

## Innovative person as a way to achieve globally competitive educational advantage of Russia

Grigory Artemovich Balykhin<sup>1</sup> and Mikhail Grigorievich Balykhin<sup>2</sup>

<sup>1</sup>Education Committee State Duma of the Russian Federation, Okhotny Ryad street, 1, Moscow, 103265, Russian Federation

<sup>2</sup>Moscow State University of Design and Technology, Sadovnicheskaya street, 33/1, Moscow, 117997, Russian Federation

**Abstract.** Innovative person is the subject of all innovative transformations, as well as their active initiator and producer. According to the strategy, his abilities should incorporate the ability and willingness to continuing education, retraining, self-education, occupational mobility, ability to think critically, creativity, entrepreneurial spirit, ability to work both independently and in a team in a highly competitive environment.

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### Introduction

Russia's long-term development objectives are associated, at a minimum, with the solution of the following tasks [1]:

1) providing a high level of human wellbeing;

2) strengthening the country's geopolitical role as one of the world leaders, which defines the global political agenda.

Russia's development strategy until 2020 recognizes and lays out the need to build the domestic economy based on leadership and innovation. In this regard, some long-term goals are outlined by the policymakers as follows:

– gaining a substantial share (5-10%) in the high-tech and intellectual services market;

– increasing the share of innovative products in the manufacturing industry (by 5-6 times) [2];

– increasing the share of innovation-active enterprises (from 9.4 to 50%).

As is known, the global economic crisis has significantly complicated the implementation of the objectives to be achieved, led to a reduction in private business spending on innovation, aggravated the structural weaknesses of the Russian innovation system.

### Key challenges for innovative development of Russia

Problem-solving of post-crisis recession in Russia takes place under the impact of external and internal challenges. Let us identify key external challenges in innovative development of Russia and its mechanisms. One of the major challenges is associated with the acceleration of technological development of the world economy. Russia's real competitors in terms of innovation are not only the

leading countries, but also the developing countries, as well as the CIS countries.

Uncertainty of Russia's development is increased by virtue of the technological revolution in resource saving and alternative power engineering. Yet the global market is dominated by the export of traditional energy sources. However, there are emerging cost-effective technologies for producing hydrocarbons from unconventional sources, such as oil shale, tar sands, etc.

A "brain drain" from the country of skilled workers, technologies, ideas, and capital becomes another significant challenge, while to strengthen the country on a global basis, highly skilled workforce and the 'smart' money (investments, technology and competences) are needed [3].

To the third group of challenges one may refer the problems that are faced by all humanity, i.e. climate change, an aging of population, and challenges, which are most significant for Russian citizens, i.e. healthcare and food security. All of the above designated puts the need on the today's agenda for intense scientific research and technological developments in the areas, such as

– "clean" energy,

– genomic medicine,

– new technologies in agriculture, etc.

Russia has no significant backgrounds in these areas. It is needed to overcome the existing isolation very quickly and integrate into the global innovation system.

The other alternative means narrowing the "window of opportunities", i.e. the transition of Russia into the community of simulation type countries, i.e. raw-material producing countries, not capable of producing new knowledge and achieving global leadership in key areas.

**Innovative person**

The achievement of targeted prospects and capability of transforming ideas into opportunities and specific activities are feasible only in case of formation in Russia of innovative personality that is not a synonym of innovative entrepreneur.

**The innovative nature of Russian education**

Formation of "innovative person's" competences must begin both before school and in primary school.

The following key features must be laid in children exactly during this preschool period:

- 1) the critical perception of information;
- 2) ability to unconventional decision-making;
- 3) creativity and inventive power;
- 4) ability toward teamwork;
- 5) socialization skills.

In order to facilitate the implementation of innovative study tools into personality's formation and creative activity, it is necessary to provide the following measures [4]:

- to create sites for training of teachers and administrators in order to acquire innovative programs of preschool education development (at least 2 sites during the period of 5 years in each federal district, supported by government);

- to pay maximum attention to the family role in children's education and training; for that purpose it is supposed to create and develop various civil society institutions, including the socially-oriented non-profit organizations;

- to use flexibly new educational technologies and practices in the school that include the development of infrastructure for in-depth education and industry-specific training, integration of general and extended education, enabling professional and pre-professional studies. **Awarding the status of the presidential lyceums to the most successful schools** will be based on actual effectiveness of the work performed.

The relationship between a university and a school in the innovative development area will be carried out through the joint network and project activities, as well as educational and professional communication with young researchers, their involvement in projects organized by universities; through grants to support specific projects and educational programs, creation of a network of internship sites for training the general education system employees, as well as the improvement of certification, licensing and other requirements [5].

**Organization of an integral system of continuing education** that would meet the requirements of the innovation economy becomes

very relevant. Its specific implementation should be carried out through:

- implementation of international standards and credit-based modular learning;

- development of cooperation between educational institutions and high-tech production companies;

- change in the recruitment principles of higher education teaching personnel: middle and senior positions (permanent positions) should be held on a competitive basis with the obligatory account of international publication activity of the applicants.

**Formation of innovative person** is strongly associated with the fledging of professional innovators, including those in the education system. This would be possible through the following measures [6]:

- participation of lecturers in globally competitive research and projects and termination of the contracts with the professors, not involved in such activities;

- recruitment of foreign experts for permanent and temporary work;

- creating new university ratings on the basis of international publication and patent activity of the academic teaching staff;

- increasing requirements for the assimilation of educational programs in foreign languages including Russian as a foreign language;

- monitoring the effect of international and in-country academic mobility of students and academic staff;

- participation of high-tech business professionals in the development and implementation of educational programs;

- creation of enterprise-based university departments in priority branches of science and industry;

- measures aimed at the opening of the Russian market in the matters of personnel training and certification for foreign organizations;

- development of adult education system and training of teachers and administrators for this purpose;

- creation of small businesses and opening of a) training programs (for example, in the field of digital product design), b) adult education programs, and c) educational programs for the elderly people of the third age.

Development of continuing professional education mechanisms and networks is caused by the development of the Internet and distance learning, as well as interactive groups, problem-oriented teams, focus-groups, etc. [7].

**Education on innovative entrepreneurship** will be included in the near future

to the number of tasks relevant to higher education. At that:

- emphasis will be made on the formation of a complete innovation cycle at the university: from selection of the subjects to study through the sale of innovative "startups";
- intense commercialization of scientific developments is anticipated;
- students of humanitarian and engineering majors will create joint teams to implement innovative projects;
- successful entrepreneurs will be engaged in the "Mentoring" program to train young people.

### Youth and innovation

Becoming innovative person is largely associated with a set of measures on involvement of young people into the context of research and development [8]; these includes:

- development of infrastructure called "House of pupils" for the implementation of programs on supplementary education in natural and engineering sciences;
- development of scientific academic competition, summer science camps and expeditions, competitions and conferences;
- supporting issuing, Internet and other resources related to science, technology, innovation, etc.

**Ways of joining the efforts of government, education, science and business** are in the focus of policymakers and initiators of large-scale domestic changes. They include the creation of **technological platforms**, i.e. communication tools aimed at enhancing efforts in developing of advanced commercial technologies, services, products and research. The following technologies are of high priority:

- information technology;
- aerospace technology;
- biotechnology, including industrial biotechnology and pharmaceuticals;
- composite materials;
- photonics and laser technology;
- nuclear power engineering.

A "breakthrough" is anticipated in the high technology products and intellectual services markets within 8-10 priority areas, such as nuclear technology, aviation, shipbuilding, software, weapons and military equipment, educational services, space-based engineering services and manufacturing of rocket and space systems, as well as the fundamental applied scientific research and technology.

### Effective science

Innovation development of Russia is surely dependant on the achievement of science-based effective development potential of the country. Currently Russia has 3.5 thousand research organizations engaging more than 750 thousand people. The following should be accomplished to make science really effective [9]:

- to carry out an audit of research and academic institutions performance quality;
- to focus the efforts in priority areas;
- to establish a network of research centers, research universities, **centers of excellence** and **competence centers**, i.e. national research centers in the priority areas;
- to establish a unified **university and academic complexes** implementing the practice of combined teaching and research;
- development and implementation of new post-graduate training models, which would include professional in-class learning;
- extension of the internship programs;
- strengthening the scientific schools, creation of positions, such as a federal researcher and federal professor (70 years age qualification should be introduced to limit the occupation of leading positions in the field of science and education);
- the legal restrictions on the involvement of foreign nationals in leading positions (including chancellors) should be eliminated.

### Specific ways to university leadership and survival

A total number of foreign students studying in the country play a primary role in the variety of education export forms [10].

In the statistics digest "Export of Russian educational services" it is emphasized that the satisfaction level of foreign students in terms of their living and study in Russia is very far from reassuring. The main complaints are related to the following problems [11]:

- low quality of vocational education;
- poor content and outdated teaching methods (study "in layman's terms");
- lack of well-organized practices, and practices as such;
- mismatch of education quality and its cost;
- lack of classic and modern educational textbooks;
- availability of teaching disciplines not related to the future profession;
- some social problems associated with personal security;
- linguistic and intercultural barriers.

**Conclusion**

In order to ensure implementation of technological and intellectual thrust, Russia needs to consolidate various scientific, professional, humanistic, financial, economic and political efforts. However, the truth is concrete, and each person should start himself the way to innovation.

**Corresponding Author:**

Dr. Balykhin Grigory Artemovich  
Education Committee State Duma of the Russian Federation  
Okhotny Ryad street, 1, Moscow, 103265, Russian Federation

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