

Experience of Organization of the System of Psychological and Pedagogical Professional Development of Teachers of Higher Educational Institutions

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ABSTRACT

The relevance of the researched problem is caused by the changed social and economic conditions in Russia that led to search of the paradigms of education adequate to new social and economic development of the country. The presented article is directed to drawing attention of the pedagogical public to modern forms of organization of the system of advanced training of employees of higher education. The leading approach to the research of this problem is the analysis of experience of practical activities of Russian State Vocational Pedagogical University; this approach enables to fill educational practice with new constructs and meanings. As a result of the research, the model of implementation of the system of advanced training of employees of higher education is proposed. The material of the publication can be useful while developing and projecting of programs for professional psychological and pedagogical qualification development of teachers in the system of higher education, including its network use in the space of vocational pedagogical education.

KEYWORDS

Advanced training, network interaction of educational organizations, professionalism, psychological and pedagogical qualification of employees of higher education, vocational pedagogical education

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Introduction

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The relevance of the research is caused by the changes in the Russian educational system, adoption of the new law "About Education in the Russian Federation" and the professional standard "Teacher of Vocational Training, Vocational Education and Further Vocational Education" approved in the country for the first time; there is the reconsideration of a role of a teacher in an educational process as a moderator and coach, reevaluation of level of qualification (not only of subject, but also psychological and pedagogical), and as a result – improvement of the system of psychological and pedagogical qualification development of a teacher.

Scientific researches of teachers working in the system of advanced training of educators are devoted to the questions of advanced training of higher-education teaching personnel of the Russian higher educational institutions.

Pedagogical competence (Medvedev, 2010) is considered by the researches as the most important component of professionalism of teachers of higher educational institutions, until recently, which was regarded the minor one in the presence of basic technical, medical, economic and other education.

The improvement of psychological and pedagogical qualification of higher-education teaching personnel at the present stage of development of higher school meets the new requirements to professional pedagogical community. The development of the system of further professional education for teachers of higher educational institutions assumes the solution of the following tasks: development of the professional competences necessary for effective work in the changing social and economic conditions of the Russian education; expansion of knowledge due to the reached achievements of pedagogical science; mastering effective technologies of professional activity; forming of methodological culture of teachers due to acquiring of additional knowledge on modern didactics, psychology, acmeology, andragogy; overcoming of professional stereotypes, development of creative activity, innovativeness (Kopytova& Makarov, 2012; Khuziakhmetov&Gabbrakhmanova, 2016 a,b; Biktagirova, 2016). The designated tasks for the system of advanced training of higher-education teaching personnel assume some changes in motivational behavior of teachers who sometimes do not see the need for continuous development of pedagogical skills (Belov et al., 2014; Platonova et al., 2016). In many respects, the solution of objectives is promoted by network interaction of educational organizations in forming of the system of advanced training including the creation of interregional associations of teachers (Podpovetnaya, 2014). The new tasks for many higher educational institutions are set due to the noted features of advanced training of higher-education teaching personnel in modern conditions of the Russian education: development of the concept of pedagogical education in educational organizations; projecting of modular programs of advanced training; projecting of scientific-methodical and educational-methodical supporting system of advanced training; development of the diagnostic tools promoting development of professional competence of teachers of higher schools, and also development of new technological models of advanced training of higher-education teaching personnel of higher educational institutions (Batrakova&Bordovsky, 2009).

Everything mentioned-above reflects the problems of development of psychological and pedagogical qualification of higher-education teaching

personnel for most of the Russian higher educational institutions; moreover, it emphasizes the relevance and need of the appeal to the stated subject.

Methodological framework

Research methods

In the process of the research the following methods were used: theoretical (the system and retrospective analysis of contents of requirements to the system of advanced training of educators, including workers of professional pedagogical education, logical generalization of regulatory and scientific literature, modeling of pedagogical system of advanced training at the level of higher educational institution, factorial analysis of pedagogical experience, forecasting of the pedagogical phenomena, comparative analysis of methods of a research of needs of a teacher for acquiring of new knowledge at the level of intersubject communications – andragogy, pedagogics, acmeology, psychology, cultural science, pedagogical speech studies; structural-functional modeling of intra high school system of advanced training; projecting of models, modules of programs and health saving educational environment); empirical (observation, questioning, comparison, analysis of group interactions); experimental (pedagogical stating experiment, projecting of pedagogical tasks, projecting of a trajectory of advanced training).

Experimental and research base of the study

Experimental and research base of the study is presented by the Russian State Vocational Pedagogical University, Ural State Forest Engineering University, Ural State Medical University, Ural State University of Railway Transport.

Phases of the research

The research of the problem was carried out in three phases:

The 1st phase. The system analysis of scientific publications, the scientific-legal documentation in the field of professional education; problem-based analysis of the current state of the Russian system of advanced training of employees of v pedagogical education and vocational training; research of a problem of intra high school advanced training as parts of a corporate culture of an educational institution.

The 2nd phase. Development of a model of intra high school system of the improvement of psychological and pedagogical qualification of employees of professional education; development of recommendations for heads of educational institutions on the organization of intra high school system of the improvement of psychological and pedagogical qualification.

The 3rd phase. Approbation of intra high school system of the development of psychological and pedagogical qualification of teachers.

Results

Programs of psychological and pedagogical advanced training of teachers of higher school are designed to provide development of professional competence of specialists in the field of education. A fundamental concept of the developed and approved system of intra high school advanced training is the category of

professionalism. In ordinary understanding this concept communicates with the certain fact in any professional field of activity. In our opinion, it is a very formal point of view which combines the essence of this social and professional phenomenon. Professionalism is not only an achievement of high professional tops by members of activities, but there should be social and psychological properties and such components as a conscientious attitude of a person to work, a condition of a personal "aim-efficient" (Weber, 1980) predispositions to pedagogical activities, satisfaction with it. "Professionalism is a highest degree of perfection in a certain type of activity, a highest level of skill, success any activities in a superlative degree" (Ignatov, 2006).

Many acmeologists suggest to differentiate *professionalism of activities* (the quality characteristic of a member of work reflecting high professional qualification and competence, a variety of effective professional skills and abilities, ownership of modern algorithms and methods of the solution of professional tasks that will allow to perform activities with high and stable productivity) and *professionalism of a personality* (the quality characteristic of a member of work reflecting the high level of professionally important or personal and business qualities, acmeological invariants of professionalism, creativity, adequate level of ambitions, motivational sphere aimed at the progressive development). Thus, professionalism of activities and professionalism of a personality are two parties of the same phenomenon. In case of the solution of the practical tasks connected with professionalism development, such separation is reasonable due to various contents of the applied technologies. It will allow to perform more orderly development of professionally important and significant qualities of a teacher of higher schools.

The developed program of intra high school advanced training enables to create conditions for forming of single educational space, single educational environment not only one for specific higher educational institution, but also the system of higher educational institutions of one profile; and also allows to increase the level and effectiveness of innovative activities of teachers, to keep the creative potential of teachers. This system plays a positive role in education quality improvement.

Nowadays the improvement of psychological and pedagogical qualification of teachers of higher schools is one of the priority directions in pedagogical science. The program of intra high school advanced training of one of the tasks assumes forming and development of professional qualities and competences of teachers who sometimes have no basic pedagogical education. Knowledge and education compile the main economic value of each country in the modern globalized world. So, by estimates of the World Bank, in the USA "human capital", i.e. knowledge and abilities accumulated by the population, amounts 76% of national wealth. The physical capital is 19%, and natural factor is 5%. In Western Europe this ratio respectively figures up to 74–23–3%. In Russia "human capital" averages out of 50%, the physical equity – 10%, and 40% – natural factor that by 8 times exceeds the same indicator in the USA. Education and upbringing make positive impact on all social processes happening in the society as an educated person is law-abiding, formulates oneself new positive social norms and creates a healthy social environment around oneself. For this reason, management of knowledge transfer on preserving positive experience in education throughout all life becomes a crucial element of educational

environment, and also social and economic, culturological development of society in the Russian Federation. Development of psychological and pedagogical level qualification of teachers of technical and other direction disciplines promotes improvement of quality of professional education of students and graduate students.

Russian State Vocational Pedagogical University has created the system of development of psychological and pedagogical qualification, taking into account specifics of higher educational institution. The professional and pedagogical higher education institution trains experts for the system of professional education (for lyceums, colleges, technical schools), therefore, a series of the main educational subjects at the level of a bachelor degree consists of professional and psychological and pedagogical courses. A series of professional disciplines is carried out by experts in the field of particular technical sciences (mechanical engineering, casting method, power industry, etc.); at the same time, the experts perfectly knowing basic technical knowledge and professional competences often have no pedagogical and psychological competences. For this reason, the organization of professional development (sometimes and professional retraining) of teachers of higher educational institutions who don't have pedagogical education is important for intra high school system of development of psychological and pedagogical qualification. Considering such specifics of higher educational institutions, the group of teachers of the Department of Methodology of Professional Pedagogical Education, Faculty of Professional Development of Russian State Vocational Pedagogical University has developed and repeatedly approved the system of development of psychological and pedagogical qualification in other higher educational institutions of the city of Ekaterinburg, and throughout Russia. Let's consider some features of this system.

Forming of the order for advanced training which is carried out: a) taking into account offers of a management of university on the priority directions of pedagogical science and modern Russian education, b) taking into account scientific, methodical requests of teachers of universities, c) taking into account employment term (experience) of work at higher school of particular teachers.

Instead of a traditional organizational meeting of students of the Faculty of Advanced Training, the so-called propaedeutic training workshop with elements of game activities, collective creative case, etc. is carried out (the work is organized in mini-groups) within three days by all teaching staff of the Department of Methodology of Professional Pedagogical Education. Every day of work is devoted to the specific pedagogical subject, which requires not the momentary solution, but the decision during the whole time of the advanced training course. The results of work of each mini-group are discussed at the end of every workshop working day. Such organization of discussion promotes not only professional communication of people, who work in one higher educational institution, often aren't even familiar with each other, but also it encourages to build corporate culture of an educational organization, develop the unity of some requirements for students. At the close of the three-day communication the main directions (blocks) of the development of psychological and pedagogical qualification are determined.

As a rule, as shows our experience, the programs of advanced training consist of the following interconnected modules: *pedagogical* (includes the

following sections – "Pedagogics of Higher School", "Fundamentals of Vocational Pedagogics", "Modern Pedagogical Technologies", "Information and Computer Technologies", "Distant Technologies of Training", "Bases of Educational and Methodical Work of a Teacher", etc.), *psychological* (includes such sections as "Education Acmeology", "Age Psychology", "Education Conflictology", "Psychology of a Personality", etc.), the module of *professional and speech disciplines* (cultural-speech and rhetorical): obligatory culturological courses – "Corporate Culture of an Educational Organization", "Training of Communicative Competence of a Teacher", "Pedagogical Artistry", "Bases of Professional and Pedagogical Communication", "Professional Ethics"; obligatory linguistic courses – "Teacher Speech Culture", "Student Speech Culture" ("Educational Speech of Students"), "Fundamentals of Pedagogical Rhetoric", "Teacher Training Elocution"; *statutory and regulatory module* assumes discussion of new regulatory documents on education. The choice of a specific discipline of a module is chosen by listeners during the propaedeutic seminar. Highly skilled and most authoritative teachers of higher educational institution and experts from various ministries and departments are involved in realization of this system. This system assumes and allows realization of a network interaction (Akimova, Dorozhkin&Sikorskaya, 2014).

Any program comes to an end with public defence of the project which is independently done by a teacher; the materials are implemented into practice of work of departments and institutes of university.

At the end of training, the questioning of teachers is carried out; the purpose is an identification how advanced training courses have helped teachers with the solution of their personal inquiries, and also monitoring of the results of introduction of the projects developed by teachers is carried out within academic year.

As it seems to us, this system assumes and allows implementation of a network interaction (Akimova, Dorozhkin&Sikorskaya, 2014). It is commonly known that modern Russian education provides transition to network interaction of educational and other organizations which are engaged in educational activities (Davydova, 2013; Dorozhkin&Davydova, 2013). It is caused by *external* factors (features of a demographic situation, poor social and economic conditions, features of the labor market, social mandate for educational services) and *internal* ones (material and technical resources requiring upgrading, a lack of highly qualified personnel). Network forms give the chance of any step of training and any education level to use resources of several educational organizations (Davydova et al., 2016; Tkacheva, Simonova&Matveev, 2016). The concept of the UNO "Education through all life" vested in the Federal Law No. 273 "About Education in the Russian Federation" allows to join in the process for acquisition or development of education status at any age (the Federal Law No. 273, 2012). The network form of the organization of professional development promotes the solution of questions of optimization, improvement of quality and image of professional pedagogical education, search of ways of creation of integrated scientific and educational space. One of the productive mechanisms of implementation of new tasks can be found in steady network interaction between the educational institutions conducting training of teachers and masters of professional training, research and work collectives, business communities, society, other managing territorial members interested in

this interaction. This interaction assumes generation of the innovative environment, science and business, promotes improvement of quality of preparation, retraining and advanced training of professional and pedagogical personnel, exerting a positive impact on improvement of quality of professional training (professional training teachers and masters) (Akimova&Dorozhkin, 2015). The network model can include levels, directions, forms, methods, technologies of interaction and mechanisms of realization in the developing professional and pedagogical space (Fedorov&Davydova, 2014). We offer the possible list of structure of multilayered, split-level model; its basis lies in the projecting of "cloudy" designing. *Possible levels of interaction:* dot, local, regional, interregional (with the Russian regions), interregional (with foreign pedagogical systems). *Interaction forms:* linear (school – school, college – college, higher educational institution – higher educational institution), multilevel (profession-oriented school – college – higher educational institution), cluster (profession-oriented school – college – higher educational institution – employers –social environment – bodies of local and regional government). *Aspects of activities:* innovative, educational-methodical, educational, scientific, territorial-managerial, statutory and regulatory, cultural-educational, social-operational. *The methods and technologies of interaction:* projecting, polycultural communications, IT technologies, multidimensional dialogue, fundraising. *Methods and technologies of implementation:* training of a managerial, pedagogical and factory personnel of interacting members, development of end-to-end educational programs and training courses for close to a field of professional training of educational institutions, development of transfer training programs on fields and directions of professional training, development of a network form of performance of educational programs, implementations of MOOC technologies, distance training, mobile training, use of tablet technology in training, forming of a class of mobile teachers, creation of general bank of educational programs, technologies of training, access to them online. Besides the creation of network electronic library, the creation of an electronic local network of fixed interaction and reaction, development of bank of places of employment of graduates, the organization of joint forums, conferences, discussions of questions of interaction, creation of the center of forecasting of the new directions of professional training for the region, the development of creative scientific and educational environment, development of regional fund of network interaction with involvement of employers, government institutions and society, creation of a prize fund for encouragement of active participants of a network interaction (Dorozhkin, Zaitseva&Tatarskikh, 2016).

Members of a network interaction: organizations of professional pedagogical education; institutions of higher and secondary professional education, performing (or planning to perform) training of teachers and masters of vocational training; organizations performing vocational training, including training centers of professional qualification and training centers at the place of production; educational organizations of the basic general and secondary general education conducting professional orientation work on vocational training and professional pedagogical education; organizations of additional or further education performing vocational training; business communities interested in target training of employees working within professional training; industrial, agricultural, transport, forestry entities that are interested in target training of employees working within vocational training and professional pedagogical

education; local and government institutions of territory management; cultural institutions, health care services, social and other fields of activity, interested in a network interaction with professional and pedagogical community (Fedorov&Davydova, 2014; Akimova, Dorozhkin&Sikorskaya, 2014; Davydova&Dorozhkin, 2016). Participants of network interaction need to agree also about terminological maintenance of network interaction (a network educational program, a network form of implementation of educational programs, a joint educational program, etc.).

Discussions and Conclusion

Nowadays the development of psychological and pedagogical qualification of teachers of the system of higher education is one of the priority directions in pedagogical science. The organization of the intra high school advanced training providing combination of the main, educational and scientific work with simultaneous advanced training, which a teacher once in three years is obliged to take, causes certain difficulties in the organization of this work. The teacher should have knowledge and practical application of modern pedagogical technologies, information and computer technologies, technologies of distance training, project technologies, case technologies, modular and competence-based approach, etc. The innovative processes at higher school are connected with the development of new high school standards, approaches to a quality evaluation of training, development of teacher mobility; these processes demand from the teacher some considerable and various resources connected with intellectual activities and using additional physical and temporary resources (Akimova, Kolegova&Sikorskaya, 2015).

Programs of further professional education of intra high school development of psychological and pedagogical qualification offer a wide range of topical issues, assume improvement of professional competence of a teacher and forming of professional competences necessary for work in the changing conditions of educational space of higher school. However, there are no educational and methodical materials guiding intra high school advanced training. The development of educational and methodical maintenance (methodical recommendations, variants of curricula taking into account modular-competence-based approach, electronic education guidances, etc.) for a teacher of higher school, especially for a young teacher, becomes urgent in the changing conditions. The results of intra high school development of psychological and pedagogical advanced training have applied value for preserving and maintenance of high scientific and innovative capacity of university, development of innovative processes at university, preserving time and health of a pedagogical community.

The developed and approved system of intra high school system of the development of psychological and pedagogical qualification is directed to the solution of an important social and corporate problem in the field of education – preserving the higher-education teaching personnel of university in new social and economic conditions and in the conditions of innovative processes of education (Dorozhkin et al., 2016). This problem is especially urgent for higher educational institutions as the process of aging of pedagogical collective becomes obvious: the youth doesn't go to work to higher education for many reasons, interest in scientific work decreases and activity of a personality in the solution of social tasks decreases too. Innovative processes in education demand from

teachers of considerable tension of intellectual and other efforts, therefore, the problem of preserving the collective becomes even more urgent. At the same time, heads of educational organizations not always pay worthy attention to intra high school advanced training. Educational and methodical support of the practical solution of this problem is developed insufficiently. The conducted researches in the field of an andragogy, acmeology and pedagogics insufficiently interact internally in a complex studying of problems of a higher school teacher.

The program of intra high school advanced training assumes forming and improvement of professional qualities and competences of teachers who sometimes have no basic pedagogical education. In this regard, there is a need of change of content and structure of programs of advanced training taking into account inclusion of questions on the development of pedagogical, psychological, culturological, legal, economic and speech technique components of pedagogical work (Sidenko, 2016). One of such components, in our opinion, is professional and pedagogical communication. Questions of improvement of intra high school system of advanced training are connected also with forming of a corporate culture of educational institution. In recent years, an intense interest to organizational culture is observed; it is noted that corporate culture directly influences all production indicators of an educational institution. This opinion has developed as a result of the development of some phenomena in life of society: there are some changes in the structure and nature of organizations; the policy of all prospering companies surely includes idea of a corporate culture as the key to success of an organization; quantitative indices, empirical evidences of communication between a company culture and its production indicators have appeared. S.P. Robbins (2006) suggests to consider an organizational culture on the basis of the following 10 criteria: a self-action, i.e. a degree of responsibility, freedom and independence which a person possesses in the organization; a risk degree, i.e. readiness of the employee to run risks; an orientation of actions, i.e. establishment of the accurate purposes by an organization and expected results of its accomplishment; coordination of actions, i.e. a provision in case of which divisions and people in the organization coordinate interact; managerial support, i.e. ensuring of free interaction, the help and support to managées from managerial structures; control, i.e. a list of rules and instructions applied to control and observation of behavior of employees; identity, i.e. degree of an identification of each employee with the organization; reward system, i.e. degree of work performance, organization of the system of encouragement; proneness to conflict, i.e. readiness of an employee to openly express an opinion and to get into conflict; interaction models, i.e. a degree of interaction in the organization wherein interaction is expressed in formal hierarchy and subordination. Forming and improvement of corporate system of advanced training will promote development of teacher collective that, undoubtedly, will have positive effect on all educational process of higher educational institution (Robbins, 2006).

It must be noted that educational organizations underestimate influence of intra high school system of advanced training and often don't consider it as a factor of influence on health of teachers. Regulatory documents don't allow estimating adequately influence of professional and anthropogenic workload of the teachers having the high level of physical and mental tension in connection with innovative processes in education. Modern researches in the field of an andragogy, acmeology, psychology and pedagogics are insufficiently used for

creation of an effective system of intra high school advanced training and creation of the professional environment of teachers. Our observations on a problem of creation of intra high school system of psychological and pedagogical advanced training carried out in four higher educational institutions showed that those educational institutions which create the systems of advanced training solve many problems including not only productive ones, but also the problems of social character (Pecherskaya et al., 2016). The analysis of educational and methodical materials, materials of the scientific and practical conferences in the last five years devoted to the problems of advanced training of teachers of higher school shows that researches are generally directed to the problems of organizational forms of education and determination of the priority directions; insufficient attention is given to informatory direction and development of educational and methodical materials for providing of advanced training (Akimova&Sikorskaya, 2016). Therefore, there is an urgent necessity of development of educational and methodical materials of projecting of intra high school system of the development of psychological and pedagogical qualification taking into account age features, specifics of professional work in the conditions of innovative development of education.

The proposed system of intra high school development of psychological and pedagogical qualification is developed and approved at Russian State Vocational Pedagogical University, and also in higher educational institutions wherein the teachers have no basic pedagogical education (The Ural state timber university, the Ural state medical university, the Ural State University of Railway Transport).

Recommendations

The developed and approved system of intra high school psychological and pedagogical professional development of teachers, author's programs can be useful while developing the system of professional pedagogical education, and the system of higher education; for achievement by teachers and students of new competences, and also for development of a network interaction of educational organizations of different levels that will promote expansion of humanitarian space on the basis of social partnership of different types of educational organizations.

Disclosure statement

No potential conflict of interest was reported by the authors.

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References

- Akimova, O. B. & Dorozhkin, E. M. (2015). Network Interaction in Systems of Professional Development of Educators. *Acmeology of Professional Education: Materials of the 12th All-Russian Scientific and Practical Conference*. Ekaterinburg: Russian State Vocational Pedagogical University, 15-19.
- Akimova, O. B. & Sikorskaya, G. P. (2016). The Role of Scientific and Practical Conferences in Becoming of Teachers-Researchers. *Municipal Education: Innovation and Experiment*, 3, 15-19
- Akimova, O. B., Dorozhkin, E. M. & Sikorskaya, G. P. (2014). The Concept of Networking of Institutions of Vocational and Pedagogical Education. *The Pedagogical Journal of Bashkortostan*, 6(55), 24-34.
- Akimova, O. B., Kolegova, E. D., & Sikorskaya, G. P. (2015). Academic Mobility: Problems and Prospects of Development. *Social and Professional Mobility in 21st Century: Collection of Materials of the 2nd All-Russian Conference*. Ekaterinburg: Russian State Vocational Pedagogical University, 10-17.
- Batrakova, I. S. & Bordovsky, V. A. (2009). Development of Professional Competence of Higher-Education Teaching Personnel in the Conditions of Reforming of Higher Education. *Person and Education*, 3, 44-49.
- Belov, V. G., Parfyonov, Yu. A., Kosinova, E. P. & Gibov, I. M. (2014). Motivational Characteristics of Higher-Education Teaching Personnel of Higher Educational Institution. *Scientific Notes of University of P. F. Lesgaft*, 6(112), 24-28.
- Biktagirowa, G. F. (2016). Basic Principles and Conditions of Training Reflective Teachers at University. *IEJME-Mathematics Education*, 11(6), 1927-1933.
- Davydova, N. N. & Dorozhkin, E. M. (2016). Management of a Network Interaction of Educational Organisations Oriented to Innovation Development. *Indian Journal of Science and Technology*, 9(29). DOI: 10.17485/ijst/2016/v9i29/88729
- Davydova, N. N. (2013). Implementing the Systematic Synergetic Approach in Management Practices Related to the Research and Education Network Development. *The Education and science journal*, 7, 67-85.
- Davydova, N. N., Dorozhkin, E. M., Fedorov, V. A. & Konovalova, M. E. (2016). Research and Educational Network: Development Management. *IEJME-Mathematics Education*, 11(7), 2651-2665.
- Dorozhkin, E. M. & Davydova N. N. (2013). The Development of Educational Institutions in the Course of Networking. *Higher Education in Russia*, 11, 11-17.
- Dorozhkin, E. M., Leontyeva, T. V., Scherbina, Y. Y., Shchetynina, A. V. & Pecherskaya, E. P. (2016). Teacher's Labour as a Tool of Forming Human Capital of Higher School Graduates. *IEJME-Mathematics Education*, 11(7), 2773-2787.
- Dorozhkin, E. M., Zaitseva, E. V. & Tatarskikh, B. Y. (2016). Impact of Student Government Bodies on Students' Professional Development. *IEJME-Mathematics Education*, 11(7), 2666-2677.
- Fedorov, V. A. & Davydova, N. N. (2014). Control of the Research and Education Network Development in Modern Socio Pedagogical Conditions. *Scientific Bulletin of National Mining University*, 2, 126-133.
- Ignatov, V. G. (2006). *Management theory*. Moscow: "MarT", 463p.
- Khuziakhmetov, A. N. & Gabdrakhmanova, R. G. (2016a). Creativity in Joint Activity of Teacher and Student in the Learning Process. *IEJME-Mathematics Education*, 11(4), 735-745.
- Khuziakhmetov, A. N. & Gabdrakhmanova, R. G. (2016b). Creativity in Joint Activity of Teacher and Student in the Learning Process. *IEJME-Mathematics Education*, 11(4), 735-745.
- Kopytova, N. E. & Makarova, L. N. (2012). Advanced Training of Teachers of Higher Education Institutions: Condition and Problems. *Bulletin of the Tambov University. Series: Humanities*, 108, 108-117.
- Medvedev, V. E. (2010). About Advanced Training of Teachers of Engineering Universities. *High Education in Russia*, 2, 21-26.
- Pecherskaya, E. P., Averina, L. V., Kochetkova, N. V., Chupina, V. A. & Akimova, O. B. (2016). Methodology of Contract Managers' Project Competency Formation in CPE. *IEJME-Mathematics Education*, 11(8), 3066-3075.
- Platonova, R. I., Shkurko, N. S., Lukina, T. N., Sentizova, M. I. & Bugaeva, L. P. (2016). Historical and Organizational Aspects of Pedagogical Practice Development within the System of Higher Education. *IEJME-Mathematics Education*, 11(7), 2515-2526.

- Podpovetnaya, Yu. V. (2014). Achievement of Quality of Higher-Education Teaching Personnel by Means of Creation of Interregional Associations of Teachers. *Scientific Providing of the System of Personnel Advanced Training*, 2(19), 48-52.
- Robbins, S. P. (2006). *Bases of organizational behavior*. Moscow: Williams, 443p.
- Sidenko, E. A. (2016). Professional Teachers' Development of Educational Complexes in the Conditions of Introduction of the Federal State Educational Standard. *The Education and science journal*, 2, 34-54. DOI: 10.17853/1994-5639-2016-2-34-54
- The Federal Law "On Education in the Russian Federation" as amended in 2014. (2014). Chapter 9, articles 73-74. Direct access: <http://ipipip.ru/zakon-ob-obrazovanii-2/15/>
- Tkacheva, O. N., Simonova, M. V. & Matveev, Y. V. (2016). The Model of Quality Assessment of a Scientific and Educational Network Performance. *IEJME-Mathematics Education*, 11(8), 2871 - 2883.
- Weber, M. (1980). *Researches on science methodology*. Moscow: Academy of Sciences of the USSR Institute of Information on Social Sciences, 688p.