

Modeling The Process Of Developing The Professional Competencies Of Cadets In Higher Military Institutions

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Abstract: Modeling the development of professional competencies of a cadet of a higher military educational institution, represented by structural and functional schemes, reveals the mechanism of implementation of the educational process in a higher military educational institution with the function of managing, modifying and evaluating the readiness of cadets for independent military professional activity.

Key words: competencies, important and basic competencies, competency formation model, comprehensive program, special purpose program, pedagogical conditions, assessment criteria, level of formation.

1. INTRODUCTION

In the course of service duties, the officer performs a variety of activities that require appropriate competencies. Military education According to the State Education Standard, these are design and technological, research, organizational and management, installation and commissioning, service-operational and pedagogical activities. The professional competencies of a future officer required to carry out this type of activity are consistently formed and developed at all stages of his training and are the product of the interrelated intellectual and practical activities of the teacher and the cadet. They reflect an objective and systematic relationship between the characteristics of different military situations, the results of the analysis of military equipment development forecasts, and the ability to establish new relationships, existing and already habitual in working conditions. Professional competencies reflect the dialectical connection of theoretical knowledge with practical experience and the ability to work flexibly, create, interpret and correct new experiences.

The professional competencies of a future military specialist are formed and developed during the training process, including various forms and methods of its organization. The most commonly used are: theoretical classes, practicums (practical classes), internships, optional classes, interviews, etc. Also, methods of developing professional competencies of cadets, the creation and implementation of a comprehensive program, the formation of military-professional skills, the creation of simulated situations, the definition of tasks and assignments of varying complexity, role-playing games, mock-ups and simulators, as well as implementation of cadet activities. These methods are used in the preparation of various types of operations, internships, control and inspection exercises, military exercises (field exercises of troops), maneuvers, command and staff training and graduation theses (diploma works and projects).

The educational process in a higher military educational institution is a systematic teaching, methodological and educational activity based on the organic solidarity of command, teaching staff, training units, commanders of students and cadets to teach, educate and reveal the individual potential of the cadet. The design of the learning process based on the

competency approach is aimed at qualitative change of the trainee as a carrier of competencies in the field of military activity.

The purpose of the training process is to train highly qualified military specialists who are able to organize and manage the combat operations of the units in a timely manner, with training and education skills. Formation of professional competencies of a military specialist includes: formation and development of a wide range of skills in military professional activity, mastering methods and techniques of operation and use of weapons and military equipment, implementation of calculations, preparation and execution of service documents and training development of standards.

The main component of the learning process is the training sessions, during which different methods of organizing the sessions are used. The method of action is interpreted as a list of instructions and descriptions of elementary operations that trainees must perform in order to achieve a result in solving a particular learning task. Methods of practice are described and defined in rules, guidelines, and algorithms of actions aimed at shaping skills. Rules, guidelines, and algorithms define a system of instructions or guidelines that guide how cadets perform certain cognitive or learning actions.

The main integrated approach to the development of professional competencies of future officers is to develop and implement a special-purpose program for their formation and development in accordance with the academic years, taking into account the capabilities of different disciplines and different forms of training (Appendix 6). The need to develop such a program is based on the fact that there are problems in the military education system with the decline in the level of military professional training of graduates to perform their duties.

Each section of such a program involves the study of a set of important competencies formed at this stage of cadet training. We consider its creation as a condition for the effectiveness of their development and one of the ways to increase the efficiency of the entire educational process in a higher military educational institution. S.I. Zimin introduces the following three steps:

training (analysis of the professional dimension of the military specialist and his working conditions as a projection of the future professional activity of cadets, which are then reflected in the structure and content of training and internships, as well as diagnostics of military teachers' readiness to implement the program);

design (determining the composition and sequence of program elements that play a role in achieving program goals);

effective (conditions for improving the model of professional training of cadets, aimed at developing the professional competencies of military specialists and its application in the educational process of the higher military educational institution).

It is necessary to distinguish between the concepts of important and basic competencies. According to the important competencies, we understand the necessary and sufficient volume, the absence or weak formation of which makes the professional activity of a military specialist impossible or ineffective (there are other interpretations). In each subject, the trainee will have a much larger number of competencies, only some of which may belong to important competencies. These may be directly related parts of the academic disciplines that are based on specific knowledge, skills, and abilities to solve professional problems, or special knowledge and provide adaptability and adaptability to that situation.

Basic competencies are the knowledge, skills, experience, previously formed abilities, etc. of the cadet, accumulated by the cadet, based on the subsequent process of formation and development of professional competence of the future officer. In the next stage of preparation, they also become basic competencies. Basic competencies may also include important competencies.

The program of gradual development of professional competencies was designed on the basis

of its interrelationship with previously developed medium-term professional competencies. This means focusing on the learner's cognitive activity and focusing on his or her end result as a clearly measurable achievement. It is also expected to strengthen the subject-professional aspects and practical orientation of the training, i.e. the priority of skill assessment, as knowledge in the military practitioner's work practice is often seen as an integral part of the action. At this point, it is appropriate to recall a Japanese proverb: "You know, but you can not do, so you do not know."

E.G. As Skibitsky noted, "the curriculum should be designed taking into account the capabilities of modern teaching technology, which in turn should be as close as possible to professional activity, which is a prerequisite for the formation and development of professional competencies, and focused on creative independent work."

The main idea was to create a program of differentiated influence on the activities of cadets and to conduct an experimental examination of the process of developing the professional competencies of future officers. The rationale for differentiating the impact was: the characteristics of the curriculum for a particular academic year (semester, course); their development trends and individual characteristics in military-professional activity. Under this single program, general military science programs taught in all higher military educational institutions and subjects related to a specific specialty (special subjects) are coordinated.

Certain conditions have been created in the higher military educational institution for the development of curricula aimed at increasing the professional competence of cadets. This is a process that takes into account the growing need of the Armed Forces of the Republic of Uzbekistan for specialists who can quickly solve professional problems in a constantly evolving situation, the orientation of the requirements for specialists, their experience, achievements, professionalism and military career. Such programs are a tool for managing the quality of higher education and one of the ways to build professional competence. With the help of such programs, the educational institution and its professors simplify the systemic impact to improve the quality of training of the future specialist.

The structure of such a program is based on the model of implementation of the state order, the training of future officers for military professional activity, which is presented below (Figure 1).

As mentioned above, a method is usually understood as a sequence of actions or a system of rules for their implementation that leads to an outcome. In our case, this sequence of actions is described as a set of tasks set when creating a program and has the following characteristics:

1. Define the purpose of creating and implementing the program.
2. Develop the content, composition and level of formation of important competencies as the purpose and qualification requirements of military training at each stage of training and education.
3. Identify the sequence and stages of the process of formation of professional competencies.
4. Assess the contribution of individual disciplines of military training to the formation of generalized components (personal-managerial, communicative) that do not belong to the subject.
5. Develop a work system for professors who implement a sequence of formative effects.
6. Development of scientific and methodological documents that will improve the quality of training.

Development of scientific and methodological documents within the complex target program includes:

- 1) in a higher military educational institution - a comprehensive plan for the formation of command qualities, teaching and learning skills;

2) in the unit - a comprehensive plan for the acquisition of command-methodological and professional qualities of cadets, the performance of their duties during their service in various units and the results of general military training, as well as the assessment of methodological skills; at the department - a plan for the formation of important professional qualities of cadets;

3) in courses - the workbook of the course commander;

4) in training groups - a screen for recording and evaluating measures for the formation of team skills and methodological skills, a screen for recording and evaluating measures for the acquisition of skills in organizational and educational work, annual attendance card, workbook of the course commander, training groups class journals, a screen for academic performance, statements, a departmental account for the formation of team skills, methodological skills;

5) The cadet has a notebook for the formation of command and methodological skills.

The purpose of the proposed program was not only to form the knowledge, skills and competencies necessary for the successful implementation of professional activities of cadets, but also to form such important qualities as high responsibility, diligence, discipline, readiness to independently manage the daily activities of departments. The program includes the interaction of the following elements: the object of influence (cadets of different courses), the subject of influence (officers of the department of education, employees of the department of educational work, professional psychological selection teams, teachers, commanders of cadet units), coordination relations. The comprehensive target program developed in the dissertation is based on the improved model shown in Figure 2 and the description of its components. It consists of five blocks that correspond to the five stages of professional competence development in cadets, required to carry out professional activities at each level of the position. Based on this sequence and the objectives of the process of training a future officer's military specialist (the structural task of this process is to develop his professional competence), an improved model of their development (see Figure 3) and a comprehensive target program (see Annex 5) were developed.

As noted above, the State Education Standard for Higher Military Education is that these curricula focus on the competencies of graduates that are the end result of training.

Higher military education The State Education Standard clearly defines the requirement to present the results of mastering educational programs in the form of competence. In each training cycle and section, it is indicated which competencies should be focused on the formation of science teaching.

The comprehensive program focuses on the development of intermediate professional competencies, the integration of which provides a result that meets the requirements of the army. The content of the program is determined by the characteristics of the objects of professional activity of graduates, the types of activities of the graduate and the content of competencies for each type of activity. The objectives of the training program are the competencies acquired by professionals in the field upon completion of the program, as stated in the State Education Standard for Higher Military Education. The professional and universal (personal) competencies acquired by graduates before the end of the program are the results of the study. It is noted that usually each goal is achieved through multiple learning outcomes.

The ultimate goal of the program is to meet the requirements of customers, its content should be concise and clear. This should be broader and deeper than the requirements for study results. If the result of this stage (direct achievement of an intermediate goal) is the formation of any intermediate competence, then they must eventually be added to the ability to perform

the activities included in the professional duties of a military specialist specified in the competence set in the State Education Standard.

The purpose of the program was to coordinate the activities of professors and commanders of higher military education, aimed at the gradual development of intermediate competencies for the years of training cadets and their integration into the generalized final competencies specified in the State Standard of Higher Military Education. In developing the program, we took into account that the training of cadets takes a wide range of different disciplines and formed skills. Without emphasizing the factor of creating a system with the final competencies of a military specialist, it is difficult to build a learning process that gradually forms all its necessary components.

The development of the program was based on the following principles:

1. The principle of universal communication and development.
2. The principle from simple to complex.
3. The principle of focus on results based on perfection.

All the work carried out to develop a comprehensive program for the development of professional competencies of military specialists focused on the requirements of the State Educational Standard of Higher Military Education, introduced in 2018. Higher military education The State Education Standard defines two important innovations: the “competency-based approach” and the “test units”. At the same time, it was noted that at each stage of cadet training, they were not related to each other due to the lack of development of accurate and universal measurement competencies called “intermediate”.

Higher military education Competencies developed in the State Education Standard are grouped by type of activity and are often defined as “ability” to solve certain professional problems. But, first, skills are a category that is difficult to measure, and their list does not allow the measurement results to be reduced to any level. Second, the formation of skills at the level specified in the standard is carried out step by step, with the accumulation of integration and transformation of competencies at each stage of cadet training. It is this range of defined competencies that can be measured, and the summative assessment of the results of these measurements, using appropriate measurement materials, gives an idea of the success of their formation and development, as described in the experimental part of the study; higher military education The State Education Standard rightly states that not all graduates can achieve the ultimate goal of a training program. The intermediate competencies of each trainee are not translated into the skills specified in the standard - a fact that has not been taken into account before and is denied by the phrase “the trainee needs ...”, which limits their ability to achieve high professional success, self-development and professional development. Such a change can be made by the serving officer, but the strategic partner of the higher military education institution and his or her client manage the process (see Figure 1).

Higher military education According to the State Education Standard, a program is effective if the draft curriculum is initially based on an assessment of graduates’ competencies based on their planned learning outcomes. Preparation of the program of development of professional competence of the future officer according to requirements of the State educational standard of higher military education should be carried out in two stages. The first stage is the preparation of initial data for the design of the program and its quality planning. The second is the design of the program, its quality assessment and development of teaching materials.

During the preparatory phase, the modernization was carried out, taking into account the shortcomings of the existing training system, the needs of the army were analyzed and the Decree of the President of the Republic of Uzbekistan No. PF-4947 of February 7, 2017 - Resolution No. 3898 "On radical improvement of the system of raising the morale of

servicemen of the Armed Forces of the Republic of Uzbekistan", Resolution of the Cabinet of Ministers No. 140 of February 23, 2018 "On approval of the Concept of educating young people in the military-patriotic spirit" We have coordinated the concept of the program based on the tasks set out in other normative legal acts and the requirements of the State Standard of Higher Military Education. Higher military education The task of forming the final set of planned competencies of graduates of educational programs agreed with the strategic partners of higher military educational institutions of the Ministry of Defense, recommended by the State Education Standard, was carried out jointly. Later, the concept of the program was developed, which reflected its idea, direction and features of training in accordance with the State Educational Standard of Higher Military Education, as well as the competencies of future officers.

Orientation of the program. The program aims to coordinate the activities of teachers in solving the problem of developing the final professional competence of graduates in accordance with the State Education Standard of Higher Military Education.

The main ideas of the program.

1. The professional competence of a graduate of a higher military educational institution is a set of competencies in the main activity of an officer-military specialist.
2. Higher military education for officer activity The development of final competencies defined in the State Education Standard should be carried out at each stage of training cadets through the sequential formation of their components, which are monitored and evaluated in the system of diagnostic and measuring materials. Such components should be identified for each stage of teaching, and they should be a system-building factor in the interaction of teachers in solving the task of forming the next block of intermediate competencies. The success of the development of intermediate and final competencies of the graduate depends on a number of organizational and pedagogical conditions that more or less affect the effectiveness of this process, including close cooperation between teachers and supervisors, targeted formation of professional motives. The next task is to break down the final competencies into components and analyze the opportunities for their consistent development in the learning process at each stage of cadet training.

In the second, main stage of development of the complex target program, the following work was done:

1. Higher military education Based on the requirements of the State Education Standard and an improved model for the development of professional competencies for the stages of training of cadets, for each stage (course) of training of future military specialists are identified subject-specific, operational and personal management components. an intermediate competence set was developed.
2. Criteria and methodology for assessing the maximum and minimum levels of intermediate professional competencies have been identified.
3. A plan for conducting training seminars for teachers of experimental groups was developed and its implementation was organized (see Annex 7).
4. Individual consultations were organized for teachers to analyze the possibilities of academic disciplines in the formation of universal competencies, ie the organizers in the form of subject-specific competencies that are the result of the program.
5. The initial level of critical competencies selected for experimental testing in the control and experimental groups was determined.

A proposal was made to evaluate the credit value of learning outcomes for a program that requires a new standard as follows. The total amount of points accumulated during the learning process compared to the maximum possible value (ratio) determines the percentage of mastery of the course. It should be noted here that the above-mentioned measure of the success of the development of professional competencies of the graduate is not the only

evaluation criterion. This criterion cannot be considered as an absolute indicator, because the total value of points is accumulated according to the results of mastering different subjects. However, it can be used by different alumni to conditionally compare program mastery volumes (which is one of the outcomes of cadet training and may not be integrated into a graduate's high-quality professional competencies).

This element has not yet been tested in practice, but it was considered necessary to bring the developed program as close as possible to the requirements of the State Standard of Higher Military Education. However, the requirements of the State Education Standard for Higher Military Education, such as the identification of elements of assessment, the selection of learning outcomes and methods of assessing the quality of program mastery, the creation of a fund of assessment tools, were implemented in the preparation of the experiment and described in paragraph 3.1 of the dissertation.

Although we are studying a generalized didactic approach to the integrated development of professional competencies, it is almost impossible to organize work on all components and test its effectiveness in the context of the learning process.

Therefore, in the dissertation, the effectiveness of the formation and development of important competencies, without which the professional activity of a military specialist is almost impossible, was examined. An integrated assessment of the quality of development of professional competencies of the specialist is given in the reviews of commanders of military units sent to graduates of higher military educational institutions, when assessing the item "Worthy of the position held."

The content of the program is determined by the characteristics of the objects of professional activity of graduates in the specialty, the types of activities of the graduate and the composition of competencies for each type of activity.

The organization of the process of development of intermediate professional competencies on the basis of general military and special disciplines begins with a detailed study of the preparatory stage and its transfer to the design plane. This includes a detailed and clear statement of the purpose of creating the program, turning it into a system of forward-looking, fast, and intermediate goals. These goals are related to the development of professional competencies through the subject being taught.

The content of this phase includes assessing the formative ability of each topic, selecting the necessary and sufficient amount of material to achieve intermediate and final goals, as well as planning thematic lessons. The assessment is based on an analysis of the topic material's ability to achieve each of the stated objectives, as well as the role of each lesson in achieving them. Based on this analysis, the forms, techniques and methods of solving the tasks assigned to the cadets are selected.

The basic rules, auxiliary and demonstration materials are highlighted in the process of developing a specific lesson plan. Its complexity is assessed, the number of iterations required, and the method of material delivery are determined. Stimulation of cadet activities, establishment of corrective communication and determination of the optimal level of cadet independence in solving educational problems are modeled. The next stage is organizational. This means the implementation of a comprehensive program, ie. conducting direct training sessions: organizing the initial perception of the training material by the cadets by providing training information or providing instructional guidelines that guide their learning process.

We have divided the structure of intermediate competencies formed during the years of study into:

- a) the components of the component of professional competence (information competencies of the cadet);
- b) development of its general and special skills (operational and operational competencies);

c) the formation of personal qualities, attitudes, values, beliefs and moral habits that ensure the professional orientation of the future officer, the success of his decisions and ease of working in a professional environment (organizers of personal and managerial competencies).

The organizers of personal and managerial competencies include a list of personal qualities that belong to the officer in order to effectively carry out their professional activities. On the one hand, these are the qualities of a combat officer, which allow them to act quickly and calmly in situations that require decision-making, on the other hand, the communicative qualities needed to communicate with subordinates and senior commanders, these qualities help maintain a normal psychological environment gives

It also includes the command competencies required to manage units and perform all functions related to this activity:

to understand (comprehend) the combat mission, purpose, method and the expected result of its implementation;

action planning if the time interval creates such an opportunity to solve a combat task;

determination of the goals and objectives of the combat unit;

organization of the activities of the combat unit;

directing and supervising the actions of the unit and its members (or pedagogically, if it is a question of performing the educational and pedagogical functions of an officer).

The minimum and maximum levels of professional development for each stage were set as an indicator of achieving the goals of military training. During the academic years, certain competencies were formed within each stage of cadet training, which were called intermediate competencies. Competences were determined based on the content of the subjects studied in this course. Their formation was carried out in theoretical and practical classes, and the final stage of development was a course internship.

Each set contains a certain number of questions, the number of which depends on the scope of the subject (a sample of control and measurement materials to assess the level of formation of professional competencies in the subject "Aircraft weapons" is provided in the appendix).

The "maximum" and "minimum" levels of subject-information competence in a particular subject are defined as follows. The total number of test assignments is 100%. If the number of tasks performed correctly is less than 30%, then the prospective officer will not be able to perform this part of the professional activity that requires the application of science-specific competencies. Therefore, this interval is excluded from the rating scale.

The rating scale is as follows:

if the test result is between 30% and 50%, we consider it to be equal to a low level of competence (minimum);

when the test result is from 50% to 80% - average level;

when the test result was 81% to 100% - we considered the (maximum) degree.

Since 100% completion in the transition to a five-point rating system is equal to 5 points, a low percentage of the test determines the appropriate score.

At the end of each subject study, an appropriate test is conducted by the teacher, higher education institution training unit or external regulatory body, the results of which are entered into a computer database and can be used to compare the effectiveness of experimental and control groups. Thus, the science-information component of the cadet's professional competence is assessed.

The operational organizer is evaluated by teachers and internship supervisors in the course of organizing practical training and internships and represents the average cost for internships and internships.

The personal and managerial organizer is more visible in the graduate's professional career process, so it is evaluated by military unit commanders, who send appropriate reviews to the

higher military education institution throughout the year. Reviews will be made not in a voluntary manner, but according to the characteristics required by the higher military educational institution (for example, the order of the President of the Republic of Uzbekistan No. 86 of 21.12.18):

- 1) suitability of a graduate of a higher military educational institution for the position of commander.
- 2) The degree of formation of professional competence of graduates.
- 3) Assessment of personal qualities of graduates.
- 4) Assessment of the graduate's suitability for military service (in military units).
- 5) Peculiarities of communication in the military team (reputation among colleagues, readiness for mutual assistance).
- 6) Desire for further professional development.

The assessment for each characteristic is set as follows: high, medium, low, which allows a quantitative assessment of the data presented in these reviews. The data analysis is presented in Section 3.1, which describes the results of the experimental work.

The standard of higher military education emphasizes a number of competencies. According to this document, the competencies of a military specialist are divided into universal and professional.

Professional competencies, in turn, are grouped by type of activity of specialists:

1. Design and engineering and technological activities.
2. Research activities.
3. Organizational and managerial activities.
4. Installation and commissioning activities.
5. Maintenance and operation.
6. Pedagogical activity.

As we can see, these competencies do not depend on the training stages of the cadets and reflect the final competencies of the graduate. They are expressed in an overly generalized form as the ability to solve certain tasks. But the end result of the preparation will be a series of self-organizing. The ability to do something is acquired by combining its components that are purposefully shaped at different stages of learning.

Therefore, as an intermediate stage in the formation of graduate competence, we have identified and identified the science-information, operational-activity, as well as personal and managerial organizers of each course.

As we can see, the training of cadets involves a very wide range of disciplines and a variety of emerging skills. It is difficult to build a learning process that gradually forms all the necessary components of a military specialist without highlighting the factor of system formation, which is the ultimate competence.

The organization of the process of formation of these competencies on the basis of materials of general and special sciences begins at the preparatory design stage.

It includes: a detailed description and definition of the purpose of creating the program, turning it into a system of prospective, short-term, and intermediate goals.

These goals are related to the formation of professional competencies through the subject taught:

- a) meaningful (meaningful) organizer of professional competence (information (information) competence of the trainee);
- b) development of his general and special skills (operational competence);
- c) the formation of personal qualities, attitudes, values, beliefs and moral habits that ensure the professional orientation of the future officer, the success of his decisions and the ease of working in a professional environment (personal or characteristic competence).

The content of this phase includes an assessment of the formative ability of each topic, the selection of sufficient and sufficient material to achieve intermediate and final goals, as well as thematic planning of lessons.

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