



Development of Adjuncts and Post-Graduate Officers' intellectual and creative abilities in a Higher School of Military Education in contemporary Russia

El desarrollo de capacidades intelectuales y creativas de adjuntos y estudiantes graduados de escuela militar superior rusa

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ABSTRACT:

Based on main ideas and approaches oriented to the person, the dialectical system of acmeological and synergistic activity, this article considers intellectual and creative abilities as individual psychological peculiarities that allow to

RESUMEN:

Sobre la base de ideas principales y de enfoques orientados a la persona, el sistema dialéctico, de actividad acmeológica y sinérgica, este artículo considera las habilidades intelectuales y creativas como peculiaridades

succeed in solving technical problems whose outcome is In the real world. Cognition through the problem serves as the basis for system development and predictive thinking. The essence of the development of intellectual and creative skills of deputy and postgraduate officers is the acquisition of the system and predictive thinking through the technical resolution of problems.

Keywords: intellectual and creative abilities, system and prognostic thinking

psicológicas individuales que permiten tener éxito en la resolución de problemas técnicos cuyo resultado se encuentra en el mundo real. La cognición a través del problema sirve como base del desarrollo del sistema y del pensamiento predictivo. La esencia del desarrollo de habilidades intelectuales y creativas de los adjuntos y oficiales de postgrado es la adquisición del sistema y el pensamiento predictivo a través de la resolución tecnológica del problema.

Palabras clave: Habilidad intelectual, creatividad, Sistema del pensamiento predictivo

1. Introduction

At present contemporary weapons and military equipment are becoming more sophisticated, the number of methods, activities and operations is being greatly increased. An officer has to implement all of them perfectly well acting during limited time. Under these conditions he has to be able to analyze difficult changeable situations quickly and accurately, to obtain necessary information from the analysis, to predict changing the situation, enemy's decisions and consequences of the activities on its basis, to make and carry out a decision. It is impossible to implement without acquirement of the system of contemporary knowledge, achievements of technical sciences, ICTs, practical psychology and personal creativity. Thereby development of adjuncts and post-graduate officers' intellectual and creative abilities in a higher school of military education is a very important and urgent task since acquirement of creativity as a type and component of an activity allows an officer to model possible modifications in a unit, structure and content of military training, to implement person-oriented approach to the staff on the basis of evaluation of his/her potential opportunities.

As the practice demonstrates an officer's creativity and creative individuality development facilitates upgrading of his/her competency and professionalism. Social significance of studying the problem of creativity development during an officer's training is determined by the fact that it is the foundation of professional creativity and facilitates adjuncts and post-graduate officers' intellectual and creative abilities development and their self-establishment in professional and social spheres.

The questions of theoretical and practical aspects of intellectual and creative development of learners in a higher school of military education were discussed by Alyokhin I.A. et.al., 2014; Barabanchikov A.V., 1989; Goryachev A.N., 1985; Pavlov Ye.A., 2014; Pozdnyakov O.G., 2015; Volynkina N.V., 2018 and others.

In spite of the fact that the problem of intellectual and creative activity of learners in a higher school of military education is developed in detail in these and other works analysis of scientific literature shows that this

problem is urgent and significant as never before since forms and means of adjuncts and post-graduate officers' intellectual and creative abilities development existing today do not meet the requirements of modern time and need reviewing. The contradiction between practical necessity of higher military education in methodical ways of adjuncts and post-graduate officers' intellectual and creative abilities development and insufficient justification of the essence of this process during teaching humanitarian subjects in the institution of higher military education is not solved.

Thus, the article aims at scientific justification and disclosure of a procedural nature of adjuncts and post-graduate officers' intellectual and creative abilities development in a higher school of military education in contemporary Russia. During the investigation we used such methods as term analysis of psychological, pedagogical and methodical literature, conceptualization, modeling of the process studied in the institution of higher military education.

2. Methodology

The great Russian engineer, physicist and philosopher P. L. Capitsa noted that "upbringing of creative abilities in a person is based on development of independent thinking". Developing this idea we can state that person's intellectual activity as an intermediary of creativity is a main source of creating innovative ideas that is a very important competitive advantage in the hi-tech world.

The deep interconnection of thinking, activity and creative abilities was proved by Andreyev V.I., 2000; Arieti S., 1976; Barron F., 1963; De Bono E., 1991; Emelyanova I.E., 2017; Guilford, J.P., 1967; Guslyakova N. et.al., 2017; Ibatova A.Z. et.al., 2017; Khirullina N.G., 2017; Nesterenko A.A., 2015, 2017, Terekhova G.V., 2015, 2016, 2017; Sadyrin V. V., et.al., 2016; Smoleusova T.V., 2016; Torrance E.P., 1988; Vakhitov R.R. et.al., 2017; Volynkina N.V., 2012, 2014, 2018; Zhakupova Ya.T. et.al., 2017 and others.

Methodological regulator of the problem investigated is a set of main ideas of person-oriented, system, dialectical, activity, acmeological and synergetic approaches.

Analyzing different conceptions, theories, approaches to the problem investigated in philosophical, psychological and pedagogical aspects in Russian and world science, thoroughly investigating the phenomenon "creativity" itself, its nature, the meaning, the

thesaurus, the semantic field we came to the following conclusion: intellectual and creative abilities are considered to be individual psychological peculiarities that allow to succeed in technological solving the problem the outcome of which in the context of world cognition through the problem serves as a basis of system and prognostic thinking development (Volynkina N. V., 2012).

At the same time we define system and prognostic thinking as a type of

thinking which integrate different conceptions and methods during sophisticated strategic activity and is based upon the synthesis of all the components of the system of interconnections of the problem solved and prediction of consequences in future providing innovations and breakthrough to new opportunities (Volynkina N. V., 2018).

This type of thinking involves such skills as: 1) understanding the essence of contradictions in the problem and predicting the principle directions of effective solving; 2) finding out hidden resources for solving the problem; 3) setting up reason and consequence connections when lacking knowledge but possessing formal logics; 4) making up classifying systems and setting up association connections; 5) understanding plurality of relations; 6) analyzing interconnections between parts of the problem or situation; 7) setting up several possible reasons for events; 8) taking terms from other spheres and analyzing situations; 9) uniting and synthesizing relevant knowledge, ideas into new solving which has never existed before; 10) studying an object in different models; 11) going out of the problem field; 12) formulating hypotheses and solving the problem in different ways; 13) organizing scientific discussion and proving facts; 14) "wrapping up" the information; 15) analyzing, planning and uniting definitions in a structural process; 16) carrying out the reflection over the problem solved to realize the methodic nature.

Thus, the essence of adjuncts and post-graduate officers' intellectual and creative abilities development is system and prognostic thinking acquirement through solving the problem technology. This technology consists of the following: 1) preliminary description of the problem including choosing a theme, assigning a task, studying "the history of the problem", collecting and processing information, formulating hypotheses; 2) isolation of a task from the problem situation; 3) making an abstract model of the task and formulating a contradiction; 4) sharpening the contradiction for better understanding the essence; 5) conceptualization (according to Altshuller G.S. (1979) - making an ideal abstract model of solving the problem); 6) looking for resources and solving the problem; 7) assigning

subtasks necessary for solving the main task; 8) reviewing a chain of steps to solve subtasks beginning with the step 3 and solving it; 9) experiment; 10) making conclusions including description of the results; 11) reflecting to learn methodic essence of the experience and predicting further development of the process studied.

An adjunct/post-graduate officer is able to deal with problems if he is able to see a problem, psychologically ready to solve it, solves a problem on different system levels, in different spheres using a methodic instrument.

Matrix for dealing with problems includes the following: 1) working with new information; 2) creating new ways of actions; 3) obtaining new values. These values develop such skills as analyzing, synthesizing, comparison, setting up reason and consequence connections, critical

thinking and finding out contradictions, predicting possible ways of developing; analyzing any system through "multiple screens" in the Past, the Present and the Future; making up an algorithm of actions, creating new ideas and demonstrating them graphically.

3. Results

Theoretical and methodological statements presented in the article were implemented in methods, their combinations, organizational forms of pedagogical support and logics of creating pedagogical technology of adjuncts and post-graduate officers' intellectual and creative abilities development during the forming experiment.

When carrying out the experiment a diagnostic packet was worked out to identify levels of learners' intellectual and creative abilities development in a higher military school: creative (high), potentially productive (average), adaptive reproductive (low). Criteria and their indicators were formulated: motivationally cognitive, competent, operationally processing and reflexively evaluative. These criteria touch upon spiritual and moral, mental, communicative aspects of officers' creativity development.

During the experiment project methods, methods of the Theory of inventive problems solving and some other intuitive and discursive methods were used. The main forms of the activity investigated were interactive workshops of obtaining knowledge, virtual educational travelling through sociocultural space, interactive role playing, on-line discussions aimed at system and prognostic thinking development. Problem IT lectures and

IT seminars, international videoconferences, "round tables", patenting of intellectual property were widely spread.

120 adjuncts and post-graduate officers took part in the experiment. The results of the experiment were processed on the basis of the Pearson criterion χ^2 . The data of postexperimental testing showed that $\chi^2_{exp} > \chi^2_{contr}$, in other words indicator distribution in experimental and control group differed significantly. After that quality evaluation was carried out; it was proved that results of the experimental group were different from results of control group positively ($0,3358 > 0,1896$, $R_{exp} > R_{contr}$). Thus, truly difference and quantity advantage of experimental group results were proved.

The experiment showed that implementation of the author's technology of adjuncts and post-graduate officers' intellectual and creative abilities development in a higher school of military education increased the number of respondents with a high level of intellectual and creative abilities development (45,5% in comparison with the traditional approach) and with an average level (64,5%) and decrease the number of adjuncts and post-graduate officers with a low level (25,7%).

As a result of author's technology implementation the level of adjuncts and post-graduate officers' intellectual and creative abilities development grew up to 63,2% in comparison with the level before the experiment

was carried out and 65% in comparison with the traditional approach. Thus, it was proved mathematically that the author's technology significantly increases the level of adjuncts and post-graduate officers' intellectual and creative abilities development when teaching humanitarian subjects in a higher school of military education.

4. Conclusions

On the basis of theoretical and methodological analysis of the problem of adjuncts and post-graduate officers' intellectual and creative abilities development and the experiment carried out we conclude that learners' intellectual and creative abilities development is connected with system and prognostic thinking development which is characterized first of all by dialecticality implemented during dealing with a problem according to an algorithm.

Using an algorithm does not mean transmitting learners "the only correct" succession of steps but a system of rules of effective work with knowledge about the problem. The learner employs his/her own approach to solving the problem according to his/her individual peculiarities.

Algorithms are not used instead of thinking. They make thinking more organized. When

working step by step (algorithmically) irrelevant details are cut off and powerful solving is found out much quicker. This process involves a person with his/her own viewpoint giving an opportunity to demonstrate his/her intellectual and creative abilities.

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