of health, physical condition and capacity of the body, rushes into the environment of developing own forces, strengthening them or improving the body, where he/she hopes to improve own physiological characteristics, restore energy and emotional mood, and then return to the normal rhythm of life in home, professional or public environment. The usual rhythm of life combines the forms of person's movement, requires a person to move in space and to think, which is reflected in the activities that a person should perform within the given time limits, standards and predictable parameters of safety and efficiency. To achieve the expected improvement in health, a person is periodically included in one of the structures of medical support, educational process, physical culture and sports training, or the recreational sphere of life-improvement. The methods of assistance and recommendations of these structures are known, they differ in the content, purpose and execution of programs, procedures and activities, which is ultimately assessed as a positive phenomenon, because it

expands the cultural spectrum of choosing a way to restore health, enjoy and relax, etc. The unifying principle of their usefulness is an action in the form of movement, which ensures the usefulness of a health-improvement effect on the body and ways of developing motor and mental abilities, which is realized everywhere through labor. The development of the ability to work is the main task a person faces; it refers to the natural and purposeful aspiration of any society for the reason that in this way human physiological existence and satisfaction of needs are ensured. For this reason, the processes of developing a target movement that benefit both a person and the society are at the forefront of human development, and this movement is the object of the scientific research not for one, but for many generations. The moment that sets the humanity in motion in this direction is the irrelevance of the utility produced in a person, which can manifest itself in any situation both: a) when a person is on the trajectory of own physical development at any of its points – from the point of starting preparations for the chosen activity to the point of being at the top of the professional career, b) and when a person has lost the conditions of successful life due to a catastrophic event in life and is forced to leave the environment of productive activity, but is at any point of recovery – from the point of treatment to the point of rehabilitation, which maintains the hope of the society for the return of a person to active life. In the first case, we are talking about the systemic development of person's ability to work, and in the second, about several ways to help a person, namely, about drug intervention, which relieves a person from pain, about physical exercises, which, if they are well-arranged in sequence, give a person exceptional properties of motor activity, about rest, etc. In order not to repeat the same further, attention is focused on the following aspect: *physiological utility manifests itself in a person after he/she has been cured, mastered physical movement and brought its performance to the proper level of perfection – to consumer utility.*

Comment two, regarding methodological issues

The perfection developed in a person is perceived not as a thing in itself, but as a complex of physical properties of the transformation of biological energy into mechanical work, i.e. this acts not only as

a means of acquiring a complex of physiological foundations for the accumulation of energy in the body, but also as a force that directs person's movement in the social system in easier ways: mental abilities provide the formation of the idea of movement through the selective use of knowledge, skills and abilities, and motor abilities provide implementation of movement and achieving planned success through the selective execution of operations, work and functions. This is a social engine, and its action is also known: the required happens if a person manages to subordinate the will to the activation of thought processes together with the motor coordination of movement and the process of performing physical exercises, their complexes and series. Turning a person to movement as a method of own development using a system of physical exercises is one of the ways to form a way of action and protect the body from negativity. It is based on coordinate values that provide a countdown of the methodological principle, which is focused on the development of factors of physical strength and biological energy in the body. Through the use of these factors, the initial physiological ability of life activity is formed. This physiological ability is also known to the society. It creates conditions not only for the accumulation in the body of varieties of forces and energy, but allows connecting a person to action, to the transformation of one type of energy into another, and after that, developing the ability to spend and restore it in proper proportions, and at the right time focusing person's attention on the systems of physical education and development, evaluating their usefulness, and solving the whole complex of everyday problems. According to the above, *in order to feel some usefulness, which is cyclically formed on the basis of the biological metabolism in the body, it remains to focus on the properties of the plane of contact and interaction of a person with the host environment, and already in this plane to continue to take measures and actions for gaining own position in the society as its active transformer.*

Comment three, of dialectical character.

There are many planes of interaction development both in the material and in the artificial environments of interaction. Regarding the subject of this research – organizations of the recreational in-

dustry, in which health improvement, rest and restoration of human energy are carried out – additional work is required to find some common characteristics of the material and artificial components. These common characteristics of these organizations include a number of simple elements: in the material working environment, these are the processes to provide an individual with rest, caloric intake, shift in activities, an effective system of physical development and improvement of abilities, and in the artificial environment, these are safe production and working conditions, technically, physiologically and economically expedient load on the body, sparing regime of work and rest at the workplace, public healthcare and rehabilitation system. Everything mentioned above is a conglomeration of ways to maintain the vitality and overall health of a person as a creator of own well-being. A person may need these ways in a) a standard situation, b) in an emergency life-saving situation, and c) when there is a need of targeted assistance to a person. Each plane of such activity, in turn, is characterized by the organizational moment of ensuring its own type of activity in accordance with its own level of efficiency, which is set in motion for human energy consumption with the intention of producing a health-improving product, and this is fixed in the production system, or for the development of person's initial ability to work, and this is reproduced in the educational system of the state, or to restore the functions of a lost organ or the physiological quality of health, and this is carried out in healthcare organizations and in the recreational industry. That is, three spheres of interaction are arranged in a logical sequence and the need for each of them does not require proof, because this is a tripartite unity that ensures the economic expediency of life support. The ordering of relations in this unity of interaction means the synthesis of the useful activities of the motor systems used in the environment of health-improvement and human development. These systems restore the physiological motor function in a person, provide a person with the tools for the recovery of the body, the restoration of health and the development of the ability to perform operations, work and functions. The physiological motor function is a natural action for a person, manifesting itself under the pressure of the natural need of the body, muscular and nervous

systems, caused by the natural need for self-sufficiency and the same biological property of the movement of the trunk, head, shoulders, hips and limbs. These provisions can be used in this research as well. Then the studied movements are perceived not only as the indicators of the load on individual parts of the body and the links connecting them, but also as elements endowed with restorative properties for individual physiological qualities. It remains to turn and use such properties in the planes of motion in such a way that they create usefulness for human health, development and improvement. To achieve this, it is necessary to have a) a methodological basis, in which there is not only a methodology, but also a way and technique of action, and b) an organizing system, in which there is not only its organizing basis, but also a managerial action. In dialectical unity, this is a dual system, and in this duality the issue of organization and management of action is also resolved – it is based on the legislative principle that allows the activities of healthcare organizations and the recreational industry for a long time, while the question of the essence of methods, ways and techniques of action should be adjusted periodically according to the environmental variability. In each period of time that forces the system to transition to a new state, the same task is solved – to find a way to influence a person that improves own health and replenishes own energy. This means that the methodology and technology of action in the simplest version should be built while maintaining the sequence of requirements. For example, at the initial stage, it may be recommended to perform physical exercise at a slow pace, with low intensity and under the weight of the body and its organs, and subsequently, a reasonable program of gradual transition to increasing the speed, difficulty and intensity of physical exercise, using weights and more intensive systems of physical recovery and human development should be introduced. Further, in each individual variant of the impact on the body, in order to achieve a health-improving effect, it is required to arrange sets of physical exercises, their complexes and series in a way that ensures obtaining the planned usefulness from their implementation. To ensure this effect, such sets of exercises have long been borrowed from the training programs for physical culture and sports. However, the scientific research has proven that this does

not bring usefulness to all groups of people who want to develop their abilities and improve their health, but only applies to the most persistent, striving for the development of higher physical abilities people. Over time, the situation was balanced in practice with the introduction of more flexible sources of systematization and selection of physical exercises based on aerobic properties. They should be performed with musical accompaniment in the form of a group class, which causes a special interest in the action. This is about *fitness, the foundations of which were laid by the inventors of aerobics, who thereby involved the broad masses of the population from different contingents into their networks using the property of attractiveness.*

Comment four, of structural character

The methodical advancement of the mentioned invention deserves the evaluation of individual provisions. The founders of aerobics, which from the very beginning of its movement acquired the characteristics of a segment of physical culture, had no idea that they were at the foot of the pyramid that would get the name “Fitness”. From the very beginning, this pyramid is oriented towards classes and meetings together of young and not-young, healthy and disabled, energetic and those who are rapidly losing energy, those who already have a sufficiently high degree of physical preparedness and those who are just preparing for the initial movement. This was a characteristic feature of aerobics already at the stage of the initial movement. Over time, aerobics spread among the population to such an extent that even some doctors and physiotherapists turned to it as to a means of restoring health. It was seen as a means of effective implementation of measured physical exercises after injuries. That is, the practice of aerobics helped medicine to accelerate the recognition of the usefulness of movement and mobility processes in almost all spheres of its influence, which remained untouched and unreachable before. Now, there is a comprehensive perception of the phenomenon, the following principle has been recognized: “Movement is one of the most primary, leading life functions of a person who needs movement as an influence on action in order to live and flourish in own ecosystem”. That is, every citizen, having realized the range of own personal needs for physical improvement of the body,

can come to fitness, choose and engage in physical exercises in any form, regardless of age or health status. In addition, the introduction of a musical accompaniment into the physical system, as happens in fitness, allows one to perform movements at a given pace, activate the auditory analyzer, and increases the attractiveness of the action and interest in it. In the case of deterioration of health or physical condition for any reasons, the movement can be reoriented to the individual needs of a person and subjected to the doctor's recommendations.

A wide range of modern forms of music, musical accompaniment and choreographic staging expands interest in fitness movement, expands offers for people of any age and at all levels of exercise intensity and health condition. In order to adapt training parameters to the health condition of the participant, a fitness instructor should have extensive knowledge about the possibilities of using certain exercises or limitation of action. Such knowledge makes it possible to change and individualize fitness training in a timely manner, to ensure the safety of tasks and comfortable atmosphere in class.

Guided by the idea and purpose of fitness, it is possible to introduce into its organizational system the leading requirements for determining the conditions for the inclusion of participants in the action. The choice of one of the physical fitness systems for practicing movement is possible provided that the source of its effectiveness is clarified. If such a resource exists, then there is an interest in a person to join the system and continue the movement by achieving personal efficiency. When choosing a system, it is necessary to be guided by the following provision: *efficiency in fitness* is associated with the achievement of any human development or improvement of its organs and life support systems. With this efficiency criterion, a person associates the physical environment chosen for performance with active mental processing of the action, according to which it is possible to determine the direction of movement *a)* to define the method of action, *b)* to evaluate and choose the conditions for its achievement, *c)* to design movements and operations, *d)* to search for mechanisms and mobilization of volitional efforts, *e)* to regulate emotional and other processes of a psychological nature. This is not a complete but sufficient enough *list of a number of con-*

ditions that logically lead to the acquisition of efficiency, which arises from the necessity of life support and is achieved due to the movement of an active person.

Comment five, of psychological and pedagogical character.

The effectiveness of the physical system is evaluated according to the advantages of the psychological-pedagogical direction of the development of physical action, which affects a person in one way or another, namely: *a)* according to the form of arbitrarily performed movement, and *b)* with person's awareness of integrity, usefulness and focus on achieving a functional effect. Such a consideration of the efficiency factor opens up a wide range of issues related to the fitness environment in which a person is included for *personal interest*. It is this interest that allows us considering the effectiveness of the physical system that belongs to the fitness family. Therefore, *efficiency in fitness is achieved if the physical system combines the complex use of basic, auxiliary and supporting means*. The mechanism of usefulness of fitness consists of two elements of motor activity, namely: *a)* if a person uses the favorable natural conditions of the environment and *b)* when a person strictly observes the rules of personal safety and public hygiene. From a factor that brings pleasure to a person, fitness in the recreational industry has turned into a productive means of reproducing the productive power of the society. Its leading advantage is that such a system is tolerant to the consumer and offers to perform movement of any intensity, rhythm, pace, etc. In the systems of medical care and organizations of the recreation industry, the above-mentioned makes it is possible to *develop methodological programs according to any requirements of the consumer, taking into account the health condition of a person.*

Comment six, of spiritual and moral character.

After aerobics entered the system of the initiative movement of the broad masses of the population, the expediency of many forms of health-improvement, and development of the mental and physical abilities of a person has been revised. The possibility of critical evaluation, ease of learning and unique attractiveness of aerobics were noticed by the organizational structures, which adopted the use

of aerobics in the recreational industry in the form of fitness. This movement environment of fitness is free from regulatory restrictions in the areas of activity and scientific and methodological support related to the organization of recreation and the systematization of ideas in the space of leisure of the population. Based on this and with the possibility of health-improvement and restoration of the strength of workers, fitness received an organic the opportunity to show its qualities and demonstrate the highest usefulness as an organization and management system, which is appreciated by the consumer without the need to impose it. This new formation is part of the system of technological activity, which is typical for the areas of restoration, maintenance and preservation of human health, and even for the areas of additional development and improvement of individual physical qualities of the human body. In favor of this opinion, there is also a set of useful characteristics that can be in demand among the production and socio-economic environments, where the productive force is constantly consumed, but in an updated quality. It is a well-known fact that the action in the recreational industry is constantly reflected in the physical and physiological qualities of an individual in accordance with the tasks of recovery, rehabilitation, recreation, and development of professional functions. This allows recreational industry to continue to be useful in the integrity of production and labor. In addition, the use of a tool of fitness for human development allows changing the demand for activities that fill the leisure time and the structure of pleasures derived from movements and games. That is, continuing the thought in the chosen direction, attention should be paid to the following: a person can receive a certain usefulness as a result of *treating a disease*, when the natural healing factors of *treating the body* are taken as the basis for helping a person, when methods of recreational resources and *knowledge of the environment* are used for such an impact, when to gain usefulness, the goal is to get acquainted with new information that satisfies curiosity and expands the horizons and emotionality of the involved person, with the use of *games and recreation*, when the movement of an individual is aimed to restore strength and energy, enrich experience, etc. in any place a person likes, including in the nature or on equipped sites. This means that

this research does not set the task of disrupting the technological effectiveness of the organizational structure for managing health improvement processes that has developed to date or improving it. Whatever activity it is classified as, medical or recreational, it is a subject of the independent research and ordering. In contrast to this, attention is drawn only to the methodological basis, which is the physical way of developing, improving and strengthening the motor ability of that contingent of interested persons who enter the service for a limited period of time and have hope for recovery or rest. To achieve such a goal and to overcome time constraints, it is required to condense time due to the intensity of the action. It is a well-known fact that the many people entering the studied industry for recreation or recovery depend on a dialectically changing property, namely: *the higher the intensity of technological processes is, the higher the intensity of labor is*, in particular, the intensity of the performed work, operations and functions in the field of production, which *leads to the higher frequency of injuries, morbidity and other consequences*. Not considering the norms of the ethical character, we need to mention the following: *since the nervous tension and mental burden of labor is steadily increasing due to the automation and intensification of production, the level of demand for the recreational industry is also growing to meet the needs for recovery and rehabilitation*.

Comment seven, of pragmatic character

The stated regularity is confirmed by the movement of the modern society along the path of pragmatism, which gives priority to the phenomena of business, entrepreneurship and service. From the noted position – the position of pragmatism – it is possible to consider many social and economic systems, which include health care and social security systems, and since recent time, some formations from the recreational industry. It should be noted that there is a tendency to redirect all the difficulties of compensating for the technological consequences of production and labor into the space of the recreational industry. In most countries, the machine infrastructure still remains a priority for the development of a healing product, being risky at the same time. Its material focus on satisfying the material needs of the population, as before, gives it the

power to directly develop a network of health care organizations and the recreational industry. The activities of different structures specialize in the restoration of body functions of workers who are employed in industrial production and a certain part of whom lost their ability to work due to injury to organs or occupational disease, which results in disability and limited mobility. For the sake of justice, it should be reminded here that many nosology groups of disabled people undergo recovery and subsequent return to the production environment, but there are also those who drop out of this production environment forever due to disability. The latter enter the path of retraining, and if they do not have such a desire, they are included in the lists of social security. The real picture of the recreational industry is clarified by the many sources of its contingent replenishment. The unorganized population, whose members are in need of health restoration as a result of microbial infection, exposure to mechanical or traumatic irritants, does not remain on the sidelines of this phenomenon because they cannot do without qualified medical assistance in cases of general diseases, household injuries and subsequent complications. In addition, the scientific and economic communities show interest in the restoration and resocialization of a worker who has lost the capacity for work. Such attention confirms a sufficiently high interest in both the health care system and the subject of this study – recreation and the recreational industry. This interest is recognized based both on its formation and on the consumption, which is the basis of two substances that correspond to the content of a) the social and economic phenomenon of our time, which ensures the return of some part of the labor force to the public production, and b) the socio-cultural phenomenon aimed at maintaining vitality at the expense of rest, obtaining a new opportunity to saturate life with content and participate in the environment of pleasures. Both *these substances, based on the processes of improving the functions of interaction management, limited to the areas of labor and its reproduction, rest and restoration of human strength, treatment and recovery of the worker, support the resource of motor and mental usefulness of its components.*

The above-mentioned is enough to turn further to the clarification of the conditions of interaction, which ensure the connection

of the motives of economic usefulness, scientific harmony and the sequence of process control in the studied environment of human activity. The main and obvious position can be formulated as follows: *the current situation with traumatism and morbidity in the society is caused by the industrialization of production and technological units contributing to this.* The reason is that the machine production has subjugated the productive movement and its efficiency as a result of the introduction of programs for the centralization of production, cooperative communications and the intensification of labor. The action to implement it fails, because sometimes ends with negative consequences for a worker in the form of injury or illness. This provision required special attention to the productive reproduction of labor as a way out of situations caused by physical exhaustion of a person, accelerated nervous mismatch of person's attention in the working space of moving machines, their parts and mechanisms, which leads to injuries and diseases. To the problems of imperfection of technological processes, the lack of physical preparedness for work of workers is added. Everything mentioned here naturally affects the results of production and labor due to the withdrawal of part of the materialized labor that has lost its resource due to accidents or the labor force that has prematurely lost its ability to work, which causes the withdrawal of both of them outside the production process and the introduction of a new one. This forces the organizers of production to take into account not only the loss of labor, but also the unforeseen costs of training a new contingent of skilled workers, which contains a conflict regarding the time saving regime. The problem can be solved using one of the following ways: the path of automating work and technological processes, which allows removing an employee from harmful and dangerous work areas, the path of reproduction of the labor force with its orientation to a higher level of skill of the productive force, or the path of restoring the residual ability to simpler work. In addition, each of these ways can be implemented after considering the new qualities of labor and the needs for it that arise in the society under the influence of scientific and technological progress. This position is well-known, and rich societies have both the political will and the material base for its implementation. That is, if we do not pay attention to some details, then

the path of the restoration of a person, who has experienced a series of failures and continues to search for a way of self-sufficiency, has advantages in any society in terms of spiritual representation, economic assessments, and according to the human self-preservation paradigms. It remains to coordinate the reality of the action with the objective factors of movement, including a) the richness of the natural environment, b) the individual's ideas about the usefulness of the environment potential, and, finally, c) the person's desire to continue moving in the presented environment. That is, a person needs to be attracted by this environment, to have desire and aspiration for the knowledge of the resource capabilities of the environment, and according to this, to rely on the laws of development of one's own capabilities within the limits of physical perfection. The above-mentioned requires consideration of the development of the event in accordance with the poles of 1) the advantages and values of the modern society, which is associated with the implementation of long-term goals, and 2) the real conditions for the development of the productive force for its consumption without assessing the expected changes.

The course of consideration is as follows.

1. The modern movement of humanity *towards mastering the advantages and values of the modern society* inevitably leads to the accelerated formation of new spheres of service-oriented activities. This is the quality that manifests itself in all spheres of material production of goods and services, obeying the action of the law of division and cooperation of labor, and it is impossible to ignore it. This movement is also confirmed by the subject of this research, which focuses on human activity regarding the organization of recovery, rehabilitation, and recreation of production workers within the recreation industry. The sought-after quality is provided by two branches of public life, namely: territorial space and the organization of life support. Both branches ensure the movement of the functions of organization and management of interaction in the field of work, rest and restoration of human strength, which, other things being equal, transforms personal ability and biological energy into a healing product and simultaneously exhausts itself as a result to such a degree in the envi-

ronment of public and industrial self-sufficiency that requires its restoration. The process of exhaustion is of a dialectical character and is subject to the following dependence: the higher the pace of scientific and technological progress is, the more powerful the transformation in the technological environment is and, consequently, the faster the worker's strength is exhausted.

It should be noted that in the field of this research, the general processes of dialectical transformations of relations are accelerating in a natural way in the forms of globalization and transformation of connections. This allows studying the phenomenon of recreation with the subsequent transformation of its factors into an integral recreational environment, which has a resource for the development of a socially significant product. This product absorbs the energy received by a person from special mechanisms and methods, techniques and tools of flexibility and mobility of the action of movement, which have a synergistic effect under the influence of the basic control of the action, the use of a pedagogical approach to the movement of the chosen action and the formation of a productive effect obtained from the action. As a result, several specific products are created. In the scheme of synthesis, each of them can initially be represented as a property of the citizen's social activity. This is enough to demonstrate the presence of movement. However, the path to obtaining product properties remains blurred and original. To do this, a person must find enough strength and energy, i.e. emotions, so that after the fact of the negative impact of a source of harmfulness or danger of an industrial or natural character, a person continues to develop and maintain a resource of social or industrial utility in him/herself. This means that a person needs to mobilize willpower and patience in order to fully or partially restore the function of social utility. There is a discussion in the society regarding the fact that, having some conditional consistency based on the mutually beneficial interests of a person and the state, an attempt is being made to turn a recreational activity into an industry in order to save part of the workforce for the society. The methodological prerequisites and ethical aspects for performing such an action are as follows:

- a. production facilities turned to ordering human relations in the industrial production environment with the aim to get rid of the

uncertainty of production and the subsequent high rates of industrial accidents, industrial injuries and occupational diseases. The issues of the concentration of efforts on the organization of health improvement and restoration of human strength and energy also remain in the focus of public attention. This became even more relevant after the harmful effect on the worker of the technological processes of modern machine production was revealed. It manifests itself in the increase in of labor intensity and growing exhaustion. The purpose of the action, which is to provide all possible assistance to the employee in order to return him/her to the workplace, has not changed. This is especially true due to the decline in the birth rate and the reduction on this basis of the influx of labor. That is, such processes, caused by the uncertainty of production, withdraw part of the labor force from circulation, at the same time form the need to pay attention to the increased harmfulness and danger of production, and this already causes the need for a rapid replacement of workers in certain professions;

- b. under the pressure of inflationary processes, the departments of rationing and remuneration of labor are forced to join the race for the intensification and economy of labor, which is caused by market factors and other reasons. This immediately affected the working conditions due to such factors as the scientific organization of labor, the normalized working day, the shortened duration of the work shift, the expansion of the working area of service and the combination of professions, functions, operations and work, the introduction of a second day off, the provision of extended summer vacations for employees, etc. The processes of the intensification of labor are now introduced everywhere. It should be mentioned that these innovations in the organization of labor partially free up time for rest and recuperation of workers, but at the same time, they quickly deplete the energy reserves of their body and psyche, increase morbidity and injuries, which often causes an employee to leave the profession due to physical severity and nervous tension of the performed operations, work and functions. This causes an increased need for restoring the health of workers and their replacement;

- c. the distributive system of the state also lends itself to the demands of the austerity regime for well-known reasons. It received an impulse to reckon with the need to observe the ratio in which the increase in output should exceed the increase in wages. Compliance with this, in order to fulfill the production task, inevitably accelerates the mobility of a worker in the area of the workplace, makes a worker, other things being equal, include in the work the compensatory functions of the body, and therefore more often make mistakes. As a result, fatigue accumulates in a worker, nervous tension develops, and mental discomfort, morbidity and injuries of workers employed at the workplaces of technological lines increase. This also causes an increased need to restore the health of workers or bring them to less intensive work.

It will not be a mistake to include other positions in this list – they will complement the content of the study, but will not contain ideas about how to solve the problem. Known is the following: in each new of them, the decision should be made after assessing the current situation constructively, i.e. taking into account the given selected economic criteria. For example, in the business and entrepreneurship environment, any actions of the organizers of production and labor tend to extract maximum profit or super income. However, experience shows that, without regard to the restoration of labor and the maintenance of the health of workers, the action brings the owner of capital more often a loss than an expected income. In addition, it should be remembered that in the environment of machine production, labor is consumed so powerfully and continuously, and sometimes in an unjustified way, that employers ultimately go bankrupt or are obliged to reconsider their attitude to restoring the strength and energy of the workers consumed in the process of labor, and to the organization of systems for the rehabilitation and health improvement of workers who have temporarily left the process and are left without a livelihood. In such a situation, the consequences of a poorly justified action inevitably manifest themselves. It is also necessary to mention the other side of the problem, the problem of the quality of the restoration of labor. It would be more efficient to transfer the processes of re-equipment of links of departmental organizations of sanatorium-resort recovery and recreation of workers to

the spheres of business and entrepreneurship, and such experience already exists.

Business processes and entrepreneurship functions introduce a variety of motives for the development of recreational activity structures into the interaction environment, which expands the need for studying the features of such an industry. This leads to a reasonable discussion in the society about the essence of the combination of numerous factors of production, labor and recreation. These numerous factors require the subordination of the action to the economic feasibility of production, labor and the preservation of the health of workers, and after this, the introduction of radical measures aimed at the “recovery” and “rest” of a worker both at the enterprise and in other places. Ultimately, all this draws attention to the search for evidence in favor of the recreational industry, the functioning of which already at the present stage of economic development provides direct savings in terms of mandatory payments, compensations and fines related to accidents, injuries and morbidity. At the same time, the society is silent about the obstacle of the theoretical character. The following contradiction needs to be solved: since the recreational industry belongs to the group of service activities, the scale of extraction, spending and alienation of financial resources for activities and the formation of profit in it differs from that which exists in the environment of enterprises of material production. This is the environment of the interaction of material and non-material spheres. This becomes especially relevant for those environments in which the planned and time-based form of relations is being replaced by an entrepreneurial one. This is an economic issue, the solution of which will remove the problems that develop in the environment of social relations regarding the health improvement of an employee and will transfer them into the pragmatic field.

The pragmatic motive for solving the problem of recovery requires paying attention to the organizations of the recreational industry as such entities that are designed to implement economic processes. It is appropriate to highlight this approach here for the reason that a worker who has lost health in the environment of material production restores it in a different environment – in the en-

vironment of non-material production, but after such a restoration returns again to produce an additional product for the society and, therefore, the society acquires value added. We should hope that the recreational industry will receive a part of the added value due to it, however, the mechanism of such alienation is not perceived by the interested environments. For this reason, it is required to support the modern vision of the scientific and methodological essence of the recreation phenomenon, which can be extended to the transitional period of the economic movement of the society from the industrial to the post-industrial socio-economic order until the truth is clarified.

2. If the totality of *the real conditions for the development of productive power for its consumption in the modern society* is subjected to systematization, a number of general, constitutional, constructive, developmental and functional provisions are revealed. They have a purely organizational, methodological, monitoring and management purpose. Their formalization will make it possible to introduce into circulation administrative decisions based on the provisions of Gnostic systemic character. Let us consider them:
 - a. *general provisions* state that “recreation” and the “recreational industry” derived from it are:
 - ◆ the integrity, united into an organic unity by means and methods of recovery, physical and mental development of abilities, restoration of strength and replenishment of human biological energy;
 - ◆ the form of social interaction, social-economic circulation and economic-management movement of specific utilities that are formed in the spheres of health improvement and restoration of the functions of the human body and nervous system;
 - ◆ the process of extended restoration of the physical, intellectual and emotional spheres of a person;
 - ◆ the function of scientific synthesis of events, analysis of processes of organization of work and management of human activity.

Resume: in this regard, guided by the content and structure of types of activities, performed operations and work, determined by the needs of a person for health improvement, restoration of strength and biological energy, the composition of the productive force of the

society in social strata is systematically supported, the desired level of work capacity is balanced in the qualifying strata of the population after medical treatment and return to the environment of social work and self-sufficiency. That is, the potential of the recreational sphere of activity is strengthened and the society's efforts are directed towards this kind of reality. This is a socially and economically weighty and responsible task of public importance, culminating in efficiency and specific knowledge;

b. *constitutional provisions* state that "recreation" and the "recreational industry" derived from it are:

- ◆ the system of socially agreed conventions, united by the aims of health improvement, restoration and conservation of strength and energy, providing assistance to a person incapable of self-support. This system is based on the opinion of both separate groups and general public;
- ◆ the position of the state, enshrined in regulations and codes relating to the organization of industrial relations, management and regulation of interaction regarding public health and compliance with recreational activities;
- ◆ the executive system regarding the studied subject, subordinate to departmental activities.

Resume: in this regard, guided by the content and structure of the legislative base of the state and the traditions of maintaining the forms of state development, organizational structures for the social security of injured workers and their employment are being created. That is, by strengthening the potential of the recreational sphere of activity and turning the society to this kind of reality, ways are being sought to ensure the fulfillment of a spiritual duty to workers who have lost their ability to work in production;

c. *constructive provisions* state that "recreation" and the "recreational industry" derived from it are:

- ◆ the factor of maintaining the active position of a person who has passed the phase of physical, mental and psychological recovery in accordance with the requirements put forward by the needs formed in the environment of replenishing the productive forces of the society;

- ◆ the way to extend the working capacity of disabled people who have received an impulse for recovery and socio-economic conditions to maintain life mobility for as long as possible, replenished by a meaningful occupation, pastime and good rest of an individual;
- ◆ the system of material support for the disabled and moral control over their cultural life.

Resume: in this regard, guided by the content and structure of the research subject, the result of the action is ensured by setting in motion the personifier of such an action, subordinating its movement and motion in space. According to this motive, the studied industry has sources of replenishment the activity and work, which makes it full-fledged both in the analysis of the personnel of its own entities and organizations and in the area of management and regulation of relations between them;

d. *developing provisions* state that "recreation" and the "recreational industry" derived from it are:

- ◆ the objective conditionality of the environment, formed by the inclination of the human body to common diseases, predisposition to injury to organs and complications in many various forms;
- ◆ the inability of human organs to withstand various kinds of unfavorable, dangerous and harmful factors of the production and technological environment;
- ◆ the behavior of an employee in the workplace, which is classified as inadequate, and therefore leading to an accident, injury or illness.

Resume: in this regard, guided by the content and structure of the formal motives of the movement of matter, the result of the action of the studied industry acts as a tool for correcting the weaknesses of anthropometrics, psyche and motor skills of the body, a mechanism for developing person's emotional, physical and mental mood for self-sufficiency. According to this motive, the studied industry is replenished with the sphere of educational work, which requires the development of its own educational niche of interaction, organized on a pedagogical and didactic basis;

e. *functional provisions* state that “recreation” and the “recreational industry” derived from it are:

- ◆ the platform for the development of the physical ability of a person who has lost the ability to work and is classified as a disabled person;
- ◆ the family of physical culture systems that allow, according to the choice of a person and regardless of age and level of mental development, developing motor and mental abilities;
- ◆ the organic integrity of action that concentrates the functions of restoration and health improvement of a person.

The above-mentioned draws attention due to the multi-vector character and multi-functionality of the event. In its scientific and methodological orientation, the methodological inclination towards the organization of interaction in the environment of the recreational industry can be successfully established with the support of entrepreneurship due to the presence of:

- excellent and persistent motives of action. It is filled in accordance with the structure of typical activities, among which the processes of a) pastime, b) restoration of strength and energy, c) solving problems of motor perfection, recovery, human rest, etc. take their place;
- powerful and inexhaustible sources of activity. There are several such sources, including a) the natural wealth of the area, b) the territorial and climatic environment, c) the infrastructure of industrial and economic entities;
- special and scientifically grounded constructions for ensuring activities. The action is set in motion in environments that combine the factors of technological enterprises and organizations that push the consumer to perceive a range of services, for the implementation of which a) medical institutions, b) sanatorium complexes, c) health centers, d) swimming pools for therapeutic swimming, mineral water pump rooms, radon and mud baths, solariums, etc. are created.

At the same time, considering only the presented above sources of replenishment of the recreational industry with activities and work would be completely wrong and incomplete. The reason for this is the existence of the mass of the population that is in the phase

of preparation for entry into the production-economic and economic-supporting systems of life, including school and student youth¹¹⁰, other segments of the population. They need physical systems that will allow them to develop motor and mental abilities to the appropriate level, based on their interests and health condition. That is, we are now talking about separate age strata of the population, which allows organizing age or family groups of the younger generation with the aim to develop their abilities according to their age. This means that the studied set of activities needs to be expanded in parallel with the satisfaction of cognitive and entertaining interests, needs and principles that are formed in a physically healthy person on the basis of a natural or social need for movement, for the development and improvement of personal spiritual, physical and mental qualities and properties, for restoration working capacity, emotional mood, various kinds of forces and energy of the body.

If we turn to the experience accumulated by many generations, then it is necessary to pay attention to the following provisions:

- *provision one*: modernity has at its disposal a very original means of educating volitional qualities, healing, physical improvement and human development. The condition for the accomplishment of the action is the desire to pay attention to the development of the movement. One of the systems representing a family of fitness systems can help to achieve this. Any of the selected systems turns into a means of development and health improvement of a person based on the motives, structures and formations of restoring biological energy and health of everyone who wants to act by combining two simple elements – physical exercising and music. From these elements, a single integrity is formed that affects the body, psyche and nervous system through the flow of movement processes, which have an impact and a transformative effect on the human energy centers. Something similar to the reproduction of a productive organic basis is set in motion; it is materialized on the platform of dynamically changing conditions of human viability, transforming the musculoskeletal

¹¹⁰ Śliwa, S. (2021). *Kompetencje krytyczne polskich i czeskich pedagogów w świetle badań porównawczych*. Opole: Wydawnictwo Sindruk.

ligaments of its structure. Humanity finds ways to connect to the bases of natural science the methodology of medical, therapeutic and health-improving experience, which is consumed in the socio-economic environment on the basis of naturally developing social processes and phenomena. There must be some impetus to set the system in motion, and such an impetus to the materialization of this phenomenon is the aspiration of a person to master the harmony of social relations. This requires the transformation of the environment of consumption, which can be discussed after the change in social need for a new quality of the productive force – it must be of a more perfect quality. This is both a necessary requirement for the development of the society and at the same time a social need for the development of an individual person. The objectivity of action and requirements and needs are determined by the pace of scientific and technological progress. In order to maintain and satisfy the studied need in a timely manner, it is necessary to control the pace of creating a more effective, and therefore more productive basis for human development. This can be done if we take the position of the need to develop more effective systems for the physical and mental development of a person. An individual, as a creator of social wealth, must have the properties of a carrier of a more perfect product, both in terms of creative and performing content. The labor force of a person in the labor market, adapting to the substances that dominate in economies with the initial elements of post-industrial relations, turns into the same content. Such relationships connect to the control systems both the movement and the product of the movement inherent in individual economies and activities;

- *provision two*: it becomes impossible to realize the advantages of the modern development of economies for the reason that little attention of researchers is paid to the methodological foundations of the service provision for obtaining the final product, which must not be old or obsolete. This is due to the reason that societies need to deploy human efforts on processes that incorporate qualitatively different preparatory functions both in the environment of the creator, entering the socio-economic

or production-technological environment, and in the environment of the resource basis of organizational action, which passes everywhere to the implementation of a regime-saving strategy. From a person, as a human creator, and human adaptive abilities, a deeper awareness of information is required, which differs in the structural and logical basis of the interaction of functions characteristic of the environment of intensification of relations and previously not manifested or not distinguished. Such a state can be explained by the fact that they did not manifest themselves, *ceteris paribus*, for the reason that the life support of a person is regulated from the position of a material basis, which in an industrial society made it possible to produce a healing product in the most favorable conditions of the natural environment, it was the availability of raw materials that slowed down the movement of humankind; they did not differ due to lack of knowledge, physical and mental development of a person. And now, when such an environment lends itself to restructuring, splitting, transformation and replacement in almost all spatial and economic territories on the basis of globalization and a widespread appeal to the saving mode, the task becomes clear to adapt to a new paradigm of organizing relations and establishing production in conditions of uncertainty. This opinion is substantiated by experts in almost all environments of material production, but it does not apply to the organizations and activities of the recreational industry;

- *provision three*: there is a need for the synchronous development of the opinion of experts regarding the fact that both nature and a human being are depleted in the process of consuming their resource. It is necessary to realize what method of restoration the natural environment has, and what method of health improvement a person can use. It turns out that *exhaustion is a social phenomenon inherent in the spiral of scientific and technological progress*: the steepness of the spiral intensifies under the pressure of powerful means of production, and this, in turn, inevitably sets in motion the processes of the globalization. The process of escalating exhaustion does not stop there – the globalization, in turn, endows relations and connections with a set of organizational and methodological means and requires the introduction of an

entirely new ideological and material support. Such a basis introduces the society into a single market for goods, services, capital and labor, but its theoretical basis is developed using generally accepted terminology. This should not happen in the practice of the methodological support of action – at each stage of economic development, new properties with a probabilistic background should now be displayed. These properties remained indistinguishable earlier, but have long existed in the environment. This indicates that the science should be tied to the changed structure of the consumed labor, the retooled production or the described organizational phenomenon. According to the glossary presented in the appendix, this phenomenon is also characteristic and observed in the environment of the recreational industry, which has developed on the basis of historical traditions of maintaining sources of human health improvement and has absorbed labor associations and activities that serve the people who are losing for some reason health, their own or public interest in a profession or work in general;

- *provision four*: the recreational industry is rarely assessed by the society according to the criterion of the property that from it the worker returns to the spheres of production and labor, retaining in him/herself some quality of the productive force. This means that the economic systems and economic models of these spheres receive at their disposal such personifiers of labor who have some residual quality of a producer or creator, because they possess sufficient motor and mental perfection. The quality of such perfection is introduced into the society on the basis of the use of restorative mechanisms adopted for the development of the physical motor system with the help of physical the culture, is designed in a targeted way and is subject to the restorative-situational objectivity of the affecting adjustment of the human ability. That is, the desired quality is provided on the basis of the susceptibility of the physiological properties of the body, muscles, ligaments, proceeding from the subordination of symmetry, the reliability of attachment of remote parts of the body, organs and a number of anatomical structures both in the space of the body and in relation to each other. The presence of each such factor is

consistent with the data on the anatomical structure of the body. In order to be able to design health-improving and developing programs, this requires considering different combinations of the main and particular features of motor systems.

- *provision five*: fitness systems, which form a natural family, suitable for the physical development or improvement of a person both in the recreational industry and beyond its limits, differ in the physical features of the movements, exercises, human movements and musical accompaniment included in them. They are introduced to the society in three organizational entities, namely: as a complete organizational form, as an organic substance and as a functional component. For this research, it is enough to consider the features of the functional component. Its value for this research comes down to establishing a moment at which truth, which is the essence of a binary relationship that develops between two attributes extracted from a set, does not confirm utility or does not appear at the same time as a connection between constructive elements and projections of movement and influence. There are many training states that do not reject the inclusion of elements and exercises from fitness. However, their usefulness is refuted until the idea of the sufficiency of conducting a search for the best option for combining the efforts of the scientific community in the field of replenishing the productive force or human ability by restoring strength and energy, returning a person to working capacity and creativity, etc. by physical means of influence is established. At this stage of the research, such a need appears in several environments, the main of which are labor protection and safety services created at industrial enterprises, in health-improving and sanatorium-resort institutions operating in a healthcare environment, tourist and excursion bureaus, associations and many other commercial entities. All these forms are transferred to the present stage with the preservation of industrial conditions of life support, which, in order to justify the method of replenishment, is explained by the inevitability of the course of economic development that tends to develop entrepreneurial relations. This also prevails in models of the recreational industry, the structures of which are known to

the society by its functional activities. Because of the variety of its functional activities, the recreational industry remains dispersed among several branches. The unifying point is that this structure is aimed at restoring and preserving human health, and therefore it is combined into a single whole according to the data on the state of individual human health, which vary within a fairly wide range of distinctive matrices. This requires researchers to focus on the collection of data and concentration on the phenomena extracted from different sources of information, which describe the conditions of human existence, the dynamics of physical and mental development and historical formation. For this research, such phenomena are provided by the environments of socio-economic support for the reproduction processes of industry, labor and recreation that follow the achievements of success, which are characteristic of the fields of medical, environmental, economic and technical nature. The interpenetration of ideas and provisions of such spheres of activity is impossible if not only the anthropological, physical and psychophysiological components of the human body and nervous system, but also the results of the dynamics of their development are ignored in the assessment. To avoid this, it is necessary to combine activities according to the structural principle;

- *provision six*: the structure of the core activities of organizations and embedded entities in a number of industries initially differs in the functions of preventive examination of human health, therapeutic intervention and treatment when such a need is established. Recognizing the correctness of the named composition of actions, caused by the objective need to produce a healing product consumed by a person, it should be remembered that a person enters the system of treatment and rehabilitation not of own free will, but is forced to do this. This may be the result of a violation of the technology of the production process, precautionary labor protection requirements put forward to the behavior, professional preparedness, physical or mental development of an employee who is not able to assess the interference in a timely and adequate manner and realize the consequences that accompany the event. The list of such factors can be pre-

sented in a wide range, however, with a closer acquaintance with them, the main thing is revealed – the manifestation of a negative outcome leads to the loss of material and labor resources and the overspending of the society's financial resources. Both are decomposed into three vectors: a) the outcome vector of direct loss of labor, b) the outcome vector of restoration of the worker's productive power, and c) the outcome vector of long-term treatment and disability provision.

This allows developing the provisions of a model approach to the subordination of the subject of the research to the systemic nature, to which any economic entities aspire. The platform of the model approach is the phenomenon of cardinal progress, which consists in the fact that the recreational industry has every reason to develop into an economic industry on a self-sustaining basis insofar as its consistent development has both service and physical utility. It remains to solve the problem of modeling connection, in which:

*initial reasons for public attention
to the methodological, methodical and structural content of
integrity, which revolves around the value of new formations in the
environment of the recreational industry, are outlined by the bound-
aries of specific activities in the areas of health improvement and
development of a person, restoration of biological energy, strength
and ability to work, formation of an emotional background, mood
and desire to master something useful, absorbing the properties of
games, travel, entertainment and pleasure”*

*“motives for the usefulness of a person's entry into the production
and economic environment, which has the means
to ensure the movement of efficiency*

(P.1)

The model connection (P.1) according to its initial reasons and motives, leading the recreational industry to integrity, differs in the following number of properties, namely:

1. *according to the initial causes of the phenomenon, the methodological basis for establishing the environment of the recreational industry is known.* This basis allows combining the processes of pragmatic and methodological perception of the phenomenon of this industry in the advanced societies that build relationships involving two poles of interaction. Such poles are focused on

the use of active means to develop in a person a sufficient level of physical ability to work, replenish person's motor abilities and expand emotional basis. The level is active according to the perception of the data of:

- a. *the processes of reproduction of the mass of the productive forces of the society* in an environment that has a resource for the revival of an active participant in the social system, the personifier of the labor force, who meets the needs of the society in the field of physical and mental qualities, i.e. qualities developed in a person in advance;
 - b. *factors controlling the behavior of an employee at the centers of uncertainty, harmfulness and danger* within the working space, because with a high degree of probability an inattentive worker, due to the lack of experience, negligence or monotony of work, creates a situation of accidents and falls under the influence of medical methods for curing injuries or occupational diseases;
 - c. *feelings of success in the perception of the social process of preventing a dangerous action* in order to develop the required behavior near the source of danger;
 - d. *the quality of non-fulfillment of instructive rules* on safety;
2. *based on the phenomenon, the developing basis of individual organizations of the recreational industry becomes known.* The phenomenon of the studied industry has value in any society – both those that are limited to providing first aid to a person, and those that strongly encourage ties between countries based on the exchange of activities, travel and tourism. The phenomenon is active according to perception of the:
 - a. *axiological theory of human evolution.* In this theory, the values of movement towards progress form the foundation of the existence and development of a person for the reason that they are the main driving and motivating force both in person's life and in public life, where the ratio of one's own assessment, one's own value and one's own energy resource must be calculated and used constantly as a tool for realizing the usefulness of ethical, aesthetic and cognitive essences that should be extracted from modernity and replenished. Awareness of such

entities and taking them into account endows a person with the meaning of the implementation of any of his/her actions, the management of which creates conditions for the development of a *synergistic effect*. Mechanism: an action culminating in an improvement in the quality of the environment and the persistence of managing this quality;

- b. *systems of psychological means of influencing a person.* In these systems, the values that a person possesses after following the signs, signals and symbols that are present in the interaction environment in the form of visual, sound, verbal or tactile information, subordinate person's movements, turns and motion in the established space. The conscious perception of such a state of movement has an impact on the individual consciousness, on the choice of behavior and the structure of developing loads, which causes a *psychological effect*. Mechanism: the subordination of the desire, activating actions and impulses to the movement of a person, to the accomplishment of a cognitive transformation of the environment. Along with this, the source of the feedback signal also manifests itself after the excitation of the mechanism of the dynamic stereotype and transformation of its physiological resource into creativity;
- c. *theories of organization of movements and physical culture.* In this environment, as a means of forming a physiological value, the mechanisms of influence on the human body of the essence of physical exercises, consisting of complexes, series and combinations, are used. Their use requires a person to mobilize the constructiveness of thought, which are processed as the sequences of the performed movements and motion in space with a measured load and intensity. Ultimately, this action is accompanied by a transformational quality that influences the body, its skeletal system, muscles and tendons, and finally, the psyche due to the physical load on the body as a whole, on individual organs, on their systems, on individual muscles and on their groups. This causes a *bio-energetic effect*. Mechanism: activation of the processes of transformation of bioenergy resources occurring in the body, normalization of imbalance in energy metabolism with the use of redox pro-

cesses in the structural and functional elementary units of the body, generation of biological energy in the muscles. This has an intermediate meaning and does not end there, for the reason that the resulting energy must be modified into thermal energy, and after that into its other forms of mechanical utility due to cellular oxidation. To achieve this, the action includes the molecular level of processing of many enzymes concentrated in specialized structures, which actually ensures human life and activity;

- d. *energy processes occurring in the body and creating the necessary conditions for various biochemical transformations that ensure the activity of the structural elements of a living organism.* The lack of human energy is considered the main cause of many diseases and even of the process of premature aging. In order for the energy not to stagnate in the body and not to cause disease, a person should strengthen one's own energy field. There are methods to strengthen the energy field of a person, based on the impact on bioenergetics, which can be restored through external intervention techniques of psychotherapy. Thus, during active physical work, it is recommended to relax tense muscles. Then, with the help of techniques aimed at normalizing energy metabolism, an improved understanding of the essence of movement and body control can be achieved, which contributes to better health. However, this is already an intervention in a different area of human health improvement and restoration of strength, which, after clarifying the details, like the strengthening of health improvement processes using the healing properties of natural resources, strengthens both this research and the resource of the recreational industry.

General conclusions and clarifications:

1. The society, instead of a full-fledged recreational industry characterized by the freedom to choose a system of physical development and health improvement of a person, which is closer to perceiving it as a large-scale process of formation and transformation into an independent field of activity with its own physical culture and rehabilitation pedagogical technology, is everywhere

and more conveniently imposed the perception of fragments of recreation, intertwined with the peculiarities of therapeutic effects and recreation by means of travel and tourism. The indisputable point is that the currently observed attitude towards recreation considers it such a phenomenon that provides a person with rest and brings enough benefits to humanity. There are few objections and arguments against this, because many processes of restoring a person's strength are reflected in this, and there is a large-scale idea of the existence of effective ways of rest or ways of spending time. However, in order not to maintain this illusory and unambiguous perception of rest as a factor in the restoration of biological energy, it is necessary to adhere to the well-known position that the method of changing the type of activity is in no way worse than the method of rest, and even much better, because time is not wasted, and the organism restores the physical reaction to the same extent and even more, responding not to a simple, but to a differentiated stimulus. There are also other advantages to pay attention to. For example, the inclusion of everyone in a measured and exciting environment for the performance of rhythmic physical exercises and movements accompanied by music.

2. Recreational activity should be perceived as one of the factors in the restoration of the productive forces of the society. To do this, it is necessary to reorient part of the functions of health improvement, rest and maintaining person's capacity to use methods for restoring the motor properties and skills for their intended use. This returns the sphere of health improvement to solving the problem of replenishing the labor force resource in any country, expands the potential opportunities for the public to appeal to the attractive aspects of the recreational industry as a phenomenon of the modern society, not only from the standpoint of restoring the strength of an individual, but also from the standpoint of restoring the working capacity of the population. Along with this, the above-mentioned allows to moving on to obtaining estimates, gradually presenting the advantages of the studied industry from many other perspectives, such as interaction, activity, cooperation and their usefulness, the development of supply and de-

mand for the recreation in transforming environments of social relations.

3. At this level of the development of scientific thought and until the moment of voicing the materials of this research, the recreational activity, in order to talk about it from the position of the industry, comes down to solving the issues of filling physical culture with motor systems of health improvement and recreation. It is proposed to solve such issues with the methodological forms of fitness systems, which have been tested and are more recognized by the the society. The forms, which are considered in detail in this research, do not destroy the existing systems of medical and biological recovery, health promotion and preservation of human ability to work; in addition, but they can be useful as therapeutic disease prevention measures. To take their rightful place in the sciences, fitness systems should be studied and analyzed in a wider range of palliative, therapeutic and movement techniques, procedures, methods and means of physical influence on a person to provide physical assistance. Attention should be paid to the following points:
 - a. the notion of rest plays its primary role, when, given the accepted identification of the studied phenomenon, this method of influencing a person is practically the only effective tool under which reinforcement is codified, while other tools are therapeutic. The functional load on the concept of “strengthening” concerns both restorative functions for the body and any other renewal of its vitality. It is not enough just to rest in order to renew and restore all functions. In fact, fitness systems are designed to provide full recovery of a person;
 - b. the productivity of the methodological approach called “rest”, which in its essence corresponds to the extensive features of the development of both this event and any other, is exhausted as it is forced out of the environment of value at the moment other methodological support for recuperation and recovery is included in circulation in a more intensive way. Fitness systems provide the entry into action of a non-violent approach to changing occupation or work, i.e. compliance with the regime of work and rest with the simultaneous use

- of physical exercises, the implementation of which is carried out according to the musical rhythm and influences human senses, causing in a person the expected emotions and desire to move.
4. The choice of a fitness tool is influenced more by a psychological motive than a physical one, and this gives the system advantages. Psychological motivation is perceived as a hypothetical internal process of a person, in which the desire to achieve a specific plan for inclusion in the movement and in the environment of social activity is concentrated after overcoming some difficult time of loss of health or inspired thoughts about the need to improve mental or physical abilities. In such a case, there must be an impetus to act, to action, and finally to a shift from the place, to move towards the implementation of the plan in the real environment. That is, a person, whose thoughts are excited by the desire to become active, must dare to take the first step in order to make a move or change the style and rhythm of life. This means a movement that includes the cooperation of several persons united by personal relations, which are simple and understandable and based on parity and tolerance. A person begins to be pushed into the space of movement by the tendency of the development of social relations, behind which lies some dependence, which consists in satisfying the growing needs of humanity. Such dependence also manifests itself in the areas of health, recovery and restoration of the energy of an individual person, which should instill in a person the hope of increasing the ability in production processes. On the way to the development and strengthening of such abilities, the systems of physical culture and strengthening of health take their place. In this way, fitness systems complement physical culture due to their attractiveness and accessibility of movement perception. This activates attention and motivates to master fitness, being subject to the following dependence: *the higher the level of motivation, which is provided by the need of strengthening health, the greater is the commitment of fitness followers to participate in physical groups based on the interests of achieving a personal idea of improvement of the body. Further, the greater is the personal attachment to the fitness system,*

the better are the perspectives of a mobile individual. This research deals with the recreational sphere of human activity, which, in combination with the medical achievements of the society, therapeutic measures of influence on a person and natural possibilities for recreation, reaches the level of the industry. This industry encourages people to act, to move, to improve health and to restore strength, and it is designed for those who do not abandon the hope of renewing themselves and increasing their strength and energy due to the arbitrary performance of *physical exercises that obey systematic and methodological requirements in order to improve health and physiological and resistance indicators.* There is also a well-known fact that the best effects and achievements are provided by the training of the physical qualities of a person with the involvement of mobile exercises and the creative ability of an individual.

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APPENDIX

Glossary

ADAPTIVE PHYSICAL CULTURE – a social phenomenon, the main goal of which is the socialization of a person with limited physical capabilities into the production space and rehabilitation using physical exercises and physiotherapeutic procedures.

ADAPTIVE PHYSICAL EDUCATION – a science that studies the process of physical education of a person who has lost some functional capabilities, including motor ones.

AEROTHERAPY – a system that uses the effect of air on the body.

ANIMAL THERAPY – a method of improving person's health by interacting with an animal.

APITHERAPY – a system of methods of treating diseases and improving human health with the use of bees and bee products.

ART THERAPY – a method of psychotherapy used as a means of treatment, psycho-correction and human recovery on the basis of artistic techniques and creativity.

BIOTIC FACTORS – a set of environmental factors influencing changes in life activity. For example, **HYDROTHERAPY** is the use of water of different temperatures for preventive, therapeutic or health-improving purposes; **HELIO THERAPY** is the use of the healing effect of solar radiation and heat; **MUD** – volcanic – a product of the activity of mud volcanoes and other formations composed of clay rocks; sulfite – silt deposits of mainly mineral (salt) coastal and mainland lakes, which receive a large amount of dis-

solved mineral substances and solid particles; sapropels are silt deposits of mainly organic composition that form in fresh or low-mineralized lakes. These are *natural recreational resources* that play the role of a factor, substance or property of a component of the natural environment, which are originally endowed by nature with qualitative and quantitative parameters favorable for recreational activity and serve or can serve in the processes of organizing recreation, treatment and rehabilitation of a person. For example, minerals – germanium, jade, ozokerite, tourmaline, etc.

BIOTIC RECREATION RESOURCES – resources of living nature that contribute to the treatment and recovery of a person according to the spiritual and intellectual needs in the form of travel, excursions and tourism.

CHROMOTHERAPY – treatment with the help of light of different colors.

CONCEPT OF RECREATION IN POLITICAL ECONOMY – a concept that is based on the need to restore and develop strength in order to use it for the benefit of the society.

HEALTH IMPROVEMENT – 1) recovery, 2) health improvement, regardless of whether a person is sick or healthy.

HEALTH PROTECTION OF CITIZENS – a set of political, economic, legal, social, cultural, scientific, medical, sanitary-hygienic and anti-epidemic measures aimed at preserving and strengthening the physical and mental health of each person, maintaining long active life, providing an individual with medical and social assistance in case of disease.

HISTORICAL AND CULTURAL RECREATION RESOURCES – cultural monuments created by humankind, which have social and educational significance, cognitive interest and can be used to satisfy the spiritual needs of the population.

PREVENTION – a complex of various measures aimed at preventing any phenomenon and/or eliminating risk factors. Kinds of prevention: **PRIMARY** – 1) a system of measures to prevent the occurrence and impact of risk factors for the development of diseases in the country – vaccination, rational work and rest regime, rational high-quality nutrition, physical activity, environmental improvement, etc.; 2) socio-economic measures of the state to

improve the lifestyle, environment, education, etc.; **SECONDARY** – a set of measures to eliminate pronounced risk factors that, under certain conditions such as an adaptive breakdown, overstrain or a decrease in immune status, can lead to the onset, exacerbation or relapse of the disease.

PREVENTIVE HEALTH IMPROVEMENT – introduction of systems of physical activation of motor functions from the standpoint of the impact on a person according to the preventive, health-improving and bio-activating measures.

PREVENTIVE PROCEDURES – developing resistance to cold, cold douche, rub-down, etc.

RECREATION – 1) restoration, rehabilitation, and space, where these activities are carried out; 2) the amount of time during which the restoration of the productive forces of a person takes place, or an activity aimed at this restoration; 3) the function of every activity, every period of time and every territory; 4) activities of people involved in the creation and personal use of free time; 5) a set of phenomena and relationships that arise in the process of using free time for recreational, educational, sports, cultural and entertainment activities of a person in specialized territories, the general process of restoration of spiritual-cognitive, neuropsychological and physical-motor strength of a person due to the use of appropriate measures.

RECREATION ACTIVITY – a system of activities related to health improvement, development of cultural and cognitive activities in nature and specially equipped territories and sites.

RECREATION CAPACITY – the ability of the territory to provide a certain number of vacationers with psychophysiological comfort and the possibility of sports and health improving activities.

RECREATION CLIMATE RESOURCES – ionized clean air, the number of sunny days, ultraviolet radiation, etc., factors that are suitable for the spatial organization of recreation, restoration of strength and energy.

RECREATION COMPENSATORY – recreational human activity that restores the expenditure of biological strength and energy to a physiologically justified level.

RECREATION EXTENDED – recreational human activity, culmi-

nating in the restoration of strength and energy in abundance.

RECREATION LANDSCAPE – environment inherent in recreation areas or areas of active tourism.

RECREATION POTENTIAL – a set of natural-geographical, cultural-historical and socio-economic factors of the certain territory, suitable for the organization of recreational activities.

RECREATION REGIME – sequence of elementary recreational activities with fixation of their duration and intensity in the cycle of recreational activities.

RECREATION TERRITORY – an area suitable for human health improvement and recreation.

RESORT-RECREATION SYSTEM – territorial concentration of the activities of enterprises, organizations and institutions, which use medical and health-promoting, preventive and cognitive-improving resources.

RESTORATION OF STRENGTH AND ENERGY – a way to restore the health of the human body. These ways include: 1) physical culture and sports training, which strengthens the body physically and mentally in the form of a feeling of vivacity and energy filling of the muscles, 2) healthy food and its combination with the regime of work and rest, 3) healthy sleep and hygiene in everyday life, 4) outdoor recreation in the form of walks or games, 5) control over the culture and effectiveness of speech, 6) ordering thoughts and mental perception of the world, the search for positive emotions, 7) reorientation of the attitude to the environment and its change, 8) switching the psyche to self-regulation and improvement.

