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Structural and Functional Model Development of the Culture of Intellectual Work Among Future Specialists

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Abstract

The relevance of the problem under study is due to the need for monitoring diagnostics to determine the level of intellectual work culture of the future specialist and the need for a structural and functional model of its development as a fundamental basis of training. This article pursues a goal that is aimed at revealing the essence of this model and includes blocks that define its functions. The design of this model is based on the human-anthropological approach and its approbation. The leading method of studying this problem is modeling, which allows revealing the integral system-developing components of the culture of intellectual work. The article presents a structural and functional model of the development of the culture of intellectual work of the future specialist, consisting of logically interrelated blocks aimed at transforming the culture of intellectual work of the future specialist.

Keywords: model, the culture of intellectual work, model design, emotional intelligence.

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Introduction

The theoretical basis for the study of this problem is research, which reflects the ideas of professional training of future specialists, the ideas of the development of personal qualities and properties, philosophical and cultural foundations, which reveal the scientific nature of such categories as "culture", "development", "intelligence", "intellectual work", "culture of intellectual work".

The methodological basis of the research consists of concepts focused on the practice of teaching and developing a personality during training, as well as cultural, cognitive, systemic, and synergetic theories that allow us to explore the process aimed at the human-anthropological educational paradigm in the professional formation of a future specialist.

The concept of the development of the culture of intellectual work is also made up of the main provisions on cognitive models of intelligence. Human intelligence as a developing system of personal properties and qualities in the course of the organization of intellectual work of a person allows you to determine the level of abilities in solving unconventional life-affirming tasks (Razumova et al., 2017).

The processes of systems genetic development occur during the organization of a person's work and activity. However, creative intellectual work in this process is a psychological and pedagogical prerequisite for the conscious development of one's own level of intellectual work culture in its professional aspect.

The system genetic theory allows us to consider intellectual labor as a procedural psychological mechanism that allows us to master such components as the purpose, content, methods, operations, components of the culture of intellectual labor, a block of ways to solve the problem and approaches for the development of abilities.

Purpose and objectives of the study

The purpose of the study is to consider the structural and functional model of the development of the culture of intellectual labor as the fundamental basis of the metamodel experience of the formation of the culture of intellectual labor of future specialists within the framework of the human-anthropological approach and its approbation.

Literature review

To reveal the structural and content blocks of the model, it is necessary to clarify the concept of "intellectual labor culture". When analyzing the works of scientists and generalizing well-known definitions, it can be noted that most researchers of this phenomenon note that the culture of intellectual work of a future specialist allows you to characterize the personality that is expressed:

- in the stability of the motives of cognition of inner experience through self-observation (Shaimardanov & Khuziakhmetov, 2008; Amhag L. et al., 2019). Evaluating one's own thoughts and actions allows one to characterize the actions and actions of another person. In the practice of teaching, the observation method is a familiar and effective way of working. However, all subjects of the educational process are aware that the habitual action that has become entrenched in society, society, can have a discrepancy if they are sensibly comprehended. Therefore, the method of self-observation of one's inner world is necessary for changing thinking, developing inner experience through self-knowledge. The true position of a person does not have to be defended and justified, it can be justified, explained by knowing their own feelings, emotions. Negative emotions lend themselves to awareness of the situation and the tension that a person experiences at the same time due to erroneous trust in the current situation. The ability to correctly and logically consistently substantiate the prevailing belief of a negative nature will help to explain the tension and solve problems (Yarullin et al., 2018; Hur et al., 2019).

- in the development of the logic of thinking through the implementation of laws, since the correctness of the development of thinking depends on their strict observance - certainty, consistency, consistency, and evidence;

- in the constituent components of the culture of intellectual work and their appropriate rational ways of organization, which justifies the level of mastering by a future specialist of a system of actions, operations, techniques, methods, means that determine the professional style and significant personal qualities associated with volitional efforts, indicators of conscious and humane attitude to a person, responsibility for their own path of development (Hivner et al., 2019; Razumova et al., 2018).

The future specialist is an active subject, as he owns the tools for the development of the culture of intellectual labor, knows the ways to solve them, consciously uses the methods and techniques of their implementation, deepens the meaningful structural components of the culture of intellectual labor.

The development of the logic of thinking of a future specialist in accordance with its laws refers to the minimum requirement and tool of cognition, without which it is impossible to diagnose the level of development of the culture of intellectual work.

Methodology

The choice of research methods is determined by the research topic, purpose, and objectives. These included: a theoretical and synthetic analysis of philosophical, psychological, pedagogical literary sources, selection, and systematization of information material of the studied problem.

The empirical analysis of the problem included methods of observation, ascertaining and transforming the stages of the experiment; methods of psychological and pedagogical diagnostics: testing, questioning; analysis of the results, and their mathematical processing.

The experimental base of the study was presented by S. Toraighyrov Pavlodar State University (Pavlodar) and Kazan Federal University (Kazan).

The research consists of three interrelated stages. The first stage of the research was aimed at analyzing and selecting philosophical, psychological, pedagogical, educational, and methodological literary sources in accordance with the research topic; the real level of the problem in the educational practice of the university was studied; the conceptual foundations of technology were determined based on the analysis of theoretical and methodological approaches to its study.

The organization and conduct of the second stage of the study made it possible to identify the components of the procedural components of the technology for the development of the culture of intellectual work of the future specialist, to implement the ascertaining and transforming stages of the experiment. To check the developed approaches and tools, to correct and improve them, to analyze the results obtained for further work.

The organization and conduct of the third stage of the study were aimed at performing final measurements for diagnosis, generalization, and comprehension of the result; formulation of conclusions and conclusions, as well as the design of literary sources.

Results

The structural and functional model of the development of the culture of intellectual work as a methodological tool allows us to identify the subjective experience of future specialists, determine their views, ways, and approaches to the course of transformative activity of research practice.

The structural and functional model of the development of the culture of intellectual labor as an information-abstract model differs from the specific models used in the subject areas in that it allows us to reliably determine the functional features of the type and subspecies of intelligence, highlighting in them general abstractions, principles, rules for analyzing factual data and managing the process of developing the culture of intellectual labor of students. The specification of the structural and content components and the allocation of specific components of the model features occurs in the process of its use when the data of the subjective experience of the future specialist is transformed into a dynamic view or subspecies and their connection with the implementation of rational actions occurs.

The structural and functional model of the development of the culture of intellectual work of the future specialist manifests itself in the educational and developmental environment as a dynamic interpretation of data related to the subjective experience of future specialists and practical actions, which ensures the creation of new models by describing the dynamics of the type and subspecies of intelligence, as well as storing deployed components in RAM for quick access to them and use in practice.

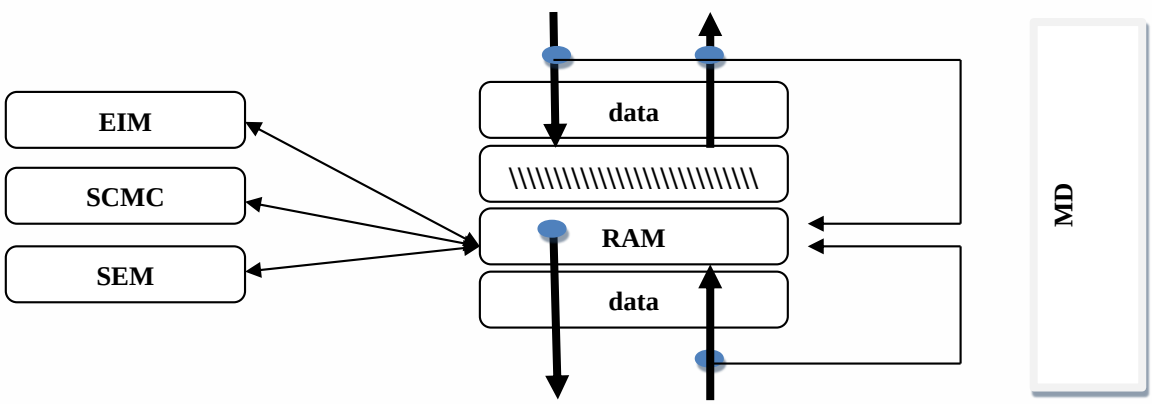

Figure 1. System-developing components or blocks of the model

System-developing communication of components includes:

- MEI - model of emotional intelligence;

-MSCC - a model of the structural and content components of the RCIT;

- MSO - a model of the subjective experience of a future specialist;

- MRD - model of rational actions;

- B - factual data;

- MD - metadata about multidimensional intelligence.

Thus, each component contains abstract facts unrelated to reality, which have ample opportunities for solving problems. One or another component in its expanded form can be observed during the implementation of the program for the transformative activity of the practice. However, to transform it into a model of the subject area or the problem being solved, simulated factual data based on the experience of future specialists are needed.

The dynamics of components as a process of creating a domain model from data is based on the model experience of future specialists in the course of rational actions. The construction of a domain model is possible during the transformation of activity and interpretation of data, but incomplete, fragmentary, since it takes time to process, systematize, analyze data and save them in order to save human health-saving resources and not repeatedly interpret data.

The system-developing approach, which determines the degree of expression of emotional intelligence as a personal experience of students, includes psychological formations formed during the transformative activity of research practice under the influence of factors that determine the levels and specifics of individual typological features of future specialists.

The content data of emotional intelligence includes approaches that determine its essence and a set of abilities for understanding and managing one's own emotional background and others around. Emotional intelligence is aimed at rational design and planning of emotional and cognitive actions for socio-psychological adaptation to environmental conditions for conducting research practice. The structural and substantive interdependent components of the technology are aimed at effective interpersonal interaction.

Within the framework of this study, we have studied the patterns of behavior, activity, and psychological characteristics of future specialists due to their transformative actions in research practice. Their distinctive characterological features for designing rational actions in activities, communication, relationships, the ability to correctly express emotions and thoughts; the ability to analyze actions, strong and weak aspects, the ability to determine the criteria of emotional intelligence that make up a subspecies of intelligence of the personal component are revealed.

In total, 130 students were covered by the study, 76 students became direct participants in the experiment.

The analysis of the results of the diagnostic study allowed us to conclude that the majority of students have an initial (57%), average (34%) level of formation of the considered systemic qualities, and a high – 9%

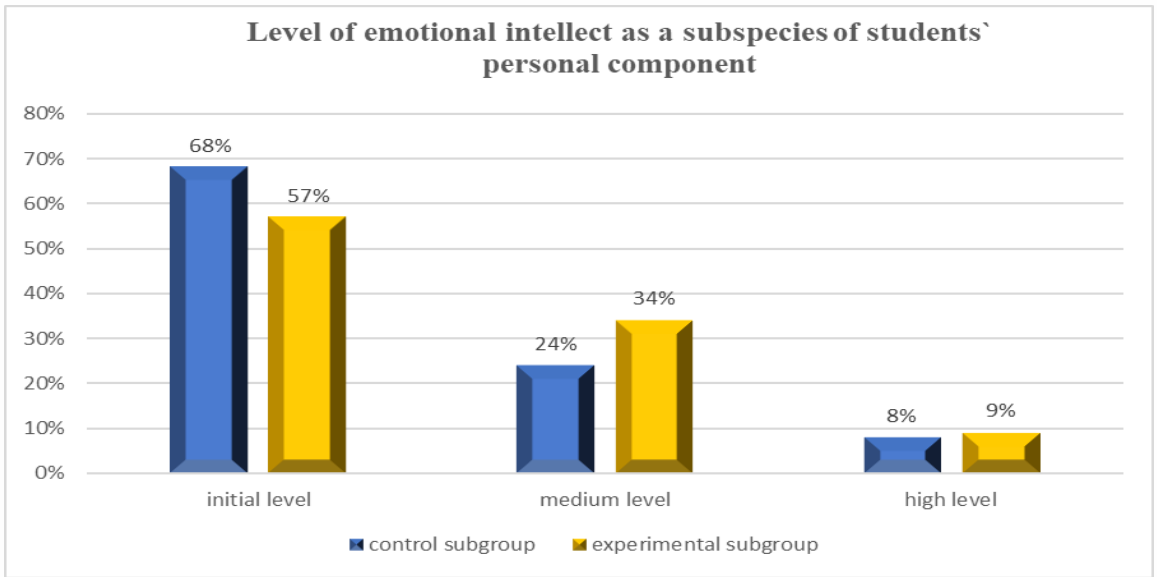

Figure 2. Results of the level of study of emotional intelligence in students at the ascertaining stage

A high level of emotional intelligence development was shown by students who have a pronounced ability to understand their own emotions and the emotions of people around them. They are able to manage their own emotional sphere, which has led to their higher level of adaptability to the conditions of research practice and effectiveness in communication.

This group of students is small, but they have realized their goals and objectives. It should also be noted that the majority of students have the development of emotional intelligence formed at an initial low level.

The revealed abilities of students to understand emotions and be able to manage them are interrelated with the orientation of the individual to cognition of emotional intelligence. They are able to take into account the inner experience of a person during the transformative activity of research practice, are more inclined to analyze their own and others' behavior, highlight the values of kindness, traditions, customs, achievements, they have mastered the methods of definition. Therefore, the model of emotional intelligence is a construct based on cognitive skills and personal individual typological characteristics of students.

Emotional intelligence as a psychological and pedagogical education can be formed throughout a person's life and activity under the influence of factor conditions that ensure the level and determine the specifics of the features of the future specialist. The model of emotional intelligence is aimed at improving the structural and content components of the culture of intellectual work in rational activity while mediating the emotional positions of students for the implementation of active actions:

- evaluation and forecasting of actions;

- building emotional and communicative actions;

- planning of regulatory ways of action;

- designing motivating ways of action;

- performing reflexive and corrective actions. The emotional intelligence model includes criteria and indicators that made it possible to develop a program and carry out certain work

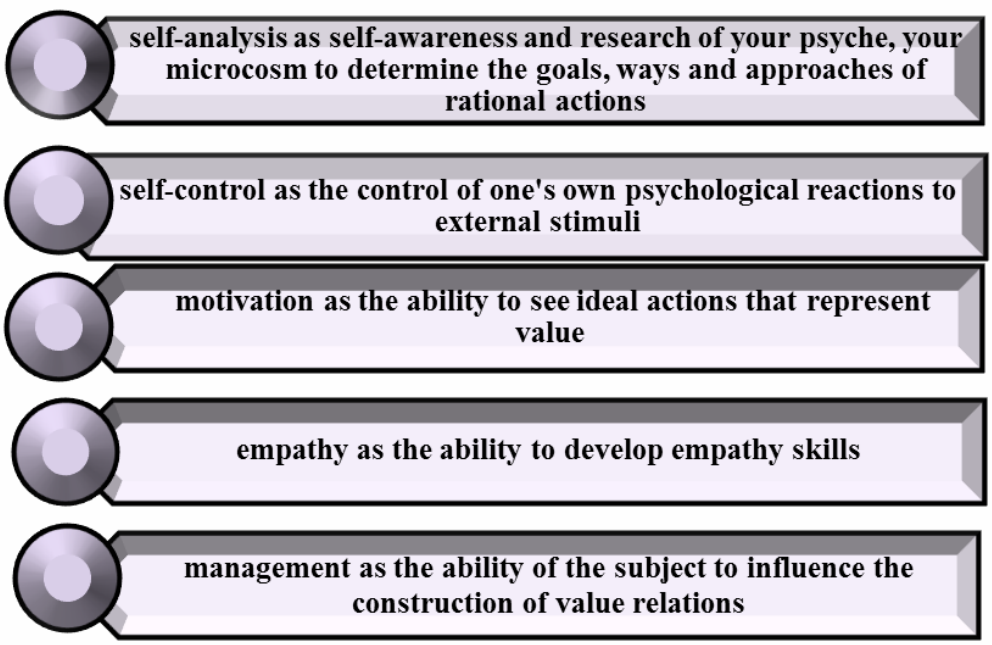

Figure 3. Criteria and indicators for effective transformative activity of research practice

The technology of intellectual labor culture development belongs to the fundamental structural element of the educational system.

Its components are based on the emotional and volitional qualities of the individual and motivational preferences, assuming the level of development of cognition, increasing the interest and beliefs of students. The culture of the development of thought processes enriches the internal experience, allows you to identify common features, determine the specific nature of knowledge for understanding and refine them through analysis, synthesis, abstraction, classification, and generalization. The development of the logic of thinking for the proof, the argumentation of one's own ideological position, and the organization of intellectual work consist of a knowledge system.

Organizational and technological scientists include the main technologies of intellectual labor, which hone the ability to independently select information material, the culture of adequate perception, understanding, and analysis through rational schemes and models of fixation and registration of knowledge. The components of the culture of intellectual work involve the development of knowledge and the implementation of certain regulatory prescriptions for the purpose of reasonable expenditure of energy, competent distribution of various types of activities as a health-preserving basis of human life, providing emotional and value attitudes of the individual to the organization of intellectual work.

The control stage of the experiment allowed us to determine the dynamics of the formation of emotional intelligence as a subspecies of the personal component of students in line with the structural and content components of the culture of intellectual work of students. During the experiment, monitoring was carried out using the same methods used at the ascertaining stage of the experiment.

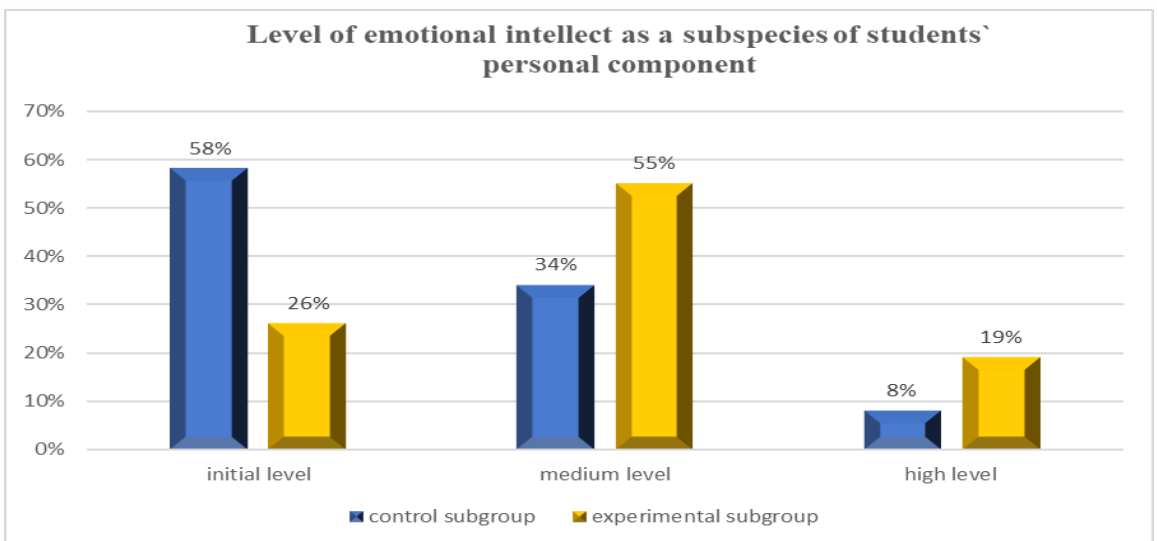

Figure 4. Results of the level of study of emotional intelligence in students at the control stage

The indicators of control monitoring are higher compared to the results carried out at the previous stages. However, significant indicators were noted in the experimental group, as the number of students with average (55%) and high (19%) levels of formation of fundamental qualities have increased. In the control group, there were also changes in the level of formation of these skills, but not significant.

Practice shows that the level of study of emotional intelligence among students affects the results of the productivity of transformative activity of research practice.

Discussions

Consideration of the system-developing technology for the formation of the culture of intellectual work forms the basis for the analysis of its various models and the application of the multidimensional experience of future specialists for planning and designing transformative activities of research practice in the conditions of real implementation of educational programs in the pedagogical process of the university.

The works of scientists reflect the methodological foundations that allow determining the multidimensionality of thought processes (Bakhtin, 2012), the conceptual foundations of the manifestation of professionalism and creativity by a person at the philosophical level are developed (Descartes, 1989), general theoretical aspects of the culture of intellectual work are defined, which are reflected in various approaches (Berdyaev, 1989). At the concrete scientific level, scientific views on the consideration of this problem from the standpoint of activity, integration of properties, and personal qualities are reflected (Frankl, 2015).

Thus, at the present stage of the development of education, the professional formation of future specialists as a priority area of the university's activity presupposes fundamental, humanization, professionalization, a rational combination of ways and approaches to the organization of the educational process in higher education. This aspect should fundamentally be based on a system-developing technology for the development of the culture of intellectual work, providing skills for independent research and research activities, contributing to self-determination and self-development of future specialists.

Conclusion

The state of the theoretical and practical basis of the pedagogical process in higher professional education shows the need to develop a holistic system-developing technology for the development of the culture of intellectual labor as a new focus on the organization of transformative activities that ensure the manifestation of personality-psychological neoplasms that require the development of new models of multidimensional intelligence in future specialists from the perspective of the development of the culture of intellectual labor. The structural and content components of the meta-model will form key positions for the study of various types of intelligence, interacting on a constant dynamic fullness based on new psychological and pedagogical discoveries that correlate with the existing component complex when introduced into the educational process and give a high level of effectiveness.

Acknowledgements

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