

Features of Formation of Future Radio-Electronic Specialists' Technical Competence

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Abstract

The article deals with components of radio-electronic specialists' competence. Technical competence, reflecting by future specialists understanding of construction principles, technical devices designed for automated searching and processing information, knowledge of differences of automated and automatic execution of information processes, the ability to classify tasks by type, followed by the decision and the choice of certain technical means depending on its basic characteristics. Technological competence, which involves the use of software, knowledge of information technology tools for searching, processing and storage of information, the identification, creation and prediction of possible technological stages of processing information streams, technical ability and skills to work with information streams with the help of information technology.

Key words: competence, professional competence, technical competence, a radio-electronic profile.

Introduction. The main task of the modern system of higher education is to develop technical competence of officers, including a top-level training of radio-electronic specialists. Traditional approaches to education could no longer satisfy the needs of the military that constantly increase due to the widespread introduction of information technologies, automation of weapon and troops' control, dynamic modernization of military equipment, especially with regard to the ways of its application. University-based education focuses on development of the student's ability to adapt his/her own system of professional activities taking into account military goals and regulations, and this is based on the corresponding fundamental education. I.e., military education has to form a competent specialist who has the knowledge, abilities and skills, and knows how to act appropriately under relevant circumstances, and could take responsibility for his/her own actions.

Didactic and methodological aspects of educational process in higher educational institutions are considered in some works (e.g. A.M. Aleksiuk, S.I. Arkhangelskyi, V.A. Kushnir, V.O. Slastionin).

Results. This issue was thoroughly considered with regard to such aspects: theoretical grounds for education and training in universities (V.I. Losova); implementation of pedagogical technologies during the training process (A.S. Nisimchuk); means of humanization of educational environment (M.I. Romanenko); the nature of credit-modular education at universities (I.V. Moroz, P.I. Sikorskyi et al.); formation of professional, technical, psychological, pedagogical and domain-specific competency of specialists (V.A. Adolf, V.I. Baidenko, O.B. Bihych, O.I. Hura, I.A. Ziaziun, O.E. Kovalenko, N.V. Kusmina, M.I. Lukianova, A.K. Markova, I.B. Mishchenko, O.V. Ovcharuk, V.I. Svystun, S.O. Sysoieva, V.Yu. Strelnikov, Yu.H. Tatur, L.Z. Tarkhan, L.L. Khoruzha, A.V. Khutorskyi et al.); theoretical issues of implementation of competence-based approach for the university training of military specialists (V.V. Yahupov, V.M. Druzhyn, O.F. Yevsiykov, P.A. Korchemnyi, Ye.Yu. Lytvynovskiy, Ch.P. Chystovska et al.).

However, the problem of the formation of technical competence of radio-electronic specialists in the process of training was never subjected to a special study. Analysis of scientific papers and teaching practice allowed to coin out a contradiction within this issue: available potential of the content of professional courses regarding the formation of technical competence of students and lack of evidence-based process and system of practical means of its implementation; the need to develop technical competence of radio-electronic specialists and professional reluctance of teaching staff and commanders to its formation.

A good example of this is job and person specification (in South Australia Police) for Title of Position as *Technical Officer (Electronics)*: “The Technical Officer (Electronics) is responsible for contributing to the operational effectiveness of the Traffic Technical Support group within the Radio and Technology Support Unit (RTSU), and for contributing to successful SAPOL prosecutions by technically developing, maintaining and modifying a range of technical equipment such as fixed red light and speed camera equipment, mobile traffic speed camera units, laser and radar speed detection units, breath analysis equipment, ensuring that all such equipment is maintained to the manufacturer’s specifications and the appropriate Australian Standards. The incumbent will be trained to undertake the role of a NATA Signatory Officer, achieving and maintaining the competency levels required to meet NATA requirements and support SAPOL’s RTSU Calibration Laboratory NATA Accreditation. This will include supervision and contribution in the maintenance, updating

and development of the Calibration Laboratory operations Quality Systems, manuals, documentation, processes and procedures and other duties as may be required to maintain NATA accreditation, relevant standards and operational best practice [3]”.

The components of military teacher’s competence is the content of professional military knowledge and skills that are the basis for maintaining the authority among the personnel of teaching and professional military and humanitarian training, writes V. Yagupov [2, p. 302].

Simultaneously low maturity of personal traits of the graduate student subsequently generates dissatisfaction with labor, reduces desire for professional growth, often leads to a change of profession. Qualities that are important for a professional commander that constitute his/her personal potential, could change under the influence of changes in his/her profession. Considering the problem of competence, we believe that graduates of higher military educational institutions, need to develop professional autonomy, professional mobility and human sociability. The tasks to reform the educational system, including the conversion of military education, require not only a high level of professionalism, but also social mobility and individuality that extend the notion of competence.

Therefore, we define *competence* as:

1. Professional autonomy of the graduate student, his/her ability to know the requirements of the profession, ability to plan, execute and monitor the work.
2. Professional mobility, willingness and ability to make rapid changes during service and execute professional tasks of co-related professions as well as tasks of closely related professions; ability to quickly master new skills or change them, that emerge as a result of scientific and technical progress.
3. High level of responsibility, including willingness of the graduate student as a military specialist to be responsible for his/her actions; quality self-presentation in relation to the expected results of military service.
4. Willingness and ability to change not only the methods, means and ways of solving problems, but also person's own social role during service in the chain "commander-subordinate", "subordinate-commander."
5. Individuality is the ability of the graduate student to self-express and possess unique traits bound to him/her.

6. Career promotions bases on harmonic and humanistic standards of personal service and etiquette, military regulations and orders.

V.V. Neizhmak states "... professional competence of military specialist is a fundamental characteristic of the soldier, manifested in the high level of professionalism, ability to perform combat missions and duties of military service, personal creative work that is fundamental and multidimensional, requires intelligent, autonomous and reflective actions" [1, p. 38].

Within results of the analysis, we can distinguish two main components of professional competence of the radio-electronic specialist:

- *technical competence* that reflects an understanding of the principles of construction and operation, capabilities and limitations of technical devices for automated searching and data processing; knowledge of differences in automated and automatic execution of information processes; ability to classify tasks by type, followed by decision and choice of a particular technical means, depending on its basic characteristics;

- *technological competence*, that lies in the use of software tools, knowledge of information technology, tools for searching, processing and storage of information and identification, establishment and prediction of possible stages for information flows processing; technological skills and ability to work with information streams by means of information technologies.

V.V. Neizhmak points out that for military specialist "... professionalism means to master military service and promotion to the top of the professional competence that provides realization of the strategic achievements in daily work. The vision of how to achieve the highest level of professionalism and sticking to the logics of promotion suggests a set of stages to undergo. Each defines new levels of professional competence to achieve, such as professional development (ability to independently perform military affairs); ensuring stability in military affairs (guaranteed, timely and quality performance of tasks during military service); improvement of military, and in particular combat skills (creative, effective military work that involves implementation of individual strategies in activities)"

Conclusions. Thus, *technical competence of the radio-electronic specialist* is the essential characteristic of professionalism, which is a integral personal quality that emerges during training in military school, based on the set of professional knowledge and skills that

ensure readiness and ability to carry out professional activities successfully. Technical competence of officers includes such components: deep technical and practice-oriented knowledge; high level of professionalism; automatic skills in management, data processing, operation and use of hardware and technical aspects of special equipment; fast professional psychological and pedagogical adaptation to the development of military technology, including new one; motivation to learn, to master technical knowledge and new technologies of data processing; use of methods to train contract-sustained soldiers with technical training and a range of personal qualities (psychological stability, responsibility and ability to make right decisions in extreme and unusual situations).

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Тернопільська В.І., Андрущенко І.С. Особливості формування професійної компетентності майбутніх офіцерів радіоелектронного профілю.

У статті розглядаються складові компетентності офіцера радіоелектронного профілю. Технічна компетентність, що відображає розуміння майбутнім фахівцем принципів побудови, роботи технічних пристроїв, призначених для автоматизованого пошуку й обробки інформації, знання відмінностей автоматизованого та автоматичного виконання інформаційних процесів, уміння класифікувати завдання за типами з подальшим рішенням і вибором певного технічного засобу залежно від його основних характеристик. Технологічна компетентність, що передбачає використання програмних засобів, знання особливостей засобів інформаційних технологій щодо пошуку, переробки й зберігання інформації, виявлення, створення і прогнозування можливих технологічних етапів із переробки інформаційних потоків, технологічні

уміння й навички роботи з інформаційними потоками за допомогою засобів інформаційних технологій.

Ключові слова: компетентність, професійна компетентність, технічна компетентність, радіоелектронний профіль.

Література

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