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Competences of the modern university teacher: challenges of Innovative Economy

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ABSTRACT

1. Introduction. Research relevance is caused by need of improving an education system. Competences of the teacher of new type have to provide developing innovative behavior in students. The research objective consists in developing necessary conditions, methods and instruments of forming and developing competences of the teacher of new type.

2. Methods. As theoretical and methodological base of a research works of foreign scientists were used (Bezer C., Falkenberg T., Hackett R.S., Harward D., Murphy, J.H.) and domestic scientists (Baranovsky A. I., Hookean M.V., Kislyakov P. A., Seryakova S. B., Tryapitsyn A. P.). Researches of these scientists are devoted to reforms in an education system, to improvements of the state educational standards, forming necessary competences, innovative educational technologies, developing innovative potential of students.

3. Results. First, improving educational process by means of new info-communication technologies of communication is necessary. Secondly, it is necessary to increase motivation of pedagogical collective for forming competences of new type. Thirdly, the development strategy of enterprise universities is necessary. Fourthly, forming the general policy of training at the level of the region or the territory is necessary. Fifthly, it is necessary to improve skills of heads of educational institutions in the field of innovative activity for activation of work on forming competences of new type.

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4. Discussion. Need of integration of the theory and practice for educational process remains a debatable problem. Training of specialists has to be brought closer to the real sector of economy. On the other hand the academic science has the advantages in training of specialists to innovative economy.
5. Final report. As conclusions and recommendations the principles and the directions of the strategy of development for an education system taking into account requirements of innovative economy were formulated.

Keywords: education, innovations, new educational technologies, Enterprise University, innovative infrastructure.

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1. INTRODUCTION

Now an urgent task is improving system of the higher education. The system of the higher education has to correspond to current trends of developing economy. The modern economy demands preparation of a manpower with an innovative potential. The teacher of new type is necessary for training of specialists with an innovative potential. Competences of the teacher of new type have to provide developing innovative behavior in students.

Forming competences of the teacher of new type requires design of actions for the higher education system modernization on various levels (cuts) of the social and economic environment (Zhu *et al.,* 2013). As the offered levels of developing innovative competences of pedagogical collective it is offered to consider: state level, territorial level, organizational level, pedagogical level, informing and communicative level.

The research objective consists in developing necessary conditions, methods and instruments of forming and developing competences of the teacher of new type. Only the teacher with competences of developing innovative behavior is capable to prepare manpower with an innovative potential.

2. METHODS

General scientific methods of a research act as methodological base of a research: analysis and synthesis, deduction and induction, interrelation of logical and historical processes, laws of dialectics.

The system analysis, the analysis of relationships of cause and effect, institutional approach act as special methods.

As theoretical base of a research works of foreign scientists were used (Bezier C., Falkenberg T., Hackett R.S., Harward D., Murphy, J.H.) and domestic scientists (Baranovsky A. I., Hookean M.V., Kislyakov P. A., Seryakova S. B., Tryapitsyn A. P.). Researches of these scientists are devoted to reforms in an education system, to

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improvements of the state educational standards, forming necessary competences, innovative educational technologies, developing innovative potential of students.
Also bases of the theory of innovations which contain in works of such scientists as J. Schumpeter, N. D. Kondratyev, G. Mensh, A. Klaynknekht, H. Freeman, T. Hegerstrand, were used. Peru, J. Budvil, H. Richardson, S. Glazyev, D. Lvov, M. Porter, B. Lundvall, R. Nelson.
Poly-disciplinary character of a research allowed to receive new scientific results and to execute a goal.

3. RESULTS

Let's consider possible actions for reforming educational process at universities for training of specialists with innovative competences at the following levels.

State level (level of national policy realization for higher education system modernization)

As the main directions of national policy of the higher education system modernization it is possible to allocate the following:
1. To increase the number of entrants at the expense of popularization of the higher education, developing the correspondence and remote education, reforming a branch network of universities in regions (Pevzner, & Petryakov, 2013), (Gapsalamov *et. al.*, 2016).
2. To develop both the state, and not state educational institutions taking into account monitoring of quality of educational services and employment of graduates (Balatsky, & Ekimova, 2014), (Levina *et. al.*, 2015).
3. To improve two-level training. Advantages are acquired by the universities having the right for training of masters (Kazantsev, 2012).
4. It is more active to use target approach (federal target programs) from the state to financing of educational institutions (Kuzminov, 2007).
5. To structure universities according to the status and the state support and their division on federal, research and enterprise. "The model of a threefold spiral" needs use

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of planned mechanisms of coordination of market activity for effective realization (universities - business - the state) (Etzkowitz, 2011).

6. To use new informing and communication technologies and innovative technologies of training (Akhmetov *et. al.,* 2015), (Dezhina, & Kiseleva, 2008).

7. To increase the importance of requirements of labor market for receiving future profession. This tendency forces employers (firm) and universities to cooperate with each other (Akhmetov *et. al.,* 2014), (Vasilev *et al.,* 2016a).

Territorial level (level of the higher education system integration with other sectors and the directions of developing the national economy)

Now territorial (municipal) level in system of the higher education begins to play a crucial role. In the territory of municipality not only municipal preschool and average educational institutions, but also the average professional and highest professional organizations, corporate universities and structures which are responsible for professional development and retraining of personnel are territorially located. For the territory (region) existence of university with the high level of innovative development bears the following benefits:

- expansion of jobs due to creation of the small innovative enterprises or subjects of innovative infrastructure - science and technology parks, business incubators, the centers of a transfer of technologies, the engineering centers;
- increase in scientific and technical level of manufacturing enterprises and a services sector at the expense of a transfer and commercialization of innovative technologies and products from university to the real sector of economy;
- improving personnel capacity of the region at the expense of the programs of a bachelor degree, magistracy, postgraduate study, professional development and retraining organized by university taking into account inquiries and priorities of employers and consumers of labor (Polterovich, 2014), (Sharafutdinov *et. al.,* 2017).

Organizational level (level of innovative strategy realization in collective work of university)

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At this level first of all innovative developing personnel capacity of university is necessary. Now innovative methods and the strategy of human resource management as the effective direction of increase in competitiveness of university gains value (Dmitriyev, 2011), (Ivanenko *et. al.*, 2015).

Creation at university of personnel structure with an innovative potential has to consider the following stages and the areas of work:

- strategy of use of personnel;
- developing personnel, its training and retraining;
- forecast of supply and demand of personnel, its quality, quantity, qualification, specialty, structure;
- assessment of expectations from investments into processes of innovative developing personnel potential;
- the choice of techniques of improving a motivational component for shots from the point of view of innovative developing personnel potential.

Pedagogical level (the level of developing pedagogical skill and the competences corresponding to calls of innovative economy)

The graduate of the higher school has to have such competences which would allow it to initiate, direct or participate in developing innovative production or service and to bring it to the market, having provided high income level (Shmelyova, & Kislyakov, 2012).

The teacher of modern university has to form at students of competence who will allow:

- to gain new knowledge and skills in not profile spheres of activity;
- to accumulate, analyze and transfer new informing for the purpose of the solution of urgent production tasks;
- to develop and use creative abilities for generation of the "breakthrough" or non-standard ideas and decisions;
- to update and improve the competences allowing to work in the conditions of transforming basic technologies and the equipment;

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- to accumulate the social capital and to communicate effectively in the new social relations (Altbach, & Salmi, 2012).

Informing and communicative level (the level of the educational environment allowing the teacher to form at trainees the competence of innovative activity and at the same time to develop the innovative competences)

Creation at university of elements of innovative infrastructure is especially important for forming competences of the teacher of new type (business incubators, the centers of a transfer of technologies, the engineering centers) (Vasilev *et al.*, 2016b). It allows students to do practical training in the innovative focused structures and to receive and adjoin to problems of protection of intellectual property rights, marketing, management and the economic (tax) accounting of innovations. Students can get considerable experience also as hired workers or probationers trainees in the small innovative firm created at university. Success of the innovative businessman consists in skillful use and the balanced combination of both traditional and innovative instruments of business (Efimov *et al.*, 2012).

In other words with practical participation of students in processes of commercialization of intellectual property items of university it is provided:

- deep integration of an educational component into innovative processes;
- forming at students of innovative thinking;
- developing innovative ability and susceptibility;
- assistance in employment of graduates;
- increase in level of enterprise culture of the student, education of mentality of the businessman.

4. DISCUSSION

As debatable aspects of our research it is possible to allocate the following:

1. At the level of public administration.

Traditional universities in national innovative system according to the concept of "a threefold spiral" have to turn into "enterprise". First of all federal and national research

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universities have to become "enterprise" (Katukoff *et al.*, 2012), (Korableva *et al.*, 2017). The concept of "enterprise university" means the following features: strengthening of an administrative kernel, expansion of external relations, diversification of sources of financing, stimulation of enterprise activity, developing enterprise culture (Grudzinsky, 2003). Among foreign examples of enterprise university it is possible to call first of all Massachusetts Institute of Technology as a factor of emergence of Silicon Valley (Andryushkevich, & Denisova, 2004).

2. At the level of territorial administration.

For the territory (region) enterprise universities with the developed environment of the small innovative enterprises are priority (Indermit, & Homi, 2007). It allows higher education institution to overcome on the one hand a gap between science, education and production, and on the other hand - to get access to needs of the real sector of economy. Respectively, it allows holding more effectively a work practice of students, a laboratory and practical training, to exchange personnel structure between university and the enterprise. This process allows creating competences of the modern teacher who can teach the student to work with new knowledge, to generate them, to use and introduce in practice, to work in team or design group, to switch quickly to non-core tasks and functions.

3. At the level of management of university collective work.

For increase in innovative activity of personnel structure the modern university has to create infrastructure of support of innovative activity (science and technology parks, the centers of a transfer of technologies, business incubators), to develop both educational, and research activity for feed of the innovative ideas, to transform the organizational structure in the direction of creation of new subjects of innovative activity - the small innovative enterprises, research laboratories, the engineering centers (Dosuzheva, & Lyamzin, 2012). For this purpose in the mission of university innovative development has to be allocated with separate activity, there have to be corresponding administrative shots and innovative managers, there has to be an accounting of scientific and technical

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developments, patents, licenses and other intellectual property items, the university has to take active part in commercialization of results of scientific and technical activity in the market through specialized institutes of assessment, financing, production, sale and redistribution of innovations.

4. At the level of pedagogical process management.

Change of the purpose of education changes ways of achievement of goals. To become topical issue use of innovative technologies in training. It demands from the teacher of psychological reorganization and orientation to new type of management of educational process, change of the role in it. Existence of active educational technologies will allow to achieve not only the objectives of innovative development, but also to receive competences which are necessary at the same time. The following tools can be examples of active educational technologies: contextual training, training at an experience basis, problem-oriented approach, the design and organized technologies, business games directed to team building and leadership.

5. At the level of informing and communicative communication between the teacher and the student.

The major pedagogical task is to form innovative potential of students. Essential skills and abilities of the personality with an innovative potential are: creativity, strategic planning, system development, vivid thinking, a non-standard of the made decisions (Prigozhin, 1989). Educational technologies have to allow communicating as much as possible the trainee as among themselves, and with the teacher in the course of the solution of theoretical and practical tasks. Communication is one of spheres of activity which provides development and self-updating of the personality in society. Only in the course of communication forming new ideas about subjects of activity, developing the estimated relations forming a self-assessment and each other assessment, improving flexibility in interaction with people around and abilities to creative approach at the solution of problem situations is possible.

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5. SUMMARY

In the conclusion it is necessary to formulate a number of conclusions:

1. The modern innovative economy demands carrying out the higher education system modernization.
2. There are positive (education level of the population) and negative (level of commercialization of the intellectual capital) indicators of the Russian national innovative system.
3. Deeper integration with the real sector of production, increase in a demand of graduates of universities in the world market of high technologies, developing innovative infrastructure at universities, professional developing pedagogical shots and creation of the educational environment forming innovative competences have to become the purposes of the higher education system modernization.
4. Creation of enterprise universities has to become a priority task. It will increase a share of the practice-focused studies, will lead to creation of the small innovative enterprises, will attract market financing to innovative projects of higher education institution, will create a basis for improving personnel capacity of the territory (region) and will increase the level of competitiveness of the domestic enterprises (Kharisova, & Puryaev, 2014).
5. Improving the educational environment in universities has to take place on the basis of use of innovative educational technologies. Increase in communication in the course of performance of studies, developing interactive forms of education and participation of students in realization of scientific and technical developments of higher education institution will allow creating competences of innovative activity and will train the teacher of new type (Galimullina, & Lyubimova, 2014).

6. CONCLUSIONS

As the conclusion It should be noted that innovative developing universities has to be based on constant improving traditional kinds of activity: educational, methodical, economic, educational and scientific.

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Innovative approach to education reform is based on idea that the education system not so much adapts to labor market how many it itself is a source and an incubator of the new ideas, innovative solutions, breakthrough technologies.

Respectively, the new educational paradigm considering calls of economy of knowledge has to meet the following conditions:

- universities have to provide high education of the person;
- future expert has to be able to adapt flexibly in promptly changing conditions and to have skills of work with the arriving new informing;
- it is necessary to pass to deep integration of science, education and production;
- forming the new culture of informing society allowing to compensate considerable territorial remoteness of people from each other and to increase efficiency of use of their intellectual potential is necessary;
- it is necessary to solve basic problems of economic character, such as social inequality, unemployment, migration of labor, living and social conditions, poor quality of life and education.

Improving educational process by means of new educational technologies, developing innovative infrastructure of university and the small innovative enterprises, expansion of opportunities for carrying out with students of a practical training in the real sector of economy, forming competences of the modern teacher through integration of labor market and education market has to become a priority of developing universities.

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