

# Humanitarization of Technical Education: Challenges and Modern Approaches

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**Abstract** — The article is devoted to the analysis of the role of humanitarization of technical education in resolving issues of technogenic civilization. The relevance of this topic is based on the complexity and global nature of the problems that can be solved by the whole humanity or by each individual independently. Within the framework of technogenic civilization, many aspects of relations between society and nature, man and society, and the interactions of various human communities are particularly acute as issues of the survival of mankind. Of particular danger in the modern era is terrorism, the aggravating environmental situation, demographic, raw materials and other problems. The article proves that all that we call “humanitarization of education”, including personal orientation of education, mainstreaming of the values of human life, the use of personality potential, and culture centricity, can qualitatively change attitudes towards the world and people and provide an optimal solution to the problems of technogenic civilization. The presented study implements an integrated approach that allows us to use historical and cultural, and topic addressed methods to determine the factors, tasks directions and expected results of the humanitarization of education. The author analyzes the educational process of the famous Russian technical university, Moscow State University of Civil Engineering, as an example of the successful humanitarization of technical education. The humanitarian aspects of education at this university include: 1) the close relation between science and education, the persistent desire to provide on this basis effective research and educational activities aimed at improving the quality of educational services; 2) fundamental and applied social research on a wide range of priority areas for the development of science and technology; 3) historical, philosophical and cultural analysis of the problems of construction and architecture; 4) a highly effective system of education in the humanities for masters and qualified specialists; 5) training of students on the best traditions of education in the field of construction and the industry as a whole, etc. The culture-centric approach is defined as a modern approach to the humanitarization of technical education, which is associated with the search for the axiological foundations of modern education and the determination of its basic humanistic values.

**Keywords** — *humanitarization, education, technical education, personality, culture, construction.*

## I. INTRODUCTION

At present, the problem of the humanitarization of higher technical education requires a comprehensive review and study of its theoretical and practical aspects. At the same time, the process of humanitarization itself is associated with the

personal and professional transformation of future specialists, the development of their social and communication skills [1].

The scientific and disciplinary differentiation of education is connected with the historically established substantive and informative principles of structuring general and professional education [2]. In practice, this is often expressed in the higher status of professional and technical competencies and the reduction of humanistic educational tasks [3].

At the same time, along with disciplinary differentiation in the modern scientific and educational process, the processes of integration and creation of interdisciplinary areas are activated, including different subjects [4]. Such processes are accompanied by the search for certain general cultural foundations and new ways of scientific and social communication. The training of students, the formation of personal characteristics, readiness for self-improvement and interaction with other people, the development of environmental culture, and other tasks are also relevant [5]. Complicated problems of human – technology relations associated with the use of fundamentally new technologies (biotechnology, artificial intelligence, digital humanities, etc.) stimulate interest in the possibilities of education humanitarization [6]. The most acute problem of the humanitarization of education arises in the training of specialists for industries related to natural sciences and new technologies, in particular for the construction industry [7]. In the educational practice of a technical university, it can be expressed in a reasonable expansion of the sphere of humanitarian disciplines, updating their content, and improving educational standards [8].

## II. RESULTS AND DISCUSSION

Most researchers (teachers, psychologists, specialists in history or philosophy of education, etc.) come to the conclusion that education in a university cannot be determined only by the transfer of knowledge [9]. The formation of a personality culture and social communication skills are also included in the tasks of educational process and extracurricular activities at the university [10, 11]. The creation of a unified educational space in a university is based on many tasks and activities, such as determining the value foundations of the so-called corporate culture of the university, forming a high-quality educational work system, making a wide network of

student associations of various spheres (scientific, creative, sports, artistic, etc.) [12].

A model of the organization of educational work in a technical university should contribute to an active attitude of individuals not only to chosen majors, but also to social practice as a whole. The main goals of educating students in construction universities can be determined by the following interrelated areas: 1) professional and labor; 2) civil and patriotic; 3) cultural and moral [12]. These aspects correspond to the main tasks of the humanitarization of a technical university and are aimed at training a highly qualified specialist, active citizen, and patriot.

### III. CONCLUSION.

The modernization of Russian higher education has touched upon such an important problem as the place and role of the humanities in a technical university.

The main features of the humanitarian aspect of education at NRU MGSU are the following: 1) a close connection between science and education, an insistent desire to provide on this basis effective research and educational activities aimed at improving the quality of educational services; 2) conducting fundamental and applied research on a wide range of priority areas for the development of science and technology, understanding of modern problems of construction and architecture through the prism of history and philosophy; 3) the presence of a highly effective system of humanitarian training for masters and qualified specialists, support for the modernization of the educational and scientific base of the university, training on the best traditions of education in the field of construction and the industry as a whole; 4) participation in the preparation of programs of additional professional education and retraining of construction personnel [13].

In the Russian higher education, department has always been the main structural and system-forming unit that performs the following main functions: giving the relevant lecture courses and practical classes, checking and controlling the knowledge gained; organizing research work for students and graduate students under the scientific supervision of faculty; conducting socially educational work with students. At the same time, humanitarian departments have their own specific goals and objectives inherent in the specialization of construction university. A set of humanitarian disciplines in a construction university includes historical, philosophical, cultural, socio-political, psychological and legal education. Studying such historical disciplines as "History", "History of Russia", "History of world civilizations", students get a general idea of the essence and functions of historical knowledge, methods, forms and principles of studying history, get acquainted with the concepts of "historical source", "historiography", etc. During the training sessions, students learn to understand the place and role of Russian history as a part of the global historical process.

The philosophy courses taught at the undergraduate, graduate and postgraduate programs pay special attention to the interconnections of "man and society", "man and culture", "man and nature", as well as issues of history and

methodology of science and technology. The problems of civil society and state, a person in the system of social ties, the concepts of freedom and responsibility are becoming increasingly relevant and are of interest to young people.

For the cultural studies, the problems of contemporary cultural knowledge, the typology of cultures, the contradictions and functions of culture are usually examined. Particular attention is paid to the concept of spiritual culture, its revival in modern society, as well as the problems of cultural identity, the place and role of Russia in world culture.

Despite the substantial difference in the subjects studied by students, they are all interconnected, and teachers of humanities courses, both during the educational process and outside it, pay great attention to the social education of students. The above is characteristics of the activities of all humanitarian departments of technical universities.

The role of humanitarian research in a technical (construction) university can be demonstrated by taking the Department of History and Philosophy of NRU MGSU as an example. The following research areas have been formed at the department:

- innovative approaches to teaching the humanities at a technical (construction) university;
- traditions and innovations in the development of university education in general and technical universities in particular, taking into account the profile of a construction university;
- historical aspects and modern cultural features of urban planning and architecture;
- the philosophy of the city;
- the historical and cultural heritage of Russian cities and Moscow in particular. The problem of the safeguarding of cultural heritage.

The humanitarian component in technical universities in Russia is extremely multifaceted and creative today, based on modern universal values and domestic traditions [14]. A large-scale analysis of domestic traditions and modern approaches to the humanization of technical education is required [15].

In this context, it is also necessary to research the results of the interaction of humanitarian and technical knowledge, the peculiarities of their reflection in social practice and the development of culture, issues of the complexity and interdisciplinarity of modern knowledge.

### References

- [1] G.V. Ahmetzhanova, L.V. Aliyeva, and Yu.A. Livshits, "Humanitarian education in post-industrial society: experience of competence-based approach realization in university," International Conference on Education Environment for the Information Age, European Proceedings of Social and Behavioural Sciences, vol. 28, 2017, pp. 17-25
- [2] B.I. Pruzhinin, A.Yu. Antonovskiy, and A.M. Dorozhkin, "Communications in science: epistemological, socio-cultural and infrastructural aspects. materials of the round table," Voprosy filosofii, vol. 11, 2017, pp. 23-57.

- [3] A.A. Argamakova, "Socio-technical disciplines in scientific classifications," *Epistemology & philosophy of science*, vol. 55(1), pp. 48-51.
- [4] A.R. Masalimova, E.Y. Levina, and R.I. Platonova, "Cognitive simulation as integrated innovative technology in teaching of social and humanitarian disciplines," *Eurasia journal of mathematics science and technology education*, vol. 13(8), 2017, pp. 4915-4928.
- [5] David Reina-Rozo, Juan; Pena Reyes, Jose Ismael; Gaitan-Albarracin, Nicolas, "Ingenuity and society: a humanitarian engineering education experience in Colombia," *Global-Engineering-Deans-Council (GEDC) World Engineering Education Forum (WEEF)*, 2018.
- [6] Huayong Li, "Research methods for the digital humanities," *Digital scholarship in the humanities*, vol. 34(3), 2019, pp. 699-701.
- [7] G.M. Rogov and V.I. Korenev, "Higher architectural education in Tomsk: It's past and present," *KORUS 2000: 4th Korea-Russia international symposium on science and technology*, 2000, pp. 7-9.
- [8] O. Khatsrinova and V.G. Ivanov, "Psychology and pedagogical maintenance of formation of career competence of future engineers," *Teaching and learning in a digital world, VOL 1, Advances in Intelligent Systems and Computing*, vol. 715, 2018, pp. 287-292.
- [9] M.A. Makienko and A.N. Panamaroyva, "Modern education in humanities at technical university (the example of Tomsk Polytechnic University)," *INTED 2017: 11th International technology, education and development conference*, 2017, pp. 5034-5042.
- [10] Jon A. Leydens and Juan C. Lucena, "The problem of knowledge in incorporating humanitarian ethics in engineering education: Barriers and opportunities," *36th Annual Frontiers in Education (FIE 2006)*, *Frontiers in Education Conference*, 2006, p. 1287.
- [11] N.T. Burganova, "The components of leadership competences of technical university students," *2nd International Forum on Teacher Education (IFTE)*, 2016, pp. 19-25.
- [12] T.A. Molokova, "Humanitarization of technical education: domestic traditions and modern approaches," *Features of integration of humanitarian and technical knowledge: Collected reports of the All-Russian scientific conference (NRU MGSU)*, *Institute of Fundamental Education*, 2018, pp. 23-29.
- [13] Leanne M. Horinko, "Graduate Education and Humanities Crisis," *Canadian Review of American studies*, vol. 49(3), 2019, pp. 382-391.
- [14] T.A. Molokova, "Humanities component of construction education development (experience of the Department of History and Philosophy of NRU MGSU)," *Development of the fundamentals of science and education in construction, Abstracts of the XIV International Scientific and Practical Conference*, 2017, pp. 18-21.
- [15] D. Navratilova, "Environmental and ethical values within technological education at the universities," *International Multidisciplinary Scientific GeoConference-SGEM*, 2015, pp. 281-288.