

Nataliia GLUSHANYTSIA

National Aviation University, Ukraine

Model of foreign language professionally-communicative competence formation of future bachelors in avionics

Engineer's professional training is the base of the future society. So it is important to use innovative, integrative, interdisciplinary approaches in the process of their training. Their implementation allows to train a professional who is able to apply scientific ideas and approaches in his activity. The current market requires professionals who possess professional competence, ready to take responsibility, able to make quick decisions independently, active and creative. Market demands give some ideas and make adjustments to create a model of foreign language professionally-communicative competence formation of future bachelors in avionics. Foreign language professionally-communicative competence of future bachelors in avionics is a significant professional quality. It enhances the effectiveness of avionics engineer's professional activity.

In today's social and educational studies the problem of modeling is investigated by many scholars such as N.I. Nikitina, M.F. Glukhova, L. Mardahayev. They explain modeling as *the process* of creating models, diagrams, symbolic and real counterparts, which depict the significant properties of more complex objects (prototypes). Modeling is also considered as an objects' of knowledge *research method* on their models. The process of modeling is the construction and study of real objects' models and phenomena (organic and inorganic systems, engineering equipment, a variety of physical, chemical, biological, and social processes) and objects that are constructed to determine or improve their characteristics, to rationalize ways of construction and their management [Савельев 2005].

In our scientific research we will consider modeling as a method of cognitive and management activity of complex professional system that allows to reproduce some essential elements of the researched process.

The purpose of the article is to suggest a model of foreign language professionally-communicative competence formation for future bachelor in avionics. The process of foreign language professionally-communicative competence formation for future bachelor in avionics is complex and multiaspect for direct cognition. That's why it is necessary to use modeling.

Modelling includes: model idea of the object under study; our idea of realization of these ideas in actual educational activity; the stages of educational

activity to achieve the goal; ways of monitoring the results. Modeling process provides: model development; its adaptation to the actual educational process; testing of its effectiveness.

M.M. Fitsula considers scientific model „as ideationally submitted and material implemented *system* that adequately depicts the purpose of the study ... is a mean of theoretical studies of pedagogical phenomena via imaginary creation (modeling) of life situations, helps to know human behavior patterns in different situations” [Фіцула 2006]. Successfully developed model demonstrates behavior similar to original or helps to identify the unknown quality of the phenomenon. Therefore, while developing model in our study, we will concentrate our attention on analyzing the effectiveness of the research object’s activity namely the foreign language professionally-communicative competence formation for future bachelor in avionics. Modeling method will enable consciously influence the certain constituents of the process and, therefore, will increase its effectiveness.

Process modeling of foreign language learning of future bachelors in avionics is based on the students’ adaptation for their future professional activity and is a part of educational activity. Objects of different origin can be modeled. Therefore, the models can be different. They are usually divided into *material and ideal*, but according to the nature of the original they can be *substantial, structural, functional and mixed* [Шульга 2006]. We will consider the structural – functional model of the foreign language professionally-communicative competence formation of future bachelors in avionics in higher aviation school. However, it should be mentioned that its structure and content are determined by the special requirements for their professional activity, which varied at different stages of society according to the type of socio-economic relations and the characteristics of their professional activity. So society defines the basic professional’s qualities depending on the stage of its development. The market demands contribute some ideas and make adjustments to create a model of future engineers training, the formation of his professional competence. The necessity of foreign language professionally-communicative competence formation for future bachelor in avionics in the process of their professional training is assigned by the industry standard in the form of requirements for future aviation specialists.

Any model is a multifunctional phenomenon and it can perform the following functions: *information, diagnostic, organizational, corrective, oriented, educational* [Бобкова 2004]. Each function has a specific orientation and content. In particular, the *information function* of the model of foreign language professionally-communicative competence formation for future bachelor in avionics involves providing students with knowledge about the peculiarities of their future professional activity, a system of theoretical information about the purpose and use of special electronic aircraft equipment; knowledge of ICAO (International Civil Aviation Organization) standards regarding the requirements for linguistic preparation of aviation specialists. *Diagnostic function* of the researched model

means orientation of educational process at the development of students' reflexive skills. The *organizational function* helps to develop the students' skills of effective professional training and qualified psychological interaction by means of foreign language. *Corrective* function provides some changes in the process of foreign language professionally-communicative competence formation of future aviation specialists, which are caused by the introducing new requirements for social workers of the airline industry, international standards as to the functions of the avionics engineers, the requirements of the International Civil Aviation Organization (ICAO). *Oriented* and *educational functions* are interconnected. They help to form a self-sufficient individuality, competent avionics engineer who can use modern professional and communication technologies in order to enhance professional performance and safety level.

Modeling of future avionics engineers' activity provides maximum identity of educational structure to the structure of their future professional activity. We suggest carrying out the process of foreign language learning as a sequential process of solving the problem of professional and foreign language communicative competence formation, maximum use of the students' theoretical knowledge, theory and practice combination. Students must have formed internal demand to master the content of general, general engineering, professional and special disciplines. However, having got some knowledge, students must continue studying, because aviation technology is constantly improving. So continuous education has become a professional need for future aviation engineers because it provides continuous professional competence grow. According to ICAO demands there is an urgent need to improve professional English.

Students use their professional knowledge at the level of skills and abilities. Avionics engineers in their professional activity are only language users. So the purpose of language learning is not memorizing grammar rules, expanding vocabulary, but language learning, especially reading and writing. The main criterion of didactic content model design is an actual professional activity. Most attention is given to such components of the educational process as content, teaching methods and knowledge testing. At the first stage of the future aviation specialists training we suggest using reproductive techniques and methods algorithm training and then – to combine them with the activation methods of teaching and learning activities. They form specialists' search ability (problem-finding methods), provide knowledge reliability.

Model of foreign language professionally-communicative competence formation of future bachelor in avionics is based on a systematic, personal, operational, competence, cultural and communicative approaches. Its components are: *purpose-oriented, cognitive, operational and evaluative*. Interaction between these components determines the proper model functioning and its integrity.

Purpose-oriented component of this model is to create a positive environment for future avionics engineers to develop their cognitive interest, get certain amount of knowledge and skills which are necessary for foreign language pro-

professionally-communicative competence formation. Purpose-oriented component includes the purpose, objectives and principles of foreign language professionally-communicative competence formation for future bachelor in avionics. Methods of purpose-oriented component formation are the integration of verbal, visual and motivation methods.

Cognitive component of this model establishes conditions for attracting future bachelors in avionics to teaching and learning activity which must be as close to their future professional activity as possible. Future avionics engineers are to aware the importance of their professional tasks and develop their skills to work with professional information. The purpose of this component is that future bachelors in avionics have to master: system of engineer knowledge; aviation terminology; oral and written English language standards; different types of language activity (reading, writing, listening, speaking); documents of special purpose functions; social and cultural peculiarities of foreign countries. Cognitive component includes a system of knowledge which ensures the formation of students' scientific world view. Method of cognitive component formation is the integration of verbal and cognitive methods.

Operational component consists of diagnostics, activity programming and all subjects of educational process. It involves the following skills: to operate by engineering knowledge; to use aviation terminology with communicative purpose; to use knowledge of language standards and all kinds of language activity; to work with documents; to use knowledge of the social and cultural peculiarities of foreign countries; to make decisions quickly and efficiently; to interpret information critically; to get new knowledge independently and successfully use it in their future careers.

Evaluative component of the model is based on criteria and indices to assess the level of foreign language professionally-communicative competence formation of future bachelor in avionics. The criteria of foreign language professionally-communicative competence formation are: cognitive, motivational, operational and reflective. They help to determine the levels of the certain components formation of this type of competence.

To realize the research objective it is necessary to perform *the tasks* which are an integral constituent of the purpose-oriented component of this model: study the problem of foreign language professionally-communicative competence formation of future bachelor in avionics in aviation and technical higher educational establishments; determine the peculiarities of avionics engineers' professional activity and the role of foreign language professionally-communicative competence in the structure of their professional competence; prove criteria and indices to determine the levels of foreign language professionally-communicative competence formation of future bachelor in avionics in the process of their professional training; create the model of foreign language professionally-communicative competence formation of future bachelor in avionics in the process of their professional

training; determine the pedagogical conditions; develop methodical recommendations concerning foreign language professionally-communicative competence formation of future bachelor in avionics in aviation in technical higher educational establishments.

Realization of the research objective was based on *general didactic* and *specific principles* of learning: *system principle*, which involves foreign language professionally-communicative competence formation of future bachelor in avionics in the process of their professional training based on the close interconnection of all elements; *culturological principle*, that requires the selection of content, forms and methods of foreign language professionally-communicative competence formation of future aviation specialists. This principle takes into consideration that a person is developed in a certain cultural space that has its own characteristics and traditions; *principle of practical orientation* that involves consolidation of knowledge and skills during the activity; principle of teacher's personal initiation; *principle of variability*, which means the choice of a large number of self-realization and self-expression variants; *principle of dialectical unity, repetition and novelty*; *design principle* that provides maximum approximation of the educational process to the future professional activity.

The specific principles are: inseparability of training's content and technology; specificity when each teacher performance, condition, content are clearly defined, understandable and accepted by the participants; convergence of „two visions of the world”, which is based on modern science and empirical personal experience; optimistic as a factor of solving educational problems, belief in success; recognition of moral individual autonomy; formation of a competent, active, creative, ready and able for self-development personality.

An important component of the model is the structure of foreign language professionally-communicative competence of future bachelors in avionics. The structure of any competence involves several components: cognitive, motivational and operational. We support N.A. Zinchuk's idea „each of the components of competence is the result of professional training and has the following structural components: knowledge, abilities, skills, professionally important qualities, attitudes to work, motivation formation, their own abilities, creative approach, personal experience and desire for lifelong learning and self-improvement” [Зінчук 2010]. We define cognitive component in foreign language professionally-communicative competence formation of future bachelors in avionics dominant. We suggest including into the structure foreign language professionally-communicative competence formation of future bachelors in avionics reflexive component which implies the ability to evaluate and analyze ones activity, commitment to professional development, the ability for self-improvement, self-development, self-regulation. The process of foreign language professionally-communicative competence formation of future avionics engineers is performed in two ways: *information*, that provides mastering specific knowledge which are

necessary for the successful implementation of future professional activity; *operational*, which is oriented at the formation of skills and abilities, modes of action within a profession.

Our scientific research was carried out according to the objectives, pedagogical approaches, principles and methods. They will be the most effective if we realize the certain pedagogical conditions.

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Abstract

The article presents the model of foreign language professionally-communicative competence formation of future bachelors in avionics. The components of the model are analyzed.

Key words: systematic, personal, operational, competence, cultural and communicative approaches, foreign language professionally-communicative competence.