



## Technology and System of Training Teachers for Ergonomic Activities

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**Abstract:** The organization of a new ergonomic learning environment in schools and the development of the ergonomic culture of the modern school teacher are based on the urgency of ergonomic knowledge, skills and competencies. The ergonomic system addresses the issues of teacher and student participation in saving labor, creating a comfortable and effective, safe learning environment at school.

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**Keywords:** educational ergonomics, teacher ergonomic culture, ergonomic learning environment.

### 1. Introduction

In addition to socio-economic development in our country, extensive work is being carried out in the direction of modernization of Education. The state policy in the field of training of personnel has determined the systematic acquisition of knowledge on educational modules and blocks of listeners in educational institutions, the need for mastering knowledge, Basic Educational-Scientific and general-scientific knowledge, moral and moral qualities based on national and universal values, professional development, creative thinking and conscious attitude to the environment, providing for the formation of a.

The main prints of the state policy in the field of education are the provision of education on the basis of state educational standards, state educational requirements and educational programs, a clear goal and comprehensive perfection of the younger generation on the basis of socio-historical experience. The organization of a pedagogical process, which is organized on the basis of a specific project, aimed at achieving a specific goal, guaranteeing the outcome of education, in a systematic process aimed at developing the consciousness, behavior and outlook of educators requires from school teachers an ergonomic culture based on knowledge, skills and competences in pedagogical ergonomics.

### 2. Material and Methods

The use of the most effective methods in pedagogical processes aimed at the remote implementation of lessons using the Internet and information and communication technologies, organization on the basis of a specific project, achievement of a specific goal, guaranteeing the result of Education, selection of educational and educational technologies and ensuring the effectiveness of the organization of lesson processes serve ergonomic culture. Selection and systematization of educational materials, accounting of educational material base of educational institution and ergonomic requirements for educational instruments provides an opportunity to model educational materials effectively while adhering to the principles and criteria for determining the content of education[1,B,54]. As a result, compliance sociological, organizational, psychological, didactic, sociological and cybernetic conjunctions in the educational process is achieved while adhering to the general laws, laws and principles of the holistic pedagogical process.

Productive use of the main and auxiliary forms of the organization of the educational process, taking into account the universal and universal importance of the components of the educational process, requires the effective organization and transfer of students ' free time, the development of ergonomic cultures, as well as the concentration of the creative competence of the pupils. Professional qualification of teachers working in an educational

institution, work experience on relevant functional tasks, compliance with professional sphere, knowledge of functional tasks on the occupied position, initiative, creative approach to work should be at the level of modern requirements, as well as its qualities such as objectivity, transparency, personal and professional competence, practical experience, management skills, responsibility, initiative will depend on the level.

Teachers of educational institutions in accordance with the requirements of pedagogical ergonomics in the field of increasing the effectiveness of education and training are wise to operate, to be the real owner of the educational institution, to perfectly master all the frontiers of the organization of a safe and comfortable educational process, to be extremely responsible for their duties, to ensure the safety and Also, the teachers of the educational institution are required to carry out the optimal, effective ways of carrying out the developing ergonomic Culture, initiative, personal qualities, skills of systematic analysis and decision-making on the basis of ergonomic competence, position tasks, primarily in the case arising from the requirements of Public Policy.

The present day provides for the modernization of the educational system, its structural restructuring, the transformation and renewal of educational programs taking into account the modern achievements of Education, Science, Technology and technology, economy and culture of the world scale.

The broad adoption of advanced technologies, positive changes in the economy, the scale of foreign investment, the development of entrepreneurship, small and private business, as well as the integration of continuous education with science and production, the introduction of an integrated approach to education in accordance with the capabilities and capabilities of educators, will be the basis for the improvement of advanced pedagogical technologies.

This, in turn, imposes on the teachers of the institutions of professional development and retraining new tasks on the issues of organization and management of pedagogical processes on the basis of pedagogical ergonomics requirements, as well as on the positive solution of existing problems in the direction of ensuring the effectiveness of pedagogical processes in the field of improving the ergonomics.

In the direction of preparation of teachers for ergonomic activities in the institutions of professional development and retraining, the content of education, the level of training of the audience and the level of knowledge necessary to master it, as well as the general qualification requirements for graduates of higher educational institutions, the process of

preparation for ergonomic activities requires the creation of content.

The need to formulate the necessary knowledge, skills and qualifications in the direction of pedagogical ergonomics in teachers in accordance with the requirements laid down in the content and components of educational programs and the content of the knowledge required to be mastered remains relevant to the level of preparation of teachers studying in the institutions of professional development and retraining.

For the first time the term "ergonomics" refers to the Polish naturalist. It was used by 1857 year, referring to the science of labor, based on the laws on nature[4,b,343]. B. The origin of ergonomics education G. Ananiev [2, b, 288], V.P. Zinchenko [4, b343], A.N.Y. Leontiev [5, b, 304], B.F. They were founded[7, b, 465]. In general, ergonomics is a branch of scientific science that "comprehensively Studies a person in the specific conditions of his activity in modern production"[3,b,230].

Since 1986 year in the journal "Ergonomics abstracts" appeared a new branch of science dedicated to the ergonomic problems of Education-Education (Education) that Russian researcher A.A. Kuligina initially shed light on her work "ergo design in the world of Education" [8,b,356].

But, interest in solving educational problems appeared earlier in ergonomists. In 1980 year in the Society of human factors, a special group is formed to determine the prospective directions of ergonomics. One of the 8 directions recommended by the group will be the creation of a system of training and training. It should be noted that in the past period, this direction of ergonomics developed only in the case of studying cocktail activities(related to the technique of Man), related to the profession of operators.

A number of authors believe that the principles and recommendations of ergonomics can be transferred from the production process to the pedagogical process. In Particular, V.P. Zinchenko "there is a need to create pedagogical ergonomics," he emphasizes very correctly [4,b, 343]. "Even if ergonomics examines the" man-machine "system, many of its conclusions and recommendations can be used to improve the learning process in the school," says A.A. Chensov [10, b, 273]. "By synthesizing the achievements of a number of labor activity disciplines and technical disciplines, ergonomics can contribute to the establishment of relevant science links and the good organization of the educational process itself" [4,b, 343]. "One of the ways to comprehensively solve the problems of working with complex modern technologies is to use this ergonomic approach"[6,b,141]. "In contrast to the traditional approach, which mainly deals with the design of

anthropic technical systems, the ergonomics of vocational education should be concerned with the justification of new teaching methods, systematic and Complex approach-based technical teaching tools,"[6, b, 141]. "Taking into account the ergonomic requirements, school equipment using the recommendations of this science, when designing sighted weapons, creating the necessary comfort in the classroom, undoubtedly has a positive impact on the process of acquisition of knowledge, abilities and skills by students, improves the educational system as a whole"[10,b,273].

Educational ergonomics relies on the ideas of cognitive ergonomics(cognitive ergonomics) and tries to apply them in the field of Education. Cognitive ergonomics is a science in how to improve and relax a smart cocktail. Educational ergonomics is the science of how to improve and facilitate educational activities[9,b,200].

Organizational ergonomics studies the issues of improving the effectiveness of the activities of educational institutions in the organization of the educational process, resolving issues related to the optimization of the educational process, including organizational structures and management processes, and the system of individual relations, human resources management, development of projects, cooperation, rational organization and management of teamwork.

The educational process in higher education includes the following processes. Upbringing, education, formation and development of the personality of qualified personnel, etc. This summit is aimed at training highly qualified competitive personnel and is achieved due to the activities of students and professors and teachers, social interaction between students and professors and its robustness, material and technical support of the educational institution, established cooperative relations and a number of other factors.

Also in the organization of the modern educational process will be necessary to take note of the following things:

- the fact that the methods of obtaining knowledge are changing;
- the introduction of modern educational technologies, methods of teaching and the opening of opportunities for change in content;
- changes in the role of the teacher in the educational process;
- opening of wide opportunities for distance education and training.

At present, it is required to provide high-quality knowledge and to organize the educational process. In this process, the following subjects can be distinguished in the behavior: the first are those who

prepare the resources for the process of obtaining knowledge(professors, teachers, scientists), the second are those who want the resources that have been prepared(students, trainees, researchers), as well as those who organize and manage the process of learning(head of staff).

With the increasing number of sources of acquiring knowledge, a new concept of acquiring knowledge arose: the acquisition of education throughout the whole life, the acquisition of continuing education, etc. In this regard, one of the modern requirements will be to radically improve the quality and effectiveness of the educational process, to study the ergonomic aspects of the educational process, to take a systematic integrated approach to the issues of improving the quality and efficiency of the activities of the subjects of the educational process and higher educational institutions. As a result, the subjects of the category "pedagogy", which is studied in pedagogical higher educational institutions, are ergonomics(Organization of a safe and comfortable educational environment), economics(identification of economic extologies and resources in the process of development of Education), Psychology(identification of psychological states of students), sociology(identification of social extologies in education), media(study of the state of health of students, creation of special conditions taking into account physiologic and age characteristics), philosophy(the use of a general approach and philosophical conceptions), mathematics(the use of mathematical methods of calculation in pedagogical diagnostics and pedagogical research), history(the study and application of historical experiences of Education), anthropology (theeksex approach to man as a subject of education) are inextricably linked with the subjects of the study.

In some Pedagogical Sciences, these disciplines are partially taken into account, and their interrelations in the coverage of the goals and objectives of the disciplines are presented.

In our opinion, we can take into account that the program developed on the subject of "theory and history of pedagogy" for the students of the field of higher education pedagogy in the provision of links to the science envisaged in the teaching of these disciplines is not given a separate section for providing students with concepts in educational ergonomics, and this section.

"Pedagogical ergonomics" is an area of scientific science that comprehensively studies the activities of teachers and students in connection with technical means of teaching, didactic tools, pedagogical technologies, as well as the educational and educational environment in the school[9,b, 200].

Pedagogical ergonomics is the creation, implementation, identification of the process of teaching and mastering taking into account human and technical possibilities and their interaction with the aim of creating a safe and comfortable educational environment, facilitating the work of teachers and readers, reducing the cases of mental stress, eliminating the problems of the educational system[1,b,54].

In our opinion, issues related to the planned teaching of pedagogical ergonomics: biomechanical, physiologic, anthropometric, anatomic descriptions of a person who is involved in the training and educational process related to the cocktail of educational and educational autonomy ergonomics are of great importance. Search work on ways to solve the actual problems of the educational process: work place, processing of materials, change of the members of the human base, component of the work place, reliability and health; organizational ergonomics refers to issues related to the optimization of a case involving social technical systems and their organizational structures and management processes, etc. It also examines the issues of individual communication system, Human Resource Management, development of projects, cooperation, rational organization and management of teamwork; cognitive ergonomics examines the issues of human interaction with other elements of the system, finding interprocess contacts(perception, memory, decision-making, etc.). Problems such as smart cocktail, decision making, skilled performance, human and computer collaboration will be considered, in the process, when designing social technical systems, attention will be paid to the issue of continuous education and professional training of a person and concepts will be given. Pedagogical ergonomics plays a special role in the preparation of students for the activity of rational elimination of the problems of the educational system.

Also, to give concepts on ergonomical education and its specific features in providing concepts about the purpose of education, functions and content of Education, intellectual, civil, moral, moral, physical, labor, economic, environmental, aesthetic education presented in the curriculum of pedagogical theory and history science; requirements for the examination and evaluation of educational results, in providing concepts in the direction of psychological and pedagogical conditions of the effectiveness of control and evaluation of educational results, in providing specific features of ergonomic planning, organizational-executive, control-diagnostic functions, in providing insights on the specificity of control; it is desirable to link the requirements for the teacher and his personality, the professional and

ergonomic qualities of the teacher, the concepts of the ergonomic culture of the teacher with the personality of the teacher and his professional, spiritual and personal qualities and qualities.

As we have already said, the theory and history of pedagogy and the linkage of subjects with the concepts of rational elimination of the problems of the educational system in the process of teaching pedagogical ergonomics plays an important role in the preparation of students for this activity.

This, in turn, determines the need to provide concepts in the direction of rational elimination of the problems of the educational system in the teaching of the theory and history of pedagogy and pedagogical ergonomics, ensuring the interconnectedness and coherence of the topics, that is, the organization of the educational process in these disciplines on the basis of an integrated and andrologic approach.

Based on the above points of view, it can be said that the direction of the development of the ergonomical culture of students, the integrated and andrologic approach implies the interaction and coherence of the subjects in the formation of working programs on the subjects, the distribution of hours according to the content and nature of the subjects, as well as the design and organization, it serves to improve the quality and effectiveness of the educational process in the preparation of students ' worldviews and concepts in the sciences wide, the development of their interest in the chosen profession, their practical activities.

Hence, taking into account the fact that the process of special training of students of higher pedagogical educational institutions has not been organized for the ergonomical activity of rational elimination of problems of the educational system, it is necessary to organize the process of preparation of teachers for ergonomic activities in the institutions of professional development and retraining and their formation on the level of preparation, pedagogical ergonomics we recommend a technology and system that consists of interrelated and complementary components that characterize the direction of the requirements established in the content of educational programs and the achievement of the results achieved in the educational process, the development of ergonomic culture in teachers(Figure 1).

The teacher was briefed on the fact that the development of ergonomics culture is directly related to the ergonomics competence provided by educational cognition activities.

A number of features, such as interconnectivity and interconnectivity of the components that make up the technology and the system, are taken into account, because these features are of particular importance in the formation and development of ergonomic culture.

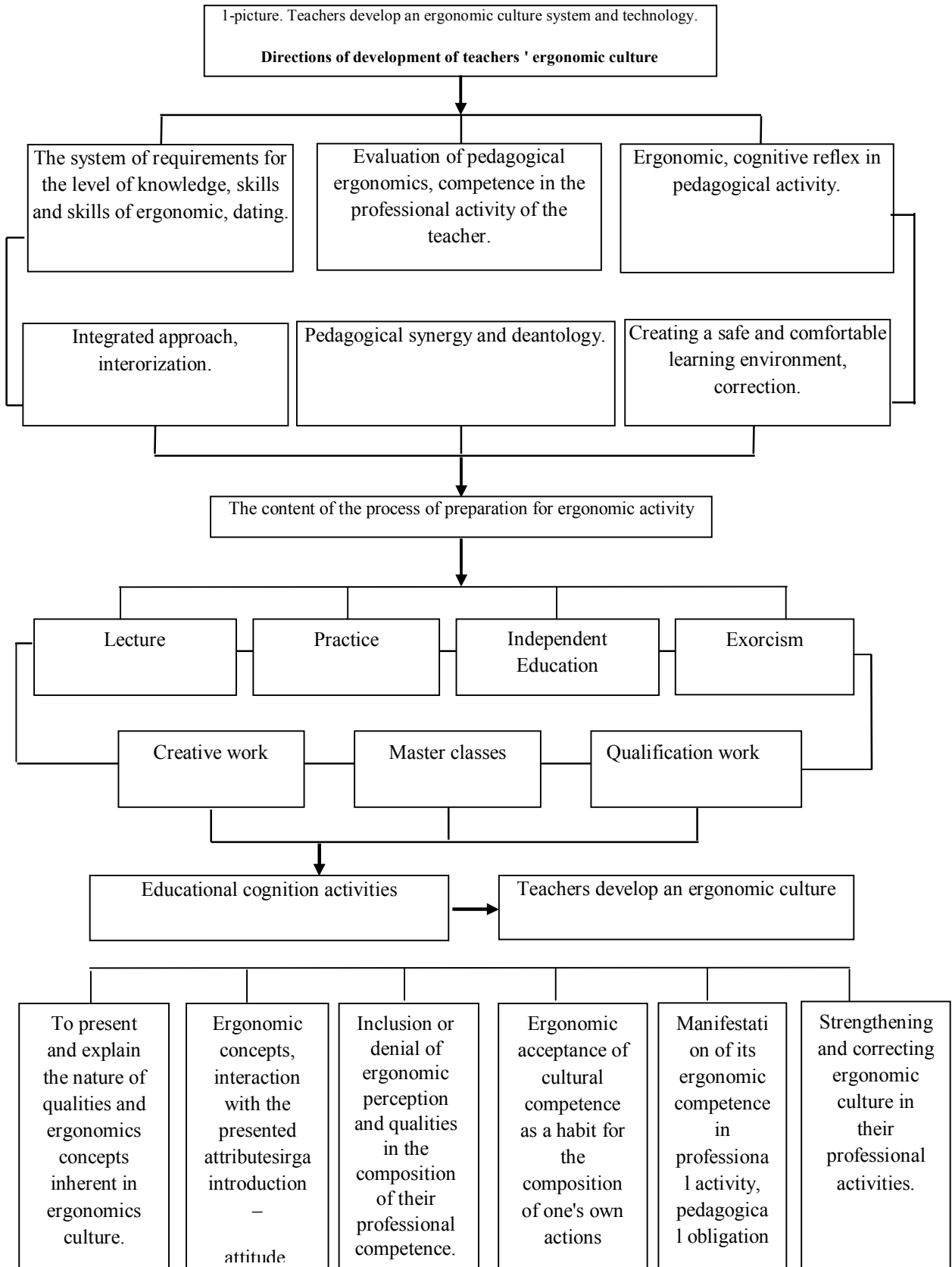
## Results and Discussions

Taking into account the characteristics of the influence of factors affecting the object and subject, which affect the formation and development of the ergonomic culture of the teacher-audience, we determined the criteria and indicators for assessing the degree of formation (high, medium, low) of the ergonomic culture of the audience:

- a) cognitive feature characterizes the knowledge of the audience about ergonomic culture, the ways of its formation;
- b) determines the attitude of motivational listeners to the problems of ergonomics culture formation;
- b) integrative activities indicate the acquisition of ergonomic skills, skills in creating a comfortable, effective and safe learning environment in a modern school.

Thus, in the Regional Center for retraining and professional development of the employees of public education of Namangan region, a group of listeners were asked to answer test questions about ergonomics and its role in the education system. The Test tests were attended by directors of spiritual and educational work, Directors of educational work, teachers of primary classes, listeners of Physics, Mathematics, Geography, technological education,

physical education. As a result, only 14% of the audience said that they are familiar with the concept of ergonomics and have an idea of the use of ergonomics, only 9% said that they have heard about the use of ergonomics in the educational system. Such a low level of awareness of ergonomics and its role and position in the education system allows us to assume that we are not sufficiently prepared to perform labor functions in accordance with the professional standard of the teacher. How to develop a comfortable and safe reading culture "listeners"? answering an open question, 59% of the audience reported the use of the subject "Physical Culture and sports", 41% - "safety of life activity". Thus, the formation of a comfortable and safe educational culture in only 18 people can be reflected in the ergonomic component, since the study of the basics of ergonomics is one of the sections of the study of the subjects "safety of life activity" and "age physiology and hygiene", and often expressed the opinion that teachers study independently. In general, most of the audience has a low level of ergonomic culture. The findings of the study showed that in the system of qualification and retraining, the teaching of the audience does not provide the necessary level of ergonomics component in the education system for the teacher.



**Conclusion.**

Regular improvement of the ergonomic culture of teachers and listeners in the institutions of professional development and retraining implies the implementation of several tasks, namely the creation of the necessary conditions for the subjects of the pedagogical process, the organization of their activities, coordination, control, analysis and evaluation, as well as the creation and strengthening of a material and technical base for the implementation. Therefore, it is necessary that the managers and pedagogical staff responsible for the organization and management of pedagogical processes in the institution of professional development and retraining and ensuring its effectiveness have not only pedagogical experience, but also sufficient understanding of ergonomics and management, pedagogical ergonomics in a number of directions. Therefore, in the institution of professional development and retraining, special preparation will be necessary for the teaching of ergonomic knowledge, which will ensure the performance of Labor functions in accordance with the professional standard for the teacher-audience. In conclusion, it can be said that in the process of developing an ergonomic culture, it will be necessary to control the level of its components, such as ergonomic knowledge, skills, thinking, orientation, in the formation of teachers-listeners. If in the educational process there is a presentation of various types of control, ergonomic knowledge and skills, timely detection and elimination of the educational activities of the teacher-audience, gaps in knowledge, in our opinion, the ergonomic culture in the teachers will develop with improvement.

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