

Thus, active learning methods and contextual education are proved to contribute to professional identity development. Students become aware of the importance of education and regard it

as one of the stage of a long professional path. Understanding the importance of future job would definitely contribute to increasing job performance.

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## Synergy in Interdisciplinary Teaching of Humanities

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The paper deals with synergy effect resulted from interdisciplinary teaching of humanities. The author identifies homogeneous and heterogeneous synergies and pays particular attention to interdisciplinary aspect of the humanities. The analysis of interaction between moral and legal components of the education process in high school reveals that the synergy effect has a profound social and cultural context connected with the development of personality of a certain type.

**Key words:** synergy, interdisciplinarity, education, personality formation, humanities.

The notion of “synergy” was first introduced in philosophy by Aristotle, when he was speculating on entelechy, and then used to denote one of the fundamental methodological principle of science. According to Aristotle, “the whole is greater than the sum of its parts”, since the whole results from synergy, which implies the benefit through cooperation.

There a lot of examples of combined effect of cooperation in everyday life, and educational process is not an exception: the educational forms and approaches are numerous and synergetic. Here we mean such approaches as multi-pronged, systemic, integrative, interdisciplinary – all based on interaction between different disciplines. These approaches implemented in education lead to synergetic effect, which implies not only an increase in the amount of knowledge, but also the knowledge of a particular quality. This effect is of particular interest when teaching humanities.

In compliance with W. Windelband’s classification, all science can be split into nomothetic and ideographic, therefore, interdisciplinary links can be of two types – the links resulting in homogeneous synergy and those leading to heterogeneous synergy. Heterogeneous synergy results from interaction between humanities and natural science. It should be emphasized that until the end of the 90-s Soviet engineering education enjoyed pride of place worldwide. The reason for this

leadership was a humanities component in the system of higher technical education, which ensured educating highly-qualified graduates. Humanities not only contribute to forming a worldview and developing versatile personality, but also facilitate many intellectual processes – imagination, abstracting, logical thinking, abstract modeling – as well as develop scientific thinking and analytical skills. The interconnection between humanities and sciences within higher technical education in Soviet time resulted in a strong synergetic effect called “Soviet engineering education”.

Homogeneous synergy is the result of interdisciplinary correlation between humanities united by the mutual system of beliefs and ideas, which multiplies the intellectual impact on personality development. In this regard, it is of particular interest to consider synergetic effect caused by moral and legal components within the educational process.

Today, one of the main objectives of national higher education is to develop a moral personality with ethical principles and highly developed legal culture. These objectives achieved, the higher education system is considered an adequate instrument of socialization.

In terms of a particular historical, social and cultural situation, personality development is complex, controversial, and multi-phase process, which includes



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various social subdivisions more or less contributive for nurturing personal characteristics. One of the social institutes inseparably connected with “inculturation” is the system of higher education with its educational facilities, powerful information resources, highly-qualified academic staff, and reliable scientific and methodological support for personality development. Currently, there is an urgent issue of the dependence between the effectiveness of social changes and the adequacy of education system. The pace and intensity of social changes undoubtedly depend on individual’s morals and legal culture, personal maturity, professional competencies, and civil responsibilities, as well as an ability to orient oneself in ideologically diverse social environment resulting from democratization of Russian society. Today’s higher education focuses on forming, (or “producing”) a personality with social qualities in demand.

In this regard, the investigation into synergetic effect caused by philosophical and juridical disciplines overlapping is particularly interesting since these disciplines aim to develop a personality able to cope with current historic, social, and cultural tasks.

It should be noted that there is a profound theoretical and methodological basis for philosophical and juridical disciplines overlap, which can be explained in terms of social and philosophic analysis. Dialectic interconnection between morals and law, which are historical components of social structure, is of genetic type. The morals, as a form of social consciousness, is the predecessor of law and basis for legal regularities for social relations, which are institutionalized and controlled by government. To explain dialectic interconnection between moral and law, K. Marx suggested a clear definition as follows: “law is legislated morality”. The interrelation between morals and regulations is due to similar structure and functions. Congruency of morals and law structures implies that there are three levels as follows: a) moral and legal awareness

comprising a wide range of components (knowledge, norms, principles, estimations, ideals, beliefs, etc.), which together form personality’s worldview and civil responsibilities; b) moral and legal activities performed by the personality with particular morals and civil responsibilities; c) ethical and juridical relationships formed and changing due to socially significant activities performed. The philosophical belief that morals and law, as two major estimative and regulative civil mechanisms, are inseparably connected, is a theoretical and methodological basis for interdisciplinary links between ethical and juridical knowledge, which can be effectively implemented into the system of higher education.

However, today’s higher education system lacks opportunities to reach the objective of developing a personality with ethical principles and highly developed legal culture. Higher education school is currently under the influence of government institutions and civil organizations, which set its objectives, determine the development strategy, and involve it in different national processes. In term of the efficiency of higher education system, the effects are ambiguous.

It is necessary to point out the factors reducing synergetic effect within higher education system, which is supposed to ensure interdisciplinary links between ethical and juridical knowledge acquired by the youth.

The synergetic effect is significantly reduced by the **deficit of knowledge of humanities**. Currently, there is a great demand for sciences in manufacturing sector, which boosts the development of many fundamental and applied sciences. Theoretical frameworks of many disciplines are updated every five years. This results in challenges in the system of higher education and professional training of highly qualified specialists. The system of today’s higher education implies not only limited amount of scientific and theoretical knowledge (in other words, effective knowledge selection), but also ideological perspective

and a particular worldview. Technical and engineering universities curricula include numerous disciplines of natural sciences and engineering cycles, which inevitable leads to the deficit of humanities.

In the course of civil society development, the categories of human rights, freedom, and justice are becoming more and more valuable, and as a result, law as a discipline within the higher education programs is gaining importance. Although there are some achievements (for instance, “Fundamentals of Law” is among compulsory subjects within higher education programs at all departments and universities), the situation with teaching humanities in general, and at engineering universities, in particular, is far from being satisfactory. For example, the discipline “Fundamentals of Philosophy”, which is principle to shape an adequate worldview, is reduced in the number of hours, becomes elective and can be taught only as an introductory course. Other humanities, such as “Culture Studies”, “History of World Art”, “Religion Studies”, “Fundamentals of Cultural Behaviour”, are only optional courses, while “Fundamentals of Ethics” and “Esthetics” fail to be included into education programs of engineering universities at all.

The experts believe that the deficit of humanities has negative impact on personality development, worldview formation, and ethical maturity [1, 2]. There is no exaggeration to say that the deficit of humanities eventually leads to moral inferiority, ethical poverty, and ignorance.

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## Moral Education of Students in the Framework of Humanities Provided By High Engineering School

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The paper discusses the results of the study devoted to moral education of students in the framework of humanities provided by high engineering school. The aim and content of humanities in terms of moral education has been identified. The issues specific to interdisciplinary relationships in the framework of humanities provided for engineering students are studied. Educational potential of humanities for development of student moral qualities is defined. The paper also provides a brief review of the theoretical model of moral education of engineering students, which incorporate teaching of humanities in higher technical school.

**Key words:** moral education, student's personality, educational environment of higher engineering school, educational potential of humanities, interdisciplinary relationships.

Relevance of research of a student moral education problem in higher engineering school is caused by modern sociocultural, economic conditions of society evolution, development of new values, strengthening of attention to culture, spiritual and moral bases of education.

The analysis of scientific works has shown that issues of student's moral education, in particular, in higher engineering school were always topical, at each temporary stage; there were the problems and ways of their solution. Now these issues are acute, as before.

The educational environment of higher engineering school provides great opportunities for moral development of student identity, including different types, forms, and principles of educational activity, aimed at individual development of every student, satisfaction of his/her informative, social, emotional, and other needs.

Moral education of students in the system of teaching humanities disciplines takes a certain specific place in personal, civil and professional development of an individual. Meanwhile, the ways and methods of

this problem solution are insufficiently reflected in scientific researches. Attention of teachers mainly to educational process, insufficient educational focus on forming student professional and moral personal qualities, needs, scientific outlook, ethical standards, and commonly accepted rules of conduct in society make a problem of moral development of student identity in technical college in the system of teaching humanities disciplines especially topical. Need for development of effective model of educational activities based on interdisciplinary communication which would provide training harmoniously developed, morally oriented specialists, has increased.

The research objective is development and theoretical justification of student moral education model in higher engineering school in the system of teaching humanities disciplines. A methodological and theoretical basis of research is: the theory of morals (A.A. Guseynov, S.F. Anisimov, A.I. Titarenko, etc.); main ideas of the theory of moral education and development (E.V. Bondarevskaya, I.S. Maryenko, I.F. Kharlamov, etc.);

humanistic approach (Sh.A. Amonashvili, R.A. Valeeva, G.B. Kornetov, etc.), axiological approach (T.B. Sergeev, L.K. Ivanova, I.A. Lipskii, etc.), synergetic approach (V.I. Arshinov, N.G. Savicheva, V.V. Gorshkova, etc.), ideas of personal activity (B.G. Ananyev, V.V. Serikov, A.N. Leontyev, etc.), polysubject approaches (dialogical) (G.S. Trofimova, M.M. Bakhtin, V.S. Bibler); theory of the personality (A.G. Asmolov, B. S. Bratus, A.A. Bodalev, etc.), the theory of mental development of the personality in ontogenesis (L.S. Vygotsky, D.B. Elkonin, L.I. Bozovic, D.I. Feldstein, etc.); the studies devoted to modeling educational processes (V.P. Bepalko, N.M. Borytko, V.V. Krayevsky, V.M. Monakhov, V.V. Serikov, etc.); issues of the theory and practice of educational process organization in technical college (A.M. Novikov, V.I. Baydenko, P.N. Osipov, etc.); the studies devoted to educational potential analysis of subject, training process (G.G. Gabdullin, L.A. Volovich, I.E. Yarmakeev, etc.).

Content and target aspect of student moral education is considered in the course of general education as special, indissoluble unity of processes of forming their professional outlook, system of value and moral culture which are subsystems of complete process of forming a future specialist's professional competence.

Therefore, study of such aspects of moral education of students in the system of teaching humanities disciplines as development of a future specialist's complete moral and professional picture of the world, his/her acquaintance with professional and universal values of humanistic and humanities character, his involvement into general and professional competence development in their internal unity is seen as the most productive from the view point of research problems.

The specificity of humanities subjects in moral development of student identity from the perspective of modern educational paradigm is that they cannot be understood by notions of values. Not explanation, but

understanding of emotional experience, thoughts, and acts of a person, moral assessment of his activity has priority value for humanities education. "Essential learning criterion in this case is the sense, relation which are developed through dialogue, internal polemic with other subjects – the teacher, other learners, authors of the ideas, concepts, works forming the content of education. There is a valuable attitude towards the studied object on the forefront..." [12, p. 45]. Thus, there is a reflection of his/her own status, mental playing out situations and roles, knowledge through experience. All these directly address humanities subjects, reflecting the regularities of personally mediated, deeply creative in its character professional activity.

Use of interdisciplinary relationships in the system of training in humanities for specialists contributes to development of a student's world outlook and personal position including awareness of the professional public significance, conviction in the professional choice, development of the principles and humanistic values focused on social and professional activity, has a favorable opportunity to be combined harmoniously with development of its behavioral aspect.

In particular, the content of the discipline "Pedagogical anthropology" provides deep and close methodological and world outlook interrelations with philosophy, sociology, cultural science, ethics, psychology, and other disciplines of common cultural and professional training of the specialist. Only by learning these interrelations the single and complete scientific and philosophical, figurative and emotional picture of the world, moral and ethical outlook of the students may be formed. Integrating modern ideas of a human being, his development and education in space, time and culture, the most productive modern pedagogical ideology, strategy and technologies of education, this discipline has extensive, versatile opportunities of education of the