

PROBLEMS OF SCIENTIFIC RESEARCH ACTIVITIES ORGANIZATION OF UNIVERSITY ACADEMIC STAFF AND WAYS OF THEIR SOLVING

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Abstract. On the ground of the experimental studies the article clarifies the reasons that significantly affect the efficiency of scientific research of academic staff (overloading by educational work, obsolete and poor material and technical base, weak contacts with leading academic institutions). The following solutions are proposed in order to overcome the identified negative factors: to involve the scientists of scientific research institutions in scientific research at higher school; to establish joint basic research laboratories, research centers, centers of innovations, departments and other institutions; to implement an effective system of incentives for scientific research activities of academic staff of higher educational institutions.

Keywords: scientific research activities, academic staff, educational process, essence of scientific activities of teachers.

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Introduction

Science at university is a sphere of the teachers' activities, their development and an important component of the educational process. The organization of the scientific research activities at university should take into account the changes in higher education in the last decade, particularly in the forms, types, content, funding of the university science and the attitude of the academic staff to the science.

Renewal and significant intensification of research and innovation status of modern higher education, an important role of science in the activities of subjects of university educational process, integration processes in the educational and scientific fields actualize further exploration in the field of the scientific research activities of university subjects that concern with the improvement of the educational environment, substantiation of the conditions for the effective implementation of the university science. Nowadays, the urgent task is to identify the practical state of the scientific research activity of university academic staff, establish its advantages and disadvantages and develop the ways of its optimization.

The analysis of the recent scientific works devoted to the following problem has showed that the issues of the scientific development and the organization of the scientific research activities of the academic staff are studied by the scientists of various branches.

Factual material analysis

The problem of the development of the research and innovation context of universities is revealed in the works of V. Lugovyy, O. Sliusarenko, Zh. Talanova, etc.; the essence and the conditions of the scientific activities implementation are proved by M. Yevtukh, V.

Maiboroda, Yu. Skyba, O. Yaroshenko, etc.; the content and the structure of the scientific competences are pointed out by S. Kalashnikova, etc.; the creation of conditions for the teachers' scientific work realization is described by B. Pshyk, I. Romashchenko, O. Sergeieva, etc.; professional competence of a teacher as a condition of the effective organization of research activities is examined by N. Divinska; the management and the mechanisms of the researcher's career development in terms of the university autonomy are developed by H. Chornoivan, etc.

Lugovyy, Sliusarenko and Talanova (2013) define the research and innovation component as a key condition for the effective activities of the academic staff.

As O. Sergeieva (2015) indicates, the world experience of the scientific research development in higher educational institutions is indicative of the development of purposeful measures aimed at adapting to the requirements of the external and internal environment of the academic staff activities.

The external factors contributing to the development of the scientific research are a change of the activities of higher educational institution in the international environment, the increase of the demands to the consumers of the educational services, the change of the national and the international regulations in the field of education, etc.

At the same time, the internal factors that ensure the development of the scientific research are the introduction of modern elements of the educational management (structure, procedures, style and functions of management, the level of professional knowledge and the skills of the academic staff, etc.) (Sergeieva, 2015, p.88).

The main role in the development of the purposeful measures of adaptation to the new conditions plays the academic staff of the department. As Kurylo (2014) mentions, department is a basis where complex function of the higher educational institution is combined, *id est* education – science – innovations – introduction in production that lay the foundations for the intellectual capital formation, growth of the competitive specialist and the state strengthening (p. 61).

The results of the scientific research activities of the academic staff may have different level of the scientific originality depending on the searching, specifying or reproduction research that they conduct. But, in any case, the main function of the scientific research activities of the teachers is the production of new knowledge, the application of new advances to improve the quality of higher education, the popularization of science in the student audience (Yaroshenko, 2015).

It may be noted that the scientific activities in higher educational institutions are considered firstly, as a part of the educational process, secondly, as a branch of the intellectual creative activity of an individual, thirdly, as a condition for the academic staff training, improving their academic skills, development and distribution of creativity, innovations, fourthly, as a determinant of their image and scientific potential as well as updating of the intellectual potential of the society (Maiboroda & Skyba, 2015, p. 56).

According to N. Divinska (2016), for the successful organization of the scientific activities in the process of the educational work, the teacher of the higher educational institution should have the skills to analyze the correlation among “aim – means – result”, organize the creative atmosphere for learning and acquisition of new knowledge through training (p. 45).

As H. Chornoivan (2016) notes, the integration of Ukraine into the European Union opens many opportunities before the researchers, particularly visa-free travel, participation in

the international programs and projects, providing with the work, continuation of the career, enriching the experience (p.307).

Despite a significant number of works, the reasons that prevent the organization of the scientific research are not clarified completely, the ways and the means that enhance the level of the scientific research of the academic staff are not proved theoretically and practically.

The aim of the article is to identify the factors that impede the effective realization of the scientific research by the academic staff and propose the ways of their solving.

Realization of the scientific research by the academic staff

The study was carried out in eight higher educational institutions, particularly in National Pedagogical Dragomanov University, Lutsk National Technical University, Lesya Ukrainka Eastern European National University, Chernihiv National Pedagogical University named after T. Shevchenko, Dnipropetrovsk National University, Oleksandr Dovzhenko Hlukhiv National Pedagogical University, Vinnytsia State Pedagogical University named after Mykhailo Kotsiubynsky, Poltava National V. G. Korolenko Pedagogical University (Yaroshenko, Skyba & Titarenko, 2015).

In general, the inquiry involved 291 teachers of the universities including doctors of sciences – 29 individuals (15,2 %), PhDs – 179 individuals (61,5 %) and teachers without academic degree – 83 individuals (28,5 %). The division of the respondent academic staff of higher educational institutions into 3 groups is given in the diagram (fig. 1).

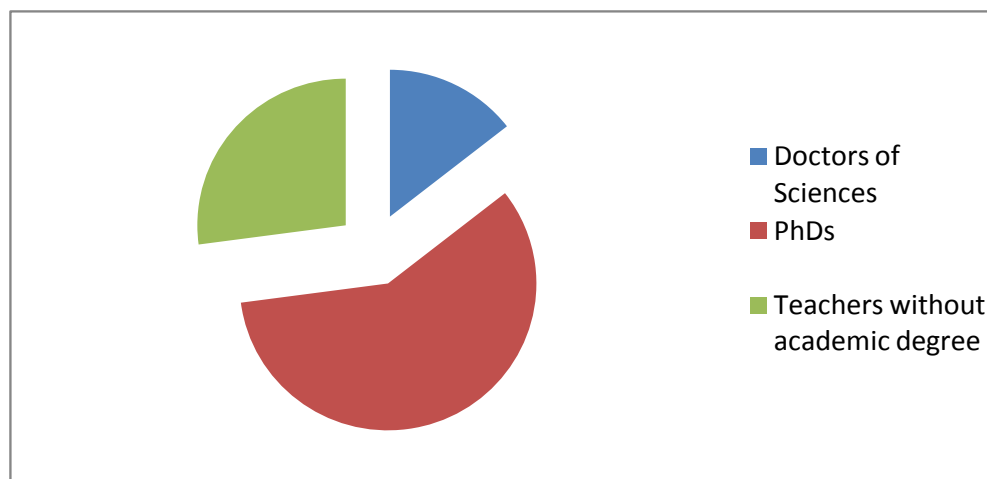


Fig. 1. Quantitative contingent of the academic staff involved in the inquiry (%)

The results of the inquiry testified that the fundamental research at universities has been carried out by 48,2 % of professors, 36,3 % of PhDs and 21,7 % of teachers without academic degree, the applied research has been carried out by 44,8 % of professors, 61,5 % of PhDs and 75,9 % of teachers without academic degree, other kinds of research have been carried out by 7 % of doctors of sciences, 2,2 % of PhDs and 2,4 % of teachers without academic degree (fig. 2). It was found that doctors of sciences carried out mostly the fundamental research, PhDs and teachers without academic degree carried out the applied research.

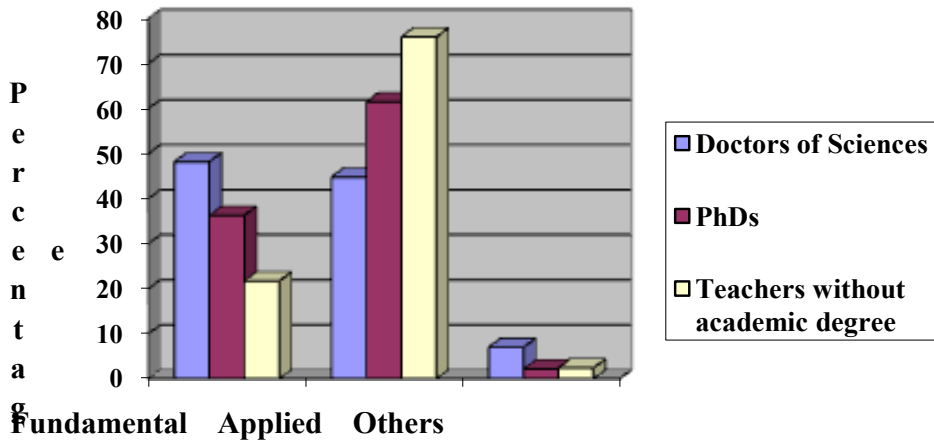


Fig. 2. Implementation of different types of scientific research by the academic staff (%)

The reasons that impede the effective realization of the scientific research by the academic staff of higher educational institutions have been determined. Generalized data are presented in table 1.

Table 1

The reasons that impede an effective organization of the scientific research activities at university (Yaroshenko, Skyba&Titarenko, 2015)

The reasons that impede the effective realization of the scientific research by the academic staff	Rank numbers							
	1	2	3	4	5	6	7	
	The number of choices							
Lack of research adviser	48	21	31	46	58	27	59	290
Weak contacts with the leading academic institutions	37	53	72	65	30	21	13	291
Lack of material and technical base of higher educational institution	96	72	28	32	34	19	10	291
Overloading by educational work	99	58	34	25	31	18	26	291
Unfavorable atmosphere for the creative work at department, faculty, institute	17	21	31	41	43	64	56	273
Insufficient level of computer knowledge	15	24	26	15	35	79	76	270

The reasons that impede the effective realization of the scientific research by the academic staff	Rank numbers							
	1	2	3	4	5	6	7	
	The number of choices							
Insufficient level of foreign language competence	33	24	50	31	41	41	59	279
The reasons that impede the effective realization of the scientific research by the academic staff	Rank numbers							
	1	2	3	4	5	6	7	
	Percentage							
Lack of research adviser	16,6	7,2	10,7	15,9	20,0	9,3	20,3	290
Weak contacts with the leading academic institutions	12,7	18,2	24,7	22,3	10,3	7,2	4,5	291
Lack of material and technical base of higher educational institutions	33,0	24,7	9,6	11,0	11,7	6,5	3,4	291
Overloading by educational work	34,0	19,9	11,7	8,6	10,7	6,2	8,9	291
Unfavorable atmosphere for the creative work at department, faculty, institute	6,2	7,7	11,4	15,0	15,8	23,4	20,5	273
Insufficient level of computer knowledge	5,6	8,9	9,6	5,6	13,0	29,3	28,1	270
Insufficient level of foreign language competence	11,8	8,6	17,9	11,1	14,7	14,7	21,1	279

As the data of table 1 indicate, the answers of the academic staff concerning the factors that impede the effective organization of the scientific work have been ranged in the following way: most respondents assigned rank number 1 to “overloading by educational work”. The second position is taken by the lack of material and technical base of higher educational institutions. The third position is taken by “lack of research adviser”. The fourth and the fifth positions are taken by weak contacts with the leading academic institutions and insufficient level of foreign language competence. According to the teachers’ estimation, the sixth position is taken by unfavorable atmosphere for the creative work at department, faculty, institute. The seventh position is taken by “insufficient level of computer knowledge”.

The dynamics of the respondents’ answers indicates that material and technical base affects the effectiveness of the scientific research significantly and, at the same time, uneven distribution of the answers concerning the integration of the scientific research institutions and higher educational institutions is traced (fig. 3).

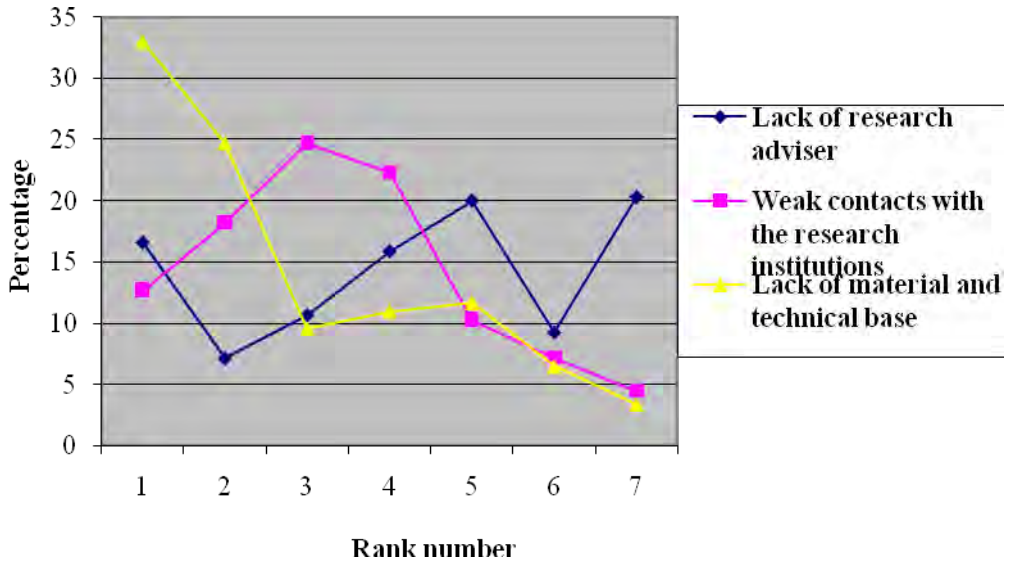


Fig. 3. The dynamics of gradation of the respondents' answers (%)

The respondents marked the dependence between the overloading by the educational work and the efficiency of the scientific research. At the same time, the low level of knowledge of foreign language and computer and unfavorable psychological atmosphere in the staff are not an obstacle for carrying out the scientific research (fig. 4).

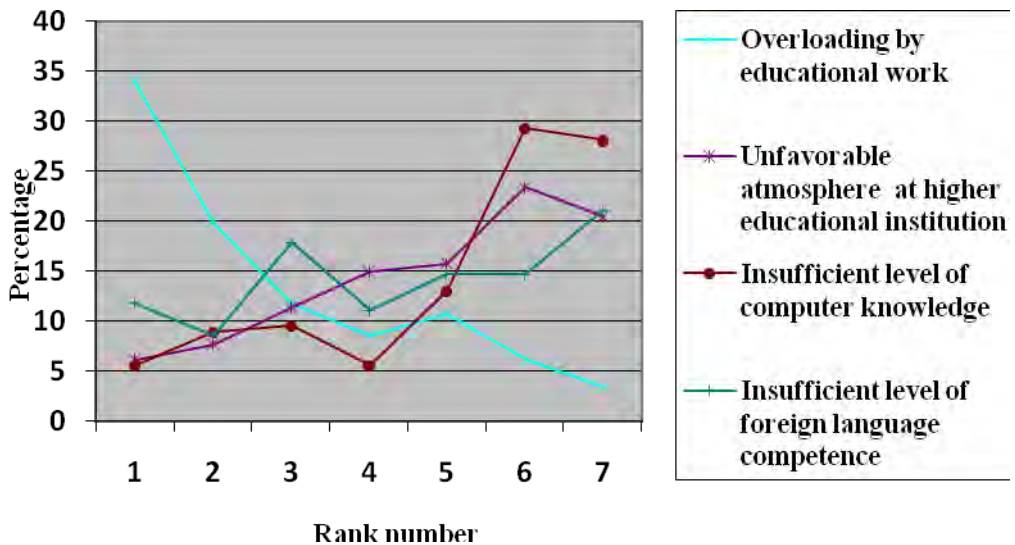


Fig. 4. The dynamics of gradation of the respondents' answers (%)

Thus, nearly half of the academic staff mentions that the main obstacle to the organization of the scientific research work is the overloading by the educational work and weak material and technical base of the university.

The dynamics of answers of doctors of sciences, PhDs and teachers without academic degreewith respect to the factors that impede the effective realization of the scientific research activities is characterized (tables 2 - 4).

Table 2

The results of the inquiry of doctors of sciences with respect to the factors, impeding the effective realization of the scientific research activities
(Yaroshenko, Skyba & Titarenko, 2015)

The reasons that impede the effective realization of the scientific research by the academic staff	Rank numbers							
	1	2	3	4	5	6	7	
	The percentage of choices							
Lack of research adviser	25,0	14,3	14,3	7,1	10,7	7,1	21,4	28
Weak contacts with the leading academic institutions	28,6	17,9	17,9	17,9	14,3	0,0	3,6	28
Lack of material and technical base of higher educational institution	35,7	14,3	17,9	10,7	14,3	0,0	7,1	28
Overloading by educational work	28,6	32,1	7,1	10,7	14,3	0,0	7,1	28
Unfavorable atmosphere for the creative work at department, faculty, institute	0,0	14,3	7,1	14,3	21,4	32,1	10,7	28
Insufficient level of computer knowledge	0,0	17,2	10,3	10,3	0,0	31,0	31,0	29
Insufficient level of foreign language competence	10,7	10,7	0,0	3,6	14,3	3,6	57,1	28

As the data of table 2 indicate, the answers of the doctors of sciences with respect to the factors that impede the effective organization of the scientific work have been ranged in the following way: the greatest number of respondents assigned rank number 1 to “lack of material and technical base of higher educational institution”. The second position is taken by overloading by educational work. The third position is “weak contacts with the leading academic institutions”.

The answers of PhDs with respect to the factors that impede the effective organization of the scientific work (table 3) have been ranged in the following way: the greatest number of the respondents assigned rank number 1 to “overloading by educational work”. The second position is taken by lack of material and technical base of higher educational institution. The third position is “insufficient level of foreign language competence”.

Table 3

The result of the inquiry of PhDs with respect to the factors, impeding the effective realization of the scientific research activities (Yaroshenko, Skyba & Titarenko, 2015)

The reasons that impede the effective realization of the scientific research by the academic staff	Rank numbers							Total
	1	2	3	4	5	6	7	
	The number of choices							
Lack of research adviser	8,4	9,0	6,2	15,2	25,3	9,6	26,4	178
Weak contacts with the leading academic institutions	9,0	22,0	27,1	29,4	6,8	4,0	1,7	177
Lack of material and technical base of higher educational institution	34,3	29,8	10,1	7,9	9,6	5,6	2,8	178
Overloading by educational work	37,6	19,7	14,6	9,0	6,7	5,6	6,7	178
Unfavorable atmosphere for the creative work at department, faculty, institute	3,4	4,5	8,5	8,5	18,2	30,1	26,7	176
Insufficient level of computer knowledge	1,7	5,1	5,6	5,6	13,6	29,4	39,0	177
Insufficient level of foreign language competence	10,2	7,3	22,0	11,9	10,2	18,1	20,3	177

Table 4

The result of the inquiry of teachers without academic degree with respect to the factors, impeding the effective realization of the scientific research activities (Yaroshenko, Skyba & Titarenko, 2015)

The reasons that impede the realization of the scientific research by the academic staff	Rank numbers							Total
	1	2	3	4	5	6	7	
	The number of choices							
Lack of research adviser	25,6	6,1	13,4	17,1	13,4	7,3	17,1	
Weak contacts with the leading academic institutions	9,9	18,5	32,1	9,9	11,1	13,6		
Lack of material and technical base of higher educational institution	37,3	22,9	6,0	12,0	13,3	4,8		
Overloading by educational work	41,5	22,0	7,3	4,9	12,2	3,7	8,5	
Unfavorable atmosphere for the creative work at department, faculty, institute	9,8	8,5	15,9	25,6	14,6	8,5	17,1	
Insufficient level of computer knowledge	9,6	7,2	10,8	3,6	8,4	37,3	22,9	
Insufficient level of foreign language competence	8,4	8,4	7,2	10,8	19,3	12,0	33,7	

As the data of table 4 indicate, the answers of the teachers without academic degree with respect to the factors that impede the effective organization of the scientific work have been ranged in the following way: the greatest number of the respondents assigned rank number 1 to “overloading by educational work”. The second position is taken by lack of material and technical base of higher educational institution. The third position is “lack of research adviser”.

Conclusions and suggestions

Thus, it may be noted that the organization of the scientific research by the academic staff is significantly influenced by the following factors: overloading by educational work – 20,4%, obsolete and poor material and technical base – 20%, weak contacts with the leading academic institutions – 18,7%, lack of scientific adviser – 12,1%, low level of foreign language competence – 11,7%, unfavorable psychological atmosphere in the staff – 9%, low level of computer knowledge – 7,7%.

To overcome the revealed negative factors in the organization of the scientific research activities at universities it is necessary to establish joint basic research laboratories, research centers, centers of innovations, departments and other institutions that would become the centers of scientific research organization; reduce the individual teaching load of the academic staff; involve the scientists of the scientific research institutions in the scientific research at higher school; implement an effective system of incentives for the scientific research activities of the academic staff in higher educational institutions.

References

- Chornoivan, H. P. (2016). *Upravlinnja kar'jeroju doslidnyka v umovakh avtonomiji universytetu [Career Management of Researcher in Conditions of University Autonomy]. Young Scientist, No. 10 (37), 303–307. [in Ukrainian].*
- Divinska, N. O. (2016). *Profesijna kompetentnistj vykladacha jak umova efektyvnoji orghanizaciji doslidnyckoji dijalnosti studentiv [Professional Competence of a Teacher as a Condition of an Effective Organization of Students Research Activities]. Pedagoghika i psykholohija, No. 1, 41–45. [in Ukrainian].*
- Kurylo, L. I. (2014). *Naukovyj potencial kafedry u zabezpechenni jakosti vyshhoji osvity. [Scientific Potential of a Department in the Quality Assurance of Higher Education]. Proceedings of the 1st International Scientific and Practical Conference “Department in the System of the Management of the Scientific and Pedagogical Activities of Higher Educational Institution”. Kyiv: 61–62. [in Ukrainian].*
- Lugovyy, V. I., Sliusarenko, O. M., Talanova, Zh. V. (2013). *Rozvytok doslidnyckjo-innovacijnogho kontekstu vyshhoji osvity – ključova umova efektyvnoji dijalnosti naukovopedagoghichnykh kadriv. [Development of the Research and Innovative Context of Higher Education Is a Key Condition of the Effective Activities of the Academic Staff]. Problemy osvity, No. 74(1), 3–10. [in Ukrainian].*
- Maiboroda, V. K., Skyba, Yu. A. (2015). *Orghanizacija naukovy-doslidnyckoji roboty vykladachiv kafedr vyshhykh navchalnykh zakladiv Ukrajin. [Organization of Scientific Research Work of Departments’ Teachers of Higher Educational Institutions of Ukraine]. Proceedings of Round Table “Organization of Graduation Department Activities in the*

Conditions of Education Integration”, Kyiv: Institute of Higher Education of NAPS of Ukraine, 56–58. [in Ukrainian].

Pshyk, B. I. (2015). *Integracija osvity i nauky u vyshhykh navchalnykh zakladakh. [Integration of Education and Science in Higher Educational Institutions]. Proceedings of Round Table “Organization of Graduation Department Activities in the Conditions of Education Integration”*, Kyiv: Institute of Higher Education of NAPS of Ukraine, 82–83. [in Ukrainian].

Sergeieva, O. R. (2015). *Napryamky derzhavnoi polityky u sferi vyshhoji osvity v Ukraini. [Directions of the State Policy in the Sphere of Higher Education in Ukraine]. Proceedings of Round Table “Organization of Graduation Department Activities in the Conditions of Education Integration”*, Kyiv: Institute of Higher Education of NAPS of Ukraine, 88–89. [in Ukrainian].

Skyba, Yu. A. (2016). *Stymulujuchichynnyky naukovoji dijalnosti profesorsjko-vykladacjkogho skladu universytetiv [Stimulating factors of Scientific Activities of University Academic Staff]. Proceedings of Scientific Papers “Topical Questions of Training of Future Teachers in Chemistry: Theory and Practice”*, 109–114. [in Ukrainian].

Yaroshenko, O. H. (2015). *Umovy realizaciji naukovo-doslidnyckoji dijalnosti sub'jektiv universytetu v orijentovanomu na doslidzhennja osvithnomu seredovyshhi [Conditions of Scientific Research Activities Realization of University Subjects in Research Oriented Educational Environment]. Higher Education of Ukraine: Theoretical and Scientific and Methodical Journal, No. 3(1), 286–291. [in Ukrainian].*

Yaroshenko, O. H. (2016). *Naukove doslidzhennja jak ob'jekt dijalnosti vykladacha vyshhogho navchalnogho zakladu. [Scientific Research as an Object of Teacher’s Activity in Higher Educational Institution]. Proceedings of Scientific Papers “Topical Questions of Training of Future Teachers in Chemistry: Theory and Practice”*, No. 2, 116–121. [in Ukrainian].

Yaroshenko, O. H., Skyba, Yu. A., Titarenko N. Yu. (2015). *Analiz praktychnogho stanu naukovo-doslidnyckoji dijalnosti sub'jektiv navchaljno-vykhovnogho procesu universytetiv: preprynt (analytychni materialy). [Analysis of the Practical State of the Scientific Research Activities of the Subjects of the University Educational Process: Preprint (Analytical Materials)]*. Retrieved from <http://ihed.org.ua/ua/resursy/biblioteka.html>. [in Ukrainian].