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SKŁADNIKI NAJLEPIEJ ODZWIERCIEDLAJĄCE PRZYCZYNY ROZWOJU CECH KONKURENCYJNOŚCI U PRZYSZŁYCH SPECJALISTÓW FARMACJI W PROCESIE KSZTAŁCENIA ZAWODOWEGO

Galina Moroz
kandydat na stopień naukowy kandydata nauk pedagogicznych
Charkowskiego Narodowego Uniwersytetu Pedagogicznego imienia Hryhorija Sawwycza Skoworody
(Charków, Ukraina)
ORCID ID: 0000-0002-9991-187X
E-mail: frost1554@gmail.com

Adnotacja. W artykule przeanalizowano możliwy model konkurencyjnego przyszłego specjalisty farmacji i medycyny, przedstawiono kryteria charakterystyki konkurencyjności i ich elementy strukturalne.

W artykule przedstawiono rozważenie uwzględnienia kryteriów wartościowo-motywacyjnych, poznawczych, osobowościowo-aktywnościowych i refleksyjnych jako składników konkurencyjności, które okazały się najbardziej skuteczne w rozwoju warunków pedagogicznych, które przyczyniają się do wzrostu konkurencyjności, co można zobaczyć z tabeli podziału przyszłych farmaceutów względem poziomów konkurencyjności według określonych kryteriów po zakończeniu matematycznego przetwarzania zebranych danych empirycznych wyników diagnostycznego przecięcia kontrolnego powstawania konkurencyjności przyszłych farmaceutów.

Graficznie przedstawiono dynamikę wzrostu konkurencyjności u studentów według określonych kryteriów.

Należy zauważyć, że wraz z pomyślnym rozwojem tych analizowanych kryteriów spełniane są najważniejsze wymagania światowego rynku pracy – następuje wzrost konkurencyjności przyszłych specjalistów w procesie szkolenia zawodowego.

Słowa kluczowe: konkurencyjność, wartości motywacyjne, kryteria wartościowo-motywacyjne, poznawcze, osobowościowo-aktywnościowe i refleksyjne.

THE COMPONENTS THAT REFLECT BRILLIANTLY THE REASONS FOR THE DEVELOPMENT OF FUTURE SPECIALISTS' COMPETITIVENESS TRAITS IN PHARMACY IN THE PROCESS OF PROFESSIONAL TRAINING

Galina Moroz
Applicant for a Scientific Degree of Candidate of Sciences
H. S. Skovoroda Kharkiv National Pedagogical University (Kharkiv, Ukraine)
ORCID ID: 0000-0002-9991-187X
e-mail: frost1554@gmail.com

Abstract. This article analyses a possible model of a competitive future specialist in Pharmacy and Medicine, presents criteria for the characteristics of competitiveness and their structural componets.

The article presents a consideration of value-motivational, cognitive, personalative-active and reflexive criteria of the components of competitiveness, which proved to be the most effective for the development of pedagogical conditions conducive to the growth of competitiveness, which can be seen from the table of distribution of future pharmacists by the levels of competitiveness according to certain criteria after mathematical processing of the collected empirical data of the diagnostic control section of the competitiveness of future pharmacists. The dynamics of competitiveness growth of the students according to certain criteria is shown graphically.

It is noted that with the successful development of these analysed criteria is the most important requirement of the World Labour Market – there is an increase in the competitiveness of future professionals in the training process.

Key words: Competitiveness, value-motivational, cognitive, personalative-active and reflexive criteria.

КОМПОНЕНТИ, ЩО НАЙБІЛЬШ ЯСКРАВО ВІДОБРАЖАЮТЬ ПРИЧИНИ РОЗВИТКУ РИС КОНКУРЕНТОСПРОМОЖНОСТІ В МАЙБУТНІХ ФАХІВЦІВ ФАРМАЦІЇ У ПРОЦЕСІ ПРОФЕСІЙНОЇ ПІДГОТОВКИ

Галина Мороз
здобувач наукового ступеня кандидата педагогічних наук
Харківського національного педагогічного університету імені Г. С. Сковороди (Харків, Україна)
ORCID ID: 0000-0002-9991-187X
e-mail: frost1554@gmail.com

Анотація. У статті проаналізована можлива модель конкурентоспроможного майбутнього фахівця фармації і медицини, наведені критерії характеристик конкурентоспроможності та їх структурні компоненти.

У статті презентовано розгляд ціннісного-мотиваційного, когнітивного, особистісно-діяльнісного і рефлексійного критеріїв як складових частин конкурентоспроможності, які виявилися найбільш ефективними для розвитку педагогічних умов, що сприяють росту конкурентоспроможності, що можливо побачити з таблиці розподілу майбутніх фармацевтів за рівнями сформованості конкурентоспроможності за певними критеріями після завершення математичної обробки зібраних емпіричних даних результатів діагностичного контрольного зрізу сформованості конкурентоспроможності майбутніх фармацевтів.

Показана графічно динаміка зростання конкурентоспроможності у студентів за певними критеріями.

Відзначено, що у разі успішного розвитку цих проаналізованих критеріїв здійснюється найважливіша вимога світового ринку праці – відбувається зростання конкурентоспроможності майбутніх фахівців у процесі професійної підготовки.

Ключові слова: конкурентоспроможність, ціннісно-мотиваційний, когнітивний, особистісно-діяльнісний і рефлексійний критерії.

Introduction. Implementation of the state policy on the development of Pharmaceutical and Medical spheres is aimed at modernization of modern Ukrainian education for the training of competitive specialists on the level of the world standards. The government will maximally promote the development of the Ukrainian pharmaceutical and medical business. The Ministry of Health Care supports the national drug manufacturies, which remains a public policy priority.

The concept of Health Care development in Ukraine is aimed at implementing the regulations of the Constitution and Laws of Ukraine to provide affordable medicine to every citizen of Ukraine, the introduction of new effective mechanisms for financing and management in Health Care, creating conditions for a healthy lifestyle. To do this, it is necessary to graduate competitive future professionals from pharmaceutical and medical universities. Characteristics and structure of qualities of competitive personality are considered in the works of V. Andreev, G. Babiy, I. Drat, L. Dudko, O. Ilenko. However, the problem of forming the competitiveness of future specialists in Pharmacy and Medicine in Higher educational institutions remains in the attention of scientists. The urgency of this problem is exacerbated by the need to eliminate contradictions that objectively affect the quality of training of future professionals in the pharmaceutical industry. This is complicated by a number of contradictions that arise between:

– the need of society in modern competitive specialists in the pharmaceutical industry and the insufficient level of attention to the formation of competitive qualities that actualize the competitiveness of students in a particular field in the content of their training;

– modern requirements of the labor market to specialists in the pharmaceutical industry and limited opportunities for their satisfaction with the modern system of the educational institution;

– acmeological needs of the individual in professional, intellectual and cultural development, which ensures its competitiveness in the labor market, and the limited methodology, theory and technology of training to achieve progressive goals;

– the holistic nature of the process of formation of the subject as a competitive specialist and the uncertainty of the stages and pedagogical conditions of its effectiveness.

Overcoming these contradictions is possible under the conditions of introduction into the educational process of educational institutions of various models of increasing the competitiveness of future specialists.

In analysis of publications of modern researchers Moroz G. argues, “Competition is a productive interaction of two, in which one goal is to achieve the highest results in their field (health, education, economics, etc.), but its achievement is possible only by one of the competitors who has appropriate professional resources (knowledge, qualities, motives, high level of professional activity), and competitiveness is the ability to compete, the struggle to achieve the best results and a competitive person – this is when she is able to be talented, able to withstand competition” (Moroz, 2019: 66).

The concept of “competitiveness” of the specialist is quite broad and not definitively defined. Thus, the analysis of scientific works of O. Fil, E. Gismatullina and other scientists shows that along with the concept of “competitiveness of the specialist” such related concepts as “professionalism”, “professional competence”, “professional skill” etc. are used as identical.

Thus, it was found that the concept of “competitiveness” is interpreted mainly as “competitiveness” (V. Busel), which in turn is understood as competition in the industry, the struggle to achieve the best results of the competition (V. Dal, T. Efremova).

Competition from the point of view of economists is interpreted by A. Smith, “Competition is regarded as a behavioral category, when individual sellers and buyers compete in the labor market for more profitable sales and purchases, respectively” (Smith, 1997: 11). M. Porter started, “The essence of competition is expressed by the threat of new competitors, the threat of substitute products, the ability of suppliers of components to bargain, the ability of buyers to bargain and the competition of existing competitors” (Porter, 1993: 53). J. Schumpeter presents competition as, “Competition is the rivalry of the old with the new, with innovation” (Schumpeter, 1982: 34).

V. Bykova argues, “The competitiveness of a specialist is the advantage of a particular specialist over other professionals who perform similar labor operations in terms of qualities, properties, results of their own work, most important for leadership of the firm, organization where he works” (Bykova, 2012: 9).

The depth of research on this topic can be supplemented by works that would highlight the conditions for the formation of a successful model of a competitive specialist in pharmacy or medicine in the training process.

Main part. The aim of the study is based on the disclosure of the conditions of the process of forming the subject as a competitive specialist in the process of professional activity, which is important in the system of continuing professional education, which ensures the achievement of a high level of professionalism.

To study the researched problem of modern activity of the future specialists of the pharmaceutical profile were used general scientific approaches:

– personal-activity approach (A. Guba, O. Popova), which creates conditions for personal realization of the future specialist, its disclosure abilities and qualities in the process of incomplete professional training;

– Acmeological approach (V. Petrukhin), is manifested as a condition for improving the quality of education, within which the professional purpose of education is the creation of conditions for the development of the future specialist and provides an opportunity to consider the acquisition of competitiveness, which is essentially a phenomenon aimed at achieving the highest quality – as a process of climbing to the top of the "acme" – the highest point of self-realization of a professional;

– program-targeted approach (S. Baikal, O. Radish), which means a set of measures aimed at improving educational work and its effectiveness, affects the development of the individual in such a way that it becomes competitive, socially mobile, competent and successful.

The purpose of the study: is to identify the impact of theoretically sound and experimentally tested organizational and pedagogical conditions for the formation of the competitiveness of the future specialist in the pharmaceutical industry on the quality of training.

The object of research: professional training of future specialists in the pharmaceutical industry in a higher education institution.

The subject of research: organizational and pedagogical conditions for the formation of the competitiveness of future specialists in the pharmaceutical industry in the process of training.

In accordance with the subject and purpose of the study identified its main objectives:

1. Clarify the essence of the concept of "competitiveness of the specialist."
2. Identify the specifics of the competitiveness of professional training in the pharmaceutical industry.
3. Theoretically substantiate and experimentally test the organizational and pedagogical conditions for the effectiveness of the process of forming competitiveness in students of different specialties.
4. Clarify the criteria and quality indicators of professional training of future specialists in the pharmaceutical industry.

The hypothesis of the study is based on the assumption that the process of training future professionals for professional activity in the pharmaceutical industry will be more successful due to the implementation of the following organizational and pedagogical conditions:

– deepening the motivation and personal focus of students to master the relevant professional information of the pharmaceutical industry by complicating the goals and content of training at different stages of training future professionals;

– formation of students' subjective position on the basis of the use of active forms and methods of teaching to master the experience of future professional activity of the employee;

– ensuring the implementation of the corrective program of personal development of students, which reflects on the formation of the personality of a competitive specialist in the pharmaceutical industry during training.

Research methods. To achieve the goal and solve the research problems, a set of methods was used: theoretical – analysis and synthesis, induction and deduction, comparison, analogy, comparison – to clarify the state of development of the problem, to define the conceptual and categorical apparatus; generalization and systematization of scientific provisions, content analysis of the content of industry standards, curricula, modeling – for the development and justification of the technology of forming the competitiveness of future specialists in the pharmaceutical industry in the process of training; empirical – questionnaires, testing, observation, interview, methods of expert assessments and self-assessment – to identify the level of competitiveness of future professionals in higher education; pedagogical experiment (ascertaining, formative and control stages) – to test the research hypothesis; methods of mathematical statistics – for quantitative and qualitative analysis of empirical data processing, proving the reliability of the results of experimental research.

The scientific novelty of the study is that: for the first time scientifically substantiated, developed and experimentally tested organizational and pedagogical conditions (or stages) of forming the competitiveness of future specialists of the higher educational institution of the pharmaceutical industry in the process of professional training.

Results and discussions. This article presents a review of value-motivational, cognitive, personalative-active and reflexive criteria as components of competitiveness, which, in my opinion, are the most effective for the development of pedagogical conditions conducive to the growth of competitiveness. specialists in the pharmaceutical industry.

Experimental work to identify the effectiveness of the system of forming the competitiveness of future specialists in the pharmaceutical industry in the process of training was carried out for 8 years. During this period, 540 students of the National University of Pharmacy (NUPh) and 60 teachers were involved in the experimental work at different stages. Of these, the pilot study covered 370 students and 56 teachers.

Approbation of pedagogical conditions for the formation of competitiveness of future young professionals, confirmation of the effectiveness of their implementation in the training process is determined primarily by the achievement of positive results in the application of appropriate measures during the formative phase of the experiment. Its

purpose is to experimentally test the proposed pedagogical conditions, which were considered as an integral part of the hypothesis of this study, to determine its effectiveness in achieving the planned result of developing the competitiveness of future pharmaceutical professionals. The pedagogical experiment involved groups from the following specialties: "Pharmacy", "Clinical Pharmacy", "Technology of Perfumes and Cosmetics", "Technology of Pharmaceuticals", "Laboratory Diagnostics", "Biotechnology", "Business Economics", "Marketing" and "Management of Organizations". The pedagogical research was aimed at making intentional changes of a progressive nature in the educational process in order to obtain higher results and is associated with their further verification, evaluation and reproducibility in other conditions.

The formative stage of the pedagogical experiment is important to test the effectiveness of the proposed pedagogical conditions. The essence of the dissertation research involves a scientific search, starting with the conditions proposed by me, the corresponding methodological measures for the formation of the competitiveness of future pharmacists.

In this regard, during 8 years of research and experimental work I have systematically conducted diagnostic studies (testing, questionnaires, individual interviews, surveys), the results of which allow us to trace the dynamics of the level of competitiveness of future pharmacists in training from the beginning of the experiment to his completion. After the formation stage of the pedagogical experiment, a control section was made. The comparative analysis of the results received during the ascertaining and control stages is carried out.

After mathematical processing of the collected empirical data, the results of the diagnostic control section of the formation of the main indicators of competitiveness of future pharmacists for, in my opinion, the components that are the most important for the process of forming the competitiveness of future young professionals on the first value-motivational criterion: out of 370 students in the experimental group, 15.1% had a high level, 43% a medium level, and 41.9% a low level. In the control group, 10.2% of students had a high level, medium – 30%, low – 59.8%. (analysis of the overall result). Accordingly, these indicators obtained at the first stage of the experiment were as follows: in the experimental group, 10.8% of students had a high level, medium – 29.9%, low – 59.3%. In the control group had a high level: 8.3%, medium – 27.2%, low – 64.5%. The results obtained are summarized in table 1.

Table 1

The diagnostic results of formation of the future pharmacists' competitiveness by value – motivational criterion after the completion of the molding experiment

Criterion indicators	%						%					
	CG			EG			CG			EG		
	To the experimental work						After the experimental work					
	H	M	L	H	M	L	H	M	L	H	M	L
Satisfaction with professional activities	8,4	25,9	65,7	10,6	28,1	61,3	10,3	28,7	61	15,2	41,7	43,1
The presence of motives for success in a competitive pharmacist	8,6	28,6	62,8	10,9	30,7	58,4	10,5	31,4	58,1	15,4	44,4	40,2
The presence of motives to avoid failure in a competitive pharmacist	7,9	27,1	65	10,7	30,9	58,4	9,8	29,9	60,3	14,7	42,9	42,4
Summation:	8,3	27,2	64,5	10,8	29,9	59,3	10,2	30	59,8	15,1	43	41,9

Preliminary analysis of the data in Table 1 shows that for all indicators the results of the diagnostic control section for students of control (CG) and experimental (EG) groups before the experimental work were close in value, and after – transmit-experimental work, the corresponding results for students of the experimental group were better than the results of the control group.

Since the observed value is less than, the probability that after the experimental work the average level of results of the experimental group became higher than the average level of results of the control group on the reflection criterion as a whole is 95%.

Summarizing the results of the statistical analysis, we conclude that the states of the control and experimental groups before the experimental work coincide for each individual indicator of the reflecsive criterion, as well as the criterion as a whole, and after this work – differ, and the average the level of results of the experimental group becomes higher than the average level of results of the control group both for individual indicators of the reflecsive criterion and for the whole criterion as a whole.

After mathematical processing of the collected empirical data, the results of the diagnostic control section of the formation of the competitiveness of future pharmacists on the value-motivational, cognitive, personalative – active and reflexive criteria look like this.

Of the 370 students in the experimental group, 16.4% have a high level, 47.3% an average level, and 36.3% a low level. In the control group, 11.1% of students have a high level, the average level – 32.8%, low – 56.1% (analysis of the overall result).

Accordingly, these indicators obtained at the first stage of the experiment were as follows: in the experimental group had a high level: 9.8% of students, medium level – 27.2%, low – 63% of students. In the control group, 8.6% of students had a high level, an average level of 27%, and a low level of 64.4%. Generalized results of the formation of the competitiveness of future pharmacists on the value-motivational, cognitive, personalative-active and reflexive criteria are summarized in table 2.

Table 2

Distribution of future pharmacists by levels of competitiveness according to certain criteria after the completion of the molding experiment

Criteria	%						%					
	CG			EG			CG			EG		
	To the experimental work						After the experimental work					
	H	M	L	H	M	L	H	M	L	H	M	L
Value-motivational	8,3	27,2	64,5	10,8	29,9	59,3	10,2	30	59,8	15,1	43	41,9
Cognitive	7,5	25,7	66,8	8,8	26,4	64,8	9,9	33,2	56,9	18,4	48,6	33
Personalative-active	8,2	30,7	61,1	7,8	27,9	64,3	11,7	37,2	51,1	15,9	50,3	33,8
Reflexive	10,2	24,3	65,5	11,6	24,9	63,5	12,9	31,1	56	16,2	47,3	36,5
Summation:	8,6	27	64,4	9,8	27,2	63	11,1	32,8	56,1	16,4	47,3	36,3

Figures 1–2 show graphical illustrations for value-motivational, cognitive, personality-activity and reflection criteria in general in accordance with table 2.

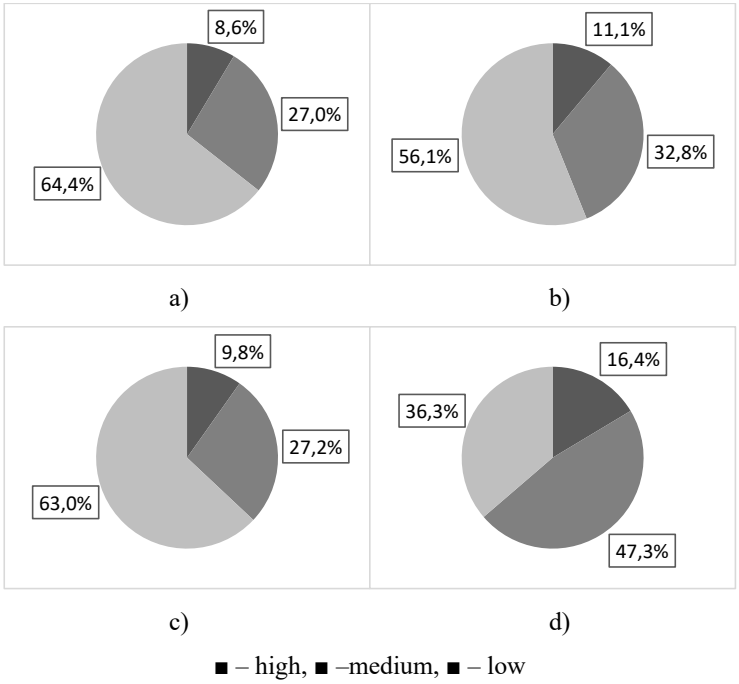

Figure 1. Diagnostic results in general according to certain criteria for CG before (a) and after (b) conducting experimental work and for EG before (c) and after (d) conducting experimental work

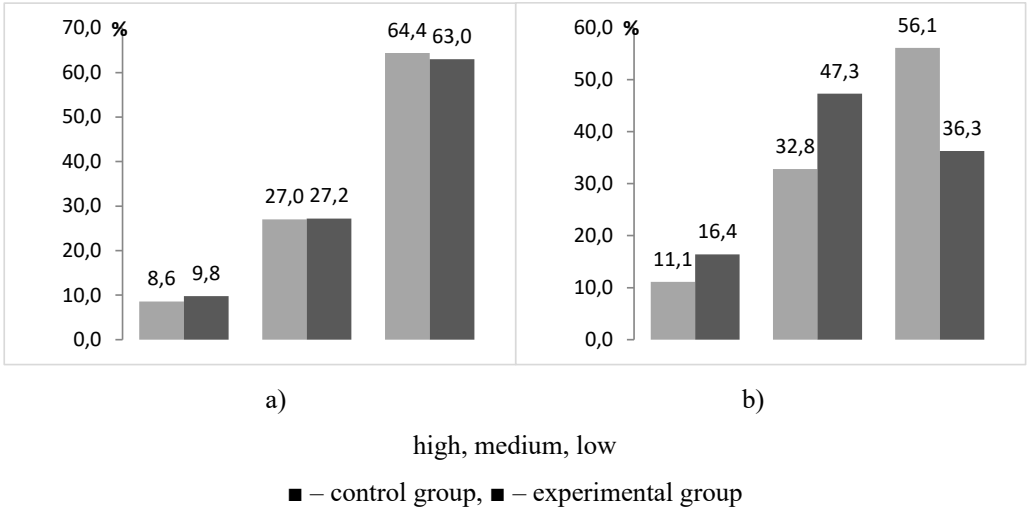

Figure 2. Comparison of diagnostic results in general according to certain criteria for students of CG and EG before (a) and after (b) conducting experimental work

For each of the criteria listed in table 2 above, it was found that the proposed experimental technique is effective. Finally, we established the presence or absence of differences in the diagnostic results for the control and experimental groups for all the considered criteria in general, using the data of the last row of table 2.

The observed value of the statistics of the criterion of homogeneity χ^2 to the conduct of experimental work was equal to $\chi^2_{observed} = 0,22$ and was less than the critical value $\chi^2_{critical} = 5,99$. Therefore, at the significance level of 0.05, we concluded that the states of the control and experimental groups by all the considered criteria in general to the conduct of experimental work coincided.

Similarly, we tested the hypothesis of homogeneity after the experimental work. In general, according to all the considered criteria, the observed value of the statistics of the homogeneity criterion χ^2 was equal to to $\chi^2_{observed} = 18,69$, which exaggerates the critical value $\chi^2_{critical} = 5,99$. Therefore, the states of the control and experimental groups according to all the considered criteria in general after the experimental work were differ.

To determine the nature of these differences, we used the Cramer-Welch test. We got the following values:

$\overline{x}_{CG} = 74,58$; $D_{CG} = 99,20$;

$\overline{x}_{EG} = 78,27$; $D_{EG} = 101,40$;

$t_{observed} = -3,98$;

$k = 333$, $t_{critical} = 1,65$.

Since the observed value $t_{observed} = -3,98$ was less than the critical value $-t_{critical} = -1,65$, the reliability of the fact that after the experimental work the average level of results of the experimental group became higher than the average level of results of the control group for all considered criteria in general, is 95%.

Thus, the statistical analysis conducted in the work confirms that after conducting experimental work in the experimental group, the percentage of students with high and medium levels became significantly higher, and the percentage for the number of students with low levels – decreased significantly in comparison with the corresponding indicators of the control group. Based on this, we can conclude about the effectiveness of my pedagogical conditions for the formation of the competitiveness of future pharmacists.

We see prospects for further explorations in the development of educational and methodological support for students of pharmacy and medicine on the way to increase their level of competitiveness.

Conclusions. Summing up the results of the statistical analysis, we can conclude that the control and the experimental groups for experimental work coincide for each indicator of value – motivational, cognitive, personalative-active and reflexive criteria, as well as for the criteria in general, and after this work – differ, namely, the average level of the results of the experimental groups became higher than the average level of the results of the control groups after the experimental work on individual indicators of these four criteria.

So, the future competitive specialists of the experimental groups have mastered the modern knowledge of the professional orientation, the assimilation of which enriches knowledge, abilities, skills, that is, instills experience of a professional orientation, promotes highly intellectual and creative development of the individual.

Thus, the conducted pedagogical experiment had a positive effect on the development of value-motivational, cognitive, personalative-active and reflexive components of the future specialists' competitiveness in the Pharmaceutical Sphere.

It turned out that the component – structural and level analysis of a specislist's competiriveness allows us to clearly represent the essence of the concept under study and its content and helps to determine the ways of managing the formation of competitiveness among future specialists in the pharmaceutical industry.

From the author's point of view, the essence of the phenomenon of the future specialist's competitiveness at the pharmaceutical industry is that it has multilevel properties which allow a person to develop highly in his field of the professional activity and to decide the problem of competitiveness.

Bibliography:

1. Бикова В.О. Рефлексія. Вісник Дніпропетровського університету імені Альфреда Нобеля. Серія: *Педагогіка і психологія.* 2012. № 1 (3). С. 9.
2. Портер М. Международная конференция / Международные отношения, 1996. – 896 с.
3. Смит Адам. Исследование о природе и причинах багатства народов. *Ось-89*. Москва, 1997. 255 с.
4. Шумпетер Й. Теория экономического развития. Прогресс. Москва, 1982. 244 с.
5. Moroz G.N. Formation of future specialists` competitiveness in the pharmaceutical field in professional training. BarSU Herald. Series Education. Psychology. Philology (Literary Studies)/edited by Academician Associate professor Vasiliy Ivanovich Kachurka. Baranovichy: BarSU, 2019. Volume 7. P. 65–71.

References:

1. Bykova V.O. (2013). Refleksia [Reflection]. Visnyk Dnepropetrovskoho universitetu imeni Alfreda Nobelya. Seria: Pedagogika i psykhologiya. N1 (3). P. 9. [in Ukrainian].
2. Porter M. (1996). Mezhdunarodnaia konferentsiya / Mezhdunarodnye otnosheniya [International Relations]. [in Russian].
3. Smit Adam. (1997). Issledovanie o prirode i prichinah bogatstva narodov. Moskva: Os'-89 [in Russian].
4. Shumpeter J. (1982). Teoriya ekonomicheskogo razvitiya [Theory of Economic Development]. Moskva: Progress [in Russian].
5. Moroz G.N. (2019). Formation of future specialists` competitiveness in the pharmaceutical field in professional training. BarSU Herald. Series Education. Psychology. Philology (Literary Studies)/edited by Academician Associate professor Vasiliy Ivanovich Kachurka. Baranovichy: BarSU, Volume 7. P. 65–71.