JOURNAL OF CREATIVITY AND BUSINESS INNOVATION

**Journal of Creativity and Business Innovation, Vol. 3, 2017.**

www.journalcbi.com
ISSN 2351 – 6186

This paper is available at: http://www.journalcbi.com/developing-innovative-thinking-of-employees.html

# Educational Alternatives for Developing Innovative Thinking of Employees

**Ekaterina Batovrina**
School of Public Administration
Lomonosov Moscow State University, Moscow, Russia.

**Abstract**

The development of a knowledge-based economy and the knowledge-based industries, the growth of organizational and environmental complexity force the employers to change their requirements for employees. Many employers require staff to think innovatively: the employees are expected to create, implement and promote new ideas and products. That is why the issue of developing innovative thinking of employees is bound to arise. Some organizations are willing to solve it by their means. They invest in training and stimulation programs for employees or in building a particular organizational atmosphere that encourage employees to share ideas, to learn from each other, to engage in self-learning and self-development – it is usually defined as a culture of personal growth. However many other organizations tend to shift the responsibility for developing innovative thinking of employees to educational and training institutions.

The educational alternatives for developing innovative thinking of employees outside organizations became a subject of sociological research (survey) started in October 2015 in Moscow, Russia. 47 teachers of secondary schools, 41 professors and 140 students of universities have already participated in it[1]. The survey results reveal that the students consider innovative thinking as a factor of their professional success. That is why they are interested in its development in the process of education. As for the professors and teachers, most of them are willing to take responsibility for making pupils and students think innovatively by means of case studies, discussions and trainings. They also recommend engaging pupils and students in extracurricular activities such as research projects and competitions. However the respondents' recommendations cannot be fully performed due to restrictions of educational programs. That is why the first and the main step towards developing innovative thinking of future employees should be an inclusion of requirements for innovativeness in educational standards and a reconsideration of existing educational programs on their basis.

**Keywords:** innovative thinking, development of innovative thinking, educational standards, educational programs.

## Introduction

The increase in the number of employers interested in innovative thinking of staff – the ability of the employees to generate, implement and promote new ideas and products (Batovrina, 2016) – raises the question of its development. More and more researches have come to believe (Zaripova, Lounev, Petrova, 2012; Vasiliev, 2011) that innovative thinking is a factor of professional

[1] The reported survey of university professors and students was funded by Russian Foundation for Basic Research according to the research project № 17-02-00059.

JOURNAL OF CREATIVITY AND BUSINESS INNOVATION

**Journal of Creativity and Business Innovation, Vol. 3, 2017.**

www.journalcbi.com
ISSN 2351 – 6186

This paper is available at: http://www.journalcbi.com/developing-innovative-thinking-of-employees.html

effectiveness not only in the sphere of innovation: it is also demanded in the other areas of human activity as it allows employees to solve unexpected and difficult tasks, to adapt to changes, to make their own decisions and implement them into practice. It is also worth mentioning that innovative thinking tends to be considered as a significant factor of preventing professional burnout of employees, as a tool that helps them to stand off routine working days and a limited range of duties: thinking innovatively the employees usually find something new, and interesting, and disturbing in their daily activities, they are highly motivated and have high-flying ambitions.

All data mentioned above demonstrate the importance of targeted development of innovative thinking of employees. The aim of our study is to identify the opportunities to solve this problem within research and educational environment framework, as well as to specify different educational alternatives for developing innovative thinking of staff.

**The concept of social environment as a factor of developing innovative thinking of employees**

The concept of social environment as a driving force for developing personality and a factor that improves his or her abilities is usually viewed as a result of work of several generations of psychologists and sociologists.

The psychologists focus their attention on the impact of social relations and activities on the development of personal abilities. The most outstanding representatives of the 'activity approach' in psychology including L. Vygotsky, S. Rubinstein, A. Leontiev, Y. Gippenreiter, A. Asmolov believed that the development of personal abilities was carried out in the process of activity under the influence of 'social situation of development' (Asmolov, 2007, p. 198). Describing the social situation of development, L. Vygotsky emphasized that the environment was not a situation of development and the factor that directly determined the behavior of the person, it was a condition of performing human activity and a source of personal development: 'the social situation of development is quite peculiar, specific for the concrete age, exclusive, unique relationship between the individual and the surrounding reality, especially the social one' (Vigotskiy, 2000, p. 903). The significant role in developing personal abilities is played by the relationship between the individual and the so-called zone of proximal development – 'it is the zone that is limited by the opportunities for development and education in cooperation with the others' (Zarezhkiy, 2007, p. 100). The zone of proximal development includes social subjects significant to a particular person: these are parents, teachers, coaches, friends, and etc. They become translators of social experience and knowledge to individual at a certain stage of his or her life; they assist him or her to uncover potential abilities including innovative thinking.

JOURNAL OF CREATIVITY AND BUSINESS INNOVATION

**Journal of Creativity and Business Innovation, Vol. 3, 2017.**

www.journalcbi.com
ISSN 2351 – 6186

This paper is available at: http://www.journalcbi.com/developing-innovative-thinking-of-employees.html

The sociologists see the impact of social environment on developing personal abilities in the other way. According to them, the most important role in socialization and development of personal abilities is played by the social institutions which are family institution, education institution, science institution, culture institution and the others. The social institutions reproduce specific social environment which, being friendly, motivates individuals to disclosure and fulfill their potential. The names of social institutions determine the names of the variety of social environment that affects the process of developing personal abilities: these are cultural environment, research environment, economic environment, educational environment, etc. According to the latest studies, the research and educational environment is the key factor of developing innovative thinking of employees outside organizations. It affects employees in the educational and training process; thanks to it, the most significant abilities of employees that are expected to be exploited throughout their working life are developed: innovative thinking is among them.

**Educational and research environment in the development of innovative thinking of employees**

The concept of 'research environment' is poorly represented in scientific literature. The terms 'intellectual environment' and 'academic environment' are usually used as its synonyms. They designate the products of activity of scientific community that define 'the reproduction of intellectual potential' (Zakrevskaya, 2009, p. 21). It can be assumed that in comparison with the academic and intellectual environment research environment is the broader concept which is close to the concept of artistic field offered by P. Bourdieu. He treated it as a 'place where belief in the value of art and in the artist's ability to create this value is produced and continuously reproduced' (Bourdieu, 1989).

Considering the research environment and the artistic field as the concepts with the close content, it makes sense to refer to its elements described by P. Bourdieu. This tactics may assist to identify the key components of research environment. Following this logic, it can be assumed that the structure of research environment consists of four groups of components. Firstly, it is a conglomerate of researchers engaged in scientific work and in the implementation of research projects. Secondly – the institutions of involvement (in the terminology of P. Bourdieu – 'initiation instances') that ensure the entry of young professionals in the research environment: these are scientific conferences, symposia, forums, etc. Thirdly, the institutions that produce knowledge and innovation: they are high schools, research institutions, training centers, laboratories, innovation infrastructure including technology parks, business incubators, innovative enterprises co-operating with the universities, etc. Fourthly, it is a group of specialized agents responsible for the popularization of scientific research, assessment of scientific results and presenting them to the wider audience. The latter component includes

JOURNAL OF CREATIVITY AND BUSINESS INNOVATION

**Journal of Creativity and Business Innovation, Vol. 3, 2017.**

www.journalcbi.com
ISSN 2351 – 6186

This paper is available at: http://www.journalcbi.com/developing-innovative-thinking-of-employees.html

prominent members of the scientific community, academic authorities, university professors, various experts, critics, as well as organizations engaged in information support of innovation.

The analysis of current research in the field of philosophy and sociology of science leads to the conclusion that one of the most important components of research environment is the third one. This conclusion is, in particular, confirmed by a pronounced tendency of identification of research environment with the institutions of science reproduction. For example, A. Oleynik considers research environment as a network structure that integrates scientific schools and clubs (Oleynik, 2004). However, it should be noted that in terms of the impact of research environment on the development of innovative thinking of staff, the significant role is also played by the other components of it. In particular, the initiation instances contribute to familiarizing the employees to research and innovation activities, provide their involvement in the innovation process; the prominent representatives of the scientific community, educators, experts and critics often act as PR-agents forming a particular image of innovation-oriented activities, they make employees interested in participating in it.

The current research has shown that the key criterion of efficiency and quality of research environment is its orientation to cooperation and collaboration of the parties taken part in its creation: it is usually characterized as the 'friendliness' of research environment. The significance of the interaction of the parties involved in creation of research environment affected development of innovative thinking of staff is reflected in the modern concept of cooperative research environment.

The cooperative research environment is a special configuration of research environment, characterized by:

- Active interaction among all its internal components (research centers, universities, innovation infrastructure, etc.) and external elements (for example, representatives of the business community);
- Focus on cooperation and implementation of a special system of disseminating information, allowing each stakeholder to receive information about current research and innovation projects and work closely with the scientific community (Bosin A., Dessì N., Fugini M., Liberati D., Pes B., 2006);
- Intensification of communication among representatives of scientific community, the representatives of innovative infrastructure and innovative enterprises by means of information technologies;
- Active involvement of young professionals in research and innovation activities (Oliveira, 2006).

JOURNAL OF CREATIVITY AND BUSINESS INNOVATION

**Journal of Creativity and Business Innovation, Vol. 3, 2017.**

www.journalcbi.com
ISSN 2351 – 6186

This paper is available at: http://www.journalcbi.com/developing-innovative-thinking-of-employees.html

Given the marked characteristics of cooperative research environment, its positive effect on the processes of production and reproduction of knowledge and innovation and the innovative thinking of staff, more and more researchers notice the need for its development. In particular, this issue is reflected in the works by A. Bosin, N. Dessie, Fyudzhini M., D. Liberati, B. Dog, G. Oliveira mentioned above. D. Coronado, M. Acosta (Coronado, Acosta, 2005) , R. Huggins, A. Johnston, R. Stephens (Huggins, Johnston, Steffenson, 2008) and many others also agree with them on this issue.

The most important institution of reproduction of scientific and research environment which is high schools also plays a crucial role in shaping the educational environment defined as 'the integrity of specially organized pedagogical conditions for the development of personality' (Tarasov, 2011, p 133.). The influence of the educational environment on training employees for innovative economy and on developing innovative thinking of staff is declared in a lot of publications (Garipova, 2009; Dementiev, Toyvonen, 2007; Nazarova, 2010). Most authors note the special role of universities in this process. The analysis of current literature reveals the following characteristics of high schools that indicate their important role in developing innovative thinking of personnel:

- Universities are multidisciplinary innovation organizations, transmitting the experience of innovation to students;
- Universities accumulate knowledge, technique, experience, innovation from different sectors of the economy, enabling them to act as facilitators of innovation at a regional level;
- High schools are usually famous for innovative educational technologies, they provide students with free access to educational and scientific information, develop their skills required to succeed in the innovation environment;
- Education contributes to developing a special type of thinking. While studying in high schools, the students learn to perceive the innovation processes in society, to understand the tactics and strategy of innovative development, to recognize and define its place and role in the changes that take place, to reconsider their status, potential, values, motives, talents and creative abilities, to find their aims;
- Innovative potential of high schools is concerned with all kinds of resources for innovation activities and involving students in them: these are new educational technologies, new economic mechanisms in the sphere of education, new methods and techniques of teaching and learning.

So, the analysis of current literature suggests that the high schools as key institutions of reproduction of research environment are the most important agents of developing innovative thinking of staff; they have access to the instruments of influence on innovative activity of employees. This conclusion is

JOURNAL OF CREATIVITY AND BUSINESS INNOVATION

**Journal of Creativity and Business Innovation, Vol. 3, 2017.**

www.journalcbi.com
ISSN 2351 – 6186

This paper is available at: http://www.journalcbi.com/developing-innovative-thinking-of-employees.html

confirmed by the results of our empirical research with participation of students and professors of Russian universities.

**The role of high schools in developing innovative thinking of employees: research methodology and the main results of conducted research**

The research program was prepared in October 2015. The research participants (which are students and professors of Russian universities) were determined by the main purpose of conducted research – to specify the role of high schools in developing innovative thinking of personnel. The tasks of the study were:

- To find the reasons for including innovative thinking in the requirements to employees;
- To make the list of positions that require innovative thinking;
- To assess the role of innovative thinking in professional activity of employees graduated from the faculties where the research participants work;
- To determine the opportunities and factors of developing innovative thinking of future employees within educational and training process framework.

We selected survey as a method of sociological research. The choice of a method led to its advantages which were concerned with the possibility of comparing the obtained data, saving time resources required for processing and interpreting the research results, and others. The tool of sociological research thus became a questionnaire.

The questionnaire for professors of universities consists of 10 questions, including the ones about:

- The inclusion of innovative thinking in a range of requirements to employees and its importance for personnel;
- Positions that require employees to think innovatively;
- The nature of innovative thinking as a human ability, its inherent / acquired nature;
- The tasks of high schools concerning the development of innovative thinking of future employees;
- The training methods which contribute to developing innovative thinking of students in educational process.

The similar questions were included in the questionnaire for students. Given the necessity of surveying professors and students from different universities, it was decided to use the electronic form of questionnaire posted on the www.surveymonkey.com. The respondents were informed on the possibilities of access to the questionnaire by e-mail.

JOURNAL OF CREATIVITY AND BUSINESS INNOVATION

**Journal of Creativity and Business Innovation, Vol. 3, 2017.**

www.journalcbi.com
ISSN 2351 – 6186

This paper is available at: http://www.journalcbi.com/developing-innovative-thinking-of-employees.html

At the end of December 2017 the questionnaire was filled out by ***41 professors*** from Moscow State University of Railway Engineering, Lomonosov Moscow State University, Financial University under the Government of the Russian Federation, Smolensk State University, Bashkir State University, Tolyatti State University and the others. The average work experience of the participants of research in higher education is 14,4 years, the prevailing position of the respondents is an associate professor, most of the respondents work at the faculties of sociology (25,6 %), management (10,3%), public administration (23,1%), humanities (17,9%).

*Inclusion of innovative thinking in the list of requirements for employees*

According to 55,0 % respondents, the requirement to innovative thinking of employees ought to be viewed as necessity not as a tribute to fashion. The increasing importance of innovative thinking, according to respondents, is associated with the changes in society ('Life has changed a lot, all of us are required to orient in the new environment, to see new threats and opportunities for success') and the needs of the economy ('The Russian economy demands innovative breakthrough', 'innovations have become a factor of production, so innovative thinking is a natural requirement of the employers'). However many respondents emphasize (45,0%) that the concept of innovative thinking at the moment is blurred, all participants of the labor market invest their own meaning in it, as a result it often leads to the identification of innovative thinking with the other human abilities – for instance, 'just an ability to think'. This situation explains why some respondents have negative attitude to inclusion of innovative thinking in the number of requirements for employees.

The participants of the survey that supported the inclusion of innovative thinking to the requirements for employees listed the main positions demanded a high level of its development. These are:

- engineers (22.0%);
- scientists (22.0%);
- teachers (19.6%);
- managers (31.7%);
- designers (17.1%).

Additionally, some respondents mentioned the possibility of using innovative thinking in any field of professional activity – 'it all depends on the difficulty and complexity of the problem that is required to be solved: the higher it is – the higher the demand for innovative thinking'.

*Development of innovative thinking of future employees as a task of teaching in high schools*

According to 87,5% respondents, the development of innovative thinking of future employees is the task of teaching in high schools. This task is mainly

JOURNAL OF CREATIVITY AND BUSINESS INNOVATION

**Journal of Creativity and Business Innovation, Vol. 3, 2017.**

www.journalcbi.com
ISSN 2351 – 6186

This paper is available at: http://www.journalcbi.com/developing-innovative-thinking-of-employees.html

related to the importance of innovative thinking for the professional activity of the graduates of the faculties where the respondents work. However the research participants see a lot of obstacles on the way of developing innovative thinking in high schools. These are:

- Professors' willingness to be innovative ('you first need to develop innovative thinking of professors themselves');
- Lack of references to innovative thinking in the existing educational standards ('the inclusion of innovative thinking in the educational standards is advisable', but 'there is a risk to formalize the requirements to this competence or to substitute it to another one', 'the concept of innovative thinking should be clarified first');
- Difficulties with measuring innovative thinking ('How to verify that it was developed?').

*Developing innovative thinking of students in high schools: the main factors and opportunities*

Characterizing the nature of innovative thinking 62,5% of the research participants confirm it is an acquired ability. It means that under the favorable circumstances each person has a chance to develop innovative thinking. The main factors that lead to developing innovative thinking of students in high schools, according to the participants of the survey, are:

- Innovative and creative atmosphere in the universities, the lack of administrative and bureaucratic barriers, the interest of high schools authorities to innovative activity of students;
- Involvement of students in extracurricular work – for instance, in performing original tasks, implementing the projects, conducting scientific research, participating in various competitions;
- High motivation and great interest of professors to the development of innovative thinking of students, the implementation of active learning methods in their courses.

The survey shows that some training methods have particular importance for the development of innovative thinking of students. They are:

- Brainstorming (mentioned by 53,9% respondents);
- Role plays and business games (mentioned by 53,9% respondents);
- Case studies (mentioned by 46,2% respondents).

The least effective methods in terms of developing innovative thinking of students turned out to be lectures, round tables, and, oddly enough, trainings. It can be assumed that the respondents associated the development of innovative thinking with the decision of practice-oriented problems; that is why the psychological techniques and exercises were considered as the secondary ones.

JOURNAL OF CREATIVITY AND BUSINESS INNOVATION

**Journal of Creativity and Business Innovation, Vol. 3, 2017.**

www.journalcbi.com
ISSN 2351 – 6186

This paper is available at: http://www.journalcbi.com/developing-innovative-thinking-of-employees.html

At the end of December 2017 the questionnaire was filled out by ***140 students*** from 13 Russian universities – Lomonosov Moscow State University, the Russian State Social University, the Russian University of Transport, the Russian Presidential Academy of National Economy and Public Administration, the Ivanovo State University of Chemical Technology, the Southern Federal University, and others.

*Defining the term of innovative thinking*

According to the results of the questionnaire the majority of respondents tend to determine innovative thinking through the terms of 'non-standard' (21.2%), 'orientation to novelty' (35.4%) and 'modernity' (10.1%): innovative thinking is 'a non-standard thinking aimed at finding new ways to solve problems', 'the ability to think in a new way, keeping up with the times', 'mental activity aimed at gaining new discoveries and results', 'a kind of thinking that meets modern requirements'.

58.6% of respondents believe that innovative thinking is different from creative thinking; it can be characterized by its applied nature, communication 'with new technologies and developments', orientation towards solving specific problems ('the ability to invent new progressive ideas on a specific issue').

*The role of innovative thinking in professional activity of graduates*

It is interesting that many survey participants assess the role of innovative thinking in the professional activity of graduates of their universities as 'rather high' (43.2%) and 'high' (26.3%). Moreover, 67.0% of respondents are optimistic and believe that at the time of their participation in the research their innovative thinking has been developed enough. The arguments that confirm this fact can be conditionally divided into three categories:

- references to examples of using innovative thinking in practical activities ('I find unusual solutions of the problems', 'I look for new ways of presenting the materials at seminars and conferences', 'I'm not afraid to experiment even when performing standard and boring tasks');
- references to the opinions of others ('I am often told as a person that looks at things differently');
- references to the peculiarities of social reality, in which it is impossible not to think innovatively ('our generation was already born at a time when not to think innovatively is to be uninteresting and unclaimed').

*Factors that lead to development of innovative thinking in high schools*

The respondents have given extended responses to the question about the factors of developing innovative thinking in the universities. In their opinion, several factors play the most significant role.

The first factor is using active training methods in the educational process. The

JOURNAL OF CREATIVITY AND BUSINESS INNOVATION

**Journal of Creativity and Business Innovation, Vol. 3, 2017.**

www.journalcbi.com
ISSN 2351 – 6186

This paper is available at: http://www.journalcbi.com/developing-innovative-thinking-of-employees.html

participants of the survey confirm that conducting trainings, business games and case studies on a regular basis is particularly important for the development of innovative thinking. The creative tasks and projects that allow the performers to reveal their creative and innovative potential are also in a high demand.

The second factor is implementing a flexible approach to teaching and organizing learning process in the universities. It is resulted in active involvement of students in the team work on interdisciplinary projects, their participation in scientific research along with teachers, conduction of elective classes on subjects that have aroused the greatest interest among students, organization open meetings with practitioners, encouragement of innovative ideas and innovative thinking of students – for example, by adding 'additional points to the students who have performed tasks originally'.

The third factor is the interest of university professors to developing innovative thinking of students. Only the ones, who are concerned on innovative thinking, 'allow students to think, not to be held hostage to someone else's judgments', 'inspire', 'encourage students to think extraordinarily'.

Without formulating rigid requirements to personal and professional characteristics of university professors, the respondents state the principles of their work and communication with students that contribute to developing innovative thinking of the latter ones:

- Demonstration of miscellaneous knowledge;
- Bringing practical examples;
- Willingness to develop the competencies of students that are not directly related to the academic discipline, but significant for activating the innovative potential of students, for example, 'the ability to find and use information';
- Encouraging new and creative solutions in the students works;
- Encouraging originality in solving problems.

The fourth factor that leads to developing innovative thinking of university students is active extracurricular work. It is expected to include scientific exhibitions, seminars and conferences for the students; students' creativity, know-how and ideas competitions; as well as involving students in interaction with the future employers – for examples, by means of internships in innovative organizations.

The education in high schools is not the only chance to develop innovative thinking of future employees. Some professors and students participated in the survey repeatedly stressed the need to solve this task at the earlier stages of education and training – for instance, at the secondary schools. Given the important role of schools as the institutions of reproduction of educational environment, it was decided to conduct another study which was a survey with

JOURNAL OF CREATIVITY AND BUSINESS INNOVATION

**Journal of Creativity and Business Innovation, Vol. 3, 2017.**

www.journalcbi.com
ISSN 2351 – 6186

This paper is available at: http://www.journalcbi.com/developing-innovative-thinking-of-employees.html

participation of the teachers of secondary schools.

**The role of secondary schools in developing innovative thinking of employees: research methodology and the main results of conducted research**

The process of preparing the research program for surveying the teachers of secondary schools was almost similar to the process of developing the research program for the university professors. The questionnaire also included 10 questions. There were the ones about:

- Interpretation of the concept of 'innovative thinking';
- The role of innovative thinking in the professional development of school graduates;
- The methods affected development of innovative thinking of school pupils.

The different channels of disseminating the questionnaire among the teachers were used: these are e-mail, www.surveymonkey.com, face to face meetings. At the end of December 2017 the questionnaire was filled out by 47 teachers of the secondary schools of mainly Moscow and Moscow region.

*Creativity versus innovative thinking: A comparative analysis*

The majority of the respondents state that innovative thinking as the competence of future employees was significantly different from creativity, only 29,4% participants of the survey believe that creative thinking and innovative thinking are synonyms. The comments on the issue given by the respondents also differ: 11,76% participants of the survey point out that innovative thinking is a kind of creative thinking (creativity), stating that the concept of creative thinking is broader than the concept of innovative thinking; 17,6% respondents suppose that innovative thinking is similar to strategic thinking, while creativity is a kind of thinking that helps in solving tactical problems; there is also a view that innovative thinking has not personal, subjective character ( 'it can be a request of time, the requirement of the company'), creative thinking, on contrary, is 'necessarily personal, subjective'.

*The role of innovative thinking in the professional development of school graduates*

According to respondents, the role of innovative thinking in the professional development of school graduates can be generally described as positive. Only one respondent disagreed with this position: 'In some situations innovative thinking can hurt', 'The examples are areas where you need and must act according to the instructions'. Presumably, these are such areas as military or civil service, health and safety, transport, and others.

Some participants of the research emphasize that innovative thinking helps the school graduates to solve the following tasks successfully: to choose a

JOURNAL OF CREATIVITY AND BUSINESS INNOVATION

**Journal of Creativity and Business Innovation, Vol. 3, 2017.**

www.journalcbi.com
ISSN 2351 – 6186

This paper is available at: http://www.journalcbi.com/developing-innovative-thinking-of-employees.html

profession (mentioned by 11,7%) respondents, to speak in public (mentioned by 5,8% respondents), to find job (mentioned by 17,6% respondents).

*The methods of developing innovative thinking of future employees at secondary schools*

70,0% respondents expect the educational standards to be changed. They believe that the new standards should set the requirement to develop innovative thinking at schools. To develop innovative thinking of pupils from day to day the surveyed teachers offer:

- To involve pupils in various project activities (mentioned by 47,1% respondents);
- To conduct trainings on the regular basis (mentioned by 17,6% respondents);
- To open discussion clubs for the pupils and to ensure that they work on the regular basis (mentioned by 17,6% respondents);
- To use case study as a learning method during the classes (mentioned by 11,7% respondents).

**Conclusions**

To sum up, it should be noticed that the educational environment in general and the educational institutions in particular have a large impact on the development of innovative thinking of staff. The highs schools and the secondary schools play the most significant role in this process: the willingness of future employees to use innovative thinking for solving professional tasks is mainly dependent on the conditions created in the universities and schools, the educational standards and programs they adopted and implemented the training methods they applied. We can assume that the development of innovative thinking of staff can also be affected by the institutions of postgraduate education – for example, by the training companies and the training institutions. Their impact on the innovative thinking of employees could be the subject of the further research.

**References:**

Asmolov, A. (2007). *Psihologiya lichnosti: kulturno-istoricheskoe ponimanie razvitiya cheloveka.* Moscow: Smisl.

Batovrina, E. (2016). *Innovative thinking as a requirement for employees of modern organizations*. Proceedings of The International Business Conference 2016: Searching for Innovative and Creative Business Solutions. Retrieved from https://www.viko.lt/media/uploads/sites/3/2016/07/9786094360428.pdf

Bosin, A., Dessì, N., Fugini, M., Liberati, D., Pes, B. (2006). Applying Enterprise Models to Design Cooperative Scientific Environments. *Lecture Notes in Computer Science*. Vol. 3812.

Bourdieu, P. (1989). *Genese historique d'une esthetique pure*. In Les cahiers du Musee national d'art moderne, 27, 95-106.

Coronado, D., Acosta, M. (2005). The Effects of Scientific Regional Opportunities in Science-Technology Flows. *The Annals of Regional Science*, Vol. 39, Issue 3.

Dementiev, I., Toyvonen, N. (2007). Formirovanie innovazhionnoy obrazovatelnoy sredi v

JOURNAL OF CREATIVITY AND BUSINESS INNOVATION

**Journal of Creativity and Business Innovation, Vol. 3, 2017.**

www.journalcbi.com
ISSN 2351 – 6186

This paper is available at: http://www.journalcbi.com/developing-innovative-thinking-of-employees.html

klassicheskom universitete. *Innovazhii*, 2, 47-57.

Garipova, A. (2009). K innovazhionnomu razvitiu obshestva cherez innovazhioonoe obrazovanie i povedenie lichnosti. *Vestnik VEGU*, 1, 26-34.

Huggins, R., Johnston, A., Steffenson, R. (2008). Universities, Knowledge Networks and Regional Policy. *Cambridge Journal of Regions, Economy and Society*, 1.

Nazarova, L. (2010). Innovazhionnaya deyatelnost kak mehanizm razvitiya innovazhionnoy obrazovatelnoy sredi agroinjenernogo vuza. *Vestnik FGOU VPO MGAU*, 4, 85-88.

Oleynik, A. (2004). Defizhit obsheniya v nauke: instituzhionalnoe ob'yasnenie. *Obshestvennie nauki i sovremennost*, 1.

Oliveira, J. (2006). A Knowledge Management Environment for Research Centers and Universities. *Lecture Notes in Computer Science*, Vol. 3841.

Tarasov, S. (2011). Obrazovatelnaya sreda: ponyatie, struktura, tipologiya. *Vestnik Leningradskogo gosudarstvennogo universiteta imeni A.S. Pushkina*, 3, Vol. 3, 133-139.

Vasiliev, P. (2011). Innovazhioonoe economicheskoe mishlenie kak dominantnaya harakteristika trudovogo potenzhiala postindustrialnoy economiki. *Gosudarstvennoe I munizhipalnoe upravlenie. Uchenie zapiski Skags*, 4, 61-68.

Vigotskiy, L. (2000). *Psihologiya*. Moscow: Aprel Press.

Zaripova, V., Lounev, A., Petrova I. (2012). Nauchit innovazhionnomu mishleniu – zadacha universiteta. *Innovazhii*, 11, 62-69.

Zakrevskaya, N. (2009). Faktori mobilnosti, vliyaushie na vosproizvodstvo nauchnogo potenzhiala. *Nauchno-teoreticheskiy zhurnal 'Uchenie zapiski'*, 3, 21-23.

Zarezhkiy, V. (2007). Zona blizhayshego razvitiya: o chem ne uspel napisat Vigotskiy… *Kulturno-istoricheskaya psihologiya*, 3, 96-104.

**Corresponding author:**
Ekaterina Batovrina can be contacted at: batovrinaev@spa.msu.ru