

**ICEST 2021****II International Conference on Economic and Social Trends for Sustainability of Modern Society****PHILOSOPHICAL PROBLEMS OF REGIONAL STUDY OF  
HIGHER EDUCATION QUALITY**

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**Abstract**

The problems of the quality of higher education in regional interaction of universities, industry and management structures are investigated. Two problematic aspects of the development of the university education are highlighted: the student's orientation towards an independent way of solving complex issues of the studied courses and the disclosure of the subjective basis of the integral interaction between the university and its industry environment. The methods used in the study of the indicated problem are based on the theory of the post-nonclassical stage of the development of science. It is noted that the new principles in the process of training of university specialists demand from researchers a significant increase in the theoretical level of the implementation of developments. A conclusion was formulated about the modern methodological status of the concept of "education quality. It is argued that with the rise of the role of practical skills that a graduate of a university should have, the importance of the psychological aspect of a student's professional training increases. The concretization of the psychological aspect of the study of subjective relations is expressed in the projection of the category of "self-fulfillment" onto the student's image. In this regard, in the course of the study of the educational process, methodological innovations are required from university teachers not only in relation to the cognitive, but also in relation to the socio-psychological aspects of students' proficiency in their profession.

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## **1. Introduction**

Recently, the achievements of scientific and technological progress have been accompanied by fundamental changes in various fields of activity, including education. Today, the reserves for increasing the efficiency and quality of training of trainees, based on traditional teaching aids, have practically been exhausted. Higher education all over the world is characterized, on the one hand, by continuing improvement, rethinking and revision of the conceptual foundations, and on the other, by the increased competition in the educational services market, increased requirements for the innovative potential of teachers, and increased requirements for the quality of the educational process.

One of the main reasons for the emergence in the subject research field of an in-depth attitude to the concept of " education quality " lies in the peculiarities of the development of post-industrial society. Close interaction between production, education and regional authorities has led to the advancement of special requirements for the training specialists at universities: attention has increased to the professional aspect of the development of their subjective qualities and subjective activity. The relevance of in-depth knowledge of the modern educational process is also determined by the formation of a post-non-classical type of scientific thinking - the formation of an interdisciplinary and techno-scientific paradigm of scientificity.

## **2. Problem Statement**

The specificity of the subjective essence of a modern specialist, acquired by him at the university, and then developed in the structures of sectoral activity and collective research, is increasingly turning into an important factor in understanding the principles of managing interdisciplinary and intersectoral events in the region with the participation of universities. These events are caused by profound transformations in modern science: changes in the forms of collective work of scientists, ways of interaction of universities with society, government and entrepreneurship, as well as the growing status of science as a social institution. The entire range of cognitive and social parameters of the subject of professional activity has undergone significant changes, radically updating the content of what is commonly called engineering. In these conditions, the study of the conceptual aspects of the concept of " higher education quality " and its fundamental relation to the subject characteristics of graduates of regional universities has in our work the status of a problematic basis for research.

With the rise of the role of scientific and practical skills of a university graduate, the importance of the psychological aspect of his professional training inevitably increases. The allocation of this aspect as an integral part of the study of the subject characteristics of university graduates, we also refer to the problematic component of the research content of the article.

## **3. Research Questions**

Solving the regional problem of improving the quality of higher education required to answer a number of primary research questions. First of all, it is necessary to highlight the issue of the transition to a fundamentally new level of analysis of the subject characteristics of specialists, involved in the relationship between the main centers of sustainable development of the region - the university, industry

and government. In particular, a deeper theoretical analysis was required in the process of developing methodological provisions that clarify the issue of the relationship between the general scientific and philosophical statuses inherent in the concept of " higher education quality ".

Simultaneously with the actualization of the above issue, methodologists were facing with the issue of overcoming conceptual and time gaps in relations between representatives of various disciplines, between scientists and engineers, as well as between entrepreneurs, industry specialists and government authorities. It should be noted that the question posed by us about eliminating time gaps between scientists, engineers and industry specialists is easier to solve in the aspect of analyzing the historical stages of the development of science.

At the present stage of psychological preparation of students at universities of various profiles, the existence of graduates in real conditions of professional activity, there is, in our opinion, the need to solve another research issue. The relevance of this issue is associated with the need to concretize the psychological research aspect of subject relations, presenting its activity structure with the help of the category of "self-fulfillment" borrowed by us from the science of psychology.

#### **4. Purpose of the Study**

The purpose of the article is to analyze two relevant, closely related methodological problems of regional development of universities in the aspect of the concept of " education quality ". The first of them concerns the shift of the educational paradigm of higher education from an orientation towards teaching monocourses to a paradigm focused on an independent way of assimilation of knowledge and practical skills by a student. The second problem relates to the study of the subject basis in the integral process of interaction between the university, industry and regional authorities. In the aspects of these problems of the development of higher education, in our opinion, the most pressing issues of organizing training courses, filling them with modern scientific and scientific-methodological content are being solved. Achieving this goal contributes to the theoretical and practical understanding of the foundations of the formation of a professional psychological model inherent in modern specialists with higher education.

#### **5. Research Methods**

The methods used by us in the process of researching the identified issues and problems are based on the theory of the post-nonclassical stage in the development of science, on the principles of the formation of a modern type of scientific rationality, called by scientists "technoscience". These methods imply the focus of researchers on the disclosure of the subjective essence of specialists with higher education as the most important component in understanding a complex set of theoretical and scientific-practical activities that determine the development of modern processes of interdisciplinary knowledge and creative collective interaction.

Research work in this direction should take into account the following methodological guidelines designed to ensure high performance of specialists in the framework of the post-non-classical values of science and scientific rationality:

1. Interdisciplinarity and transdisciplinarity as the highest degree of integration of modern sciences, as the priority of the principle of convergence in the relationship between different disciplines, general scientific areas and innovative technologies;
2. Merging of fundamental types of research with the design and engineering activities of specialists within the framework of ongoing projects. In the publications of domestic scientists, this methodological guideline of activity is called the joining of science and production (or a cluster of sciences and production). The methodological standards and norms of this technoscientific activity are supplemented in our article by the theory of post-industrial society, as well as the provisions of the complex interaction of disciplinary, general scientific and socio-worldview knowledge.
3. Concretization of the psychological aspect of the study of subject relations, based on the theoretical resource of the category of "self-fulfilment". The methodology of "post-nonclassical" psychology corresponds to this type of scientific rationality, which unites the sciences of nature and the sciences of the spirit, stimulating their development to deep integration processes.

## 6. Findings

In the latest publications of domestic and foreign scientists on higher education, the principle dominates, which assumes an independent finding by the student of complex issues of the course being studied and independent search for their solution using non-standard methods (Nidhi & Suryan, 2020). In China, for example, some scholars believe that higher engineering education is especially in need of developing a pool of innovative talents in science and technology. Scientists report this in the article (Shen et al., 2020). It attempts to analyze an overview of many university engineering training projects. As a result of the analysis, common key problems were identified, among which special attention is paid to the mechanism of collaborative learning in the relationship between the university and high-tech industries. The authors of the article (Latha, 2020) draw attention to the fast pace of the changing world. Its change ability, uncertainty, and ambiguity must be noticed, studied and reformed into the engineering education system. It is difficult for higher education to evolve in step with the development rate of the latest technologies, the global economy and digital transformation. The global network of social phenomena overcomes traditional barriers of language, geography, national cultures and beliefs. And these rapid changes, in the opinion of the aforementioned authors, are not sufficiently reflected in engineering university courses. Another article (Xu et al., 2018) highlights the problem of unstable supply and demand for innovative knowledge and innovative talents. It is argued that it is with the help of the latest research it is possible to understand the mechanisms and logical links in the process of joint innovation activities of the university and the industry.

Modern problems of engineering education are also investigated in the publication (Tharakan, 2020). This paper records the results of engineering education, which guarantee graduates the ability to practice at a professional level. However, graduates still lack the knowledge to competently navigate the issues of communication, ethics and global awareness (including its social, economic, environmental and information aspects). A constructive view on the solution of urgent problems of higher education is also

proposed in the publication (Solari, 2020). Its authors analyze and discuss the real state of education by identifying its limits, gaps and strengths, as well as a hard core of knowledge. This core of knowledge should form a common foundation for a mature and modern discipline capable of generating a professional with broad views and specialized skills.

The problem of improving the education quality is reflected not only in publications on engineering topics. For example, in one of the medical articles, scientists are concerned about the quality of the training course related to the provision of medical care (Henry et al., 2020). In this regard, preference is given to interdisciplinary collaboration. Such collaboration, with the participation of practicing doctors, medical educators and sociologists, is argued in the article, is necessary to ensure clinical perspectives and the acquisition of methodological experience by students. It guarantees that research is carried out based on knowledge of the social sciences, modern practical requirements in order to obtain an optimal result.

From our review of publications on various aspects of improving university education, we consider it necessary to emphasize the high theoretical requirements for the level of these studies. In our opinion, such high requirements for research (and their corresponding reflection in training courses) without any exaggeration bring philosophical and methodological content to training courses. However, equating the general scientific nature of research on the educational process with philosophy presupposes the obligatory observance by scientists of the following important principle. The development of the concept of "education quality" should adequately use the methodological resource of dialectical logic on the ratio of quantitative and qualitative changes. This is expressed, in our opinion, in the formulation and solution of the studied problems in two aspects: firstly, in the aspect of the dynamics of changes in modern education from one stage of its development to another, and secondly, in the aspect of the social essence of higher education in its interaction with industry environment and regional government.

In this regard, the modern nature of research issues related to the quality of higher education is determined not only by the post-nonclassical type of rationality in scientific knowledge. The problem of the education quality demanded from scientists a deep analysis of the subject basis in an interrelation between the main centers of sustainable development of the region - the university, industry and government. The study of subjective characteristics in the interrelation between regional centers, in our opinion, is a necessary condition for understanding the essence of events taking place in the system of the latest social practices. This system makes high demands on university graduates, largely determining the assessment of the degree of their readiness for practical mastering the profession.

The system of the latest social practices in the region is a complex unity of social diversification, social integration and social development. Therefore, university professors are required to make methodological innovations not only in relation to the cognitive, but also in relation to the socio-psychological aspects of students mastering their profession. For the first time, we turned to the subject basis of intersectoral and interdisciplinary features of scientific and technological processes in the "supporting university - industry" system in the publication (Knyazev et al., 2019). It revealed some of the subject features of engineering in the aspect of the methodology of the post-industrial type of society and the post-non-classical stage of science the development.

In foreign publications, researchers often associate the topic of the subject characteristics of young specialists with the weak readiness of university graduates for independent practical activity. Medical

scientists, for example, in (Yu et al., 2020) conducted a special study of the questionnaire on the readiness of a Taiwanese cohort of students for hospital practice. The questionnaire reflected the following eight student characteristics: interpersonal communication skills, confidence, collaboration, management, science, prevention, holistic care, and self-study. The results of this study were used as the subject of analysis by scientific experts. A constructive view of the current problems of higher education is also proposed in the publication we have already used (Solari, 2020). Its authors analyze and discuss the real state of education from the point of view of its strengths and weaknesses in order to find the basis of educational knowledge that is capable of forming a professionally developed personality. The authors of the following two works also adhere to a similar point of view: (Junaid et al., 2020; Lecorchick et al., 2020). Let us single out another article (Kutnick et al., 2020). It raises the question of whether the student is inspired by the proposed study programs for engineering creativity. Using the example of Hong Kong students, the article notes that they are especially interested in international assessments at competitions in natural sciences and mathematics. As a result of the survey of these students in a representative way, it was possible to thoroughly identify all their experiences and aspirations. It turned out that in this highly effective Asian society, the inhibitors of engineering learning at universities are similar to those identified in Western sociological studies.

Our reference to the above publications is an important prerequisite for attracting the primary attention of scientists to the methodological problems of studying the subject basis of future university specialists within the development of the region. Among other reasons and prerequisites for supporting this direction, the following phenomenon should also be noted. It consists in the prospect of joint participation of university scientists, students, engineering graduates and leading industry specialists in creative teams capable of independent developing their own scientific strategies and, on this basis, creating promising "start-ups". This qualitatively new subject basis, which is being formed in the relationship between the engineering university and the industrial structure of the region, turns into an important circumstance for understanding the complex integration events that occur in socio-economic and industrial life. These events are caused by profound transformations in modern science and technology, manifested in the change in the forms of collective work of scientists, interdisciplinary relations, as well as the ways of interaction of universities with society, government and entrepreneurship. The entire range of cognitive and social parameters of the subject not only of engineering and technological activity, but also of highly skilled labour of representatives of the entire socio-cultural sphere of the region has undergone qualitative changes. The modern period is considered as an era of innovative social development, effective participation in which concerns the transforming human activity, the result of which is a new quality of life, giving rise to competition at the level of ideology, economics and social transformations in society.

At Russian universities, the development of advanced methods and methods of close interaction between the graduating engineering departments and the corresponding industries of the region has recently intensified. But conceptual and methodological understanding of this innovation (in the aspect of its main interacting subjects) has not yet reached the required level. From foreign publications, which reflect the problem of interaction of higher educational institutions with industry subjects of different territories, we, for example, highlight the message (Telematics and Informatics, 2020). Its authors come to the conclusion that not only state research organizations, but also advanced groups of university graduates can be classified

as innovative groups that play an important role in the development of technological integration and regional innovation.

Thus, the subject of the research of our article includes the subjective basis of joint innovation activities of universities and developing industry structures of the region. It is the subject activity in the system of higher (engineering) education, regional industrial industry and collective research that turns into a key factor in understanding interdisciplinary and intersectoral events in the region with the participation of all universities in the region (including a university of a medical profile). It must be admitted that with the rise of the role of practical skills that a graduate of a university should have, the importance of the psychological aspect of a student's professional training increases. In this regard, we will pay further attention to this very aspect and its role in the development of the concept of " education quality ". In particular, for a medical university, methodological attention to the "psychological" aspects of the education quality is an important point in the process of improving education. The proper place for the application of socio-psychological methods is given, for example, in such an official document of a medical university as "Public Accreditation". (Its legal basis is defined in the Federal Law of December 29, 2012 No. 273-FZ "On Education in the Russian Federation." Article No. 96 of this law for the first time regulates the issues of professional and public accreditation).

From the point of view of domestic scientists, for example, I.O. Loginova, D.E. Vlasova and others (as cited in Bokhan et al., 2017), the concretization of the psychological aspect of the study of subject relations is expressed primarily in the projection of the category of "self-realization" on the subject of activity (that is, on the student) ... The idea of the theory of self-organization of personality, according to the authors of this monograph, becomes especially relevant within the framework of the post-nonclassical type of scientific thinking, based, in particular, on the principles of interdisciplinarity of scientific knowledge and synergetics. The rules of this type of thinking do not call for the abandonment of traditions accumulated in other spheres of human culture, in other types of rationality, but allow to "rediscover", rethink well-known images, symbols, and values of culture. Post-nonclassical psychology corresponds to this type of scientific rationality, which unites the sciences of nature and the sciences of the spirit, stimulating them to deep integration processes.

The concept of "human self-fulfillment", terminologically declared and formalized at the categorical level in the XX century, is today revealed in psychological research in such a way that its initial ontological foundations are available to modern scientists for their consistent and actual complication. We mean those characteristics of this concept that, from the standpoint of previous ideas, could not be discovered, understood or felt.

There is a unification of three "selves" at once within the framework of one new term in the process of self-knowledge. It should be noted that most of the authors' positions of domestic scientists "touch" the activity, existential side of a person's life in his direct connection with the outside world. S. L. Rubinshtein singled out self-fulfillment as one of two ways of life and opposed self-fulfillment as the realization of oneself, one's essence to existence. The life of an existing personality is determined by objective "logic", its trajectory is set by external structures: activity, relationships, etc. Developing this point of view, Abulkhanova and Berezina (2001) note that a self-fulfilling personality is aware of its temporary life sequences and simultaneity, which have both target and causal, and conditionally subjunctive ("if")

character, and builds a special temporal form - the strategy of life. In this case, the self-fulfilling person acts as the subject of his life path. It is not difficult to see, in our opinion, in the content of this important theoretical formula, a direct analogy with the specifics of those problematic realities with which a graduate of any university comes into direct contact.

By and large, the issues of innovative behavior and various manifestations of the innovative personality are related to life self-fulfillment as a specially built relationship of a person with the outside world, which actualizes the question of whether life is something that a person actively (self) realizes (according to the formula "I live"), or it is something that itself is realized in a person (according to the formula "I live"). As a means of implementing innovations, innovative behavior is a special value that allows you to set the framework for a new standard of life, contextually entering a broader problem field than the issues of socio-economic functioning of society.

## **7. Conclusion**

Summarizing in general the work we have done, we will formulate and point out the main conclusions, the results, representing the novelty and the relevance of this study.

Modern requirements for the quality of training university graduates urgently require university methodologists to fundamentally improve the theoretical level of relevant research. (and their reflection in training courses). In the context of these requirements, we formulated a conclusion about the need to change the methodological status of the concept of " education quality ". It presupposes the introduction of elements of philosophical (and not only general scientific) methodology into the general scientific content of this concept. This is a philosophical and methodological content, which is expressed in the observance of the following important principle by researchers. The development of the concept of " education quality " should adequately use the effective methodological resource of dialectical logic on the ratio of quantitative and qualitative changes in the process under study. In other words, the problem of the " education quality " should be posed and solved, firstly, in the aspect of the dynamics of modern education from one stage of its development to another, and secondly, in the aspect of the social essence of higher education in its closest interaction with the specifics of the industry environment and line of regional authority.

In order to effectively implement innovative methodological principles, we analyzed the subject characteristics in the relationship between the main centers of regional development - the university, the industry and the government. It is the subject basis in the system of relations between higher education, industrial industry and government that turns into the most important factor in understanding interdisciplinary and intersectoral events in the region with the participation of the university. Without this, it is impossible to correctly formulate such important concepts as, for example, the "mission of the university", "the concept of the university", "the strategy of education at the university", which determine the general directions in the process of training specialists.

The system of the latest social practices makes high demands on university graduates, largely determining the assessment of the degree of their readiness for practical mastering the profession. The specified system of the latest practices in the region is a complex unity of social diversification, social integration and social development. In this regard, in the process of researching the educational process, methodological innovations are required from university teachers not only in relation to the cognitive, but



also in relation to the socio-psychological aspects of students' mastering a profession. In connection with the currently sharply increased role of the practical skills of university graduates, the importance of the psychological aspect of a student's professional training has significantly increased. We paid special attention to this particular research aspect, briefly disclosed its role in the long-term development of the very concept of " higher education quality " .

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