

RPTSS 2017
International Conference on Research Paradigms Transformation in Social Sciences

FOUNDATIONS OF COMPOSITION AND COMPLEXES OF PRODUCTION GYMNASTICS FOR INCREASING WORKING ENVIRONMENT

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Abstract

Unstable economic and political relations lead to the emergence of social and man-made stress factors that affect people. This gives a rise to many problems that have a negative impact on the physical and psychological state of the population. The social importance of physical activity in society is increasing, and its role in shaping a healthy lifestyle of the Russians is growing. The formation of a healthy lifestyle should be an important policy direction in the field of health protection. The most effective means of reducing fatigue in the conditions of production is production gymnastics. The nature of industrial work has changed over the recent period: computerization, changing technical equipment, increased complexity and a significant amount of production processes change the role and place of labor in production. The intensification of labor causes an increase in the work load, the functional stress of the physiological systems and the organism as a whole, the growth of fatigue and a decrease in working capacity.

Preservation and strengthening of health requires the organization of physical culture and health work in production. To successfully increase the productivity of labor in enterprises, firms need to apply production gymnastics taking into account the specific nature of the work activity. Complexes, compiled taking into account the analysis of the nature of labor categories of workers, help to increase productivity.

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Keywords: Society, labor productivity, working capacity, health, a healthy lifestyle, industrial gymnastics.



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1. Introduction

Modern society is developing along the road of urbanization, the introduction of technology in everyday life and production. Unstable economic and political relations lead to the emergence of social and man-made stress factors that affect people. The socio-economic transformations, taking place in Russia with progressive positive achievements, have given rise to many problems that have a negative impact on the physical and psychological state of the population and exacerbated problems related to health conditions, the formation of a healthy lifestyle, physical activity.

1.1. In the context of socio-economic development of Russia, the social importance of physical activity in society is increasing and its role in shaping a healthy lifestyle of Russians is growing.

At the disposal of the Government of the Russian Federation "On the Concept of Long-Term Social and Economic Development of the Russian Federation for the Period to 2020" one of the directions is to preserve and strengthen the health of the population, to increase the role of disease prevention and the development of a healthy lifestyle (On the Concept of Long-Term Social and Economic Development of the Russian Federation for the Period to 2020, 2008).

Maintaining the health of the population and strengthening the prevention of diseases require: the development of conditions for healthy lifestyles, including monitoring and maintaining the current level of control over the conformity of products intended for humans, as well as human environmental factors, the requirements of the legislation of the Russian Federation. It is necessary to conduct scientific and applied research on the grounds for improving the legislation of the Russian Federation, as well as the methodological base, including development and introduction of incentive mechanisms for citizens of the Russian Federation to take a responsible attitude towards their health (Erokhin, 2016).

1.2. The formation of a healthy lifestyle should be an important policy direction in the field of health protection. At the same time, information about the dangers of low physical activity, irrational and unbalanced nutrition, consumption of alcohol, tobacco, narcotic and toxic substances, as well as training in hygiene and work practices, studies, diet and nutrition patterns should be the basis for promoting healthy lifestyles (Vinogradov, Okunkov, 2015; Zholdak, 1991).

An important contribution to the formation of a healthy lifestyle will be the creation of conditions for physical training and sports, the development of tourism for various groups of the population. The complex of professional physical culture exercises is used to improve the qualities and abilities of a person needed in a specific production activity. It provides recovery for the body, prevents and reduces fatigue during working day regime, it is used as an active rest and motor recreation.

Professional physical culture includes several social tasks:

- professionally-applied physical training;
- production gymnastics;
- physical training before and after work;
- motor recreation on weekends.

The most effective means of reducing fatigue in production conditions is industrial gymnastics (introductory gymnastics, physical culture break, physical culture minute). Introductory gymnastics

contributes to the optimal dynamics of operational efficiency: accelerating the operation, maintaining its required level, current recovery. Physical training is conducted daily for 5-10 minutes from one to three times per shift to maintain efficiency.

Fizkultminutki (two or three exercises for 2-3 minutes) are used to reduce fatigue, the exercises are selected taking into account the fatigue zones (for the back muscles, arms, legs, neck).

2. Problem Statement

The nature of industrial work has changed over the recent period: computerization, changing technical equipment, increased complexity and a significant amount of production processes change the role and place of labor in production. One of the characteristic features of modern production is the reduction of motor activity. The weight of manual labor in the system of high-tech production decreases (Kosilina, Sidorov, 1988; Musaelov, Nifontova, 1985).

2.1. The intensification of labor causes an increase in the work load, the functional stress of the physiological systems and the organism as a whole, the growth of fatigue and a decrease in working capacity. This leads to an increase in morbidity, an increase in industrial injuries, a decrease in professional performance and labor productivity. In connection with this, the restoration of the professional working capacity of workers in working and non-working hours is an important social order of society (Gustomyasova, 2011).

2.2. The state of health is reflected in all spheres of people's lives. Functional manifestations of a person depend on the level of health that determines labor, social, economic activity. At the same time, there is an inverse relationship, which opens up great opportunities for the prevention and promotion of health. Health affects the quality of labor resources, the productivity of social labor and thus the dynamics of the economic development of society (Nifontova, Pavlova, 1993; Nikiforov, 2006).

3. Research Questions

At present, many enterprise managers are trying to solve the problem of improving the quality and productivity of labor.

Preservation and strengthening of health requires the organization of physical culture and health work in production. The role of physical culture in the regime of work and leisure of the adult population is increasing (Bakulina, 2010).

3.1. Physical and health work in the workplace with systematic training leads to regular motor activity.

For the correct organization of recreational work in enterprises and in offices, it is necessary to use scientific and theoretical methodological recommendations on the organization of physical and recreational work among the able-bodied contingent. Physical fitness programs in the workplace have a beneficial effect on health and productivity.

3.2. A number of factors affect the performance and productivity of labor. In the modern society of people, professional activity is of social importance. It is difficult to master, it requires a long period to obtain special knowledge, skills, as well as the development of professional qualities of the individual. The success in work depends on the level of the person's readiness for their professional activities (physically and psychologically). The concept of "professional activity" in its meaning is closely related to productive work in a profession (Methodological recommendations for the conduct of industrial gymnastics, 1982).

The introduction of modern management methods in the organization of production, the ability of workers to adapt to the constantly changing requirements of scientific and technological progress require developed professional, personal qualities, as well as physical ones, which determine the productive performance of labor activity and a high level of readiness for it. In society, the factor of competitiveness in the labor market is the formation of readiness for work (On a special assessment of working conditions, Federal Law No, 2013).

The sphere of industrial activity, forms of labor organization are of great importance for economic productivity, as well as for health protection (Mironov, 2006).

The success of the performance of labor activity manifests itself in the course of its implementation. It depends on the level of efficiency of the subject of labor, which manifests itself as a result of the person's performance of a particular activity (Polievsky, Startseva, 1988).

The level of efficiency reflects:

- the potential ability of the subject to perform a specific job
- his personal professionally oriented resources and functional reserves
- the activation of the individual's labor incentives.

4. Purpose of the Study

The purpose is to develop a technique of drawing up complexes of industrial gymnastics for the increase of labor productivity (working capacity).

The degree of stability, the dynamics of performance depend on the psychological, hygienic and other characteristics, means of labor content, conditions and organization of specific activities.

4.1. The level of working capacity reflects the potential ability of the subject to perform specific work, his personal professionally oriented resources and functional reserves of the individual, allowing activating these reserves in the necessary working period. The degree of stability of working capacity is determined by the resistance of the organism and the individual to the influence of unfavorable factors of activity, the reserve of strength, training and development of professionally important qualities of the subject of labor.

4.2. It is necessary to develop a procedure for alternating work and rest, taking into account the dynamics of the working capacity of specialists conditioned by the physiological laws of the organism.

The alternation of mental and physical load, taking into account the dynamics of general and operational efficiency, must be methodologically substantiated.

5. Research Methods

Developed complexes of industrial gymnastics are based on scientific principles of physical education. In the technique of conducting industrial gymnastics, as well as in the method of production physical training, a number of general methodological principles (consciousness and activity, accessibility, systemacity, etc.) retain their significance.

The following specific principles are also taken into account:

- the principle of adapted balance of the dynamics of loads (compliance) of the content of industrial gymnastics complexes, especially labor activities and the phases of the dynamics of operational performance.
- the principle of age-related adequacy of physical activities helps to take into account the features of choosing exercises for effective recovery at different age stages.

With the normalization of the volume and intensity of exercises in industrial gymnastics, the principle of "load metering" is important. Physical load should cause recovery, create a working tone, cheerful mood. Sometimes a single intensity of exercise can be (in certain cases) higher than that in labor operations (Kholodov, Kuznetsov, 2007; Matveyev, 2004; Matveev, 2005).

5.1. To carefully develop the methodological recommendations of industrial gymnastics, it is necessary to compile a professional survey of employees. Professiogram is an accurate description of the conditions of the process of the labor process. It specifies working conditions; the nature of work, determined by the share of mental and physical activity and divided into physical, mental and mixed; the mode of work.

5.2. The method of compiling a complex of industrial gymnastics for workers takes into account several factors. First of all, it takes into account the dynamics of the human capacity for work in the process of labor, with the distinguishing features of changes in the working capacity of specialists of this profile during the working day, week and year. The influence of age and individual characteristics of a person is important. Geographic-climatic and hygienic working conditions on the dynamics of the working capacity of a specialist are also taken into account. Characteristics of working conditions and psychophysiological loads of a specialist in the labor process, in various workplaces (professiogram) and use of means of physical training and sports for increase and restoration of working capacity of experts, taking into account conditions, a character and a mode of their work and rest are taken into account as well. The main provisions of the method of selection of physical exercises and recreational activities in order to combat industrial fatigue, for the prevention of occupational diseases are part of this method as well.

The plan for gathering information for the compilation of exercises for industrial gymnastics is as follows:

Analysis of the nature of the work of workers.

The composition of a professiogram includes the study of the working posture, the determination of the nature and volume of labor, the recording of the dynamics of working capacity in different shifts, the degree and nature of fatigue of workers, environmental conditions, work in urban conditions or in agriculture. The method of investigation includes:

- monitoring of labor productivity for a certain time (from 1 week to 2 months);
- observations of workers over a period of time (from 1 week to 1 month);
- timekeeping of the work day;
- questionnaires.

The research tools are: taking photographs and shooting video.

The selection and the sequence of exercises in the complex, their availability for performance and dosage, as well as the execution time in different shifts are of great importance. Observation and questionnaires should consider the following information: physiological characteristics of the content of various types of labor (working posture and work movements, the amount of physical activity, etc.)

6. Findings

The level, the degree of stability, the dynamics of performance depend on the hygienic characteristics, means of labor, conditions and organization of specific activities, as well as systems of psychological and physiological prediction and the formation of professional fitness. Specific professional activity creates high demands on certain physical and psychophysiological qualities of a person.

6.1. Functional reliability of the subject of labor is manifested in adequate requirements for activity, in the level of development of professionally important physical and mental functions and mechanisms for their regulation under normal and extreme conditions (Methodological recommendations for the conduct of industrial gymnastics, 1982; Rafikova, 2007). The functional stability of the body, the capacity for work in a working environment and the environment, fatigue, are determined by the general state of physiological systems, their reserves.

7. Conclusion

Industrial physical culture (professional physical culture) is included in the system of scientific organization of labor and represents a specific activity.

To successfully increase the productivity of labor in enterprises, firms need to apply production gymnastics, taking into account the specific nature of the work activity. Complexes, compiled taking into account the analysis of the nature of labor categories of workers, help to increase productivity.

During and after the working day, industrial gymnastics contributes to the restoration of working capacity and disease prevention, elimination of changes in the physical state of the body, caused by unfavorable working conditions, prevention of occupational diseases.

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