Creative Innovative Higher Education of Researchers with Flexible Skills and Synergy of Cooperation

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Abstract
The concepts "creative activity", "creative abilities", "creative education" are already widely used both in western, and in the Russian scientific thought today and have innovative contents. Innovations have creative force: high novelty and usefulness and also provide competitive advantages and successful corporate activity in the market in the long-term period. Creativity has various forms: scientific (opening); technical (inventions); economic (business); social (relations with people); political (public administration); educational (cultivation of innovators). For training orientation to creative innovative approach of the higher education which ideally has to reveal, support and develop the creative potential of each personality is productive, growing up multi and between disciplinary researchers on fundamental subject knowledge, especially mathematicians – the queen of sciences. Within multi disciplinary approach communications of the studied subject domains come to light. As a result there are cross-disciplinary researches. As a result of cross-disciplinary researches new disciplines appear. To accelerate process of innovative cultivation the field and between disciplinary researchers and also to increase synergy of their cooperation, the advanced digital technologies will help.

Keywords: Creativity; Education; Innovations; Researches; Synergy

Introduction
Now an industrial era in the developed countries is replaced by an era of innovative development when the major role is played by knowledge, high technologies and new developments. National innovative systems which purpose - creation of the economy based on innovations are created. Innovative processes cover economy, the social sphere, policy, education, science, the equipment, production, business and other spheres. In innovative society the major role in his development is played by the new ideas and innovations. At an innovative stage of development information and knowledge become objects of creative thinking which product are the new ideas having big social and economic effect. At the same time upon transition to a new stage all achievements of the previous stages remain and develop at higher level. Creativity in the developed countries becomes continuous practice and the main source of competitive advantage. Practically any area of production is won finally by the one who has creative potential. Sources of creativity are creative people and the organizations. A problem of higher educational institutions to train experts of the future. Today modern education realizes the strategy of the human capital.

Modern creative formation of Russia
Creative education strengthens the positions in Russia as formation of innovative type which main orientation is formation of creative thinking, development of creative abilities and intellectual potential, search of new approaches in the solution of modern problems. Creative education has the potential for creative self-development, self-determination and self-realization of the personality. These provisions find reflection in the national educational initiative of development of innovative higher education defining development of the creative person and cultivation of the innovators capable to continuous creative self-development, self-improvement as a problem of paramount importance. Creative education is focused on development of creative abilities of the person, on fixing in his professional consciousness of installation on an innovation by transformation of knowledge and abilities
into development potential. It is science and art of creative training. It directs to study creatively, to become creators itself and creators of the future. It expands the range of vision of problems of development and design of versions of their decision. It has to be glavkny in activity of the modern researcher and provide him success in competition at changes of an ekonokmichesky environment in processes of acceleration of technological progress in time. In creative education the most complex and productive method is training by action which is carried out in the form of the solution of real professional tasks, the analysis and playing of concrete situations, joint activity of educational group, independent work. It interrupts the fundamental, hi-tech, prospecting practical (advancing), continuous, individual variable, design and innovative education, raising research innovative potentiate the modern innovator. Creative innovative education promotes a solution of the problem of professional readiness of the experts demanded by labor market capable to set the innovative speed in social and economic development. Modern creative education is effectively organized. The main thing in the organization of creative education is the choice of disciplines, formation of educational groups, individual load of listeners or students, health-saving and also forms, quantity and distribution of practical actions.

**The choice of disciplines**

possibility of independent formation of the obrazovatelny program or participation in her formation has big snatching in creative education. Today the student or the listener is almost deprived of an opportunity and motivations of deeper judgment of the sposobnosti, educational requirements and the business career. Still sukhshhestvut dictatorship of educational institution of the gosudarstvenny standard which rigidly establishes a nakbor career. Still sukshhestvut dictatorship of educational institution of the sposobnosti, educational requirements and the business career. Still sukshhestvut dictatorship of educational institution of the gosudarstvenny standard which rigidly establishes a nakbor career. Still sukshhestvut dictatorship of educational institution of the gosudarstvenny standard which rigidly establishes a nakbor career. Still sukshhestvut dictatorship of educational institution of the gosudarstvenny standard which rigidly establishes a nakbor career. 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mastering students practical skills and also such concrete heuristic means and receptions as brainstorming, a method of focal objects (a method of search of the new ideas and characteristics of an object on the basis of establishment of associative communications with other objects or their signs) and control questions. Fifthly, formation at students of ability to carry out the responsible choice and to make independent effective decisions on the basis of monitoring and analytical researches.

**Use of the latest information technologies**

And technical means of training. Wide and effective use of the worldwide information network “Internet”. Introduction of system of distance learning. Use of audio and video of the equipment. Use of online courses and ample opportunities of computer interactive technologies.

**Health saving principle:** The attitude towards health of participants of pedagogical process as to basic supreme value. Health has to be considered by society as the priority value, the purpose, result and a necessary condition of successful activity of all participants of educational process. Formation at students of endurance, emotional steadiness, mental stability, ability to lead a healthy lifestyle.

**Motivation of creative education:** Each of types of education relies on certain motivators. Can be them: the professional status confirmed diploma, requirement of intellectual development, realization of individually abilities, the enriching communication with experts, professional ambitions, the need for knowledge and skills of modern professionally activity (knowledge of language, knowledge of the computer and so forth), “thirst of opening”, “fashion” of a pas education. Of course, all these factors work in total. In fact, the real person always gives something a predpokchteniye, any of these factors is priority, prepotent, pronounced. Action of factors of motivation can be operated in educational processes, leaning on an essence and content of creative education. For example, it is possible to carry out obuchenky without issue of the diploma, to check not knowledge, but type of a professional myshkleniye, to estimate not the point of view, but her argumentirovanpost, to check not knowledge, but type of a professional myshkleniye, to encourage not correctness of conclusions (decisions), but their practical efficiency.

**Psychological aspect of creativity**

Identification of new regularity or essence begins with a vychuvstvovaniye her soul in an environment in which she is shown, and about which are saved up feeling knowledge. Vychuvstvovany new regularity or essence goes the acquired skills. After mental reflection of new essence, consciousness determines it by knowledge elements. The creative innovative vychuvstvovaniye reveals new entities, communications, dependences and regularities of processes and the phenomena. The feeling – knowledge of new regularity or essence is fixed in memory. Further new creative knowledge in the course of individual thinking is developed. The psychological aspect of disclosure of creative abilities is very important for accumulation of experience of development of imagination, intelligence, ingenuity, self-training and creative innovative activity.

**Creative innovative higher education increases innovative synergy**

[3-18]. First, scientific and educational synergy of preparation of creative shots for creative activity. Secondly, social and economic synergy of achievement of economic stability of healthy activity. Thirdly, financial and organizational synergy of development of the economic environment. Fourthly, design and innovative synergy of integration processes in innovative activities for development of scientific and technical, technological, production, investment and personnel potential; and also increase in productivity of work, improvement of structures and competitive capacity of productions. Fifthly, industrial and technological synergy of technologies and the industry for fundamental reorganization of labor market and formation of the effective principles of work of economic system. Sixthly, health – ecological synergy of saving of the nation and ecological development of vital spaces. Seventhly, increase in synergy of transnational communication.

**Creative Formation of the University of a Digital Era**

**Creative aspects of education**

a. The university of a digital era lays the fundamental foundation of knowledge, especially on mathematics – queens of sciences.

b. Each student has a possibility of individual hi-tech education and acquisition of skills of design with world-class competences. The identity to each participant of education at the university provides his choice to a trajectory of training and acquisition of practical skills.

c. The university is focused on training of competent experts for the companies working at the global markets.

d. The university provides professional and enterprise competences to each student in digital economy.

**Management of development of the digital university**

The main aspects of the environment on development of the digital university are: formation of the enterprise structures of the university capable to become engines of innovative development; development of mechanisms of effective interaction of the university with business on commercialization of knowledge and projects; training for innovative economy with use of the best foreign practices; creation at the university of the enterprise centers directed to implementation of innovative projects and attraction business – community for their financing; assistance to distribution of the best practician of implementation of joint partner projects; development of the international partner relations of the university with the leading foreign universities for the purpose of strengthening of integration of the Russian science and education into the international innovative community and also as key players of the national clusters promoting a contact to the international partners and the international markets.

**Educational system**

The educational system includes schools of sciences; university programs of fundamental education and discipline; the
personalized trajectories of training and development; hybrid form of education (online + offline); educational program of healthy activity; the platform decisions simplifying communications; a digital complex of training in the research market focused activity and digital economy.

**Scientific directions**

a. Fundamental education on natural and to the humanities.

b. The professional focused cross-disciplinary hi-tech training in digital platforms, the industries 4.0, to clever factories, on the basis of the directions of the road map of NTI in the technological directions.

c. Hi-tech education – the most effective way of a raising of competitiveness of graduates, and in the investigation and a raising of competitiveness of high-tech industries. Such decision gets to current problems of the industry of education.

**Approaches to training**

a. 50% of time of training in fundamental and basic disciplines and 50% of professional practice.

b. Ontogenesis approach to fundamental training at a basis of three criteria and seven principles. Fundamental education helps development of the theory; has system effect; helps innovations, estimates development tendencies.

c. Creative approach to diversification of individual preparation on the basis of online and elective courses. Such decision is perspective for creativity development.

d. Scientific multidisciplinary and cross-disciplinary research.

e. Business - practical works.

**Technological monitoring**

Important function of hi-tech training is monitoring of level of the innovative competition, a condition of labor market and hi-tech productions, for the purpose of correction of process of education on digital training:

a. Digital services and applications.

b. ICT of modules.

c. Platform technologies.


e. Advanced digital innovations.

**Formation of healthy activity**

Development of the human capital as main resource of the country and key factor of development of modern economy tends to growth of life expectancy and healthy activity. Now it is about extension of healthy activity for 30-40 years, and a new level, there will be 120 years. Training of students and the population in a healthy lifestyle will solve this problem. For this purpose, the university needs to provide:

a. Acquisition of competences on a healthy lifestyle.

b. Formation of family and public culture of a healthy lifestyle [15-16].

**Arts education**

There is a risk that spiritually not mature creative innovators can take away from a true peaceful righteous life. Arts education has to form human qualities and learn:

1. Not to bring the evil to the world not to generate the conflicts and not to infect others, not to lead mankind to disaster.

2. To extinguish angrily kind at all levels of the organization of society and to make moral history of good.

Criterion of the truth is practice. The good and evil are spiritual and moral category. On the basis of researches of spiritual and moral practice of good of history of mankind the general criterion of good is elaborated: creation and preservation of peaceful just activity. Activity by the general criterion of good will create just peace qualities of citizens. People carry out just peaceful activity on conscience.

The maintenance of arts education, forms just peace consciousness of people of secular society. Just peace qualities of citizens will develop the spiritual and moral culture of activity in society [6].

**Improvement of quality of life**

Improvement of quality of life is carried out by training in the healthy lifestyle, harmonious development of vital spaces, to ecological and social measures of improvement of quality of life directed to harmonization of public life and activity of the person and improvement of his wellbeing, health and life [1-2].

**Digital complex of training**

a. The automated information and computer technology of an individual trajectory of training at domestic and international digital platforms. She stores all trajectories of training and their results which are available to all students, both positive, and negative.

b. The educational technologies aimed at the development of creative abilities. The technology of educational process defines emergence in consciousness of the person of certain communications and interactions of knowledge, their ranging, their practical importance in concrete situations.

c. University educational platforms of distance learning and others, such as I Spring, UCHLPRO, Mirapolis Learning Management System, Get Course, Moodle, Yo-STADI, Autor, Eliade my, Forma LMS, Dokoos, IJIAS, Opigno, OLAT.

d. University educational platforms of online courses and others, such as Courses Arzamas, Lektorium, Universalism, Khan Academy, Coursera, Academy, Open education, Universality, Theory and practice, Lecture hall, Business Learning.
e. Digital educational platforms unite in the “ecosystems” interconnected, based on data exchange, covering the educational directions of world level.

f. Hardware of open applied laboratories.

g. Ecosystem of generation of the new ideas and design teams.

h. The system of real time scale for interactive multimedia training and teleconferences in development of digital economy [9-10].

**Risks of Creative Approach in Education**

Creative education is risky for pupils. At the exit of brazovateln process a certain percent of creative people in whose fate the moments favorable for development of their creative abilities have happily met turns out. It is necessary to develop and use more successfully the educational technologies contributing to the development of creative abilities of pupils and students and to form a basis of strategy of creativity in education where much attention will be paid to personal development of young people for preparation them to innovative activity in new century. Now the problem of realization of creative capacity of society for preservation and strengthening of the predominating positions in global space is very accurately realized. This direction has acquired special relevance on a wave of scientific, technological and economic break in the last decade. New century will turn into an era of big intellectual fight which participants is predetermined to become today's students. This fact it is essential demands development of creative innovative education. The cult of creative study contributes to the continuous creative development of the personality on intensive intra-corporate programs of training and in Higher Education Institutions, in training of the house and in everyday life [19].

Kreativny people change innovatively quicker than technologies. Creative individualization leads to growth of innovative offers. There is a problem of future employment of creative innovators. They will be educated generations, and they should start their career from considerably excellent set of competences, then to their predecessors. Creative innovators apply for jobs which provide increase in labor productivity and competitive capacity. They have to create the market of high-performance competitive innovators work. Generation of the inventors having experience of practical work in science, technologies, engineering and mathematicians have to define the global future effectively.

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**Conflict of Interest**

No Conflict of interest.

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