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Methodological Aspect of Future Border Guard Officers' Professional Thinking Development

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Abstract. The relevance of the subject is conditioned by the changes in approaches to professional training of qualified specialists based on the establishment of a correlation between psychological readiness, professional thinking, and further activities within the chosen specialisation. The purpose of the study is to analyse the process of forming professional thinking of future border guard officers under the influence of the author's development programme. To achieve this purpose, a number of empirical research methods were used, including surveys and questionnaires, as well as the Pearson statistical criterion. The study presents the results of an experimental review of the programme for developing professional thinking of future border guard officers. A diagnostic study of the level of completeness of cadets' professional thinking was carried out according to certain criteria (cognitive, need-motivational, operational) and levels (high, average, low). The existence of problems in the development of professional thinking of future border guard officers is confirmed and the absence of a significant difference in the conditions of groups according to certain levels and criteria of completeness is confirmed. To confirm the validity and uniformity of the control and experimental groups, they were tested using the Pearson statistical criterion. External influence on the studied experimental groups is carried out by a complex of developed tools of the author's programme for the development of professional thinking. Positive changes (at least 95%) in the completeness of the corresponding components of cadets' professional thinking of all groups are experimentally substantiated. The value of the research is determined by the confirmation of the author's methodology effectiveness for the development of professional thinking, according to which it is possible to introduce it in related specialisation of Ukrainian higher educational institutions in the future

Keywords: professional activity, problem-based training, management of educational activities, border guard service employee, professional consciousness

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Методичний аспект розвитку професійного мислення майбутніх офіцерів-прикордонників

Анотація. Актуальність тематики зумовлена зміною підходів до професійної підготовки кваліфікованих фахівців на основі встановлення кореляції між психологічною готовністю, професійним мисленням та подальшою діяльністю в межах обраної спеціалізації. Метою наукової роботи є аналіз процесу формування професійного мислення майбутніх офіцерів-прикордонників під впливом авторської програми розвитку. Для досягнення поставленої мети було використано низку емпіричних методів дослідження, серед яких опитування та анкетування, а також статистичний критерій Пірсона. У статті подано результати експериментальної перевірки програми розвитку професійного мислення майбутніх офіцерів-прикордонників. Проведено діагностичне дослідження рівня сформованості професійного мислення курсантів за визначеними критеріями (когнітивним, потребнісно-мотиваційним, операційним) та рівнями (високим, середнім, низьким). Засвідчено наявність проблематики розвитку професійного мислення майбутніх офіцерів-прикордонників, а також підтверджено відсутність істотної різниці станів груп за визначеними рівнями та критеріями сформованості. Для підтвердження достовірності однорідності контрольних та експериментальних груп їх було перевірено за допомогою статистичного критерію Пірсона. Здійснено зовнішній вплив на досліджувані експериментальні групи комплексом розроблених засобів авторської програми розвитку професійного мислення. Експериментально обґрунтовано позитивні зміни (не менше 95 %) у сформованості відповідних компонентів професійного мислення курсантів всіх груп. Цінність наукової роботи полягає в підтвердженні ефективності авторської методики розвитку професійного мислення, відповідно до чого надалі можливе її впровадження на суміжних спеціальностях українських вищих навчальних закладів

Ключові слова: професійна діяльність, проблемне навчання, управління учінневою діяльністю, працівник прикордонної служби, професійна свідомість

Problem Statement

Professional activity in any field requires the appropriate theoretical and practical knowledge and skills, which further form the general level of professional competence and professional thinking in particular. The specific features of the professional activity of personnel of the State Border Guard Service of Ukraine (hereinafter – SBGS), who perform tasks in conditions of considerable psychological loads, modern challenges, and threats and in real time, also causes the need to form an appropriate level of their professional thinking; psychological readiness to effectively solve professional tasks for the protection of the state border of Ukraine. In this context, there is a need to find appropriate methods and techniques for developing professional thinking and the psychological component of border guards, which has led to the relevance of the chosen research topic.

Analysis of Recent Research and Publications

Results of the analysis of elaborations on the development of specialists' professional thinking in various industries on the example of research by G.V. Kaposlyoz [1], V.A. Lefterov [2]; psychological analysis of the features of

border guards' professional activity in the developments of S.A. Mul [3], Ye.M. Potapchuk, and N.D. Potapchuk [4]; solving professional problems of certain specialisations, as well as the essence of the concepts of "professional thinking" in the research of such Ukrainian and foreign scientists as D.Z. Wang, U. Zou, H.V. Li [5], M. Kashapov, Yu. Poshekhonova [6], G. Kodekova, K. Mukatayeva [7], I. Taraskina [8], T.D. Solbrekke, T. Englund [9], A.I. Kupin, O.V. Tarasova [10], stated the relevance of the chosen research subject but at the same time it was established that currently the problems of developing professional thinking of border guard officers have remained out of the attention of scientists.

The Purpose of the Paper

Analysis of the impact of the professional thinking development programme on the level of future border guard service employees' professional thinking completeness.

Research Results

Based on the results of the study, the author's programme for developing professional thinking of future border guard

officers was developed, substantiated, and experimentally tested. Based on the conducted theoretical and methodological analysis of the views of Ukrainian and foreign scientists [9-11], as well as the results of psychological analysis of the features of professional activity of border guard officers [12], the programme was based on the conceptual provisions of problem-based learning as a management of educational activities, according to Yu.I. Mashbits [13, p. 79]. The theoretical and methodological basis of the research is the philosophical concept of the dialectical connection of the phenomena of objective and subjective reality; the connection of theory and practice in the context of the unity of consciousness and activity in the process of personal development, as well as the main provisions of the theory of knowledge and the principle of considering the specific features of the educational process in higher educational institutions. In the process of developing the programme, systematic and personal-activity approaches were taken as a psychological and pedagogical basis for training future border guard officers. During the development of the programme, the conditions of unpredictability of events in which the state border guard service operates were considered, the lack of time, the discrepancy between the proactive nature of social development needs, and the urgent need for border guards to master the system of knowledge and skills to collect information from various sources and the ability to establish connections between them when making decisions [11].

The thinking development programme is a complex of purposeful influence of the teacher on the cognitive, need-motivational, and operational spheres based on the leading type of professional activity and considering the individual psychological characteristics of future border guards. The effectiveness of the proposed programme was tested in several stages. Thus, at the beginning of the 2015-2016 academic year, a diagnostic study of the level of cadets' professional thinking completeness on the 3rd year of Bohdan Khmelnytsky National Academy of the State Border Guard Service of Ukraine was carried out according to certain criteria and levels. Complementary criteria for the systematic development of professional thinking of future border guard officers were defined: cognitive – for the purpose of developing the ability to logical thinking and decision-making, need-motivational – for the purpose of self-development, accumulation and systematisation of professional knowledge, self-actualisation and fulfilment of their capabilities, as well as operational – for the purpose of professionalisation and professional growth. In total, the study covered 192 cadets of all areas of training, in particular: 85 cadets of the Faculty of National Border Safety and Protection (NBSP), 76 cadets of the Faculty of Law Enforcement (LE), 18 cadets of the Faculty of Foreign Languages and Humanities (Phil), and 13 cadets of the Engineering and Technical Faculty (ET). The results of the study of the levels of professional thinking completeness are presented in Table 1.

Table 1. Levels of completeness of criteria for professional thinking of the 3rd year cadets of Bohdan Khmelnytsky National Academy of the State Border Guard Service of Ukraine according to the diagnostic study (2015-2016 academic year)

Faculty	Number of people	Levels of completeness	Criteria for professional thinking					
			Cognitive		Need-motivation		Operational	
			Number of people with this level	%	Number of people with this level	%	Number of people with this level	%
NBSP	85	High	10	11.76	11	12.94	9	10.59
		Average	42	49.42	40	47.06	37	43.53
		Low	33	38.82	34	40	39	45.88
LE	76	High	12	15.79	10	13.16	11	14.47
		Average	35	46.05	38	50	34	44.74
		Low	29	38.16	28	36.84	31	40.79
Phil	18	High	2	11.11	2	11.11	2	11.11
		Average	10	55.56	11	61.11	12	66.67
		Low	6	33.33	5	27.78	4	22.22
ET	13	High	1	7.69	2	15.38	2	15.38
		Average	8	61.53	6	46.15	5	38.46
		Low	4	30.78	5	38.47	6	46.16
Total	192	High	25	13.02	25	13.02	24	12.5
		Average	95	49.48	95	49.48	88	45.83
		Low	72	35.5	72	37.5	80	41.67

The next stage of testing the effectiveness of the proposed programme was held in September 2017. The results of the analysis of the levels of professional thinking completeness of Bohdan Khmelnytsky National Academy of the

State Border Guard Service of Ukraine cadets are presented in Table 2. Based on the results of this analysis, the participants of the experiment were divided into control and experimental groups.

Table 2. Levels of completeness of criteria for professional thinking of the 3rd year cadets of Bohdan Khmelnytsky National Academy of the State Border Guard Service of Ukraine according to the diagnostic study (2016-2017 academic year)

Faculty	Number of people	Levels of completeness	Criteria for professional thinking					
			Cognitive		Need-motivation		Operational	
			Number of people with this level	%	Number of people with this level	%	Number of people with this level	%
NBSP	96	High	8	8.33	8	8.33	4	4.17
		Average	40	41.67	47	48.96	45	46.87
		Low	48	50.0	41	42.71	47	48.96
LE	87	High	7	8.05	9	10.34	6	6.89
		Average	43	49.42	42	48.28	38	43.68
		Low	37	42.53	36	41.38	43	49.43
Phil	47	High	5	10.64	9	19.15	4	8.51
		Average	27	57.45	20	42.55	28	59.57
		Low	15	31.91	18	38.30	15	31.92
ET	22	High	3	13.64	4	18.18	3	13.46
		Average	13	59.09	10	45.46	12	54.54
		Low	6	27.27	8	36.36	7	31.82
Total	252	High	23	9.1	30	11.91	17	6.75
		Average	123	48.81	119	47.22	123	48.81
		Low	106	42.06	103	40.87	112	44.44

To ensure the representativeness of the study, the control and experimental groups were randomly selected. Thus, study groups with odd numbers were assigned to the control groups, and those with even numbers were assigned to the experimental groups. Since all faculties of Bohdan Khmelnytsky National Academy of the State Border Guard Service of Ukraine have certain features regarding the qualification requirements of studying specialists, it was decided to form control and experimental groups. However, during the study at the Engineering and Technical Faculty, in the process of forming such groups, there was only one study group, the number of which was 22 cadets and which was decided to be assigned to control groups due to non-compliance with experimental requirements. Thus, an experimental group (EG1) of 42 cadets was formed at the Faculty of NBSP. The experimental group of the Law Enforcement Faculty (EG2) consisted of 41 cadets. The remaining cadets of these faculties were assigned to control groups. An experimental group (EG3) of 47 cadets was formed from cadets of the Faculty of Foreign Languages and Humanities, and the joint group of Engineering and Technical and Humanitarian faculties of 2015-2016 (CG3) with a total number of 31 people acted as a control group for them.

To increase the reliability of the study, the uniformity of the control and experimental groups was also verified using the statistical χ^2 Pearson criterion [13, p. 113]. The distribution according to levels and criteria in the control and experimental groups is shown in tables 3-5. The empirical value of the criterion was calculated using a calculation programme based on Microsoft EXCEL software. The obtained empirical value of the criterion was compared with the critical value $\chi_{emp}^2 = 7,815$ ($\rho \leq 0.05$) та $\chi_{emp}^2 = 11,345$ ($\rho \leq 0.01$) [14, p. 328]. Statistical hypotheses were constructed as follows: H_0 – the distribution of respondents according to the specified criterion in the EG and CG groups does not differ; H_1 – the distribution of respondents according to this criterion in the EG and CG groups is significantly different. In the process of comparing the obtained empirical value with the critical one, a choice is made in favour of H_0 , if the empirical value appears to be smaller than the critical value. If the empirical value of the criterion is greater than the critical value, the hypothesis H_1 is valid. Moreover, the greater the empirical value, the greater the reliability of changes, and the probability of error, on the contrary, decreases. It is worth noting that all the restrictions of this criterion were met.

Table 3. Levels of completeness of the cognitive criterion of cadets' professional thinking (at the first stage of the formative experiment)

Levels \ Groups	Number of cadets in groups that are at the relevant level					
	CG1(54)	EG1(42)	CG2(46)	EG2(41)	CG3(31)	EG3(47)
High	5	3	4	3	3	5
Average	23	17	24	19	18	27
Low	26	22	18	19	10	15
χ^2_{emp}	0.2370		0.4655		0.0187	

Table 4. Levels of completeness of the need-motivational criterion of cadets' professional thinking (at the first stage of the formative experiment)

Levels \ Groups	Number of cadets in groups that are at the relevant level					
	CG1(54)	EG1(42)	CG2(46)	EG2(41)	CG3(31)	EG3(47)
High	5	3	5	4	4	9
Average	28	19	22	20	17	20
Low	21	20	19	17	10	18
χ^2_{emp}	0.7597		0.0302		1.2214	

Table 5. Levels of completeness of the operational criterion of cadets' professional thinking (at the first stage of the formative experiment)

Levels \ Groups	Number of cadets in groups that are at the relevant level					
	CG1(54)	EG1(42)	CG2(46)	EG2(41)	CG3(31)	EG3(47)
High	3	1	4	2	4	4
Average	24	21	19	19	17	28
Low	27	20	23	20	10	15
χ^2_{emp}	0.7543		0.5906		0.4247	

The results of the study indicate that for all criteria of the levels of professional thinking completeness, the empirical value of the Pearson Criterion did not exceed the critical values. Thus, in all cases, the main statistical hypothesis is adopted that there are no differences between respondents of all groups according to these criteria (cognitive, need-motivational, and operational).

The experimental work was carried out during 2016-2018 as part of the formative experiment, and at the final stage, a second check of the completeness of the levels of relevant criteria for future border guard officers' professional

thinking was carried out, the results of which are presented in tables 6-8. Statistical processing was performed using Excel software. The obtained empirical values of the criterion appeared to be higher than the critical ones, which indicates significant differences between the respondents of the control and experimental groups in terms of the levels of completeness of professional thinking criteria [14, p. 141; 15].

The generalised results of the levels of completeness of cadets' criteria for professional thinking based on Tables 6-8 are visually reproduced in Figures 1-3.

Table 6. Levels of completeness of the cognitive criterion of cadets' professional thinking (at the final stage of the formative experiment)

Levels \ Groups	Number of cadets in groups that are at the relevant level					
	CG1(54)	EG1(42)	CG2(46)	EG2(41)	CG3(31)	EG3(47)
High	9	16	6	18	8	21
Average	32	23	30	18	15	23
Low	12	3	10	5	9	3
χ^2_{emp}	8.3126		10.4137		7.7503	

Table 7. Levels of completeness of the need-motivational criterion of cadets' professional thinking (at the final stage of the formative experiment)

Levels	Number of cadets in groups that are at the relevant level					
	CG1(54)	EG1(42)	CG2(46)	EG2(41)	CG3(31)	EG3(47)
High	7	15	10	19	10	25
Average	35	19	28	20	14	20
Low	12	8	8	2	7	2
χ^2_{emp}	7.0601		7.4637		7.2899	

Table 8. Levels of completeness of the operational criterion of cadets' professional thinking (at the final stage of the formative experiment)

Levels	Number of cadets in groups that are at the relevant level					
	CG1(54)	EG1(42)	CG2(46)	EG2(41)	CG3(31)	EG3(47)
High	8	16	8	16	7	23
Average	30	19	24	20	17	21
Low	16	7	14	5	7	3
χ^2_{emp}	7.2714		7.0293		7.5918	

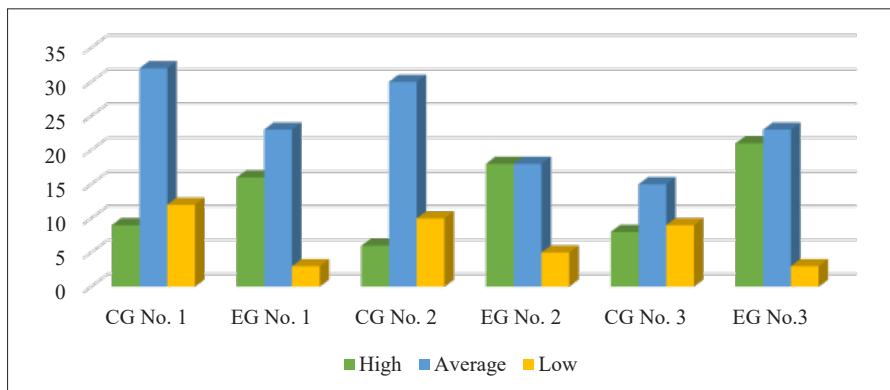


Figure 1. Statistical data on the level of cognitive criterion for the completeness of professional thinking

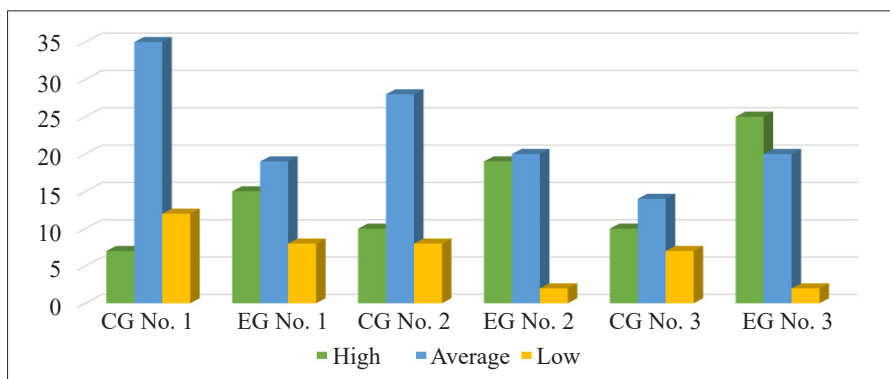


Figure 2. Statistical data on the level of the need-motivational criterion for the completeness of professional thinking

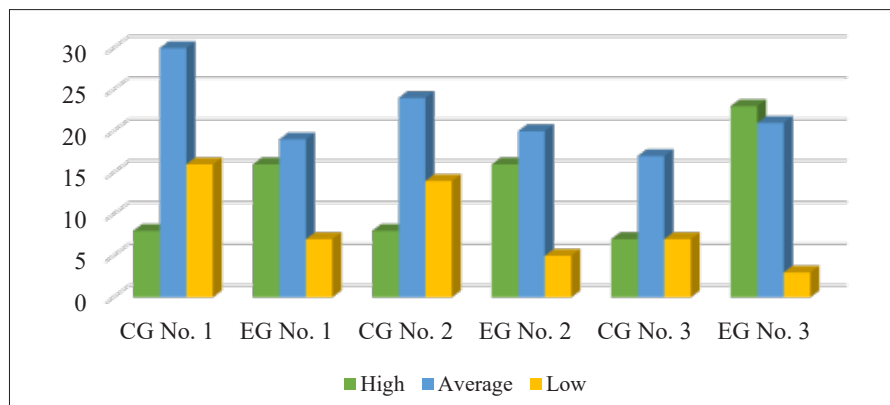


Figure 3. Statistical data on the operational criterion of professional thinking completeness

The results of a study conducted at the end of the 2017-2018 academic year have shown that cadets of the Engineering and Technical Faculty also had positive

changes in the completeness of the corresponding components of professional thinking, however, not statistically significant (Table 9).

Table 9. The completeness of criteria for cadets’ professional thinking of the Engineering and Technical Faculty (compared to the data obtained at the beginning of the experimental study)

Criteria	Cognitive		Need-motivation		Operational	
	Initial	Eventual	Initial	Eventual	Initial	Eventual
High	3	6	4	5	3	6
Average	13	14	10	15	12	13
Low	6	2	8	2	7	3
χ^2_{emp}	3.0370		4.7111		2.6400	

Thus, in this way, the influence of the author’s programme for the development of professional thinking of future border guard service employees on the process of their establishment was confirmed, as evidenced by the criterion indicators of the level of professional thinking completeness obtained as a result of empirical research.

Conclusions

A systematic study of the psychological foundations of the development of future border guard officers’ professional thinking allowed the author to reach a new level of theoretical understanding of the features of future border guards’ thinking activity using problem-based training and develop

a “programme for the development of professional thinking of border guard officers” as a component of professional training in a higher military educational institution. Thus, the results of an experimental study of the development of professional thinking of future border guard officers have shown the effectiveness of the developed author’s programme.

Further scientific developments consist in elaborating on practical recommendations for teachers of educational institutions of the State Border Service of Ukraine on the use of the programme for developing professional thinking of future border guard officers based on problem-based training.

References

- [1] Kaposlyoz, G. (2013). Features of motivation for professional activities (to master a profession) in adolescence. *Military Education*, 2, 96-109.
- [2] Lefterov, V. (2012). Personal-professional development of specialists in extreme activities by means of psychological training. *Psychology & Society*, 2(48), 91-107.
- [3] Mul, S.A. (2015). Psychological peculiarities of professional activity of officers of operating subdivision. *Actual Problems of Psychology*, 10(27), 344-353.
- [4] Potapchuk, Ye.M., & Potapchuk, N.D. (2015). Self-control of the individual in extreme and crisis situations, as important conditions for self-preservation. *Problems of Extreme and Crisis Psychology*, 17, 231-240.
- [5] Wang, D.-Z., Zou, Y., Li, X.-W., & Li, Y.-M. (2014). Status survey on medical students’ professional thinking and the analysis of influencing factors. *Journal of Shanghai Jiaotong University (Medical Science)*, 34(2), 230-234.
- [6] Kashapov, M.M., & Poshekhonova, Yu.V. (2017). The role of metacognition in professional thinking of pedagogues. *Psikhologicheskii Zhurnal*, 38(3), 57-65.

- [7] Kodekova, G., Mukatayeva, K., Korvyakov, V., Auyezova, Z., & Turganbayeva, B. (2018). Model of developing professional thinking in modern education conditions. *Opcion*, 34(85-2), 458-478.
- [8] Taraskina, I.V. (2016). Higher education in the context of formation of professional thinking of students. *Integration of Education*, 20(1), 82-87.
- [9] Solbrekke, T.D., Englund, T., Karseth, B., & Beck, E.E. (2016). Educating for professional responsibility: From critical thinking to deliberative communication, or why critical thinking is not enough. *Professional and Practice-based Learning*, 17, 29-44.
- [10] Kupin, A.I., Tarasova, O.V., Sulyma, T.S., Sokolova, S.V., Muzyka, I.O., & Tron, V.V. (2019). Defining and modeling of students' professional thinking development dependence on their training process organization. *CEUR Workshop Proceedings*, 2433, 33-47.
- [11] Fedyk, A.O. (2019). The results of a comparative analysis of the views of domestic and foreign scientists on the issues of professional training. *Collection of Scientific Works of the National Academy of the State Border Guard Service of Ukraine. Series: Psychological Sciences*, 2(13), 304-325.
- [12] Fedyk, A.O. (2019). Formation of professional thinking as a scientific problem. *Collection of Scientific Works of the National Academy of the State Border Guard Service of Ukraine. Series: Psychological Sciences*, 3(14), 208-231.
- [13] Mashbyts, Yu.I. (2019). *Psychological mechanisms and learning technology*. Kyiv: Interservice.
- [14] Sidorenko, E.V. (2000). *Methods of mathematical statistics in psychology*. St. Petersburg: Rech.
- [15] Shuvalova, E.M., & Tuhvatullin, A.H. (2015). Professional thinking formation of the students of pedagogical department: Didactic conditions. *Journal of Sustainable Development*, 8(7), 29-34.

Список використаних джерел

- [1] Капосльоз Г.В. Особливості мотивації до професійної діяльності (опанування професією) в юнацькому віці. *Військова освіта*. 2013. Вип. 2. С. 96–109.
- [2] Лефтеров В.О. Особистісно-професійний розвиток фахівців екстремальних видів діяльності засобами психологічного тренінгу. *Психологія і суспільство*. 2012. № 2(48). С. 91–107.
- [3] Мул С.А. Психологічні особливості професійної діяльності офіцерів оперативних підрозділів. *Актуальні проблеми психології*. 2015. Т. 10, № 27. С. 344–353.
- [4] Потапчук Є.М., Потапчук Н.Д. Самоконтроль особистості в екстремальних та кризових ситуаціях як важлива умова самозбереження. *Проблеми екстремальної та кризової психології*. 2015. Вип. 17. С. 231–240.
- [5] Status survey on medical students' professional thinking and the analysis of influencing factors / D.-Z. Wang et al. *Journal of Shanghai Jiaotong University (Medical Science)*. 2014. Vol. 34, No. 2. P. 230–234.
- [6] Kashapov M.M., Poshekhonova Yu.V. The role of metacognition in professional thinking of pedagogues. *Psikhologicheskii Zhurnal*. 2017. Vol. 38, No. 3. P. 57–65.
- [7] Model of developing professional thinking in modern education conditions / G. Kodekova et al. *Opcion*. 2018. Vol. 34, No. 85-2. P. 458–478.
- [8] Taraskina I.V. Higher education in the context of formation of professional thinking of students. *Integration of Education*. 2016. Vol. 20, No. 1. P. 82–87.
- [9] Educating for professional responsibility: From critical thinking to deliberative communication, or why critical thinking is not enough / T.D. Solbrekke et al. *Professional and Practice-based Learning*. 2016. Vol. 17. P. 29–44.
- [10] Defining and modeling of students' professional thinking development dependence on their training process organization / A.I. Kupin et al. *CEUR Workshop Proceedings*. 2019. Vol. 2433. P. 33–47.
- [11] Федик А.О. Результати компаративного аналізу поглядів вітчизняних і зарубіжних вчених щодо проблематики професійної підготовки. *Збірник наукових праць НАДПСУ. Серія: Психологічні науки*. 2019. № 2(13). С. 304–325.
- [12] Федик А.О. Формування професійного мислення як наукова проблема. *Збірник наукових праць НАДПСУ. Серія: Психологічні науки*. № 3(14). С. 208–231.
- [13] Машбиць Ю.І. Психологічні механізми і технологія навчання. Київ: Інтерсервіс, 2019. 208 с.
- [14] Сидоренко Е.В. Методы математической статистики в психологии. Санкт-Петербург: ООО «Речь», 2000. 350 с.
- [15] Shuvalova E.M., Tuhvatullin A.H. Professional thinking formation of the students of pedagogical department: Didactic conditions. *Journal of Sustainable Development*. 2015. Vol. 8, No. 7. P. 29–34.