

## PROFESSIONAL COMMUNICATION AS AN INTEGRAL PART OF ENGINEERING TRAINING

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**Abstract:** *The research is devoted to the issue on readiness formation of the future engineers for professional communication. Defined the theoretical base of the readiness formation of the future engineers for professional communication; the base concepts of the research are analyzed; shown the development trends of the higher technical education in Ukraine and abroad; the peculiarities and problems of the future engineers professional training, determined the main approaches for the formation of the professional communication in Ukrainian pedagogics. On the basis of the pedagogical literature analysis the main concepts of the research are grounded. The following basic concepts are determined: professional communication, readiness formation of the future engineers for the professional communication, integrative professional knowledge, integrative professional skills, integrative professional abilities.*

**Key words:** *communication, professional, an engineer, a future specialist, the integration tendencies.*

Integrative processes of the society development greatly influence upon the higher school functioning, strengthen the globalization tendencies, links among economical, political spheres of human being. The new quality of education and future specialist professional training is very closely connected with the integrated knowledge formation on the basis of the inter discipline linkage of the liberal natural and technical cycles of disciplines and their practical usage in the future professional performance of an engineer.

So, the necessity of the higher education movement to the new development stage is combined with the professional training transformations taking into account the integration tendencies which are considered to be the main trend of the technical education.

The modern market demands a wide range of professional competence formation in the process of engineering training.

In this context we can observe the appearance of the problem of the readiness formation for the professional communication.

The problem under discussion hasn't been investigated yet by our scholars and scientists. There is also a range of questions, which haven't been studied. They come as follows: the theoretical base of the readiness formation of the future engineers for professional communication, the main approaches for the formation of the professional communication from the methodological viewpoint; the concept linkage among the humanities, technical and special cycles of the disciplines in the higher technical school, readiness formation model of the students of technical specialties for professional communication, its criterion, indicators and levels.

The integrative approach is considered to be the main methodological one for the engineer professional training. Grounded that on the basis of this approach there is a concept unity among liberal, technical and special disciplines taught in the higher technical establishment.

Professional communication as an integral part of the engineer professional training is investigated from the viewpoint of the future specialist personality formation to be unique and individual. It is a practical realization of the language behavior of a future engineer development on his/her ability to deal with the wide range of the professional situations, the skills, to classify the communication participants with the orientation upon their conversational topics, themes, aims and tasks.

Professional communication is the form of the social and professional speaking with

the personal meaning for every participant of the communication act, taking part in the natural and production environmental circumstances.

In this article we deal with the readiness formation for the professional communication. This notion is determined as a complex social-psychological formation closely tied with the professional training of a future engineer and depicts the level formation of his/her integrative knowledge, skills and abilities, practical capabilities to fulfill the professional-communicative performance on the basis of the integrative approach for the higher technical education. This kind of readiness is connected with the inner state changes in the future engineer personality, aimed at the formation and development of the professionally important qualities. The components of the readiness formation for professional training are as follows: integrative-cognitive (linguistics, social-cultural and professional communication competence), motivational (formation of the socially important motives complex, arising interest for the integrative liberal knowledge aimed upon professional performance), personal (formation of the integrative professional qualities), integrative-operational (aimed at the skill perfection necessary for the integrative knowledge, skills and abilities usage in the professional spheres).

Integrative professional skills are substantiated as the necessary level of the linguistic competence formation (the obtaining level of the language knowledge, skills and ability) and professional competence (the level formation of the special knowledge, skills and abilities). On the basis of this linkage a student can fulfill analysis, planning, and organization of his/her learning-cognitive performance under the teacher leadership in the chosen speciality frame.

Integrative communicative knowledge is determined as the integrated structured liberal knowledge of the professional direction, being used with the aim of the successful solution of the communicative tasks in the production spheres.

As far as the integrative communicative abilities are concerned, they are classified as the automatic actions helping with the quick usage of the professionally aimed liberal knowledge in the professional communication field.

The integrative approach for the readiness formation for professional communication of a future engineer is clarified as the linkage establishment among the early independent subjects, processes and objects. The liberal and technical discipline integration is the integrative formation process accompanying with the substantial changes in the early isolated elements. The concept content of liberal education integration determines the unity of the content and process parts of teaching-learning sides and makes characteristics of the professional communication content system at every level formation.

According to the modern tendencies in the higher technical education it is very important to elaborate the practical approaches for the reformation and modernization of this process. We must pay our attention to the humanization of the higher technical education, informatization trends formation of the special professionally-oriented learning environment. All these means are aimed at the upbringing of a future technical specialist.

The specialist of the technical field must be not only a qualified engineer but also a person with the high cultural level development, with the field preparation of the wide specialization, eager for obtaining deep knowledge.

The higher technical school must be a cultural centre of the engineering training. It can be reached with the help of the real liberal environmental formation, influencing the personal development of a future engineer with the sound understanding of his/her aims and performance sense.

The main goal and dedication of the higher technical school is a specialist understanding of his/her place in the world and realizing the means of linkage with it.

It is in this connection the learning-teaching educational process in the higher technical

establishment must coincide with the historical, integrative, methodological, social criterion. A student must obtain not only professional knowledge but also understand its integrative character.

On the basis of the literature analysis we've singled out the following methodological approaches for the professional communication of the future specialist in the field of engineering. It comes as follows: integrative, historical-genetical, performative, professional-performative, systematic, problematic, structural, competence, synergetic.

The main approach we deal with is an integrative one allowing to determine the place and role of the liberal knowledge, skills and abilities in the modern professional training, to single out its principles, to formulate the conceptual points of liberal knowledge integration.

The professional communication is investigated as the special kind of activity of a future technical specialist comprising a lot of components. They are subjects, objects, means, operations, circumstances, aims and results.

Professional communication formation must be based upon the ideas of the professional-performance approach which aims at the learning process and future profession combination.

Professional communication system is a governed one from the point of view of its functioning. It is an integrative complex with the common aims.

Professional communication formation demands the usage of the cultural approach which is based upon the integrative perception of culture and it combines a lot of fields.

Professional communication formation is closely connected with the synergetic approach. It implies the existence of the natural links among the elements of the learning material.

The usage of the problematic approach requires the content structural transformations of the liberal material and is based upon the principles of science and development providing the integrative way of future engineer thinking.

The systematic analysis is used with the aim of discovering the integrative character of the readiness formation process for the professional communication. This process is determined as the functioning system consisting of the following structural elements: aim subjects of the teaching-learning process (a future engineer – a teacher), content, organizational forms, means of communication, ways of control and correction.

The professional training analysis proved our viewpoint that at the present moment, a future engineer owns the higher level of the accurate and technical disciplines in comparison with the cultural and liberal knowledge. In opposition to our situation in all kinds of technical universities the liberal ideas of education are widely spread in different foreign countries.

But we must bear in mind that the implementation of the integrative ideas leaves much to be desired, as in many cases it leads only to the establishment of the interdiscipline links among isolated subjects, creation of the integrative courses all these attempts do not imply the real linkage between liberal and technical fields of knowledge.

Above mentioned, problematic issues give the reasons for the elaboration of the integrative approach conception for the readiness formation of a future engineer for professional communication.

The successful formation of this system depends upon the following reasons: the perfection of the general educational liberal preparation, the appropriate level of the linguistic disciplines, system of the innovational means of teaching, the deep level of liberal and technical knowledge, the satisfaction of the individual demands and interests of a future engineer personality, the development of the creative potential of a teacher, the system of complex provision of the process with methodical means.

The model of the readiness formation of the future engineer for professional

communication includes motivational, integrative-cognitive, integrative-operational components. The main idea is connected with the achievement of the sufficient level of the readiness formation for professional communication, taking into account the availability of the appropriate didactic means of this preparation and individual way of learning. The main objects of this model are the important factors of the surrounding environment: the strategic and operational components.

These factors are closely linked with the society demands, the market demands integrative tendencies in science and production. The strategic components depicts the pedagogical conversation integrity (a future engineer– a teacher), the principles of the formation on the basis of the didactic integrity, professionally-oriented liberal disciplines, learning activity of a student.

Operational components as the most important ones in the process of professional communication formation are combined with the content formation (inner and inter discipline integration), methods and forms of teaching means of control and correction.

To sum up, the readiness formation for professional communication is a complex social-psychological part of the professional training of a future engineer depicting its integrative knowledge skills and abilities level, practical skills for fulfilling the professional-communicative activity in the frame of integrative approach.

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