

## THE POLICY OF DEVELOPING SOCIO-HUMANITARIAN KNOWLEDGE IN THE SYSTEM OF HIGHER SCHOOL

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**Abstract:** The transition of Russian society from the industrial to the post-industrial one has resulted in the views on the contemporary system of education getting transformed. The objective of this empirical study was to find out students' attitude to social and humanitarian subjects, to identify any difficulties in learning them and prospects of rendering technical education more related to the humanities. The paper details the content of the socio-humanitarian knowledge concept, its components, and the specific features of basic social and humanitarian subjects. Meanwhile, studying the subjects promotes fashioning the worldview constituent of personality in higher school students, as well as their relevant competencies. Analysis of theoretical and methodological aspects of the problem under study is represented by the range of diverse viewpoints on the importance of socio-humanitarian knowledge.

**Keywords:** system of education, humanization, socio-humanitarian knowledge, academic motivation, educational process.

### 1 Introduction

With the upgrade process being underway for the Russian system of education, the Russian society undergoes its transition from the industrial to the post-industrial one. So, fashioning students' competencies solely with study subjects of their principal professional educational program is challenging enough (Akvazba et al., 2017, p. 62).

It is important to bear in mind that in the contemporary society, the role of the information environment incorporating the entire total of various information sources is increasing. It is the states which are creating and developing their information industry the most extensively that become the most successful in transformations and economic growth. This is what determines the new development stage of such countries which got termed the "information society" owing to the up-to-date society inherent in them (Chelysheva, 2013, p. 12).

In its turn, this system can produce scientific information while building an environment for communication networks and information technologies to freely develop in. Thus, it provokes the society to create the united information space (Akvazba et al., 2018, p. 396). In this situation, scientists speak about a new intellectual technology forming. Meanwhile, the accessibility of information is not the same for each subject, which generates the information inequality (Akvazba et al., 2019a, p. 310). Education is exactly the subject which can respond to challenges of the contemporary society and contribute to leveling out the information inequality (Hofman-Bergholm, 2018, p. 19). At present, the specialists' professional preparation level is to a greater extent determined by the volume of knowledge and skills that are essential for presenting any information in a technically correct way (Fedotova & Sulenko, 2008, p. 45).

Currently, the official scientific and technical policy of the RF does not give precedence to socio-humanitarian sciences (Yurevich, 2004, p. 3). However, one cannot underestimate the contribution of humanitarian and sociocultural subjects into the development of culture and worldview in students majoring in engineering and technology (Baranova, 2012, p. 131). In its most general form, human development can be defined as both the process and the result of people's socialization, i.e., their learning and reproducing cultural values and social standards, as well as self-development and self-fulfillment in the society they live in. This is exactly what the unit of social and humanitarian subjects ensures (Mudrik, 2013, p. 113).

In the modern global economy, a positive result depends on initiative, competencies, and the professional training level. When having the freedom to act, it is critical for one to know how one can use this freedom in an ethically correct way, adhering to the accepted standards of business relationships (Saat et al., 2012, p. 269).

### 2 Literature Review

The processes taking place in the system of education give evidence about the transformation of the system of higher education; its essence is to train students in field-specific professional qualification areas. Meanwhile, the system of higher education has always been oriented to training highly-skilled graduates who can adapt in the changing world quickly, who possesses a broad outlook and fundamental knowledge (Mamalyga et al., 2015, p. 218).

As M. V. Gabdulhakova (2019) writes in her research: "For functioning in his daily life, academic and professional activity successfully, man, as a subject of his own life, has to adapt not only to the uncertain daily life conditions, but also to the nature of his activities in general (in particular, to the academic activity at higher educational institutions)" (p. 45). The fact is doubtless that in conditions of persisting globalization processes, on the one hand, deglobalization trends manifest themselves in the sphere of production, trade, scientific and cultural cooperation quite distinctly, on the other hand (Globalization 2.0, 2017, p. 27).

Higher educational institution graduates have to possess competencies incorporating the knowledge of the essence of these processes, an ability to analyze them, make relevant conclusions from the standpoints of the civic spirit and patriotism, and know the practices of their reference and regulation in small and large collectives (Lapuzina et al., 2018, p. 110). Proceeding from the said standpoints, the knowledge of political and social studies becomes as relevant for education as ever.

The authors agree with the opinion of T. A. Novolodskaya and V. N. Sadovnikov (2008, p. 32) who note that interaction of natural sciences and humanities gains more and more weight in the forum of knowledge. Such standpoint is supported by many scientists of higher school, because "engineers perceiving nothing but technical ideas can only replicate the equipment, but they are unable to create anything entirely new, significant" (Vasiliev et al., 2002, p. 24).

Socio-humanitarian sciences play an important part in the development of the society and maintenance of its ideology. The founder of social studies, A. Comte (Davydov, 2008, p. 17) believed that "The society not knowing how it functions is doomed to crises and inhibition of the technical advance. In fact, the expedient intensification cannot be performed in the society without knowing the essential characteristics and laws ensuring its life activity as an integral organism" (Valeeva & Gafurov, 2017, p. 342).

The morals of the society is another important factor the formation of which is ensured exactly by socio-humanitarian sciences (Song et al., 2010, p. 175). Predisposition to studying certain subjects is considered to depend on particularities of thinking. At present, it is common to speak about a special type of engineering thinking. However, the obvious fact cannot be denied, either, that in training of the future engineers, the humanitarian constituent is of the decisive importance. Then again, just like it is in the upbringing of people and citizens as such (Shamalo, 2015, p. 24).

Psychological particularities and the type of thinking have to be referred to some of the important difficulties in cultivating socio-

humanitarian knowledge in technical degree students (Akvazba et al., 2019b, p. 115).

When trying to learn the new information, students of engineering programs do not limit themselves to the formal coincidence of several significant attributes and properties. They start verifying the coincidences according to the secondary attributes, too, and it is only after this in-depth analysis that they make conclusions, remember the information and learn the material under study (Mankova, 2015, p. 119).

Absorbing information requires the developed memory, while acquiring knowledge requires the ability to work with information and mastering the information processing methods, which is especially relevant for the modern higher school (Ermolaeva, 2011, p. 66).

At higher school, the traditional form of developing competencies is lecturing. Scientific knowledge is a rather complicated phenomenon, with the non-formalizable constituent playing an immense role in it. So, M. Polanyi put forward the "tacit knowledge" concept, and based on his research, such well-known educational tools as the "organizational learning" concept of I. Nonaka – H. Takeuchi and I. Tuomi's concept of "corporate knowledge" have been developed. The "tacit knowledge" is the element of the educational process which renders information to knowledge, and lectures are the direct tool of this process (Nazmi, 2018, p. 42).

During lectures, the information obtained is comprehended individually, learners mobilize their internal comprehension resources, but they do it under the teachers' supervision (Škerienė & Augustinienė, 2018, p. 5).

Having become "joint parties" to lectures, the students acquire knowledge and change themselves in reality (Lukyanenko, 2018, p. 58). They develop the entire range of general cultural, general professional, and special professional competencies they need for the successful professional activity.

### 3 Research Methodological Framework

As evidenced by the results of sociological research works (Baranova, 2012, p. 131), the interest in taking up humanities decreases in students of technical specialties, because they perceive these subjects as the additional, completely non-compulsory load which is not important for their further professional establishment. It is in technical sciences, so-called STEM and practice-oriented ones, that the students see practical meaning and significance. Having studied sociological research on the problem range under analysis, in particular, the works by E. V. Baranova (2012), A. V. Yurevich (2004, p. 13); T. A. Novolodskaya, T. N. Sadovnikov (2008, p. 11), the authors conducted the questionnaire survey of students majoring in engineering and technology.

The objective of this empirical study was to identify the students' attitude to social and humanitarian subjects, find out difficulties in mastering thereof and prospects of humanitarization of technical education.

The principal research tasks set by the team of authors are as follows: studying theoretical and methodological approaches to the problem of cultivating socio-humanitarian knowledge in conditions of technical higher educational institutions; describing the principal ways for humanitarization of engineering education; conducting the research aimed at identifying the list of preferred humanities and academic motivation tools.

The experimental study implied diagnosing the students' level of perception of social and humanitarian subjects and readiness for learning them.

The base for exploring the way the process of fashioning socio-humanitarian knowledge in engineering degree students by means of pedagogical discourse is organized was Industrial

University of Tyumen – one of the basic technical higher educational institutions located within Tyumen region. The control group was represented by students of different sexes (40% – female students, 60% – male students) aged 17 to 20 and having entered the university in 2018. The total sample consisted of 142 students who had social studies and political studies on their curriculum, alongside philosophy, history, and legal studies. The group consisted of students training in programs "Business informatics" (43 people), "Electrical equipment and power generation" (21 people), "Safety of technical processes" (26 people), "Automation of technical processes" (16 people), "The technology of transportation processes" (22 people), "Construction of the unique buildings and facilities" (14 people). The survey was conducted in autumn 2019.

The object of the authors' researcher attention is the process of cultivating socio-humanitarian knowledge in the students majoring in engineering and technology. Its subject is the organization conditions of this process, with specific features of the above educational institution and its orientation to searching for efficient knowledge acquisition tools taken into account.

When compiling the questionnaire form for the survey, the authors took into account three following aspects: the students' preferences in choosing social and humanitarian subjects for learning; substantiation of their preferred choices (reason and academic motivation for studying them); and the role of the covered subjects in developing the students' personal interests and their professional establishment.

### 4 Results and Discussion

The authors of the paper conducted a survey for finding out the opinion of students getting their education in engineering specialties as for the expedience of teaching the socio-humanitarian cycle subjects and compiling the list thereof. The students' opinion on the requirements of competencies developed by the said subjects in engineers' practical activity and graduates' social life was surveyed, too.

In the paper, the results of studying the opinion of students of technical higher educational institutions are given.

It is taken into account that the students have the socio-humanitarian cycle subjects on the curriculum of their first year. Regrettably, at this age period, the students are not yet able to organize their educational process efficiently: to distribute time correctly, to prioritize, and to adapt to the system of education which differs from the school one and which is new for them. This is why the quantity of in-class work hours is very important, as it can affect the level of humanitarian knowledge essentially. However, at engineering higher educational institutions, the volume of in-class work in social and humanitarian subjects is minimal.

The data of the survey have shown that the following social and humanitarian subjects are the most preferable for the students of engineering programs: legal studies (80,5% of choices), social studies (76,3% of choices), psychology (74,1% of choices), philosophy (60,3% of choices), and political studies (55,3%).

Meanwhile, the male students prefer political studies, legal studies, social studies, and philosophy to a greater extent, while the female students – psychology and legal studies.

In most cases, the first year students opted for learning legal studies and psychology, the second year ones – for social studies, psychology, and political studies, while the third year students – for philosophy, psychology, and political studies.

The fact draws attention to itself that 80,2% of the respondents consider having social studies to be very useful for their personal and professional development, with 76,5% of the students noting that social studies has had a positive influence on them in building up their civic stance. As a result of studying socio-humanitarian sciences, 75,9% of the learners have started to be

interested in the current events in their region, country, and the world.

As a result of the study, the students' preferences have been identified as for the expedience of teaching the socio-humanitarian cycle subjects. The list thereof has been compiled up to the requirements of competencies developed by the said subjects in engineers' practical activity and graduates' social life. Engineering and technical focus areas of training are known to be chosen by the applicants who have the synthetic or analytical mode of thinking, and, as a rule, no special interest in humanities.

Nevertheless, the authors of the paper believe teaching of social and humanitarian subjects has to be expanded both in the list and in the quantity of hours.

There is no doubt that the possession by graduates majoring in engineering and technology the full-fledged humanitarian and social competencies will contribute to the successful interaction with their peers in the professional sphere, career advance, and the comprehensive development of personality.

First of all, this involves keeping the socio-humanitarian constituent in the content of higher education at engineering and technical training programs, because it is an important condition of the students' successful adaptation to social changes of their life activity, given the contemporary educational space. It is essential for their future professional activities, too, most notably, for those related to communication.

The socio-humanitarian cycle subjects ensure the link between theoretical, methodological, and practical aspects of the process of learning, as they demand updating the syncretic thinking and using the interdisciplinary relationships.

The knowledge accumulation process in the field of social and humanitarian sciences goes on; however, this information becomes known to a narrow circle of specialists only. On the one hand, this is fairly logical and natural. Meanwhile, for example, it hinders the process of developing students' legal or political culture, which on top of that depletes the pedagogical discourse of higher school.

At present, it is considered that humanitarization of engineering education can be achieved through teaching a number of subjects, in particular, philosophy, history, cultural studies, social and political studies, legal studies, psychology, pedagogy, etc. It is difficult to choose some especial priority ones from the listed subjects. Anyway, reducing the quantity of general cultural and general professional competencies, uniting them, has cut down the diversity of socio-humanitarian subjects. These factors also resulted in the smaller quantity of in-class hours for teaching the said subjects allotted by the curricula of engineering and technical focus areas of training.

## 5 Conclusion

The efficiency of the socio-humanitarian constituent in engineering education can be ensured by its continuous nature and by integrating the social and economic, social and psychological, communicative components of the general education content (the subjects providing for general cultural and general professional competencies) with professional subjects. Meanwhile, these subjects have to be integrated at the levels of convergence (synchronization), interaction and interference (synthesis). The said efficiency can also be ensured by organizing social practice for students, during which their social experience is reproduced and their communicative component is enriched.

For making it easier for students majoring in engineering and technology to perceive the learning material, presenting it as diagrams can be helpful, with text fragments gradually introduced into the lecture material after that.

So, it is better to word the assignments of the practical part of both in-class and independent work and suggest them for completing in the format of tables, figures, and diagrams. This will enable the students to more efficiently acquire the learning material and develop the required socio-humanitarian competencies.

Among positive factors helping enrich subjective social experience in the higher school students, there is organization of their emotional experience of social situations which are important and close for them. Some other positive factors are the extent of their participation in solving relevant social and political problems, their awareness of the scale and social importance of these problems, and subjectness of their stance in socially oriented practice. Similarly, the students' activity content has to be saturated with questions of the socio-humanitarian domain solved using their up-to-date engineering (technical) thinking as necessary.

Successful professional development of the students, especially of the junior year ones, depends on their teachers' taking into account the specific features of individual particularities of their adaptation to the changing conditions of life. At present, technical complexity of production means is increasing continuously, which requires particular attention to engineers' professional intellectual qualities, as well as to their creative abilities and broad thinking. These cannot be developed with special subjects only, editing socio-humanitarian knowledge out.

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