

SYSTEM AND TECHNOLOGY OF ORGANIZATION OF ENVIRONMENT FOR THE DEVELOPMENT OF ERGONOMIC CULTURE OF TEACHERS

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Abstract. *It is based on the importance of creating an environment for the development of ergonomic culture of teachers and the development of ergonomic culture of modern school teacher, ergonomic knowledge, skills and competencies. Summarizing the conditions for creating a comfortable environment, they are presented in the table. The content of the process of development of ergonomic culture of teachers and the technological system of its implementation, the model of development of ergonomic culture are presented taking into account its components.*

Keywords: *environment, teacher ergonomic culture, ergonomic learning environment, technological system, model.*

Introduction. As a factor in the professional training of future teachers in the world's higher education system, remote implementation of classes using the Internet and information and communication technologies, organization based on a specific project, selection and systematization of educational materials in pedagogical processes aimed at achieving a specific goal, guaranteeing the educational result, educational institution taking into account the ergonomic requirements for the material base and educational tools is gaining urgent importance.

Comprehensive research of the situation in science, study of the leading scientific directions in the training of personnel, analysis of the base of scientific psychological-pedagogical, technical and methodical literature, regulatory and legal documents, as well as conducted research and personal professional-pedagogical activity experience, ergonomic culture of students-teachers description of the ergonomic learning environment for the effective implementation of the development shows the need to form the ergonomic knowledge, skills, and competencies of the student-teachers.

The actuality conducted research and personal professional-pedagogical activity experience, ergonomic culture of students-teachers description of the ergonomic learning environment for the effective implementation.

A brief analysis of scientific research on the topic.

Philosophical, socio-anthropological issues related to the development of culture were researched by A.Begmatov, M.Kahharova, A. Mavrulov, J.Tulenov, G.Tulnova, E.Yusupov, O.Gaybullaev.

Psychologists such as M.Davletshin, V.Karimova, A.Leontev, A. Maslow, Z.Nishonova, L.Rubinshtein, N.Safaev, E.Goziyev studied the psychological aspects of the problem.

B.Adizov, R.Djuraev, O.Jamoliddinova, U.Mahkamov, Sh.Mardonov, O.Musurmonova, N.Ortikov, B.Rakhimov, D.Ruzieva on socio-pedagogical, anthropological and acmeological

issues related to the development of culture. T.Solieva, D.Sharipova, Sh.Sharipov, Sh.Shodmonova, N. Egamberdieva, M.Kuronov conducted scientific research.

Although scientific researches have been carried out by scientists of various fields in connection with the problem of development of professional pedagogical culture of students of higher educational institutions of pedagogy, but the issue of development of ergonomic culture of future teachers in the conditions of modernization of personnel training system has not been researched.

The scientific novelty of the article is that our scientists have not sufficiently studied the impact of the educational environment on the activity of the student and teacher, as well as the ergonomic culture on the educational process in educational institutions.

The purpose of the study is to develop practical suggestions and recommendations for the organization of the educational environment and the development of ergonomic culture based on the study of the process of developing the ergonomic culture of teachers.

The educational process in vocational training institutions was chosen as the object of the study.

Systematic, comparative-logical analysis was used in the research.

The empirical source of the research was the results of questionnaires.

The main part.

In order to describe the environment for the development of ergonomic culture of teachers, it is necessary to define the content of this concept first. The pedagogical encyclopedia gives the following interpretation: "The concept of environment includes social, cultural, economic factors and natural living conditions of people." As you can see, this definition is very vague. Therefore, we refer to copyright positions.

In the work of V.S.Lednev, the composition of the environment is used as a starting point. "One of the axioms of pedagogy is that the educational process assumes the existence of a specially organized didactic (pedagogical) environment that meets the purpose and task of education, the level of information technology limited by the requirements of pedagogical technology, the limited economic opportunities and conditions of society".

V.I.Kozyr adds the following meaning to this concept: "Pedagogical tools, together with the surrounding natural and social world, form their living environment for students. The educational environment is a vast, open, changing system. This quality can be achieved on the basis of combining all the pedagogical tools at the disposal of the educational institution itself and the external socio-pedagogical environment".

V.I.Kozyr's concept of socio-pedagogical environment includes both the artificially created learning environment and the natural environment of everyday human life, which includes nature, cultural objects and events, other people and the growing person himself, because this condition determines the condition of his development. describes as

G.M.Kodjaspirova summarizes these concepts: the educational environment of education considers the first one to be "a system of conditions for organizing children's lives, especially in accordance with pedagogical goals, aimed at forming their relationships with the world, people, each other".

A.A.Makareni and others show how important the role of cultural and creative environment is in adapting schoolchildren to changing living conditions. Cultural and creative environment is a combination of material and spiritual factors and tools that help to turn a person into a person

and later become an individual in the process of solving educational problems aimed at the intellectual, artistic and practical development of a person.

V.A.Levin examines the problem of examining the educational environment at school and gives the following definition: "Educational environment is a system of influences and conditions for the formation of a person, as well as his development opportunities, social and spatial-objective environment".

As we can see, the interpretation of the concept by researchers is multifaceted, but the content and essence are generally consistent.

Thus, the environment is an integral system consisting of many structural components that interact with a person and indirectly and directly affect the development of personality during self-development.

We will shed light on various aspects of considering the environmental problem. From the point of view of developing the ergonomic culture of teachers, we are interested in the problem of learning environment.

Bashmakov M.I., Poznyakov S.N., Reznik N.A. studying the problem of the information environment, they express the opinion that "the information environment is a system of communication with human knowledge and serves to store, compile and present the information that makes up the content of the collected knowledge, as well as to transfer, process and enrich it" and interpret this concept in this way

Describing the meaning of the concept of environment, Sova A.Ya. and Gershunskaya R.S. describes the information-subject environment: A.Ya.Sova believes that it is what surrounds the student and the teacher, but only a certain part of the learning environment participates in the learning process, which is developed by the teacher in accordance with specific educational goals, the cognitive abilities of schoolchildren and their individual characteristics says, R. S. Gershunskaya's point of view does not contradict the position of A. Ya. Sova, but the author interprets this content a little differently - as a set of ideal and material objects used to realize the goals of the educational process, the learning environment is not frozen, but an immeasurably broad concept that expands as our knowledge expands, and this process is interdependent and infinite.

N.A. Pugal examines how a classroom equipped with all the learning equipment necessary to realize the main goals of education in a cognitive learning environment.

T.S.Nazarova and E.S.Polat believe that the learning environment should be developed based on the level of modern pedagogical science and practice, achievements of scientific and technical development, and socio-economic conditions. According to them, this environment is "imagined as an environment of interactive education and upbringing, mutual support, partnership and cooperation, an environment that gives students the opportunity to choose different forms of work, convenient methods of work and recreation, to maintain and strengthen physical and moral health".

As you can see, many researchers emphasize the importance of the learning environment.

The main part.

Educational learning environment is the material conditions in which the activities of teachers and students are carried out, in other words, a room equipped with various types of educational equipment and adapted to the activities of teachers and students.

The learning environment formed in a modern school should be flexible, allowing to restore the learning process in accordance with the trends of the time and form the basis of the school in the future.

Thus, it can be noted that the effectiveness of teaching students in classrooms and workshops depends on the creation of a favorable environment, including components - conditions.

Summarizing the conditions for creating a favorable environment that we have highlighted in the above-mentioned research works, we, as the author, present them in Table 1.

1-table.

Conditions for creating a comfortable environment

Components	Conditions of application
Material and technical	Sufficient space; availability, location and condition of equipment, tools; provision of regulatory materials, reagents, etc.; quality and timely maintenance of equipment; compliance with labor safety and fire safety requirements.
Sanitary and hygienic	Normal natural and artificial light; compliance of buildings, their condition and maintenance with sanitary and hygienic standards and requirements; reasonable temperature conditions, air exchange and ventilation; the amount of dust, gas, the minimum level of noise; reasonable air humidity; equipping with sanitary-hygienic equipment and first-aid equipment.
Aesthetic	Color scheme for painting buildings and equipment according to design requirements; beautification; design style and content.
Technical pedagogical	Maintaining a reasonable work schedule for students; providing each student with a normally equipped workplace; workplace of an individual teacher equipment; creating conditions for individual and group forms of work; compliance with the requirements of scientific organization of work.

Development of a teaching model, selection and often creation of individual examples of educational tools, as well as the conditions for their complex use force the teacher to face the specifics of the project activity.

Over the past 30-40 years, ergonomic design, design system, interior, has become a science, in which technical and technological, social, ecological and ergonomic factors are taken into account when solving the main task of improving technical and economic indicators. In the last 20 years, an important feature of ergonomic design is the orientation of any project to the psychological, anthropometric, social and even specific individual characteristics of a person, taking into account the "human factor".

Ergonomics is naturally the scientific basis for ergonomic design. Without knowing its basics, it is impossible to competently and rationally develop and implement educational tools and the learning environment around them.

Arms the creators of educational tools and learning environment with the knowledge of psychology, physiology, hygiene, and anthropology connected to the system of unified requirements of ergonomics. In addition, when creating educational tools, organizing a learning environment, it provides a comprehensive understanding of what and how a person works in this environment or with this educational tool. Thus, it is important to know not only the characteristics of ergonomic indicators, but also how the ergonomic characteristics of objects designed based on them are formed. For this purpose, the development and evaluation of project proposals is a special branch - ergonomic design. In this area, special attention should be paid to "project prediction", which allows to select the best options and filter out bad decisions during the design process.

The actual process of human interaction with a learning tool usually goes beyond general guidelines and specific ergonomic requirements. In this case, the problem of designing activities with educational tools, not only the science environment, but also the problem of designing activities in it, arises. And this activity should be convenient psychophysiologicaly, aesthetically, socially and spiritually.

Ergonomic design is complex, not only when the product is not developed, but it is implemented throughout the project.

Thus, in connection with the transition from the design of something to the design of learning environments, the role of ergonomic knowledge used at various stages of design, creation and production technology is especially increasing. The need for ergonomic information that arises in the process of developing the ergonomic culture of teachers is very diverse. The possibilities of meeting the need are determined, on the one hand, by the level of professional training in teacher training, and on the other hand, by the state of ergonomics information. There are significant difficulties with both questions. The level of ergonomic training of teachers is insufficient, and ergonomics is not taught in pedagogical higher education institutions.

In order to design the environment for the development of the ergonomic culture of teachers, it is necessary to take into account the influence of factors affecting it from the outside, that is, information about the place of the designed object in the "teacher-pupil-environment-educational tool" system, as well as the relevant psychophysiological, anthropometric and hygienic characteristics of a person, as well as spatial information that allows to take into account and temporary conditions are required to be taken into account. Also, the essence of the ergonomic and pedagogical design of the learning environment is to ensure the material conditions of education, on the basis of which rational forms and methods of teacher and student activity are formed, and opportunities for their improvement are created.

We also determined the need to develop a pedagogical model that ensures the connection of the components of the development of the ergonomic culture of teachers on the basis of an ergonomic integrative approach, a systematic-cognitive-reflexive educational environment. We present the author's model of development of ergonomic culture of teachers in the form of Figure 1, taking into account its components.

The importance of the ergonomic and pedagogical approach in terms of creating an environment for the development of the ergonomic culture of teachers is evident.

The organization and management of the educational process will lead to the development of a suitable culture if it is organized based on the requirements, rules, norms and the like. Summarizing the performed scientific analyses, the following conclusions were reached:

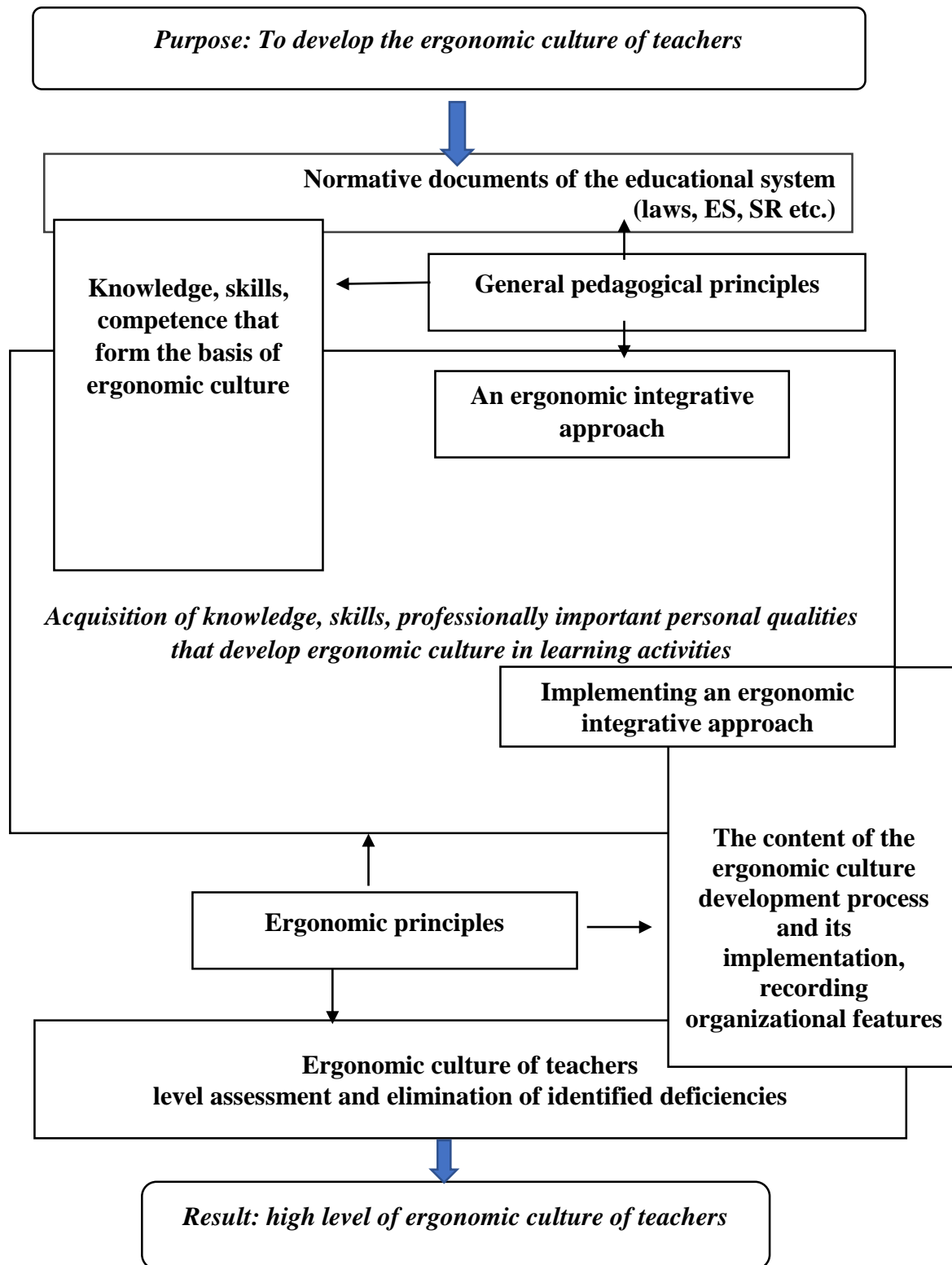


Figure 1. Components of the model of development of ergonomic culture of teachers.

1. Systematization of the aspects related to the process of successful development of ergonomic competence and tasks of developing the ergonomic culture of teachers show the urgency of developing didactic conditions for fully adapting the learning environment, teaching tools to the activities of the subjects of the pedagogical process.

2. Ergonomic competence is an important personal newly created characteristic of the teacher, it does not appear by itself and depends on the targeted actions of the subjects of the educational process in the objective environment.

3. The implementation of the model for the development of the ergonomic culture of teachers is successfully implemented on the basis of systematic, active and competent approaches.

4. As a result of applying the authorship model to the pedagogical process, high educational efficiency, creating a safe and comfortable educational environment, protecting the dignity of the student, his life and health, organizing high-quality educational processes, meeting the requirements for the level of professional training of teachers and ergonomic culture fulfillment is ensured.

Based on the conclusions, we present practical suggestions:

1. It is necessary to prepare the future teachers studying in the higher education system for ergonomic activities by introducing the teaching of the basics of "Pedagogical ergonomics" and to systematically shape their ergonomic culture.

2. Regularly developing the ergonomic culture of teachers of educational institutions (it serves to improve their professional competence and skills, as well as to create a safe and comfortable educational environment, to protect the dignity of the student, his life and health, and to ensure the organization of quality educational processes) it will be appropriate to introduce special educational modules and carry out scientific research works.

REFERENCES

1. Башмаков М.И., Поздняков С.П., Резник Н.А. Информационная среда обучения. - СПб: "Свет", 1997. - 400 с.
2. Окулова Л. П. Трудовая деятельность педагога современного вуза (эргономический аспект) // Современные проблемы наук: коллективная монография. - Ижевск: Изд. центр «Удмуртский университет», 2016. С. 79–101.
3. Коджаспирова Г.М., Коджаспиров А.Ю. Педагогический словарь. - М.: Изд. центр Академия, 2000. -176 с.
4. Козырь В.И. Теоретико-экспериментальное прогнозирование развития У МБ в школах как компонент социально-педагогических технологий // Методика изучения и распространения передового опыта. Контроль за состоянием и использованием УМБ школ. - М.: РАО. - 1990. -213 с.
5. Левин В.А. Экспертиза школьной образовательной среды. - М.: Сентябрь, 2000. - 123 с.
6. Леднёв В.С. Материально-техническая база системы непрерывного образования и факторы её развития // Методология теоретико-экспериментального прогнозирования развития УМБ общеобразовательной школы. - М.: РАО. 1990. - 317 с.
7. Лернер П.С. Учителю об инженерно-техническом проектировании // Школа и производство. 1999. - №2. - С. 21-23.
8. Макареня А.А. Културотворческая среда: статус, структура, функ-ционирование. - Тюмень: ТОГИРРО. 1997. - 65 с.
9. Педагогическая энциклопедия. Т. 4. - М.: Советская энциклопедия, 1968. - 911 с.
10. Пугал Н.А. От приборов к комплексам, от комплексов к системам. // Народное образование. 1997. - №10. - С. 81-84.

11. Симонов В.П. Педагогический менеджмент: 50 ноу-хау в управлении педагогическими системами. - М.: Педагогическое общество России, 1999. - 430 с.
12. Ibragimovich Kh.I. Peculiarities of using credit-module technologies in the higher education system of Uzbekistan //Integration of science, education and practice. Scientific-methodical journal. - 2021. - P. 209-214.
13. Ibraimov Kh. "Theoretical and methodological basis of quality control and evaluation of education in higher education system." International journal of discourse on innovation, integration and education 1 (2020): 6-15.
14. Ibragimov, X., Abdullayeva Sh. "Pedagogika nazariyasi (darslik)." T.: Fan va texnologiya 288 (2008).
15. Ibraimov X.I., M.Quronov. Umumiy pedagogika (darslik). –Т., “Shaffof”, 2023, 416-bet.
16. Ibragimovich I. K. et al. PEDAGOGICAL ABILITIES OF A TEACHER, STRUCTURE AND DEVELOPMENT //湖南大学学报 (自然科学版). – 2021. – Т. 48. – №. 12.
17. Ибрагимов Х. И. ПЕДАГОГИКА И ВОСПИТАНИЕ //Экономика и социум. – 2021. – №. 1-1 (80). – С. 608-611.
18. Ibragimovich, Ibraimov Kholboy. "Intensive methods of teaching foreign languages at university." Вопросы науки и образования 27 (39) (2018): 78-80.
19. Ибраимов Х. И. Педагогические и психологические особенности обучения взрослых //Academy. – 2019. – №. 10 (49). – С. 39-41.
20. Ибрагимов Х. И. Организatsiя самостоятельной работы студентов в условиях цифровизatsii вузовского образования //Наука и образование сегодня. – 2020. – №. 7 (54). – С. 74-75.