

HUMANITARIAN EDUCATION IN RUSSIAN TECHNICAL UNIVERSITIES

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The Russian delegation is proud that the International Festival in Athens is taking place in the name of Sakharov, known world-wide, not only as a great scientist, but also as the most important public figure in Russia, a staunch fighter for democracy and human rights. A famous Russian writer and humanist, Dostoyevsky, said that "when education begins with technology, no Aristotles will appear. But when education begins with an Aristotle, great discoveries are made and expansion of thought emerges."

While the eighteenth century is known to history as the century of mechanics, the nineteenth, as the century of electricity, the twentieth, as the century of nuclear physics, the twenty-first will be the century of the human being. The greatest transformations in material, social, political and spiritual life are taking place on the eve of the new millennium. A spiritual and economic renaissance is being witnessed in Russia, which requires new efforts from education. Humanitarian education includes the reinforcement of the human basis, in the methods of teaching socio-economic disciplines, and the humanitarian component in teaching natural-scientific, professional and specialist disciplines. The creation of conducive atmospheres in universities is an integral part of education, which raises the intellectual potential in society and develops the human destiny to a higher level. High school can be compared to a building, the foundation of which is natural-scientific training; the walls, professional training; the roof, specialist training. The atmosphere within this building in which specialists are developed, is created by humanitarian education, the humanisation of the whole educational system.

The achievements of pre-Revolutionary Russia and Western experience can be utilised in higher education. High schools should train students in accordance with real conditions, and the rules of the market. It would be wrong to give students only the basics of humanitarian sciences, which might then become, for some, the "summit of knowledge." In this case, technical universities would produce ignorant specialists, who, although having only a vague idea of social development, would still find work as engineers and even ministers.

Universities exist to teach students in the spirit of devotion to the motherland, her people and nature. Russian thinker and writer of the 18th century, Radishchev, wrote that the true man and the son of the motherland are the same thing. It is necessary to educate students to be devoted to high ideals, patriotism, and to cherish the scientific and social achievements of their great compatriots. During the hard period in which Russians are now living, this would be a definite contribution to the creation of the character of future intellectuals. Teachers have to talk with students, visit their hostels, go to theatres and exhibitions or discuss books and films with them.

The reinforcement of the concept of humanitarian education coincides with a transition to multilevel education which corresponds to the standards of UNESCO. Thus the combination of professional training with the study of philosophy, sociology, politics, economics, history and law is becoming possible. Russian society needs socially active personalities, highly qualified and educated engineers, who can create the necessary psychological climate, manage large collectives, and simultaneously possess a high level of general cultural awareness. Humanitarian education has had its role to play, partly in the disorganisation of Russia which is now, so much spoken and written about. Not long ago, the teaching of some subjects was equated with preaching immorality because basic moral values, such as the sense of responsibility for people and for nature, were neglected.

Modern society realises the value of human relations. This process undoubtedly affects higher education, particularly in the teaching of chemistry. The problems of humanisation are especially urgent for the chemical industry, whose position in modern society is somewhat ambivalent. In order to define the area occupied by chemistry, we will need such far-from-chemical guidelines as honesty and conscience. Zackgame, a university professor, states that taking an immoral technical decision is stupid. Andrei Sakharov, one of the creators of Russian nuclear technology, never forgot the moral responsibility of the scientist and was vigorously opposed to nuclear weapons.

To review and reconstruct Russian society, without taking humanistic values into consideration, is certainly impossible. The humanisation of education consists, not only of including humanitarian disciplines in the curriculum, but also of humanising every type of education. "If my subject is chemistry," says Nechaev, a Russian chemist, "I must look into its human aspect, because typical problems of ecology and human health are connected with chemical developments which are not human-oriented."

The need for humanitarian knowledge is one of the aspects of the renovation of society. Humanitarian education can be seen as a means of counteracting the one-sided development of personality, the technocratic style of thinking; it is a means of solving contradictions between the two types of culture (technical and humanitarian), between education and training. Humanitarian sciences introduce the future technologist to the world of universal human values, to the world of moral values, where a future specialist will find the basic elements of high intellectual professional development. The huge imbalance between technical progress and moral values which has appeared during recent years has

negatively affected a whole generation. Humanitarian education is indispensable under modern conditions, when ideological stereotypes are being destroyed. The younger generation is looking for new ideals, an ecological crisis threatens, national problems are surfacing and when technocracy is still alive. It is good, that in Russia, so much attention is being paid to humanitarian education. At the same time, there are apprehensions that this attention may turn into a typical campaign. Though it is difficult to admit, educating those who must lead Russia out of the crisis is the question at issue.

Historical experience shows that the need for humanitarian education arises when a person comes across creative problems. Any student could deal with a single, particular problem, but unfortunately Russia is short of specialists who could analyse the results of their experiments, who could follow the technological chain as a whole, and who could predict the results of their activities. To make a student into a chemist possessing all these qualities, that student must first of all be made humanitarian, and only then will the method of approaching problems systematically be mastered. Berdyaev, Russian philosopher of the first half of this century, believed that "creative work is the highest mission of a person." It involves particular psychological processes, such as imaginative ways of thinking and intuition, which include not only thorough professional knowledge but also a developed sense of fantasy, a rich imagination and associative-thinking capacities. These qualities are necessary for the chemist, because the main method of thinking in chemistry is one of logic and images. It is obvious that a technologist needs general culture, but it is difficult to touch a student's heart with this simple truth. A Russian philosopher at the beginning of the century, Florensky, said that "culture is necessary to nurture and foster the personality." Culture is a life-enhancing environment. The student must be introduced to different kinds of cultural layers, to be able to cultivate in himself or herself, a sensitivity to different processes and forms of culture, including at the international level.

Culture and education can be compared to a steering wheel, which should be held tight. If it is not, the development of Russia will be uncontrolled. The perfecting of a human being is achieved through culture and education. Unfortunately in Russia, education existed for a long time divorced from moral values. The current deficit in terms of culture, the graduates' intellectual level, is the most urgent problem. The concept of the humanisation of higher education is being disseminated through the chairs of humanitarian knowledge. Such chairs have been set up in many Russian universities. In the Mendeleev Chemical Technological University, although the Chair of Humanitarian Knowledge was established in 1990, the first positive results can be discussed, and shortcomings analysed.

The task of this chair is to promote cultural values, in order to raise the level of education of graduates. Different kinds of approaches are used: lectures, conferences, round table discussions, meetings with specialists, visits to museums, exhibitions, concerts, the theatre and slide shows. Professors and specialists from other universities often extend their collaboration. In some cases students manage the teaching process themselves, preparing the lectures and writing essays.

Humanitarian education presupposes the extension of individual and independent work by students. Clearly it would be desirable to have a concept of engineering humanitarian education for technologists developed by UNESCO. This would be very important, because the University works under the aegis of UNESCO and this gives the opportunity to invite professors from other countries.

The University stands wholeheartedly for humanitarian education. In this connection, the union of philosophy and the natural sciences, as the humanitarian aspects penetrate the context of technical sciences. All areas should have a humanitarian bias, which would help to form a critical way of thinking, breaking the traditions of this branch of knowledge. It is time it was understood that, for a modern technologist, humanitarian education is not a luxury but a professional necessity. The task is to do everything possible so that graduates become really intelligent technologists, with wide horizons and a high level of professional and general culture.

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