

## PROBLEMS OF ESTIMATION OF INNOVATION POTENTIAL OF THE HIGHER SCHOOL

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Pressing questions of reforming of the higher school of the Russian Federation are taken up in this article. The basic attention is given to the development and an estimation of innovative potential of high schools. The characteristic of various approaches to an estimation of innovative potential is considered. Author's vision of monitoring and high school management in innovative potential is represented in it.

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The innovative way of Russian economy development mentions all the fields of activity, including formation (higher school). Importance of educational sphere is in its ability to create and extend new knowledge that is a basis for innovations. Considering that innovations are the innovations which can accept a commercial form, its high rating among other educational organizations can be result of innovative activity of high school.

Principal reasons for innovative changes in sphere of the higher vocational training are, firstly, the openness of the world space and, as consequence, necessity of alignment of base positions on key questions of training and, secondly, the rapid development in the information sphere and, as consequence, occurrence of new, innovative methods of transfer, accumulation and processing the information in knowledge field.

It should be mentioned that the problem of an estimation of innovative potential of high school is enough new and has not found worthy reflexion neither in theoretical workings out of a pedagogical science, nor in practice.

Thus, objective requirement and undevelopmental of aspects of innovations in the sphere of the higher vocational training allow to speak about an urgency of a considered problem.

The high school is the innovative-focused element of national innovative system. It is caused by character of its production as it creates innovations in all the spheres of the activity. Generally high schools carry out two principal views of activity: educational and research.

The purpose of educational activity is the preparation of new experts for various branches of national economy, reproduction and mental potential development. Thus it is should not be forgotten that in modern conditions formation ought to be focused not so much on transfer of knowledge which constantly become outdated as on mastering base competences allowing in the future to acquire knowledge independently, as it can be required. For this reason such formation should be connected with practice more closely than traditional one. Innovative formation assumes training in the course of creation new knowledge at the expense of integration of scientific activity and directly educational process and manufacture.

Research activity of high schools is focused on working out and creation of scientific and technical production for its use in national economy.

Thus, the high school should possess considerable innovative potential; otherwise it will not be able to carry out its functions in the full value. The innovative potential of high school represents resources of all kinds which can be used for realization of innovative activity both in the field of realization of educational projects and in the scientific sphere. Any change in the organization, connected with revealing of problems of its development and formation of vision of the future of the organization it is impossible to carry out without an estimation of available potential.

The purpose of the estimation of innovative potential of high school is the degree establishment of higher educational institution conformity of innovative activity to the best experts in the sphere. Thus problems of an estimation of innovative potential allocate:

- Reception of the objective information about a condition of innovative activity of high school;
- Revealing of positive and negative tendencies in innovative activity of high school;
- Establishment the reasons for occurrence of problems and complexities during the introduction of innovations into practice of work of high schools and definition of ways of their decision.

There are various techniques for estimation of high school innovative potential. As a rule, they are based on use of the criteria applied at carrying out of certification

and accreditation of high school, or for an establishment the possibility of the inclusion of the high schools-leaders applying for reception of grants within the limits of the innovative program of the Russian Federation in its structure.

The official attitude, in particular Minobrnauki of Russia, about methodology and a technique of the analysis and an estimation of innovative potential of high school is displayed in the form of the demand at carrying out the competitive selection of educational institutions of the higher vocational training which introduce innovative educational programs. The structured form high schools-konkursanty should characterise their own innovative potential on following four group indicators:

- 1) efficiency of scientific and innovative activity (quantity of research, innovative and promotional structures; volume of financing projects in research, innovative and promotional structures; number of students and the post-graduate students involved on the paid basis to researches; the patents received on the workings out of high school; the textbooks with signature stamp prepared by teaching staff of high school, etc.);
- 2) efficiency of professional training for innovative educational activity (competition at entrance to high school; number of winners of the All-Russia Olympic Games (competitions) enlisted on 1st course; mean score at state exam among enlisted on 1 course; number of winners of the international students' Olympic Games; number of full-time study post-graduate students, number of persons working for doctor's degree, etc.);

3) a mental potential of a higher educational institution (the persons having a scientific degree of the candidate or the doctor of sciences; total number of scientific and pedagogical shots; full members and member-correspondents of the Russian Academy of Sciences and other state academies of Russia; winners of awards of the state level; average wages of teaching staff; a parity of wages of the rector to average wages of the professor);

4) supporting of innovative activity by material and information base (balance cost of cars and the equipment; personal computers and computer workstations; terminals with the access to the Internet; total number of units for storage of library fund of high school).

According to the authors, the similar approach to the analysis and an estimation of innovative potential of high school is possible only for carrying out the express analysis and reception of much aggregated integrated estimation. It does not display:

- Composition and structure of innovative potential that is very important for the analysis strong and weaknesses;

- Sources of innovative potential formation that would show distribution of own efforts and help from the state, etc.;

- Productivity of innovative potential use according to basic components that could show directions of escalating efforts in this or that field of high school activity .

Qualitative criteria of an estimation innovative potential is used in other techniques, this causes the necessity of application of expert estimations. In this case, the estimation of innovative potential is held with the using of binary system, i.e. pres-

ence or absence of this or that criterion without definition of level of its performance is fixed. The result of such estimation is the establishment of innovative potential conformity of high school to the best experts in the sphere. Nevertheless, the degree of such conformity that distinguishes high schools from each other can not be defined in this case.

If the estimation of innovative potential is limited with only quantity indicators than there is a question, what indicator should be mentioned as the indicator for comparison. A number of authors suggest using of average indicator, defined on the basis of high school engineering development s of the Russian Federation data, of regional or even world level. In spite of appeal of such approach, it has been represented enough difficult as, firstly, there is necessity in access to corresponding information, and, secondly, the information should be reconsidered regularly for the purpose of supplying with the urgency of the received results. Besides, epy level of innovative activity of high school can be always estimated with the help only quantity indicators.

Besides, such approach allows defining of the high school comparative estimation for the purpose of definition of its rating among other higher educational institutions. And it does not always give the information for an estimation of stability of the innovative development. For this purpose it should be estimated innovative potential of high school in dynamics, at least for last three years that will allow to reveal corresponding tendencies in innovative activity and to de-

fine cause-and-effect relations for formation of innovative activity of high school.

In our opinion the approach to an estimation and high school management in innovative potential should be based on following positions.

First of all, two basic aspects should be allocated:

1) The structure of innovative potential of high school and the ways of its estimating;

2) The structure of a control system of development of innovative potential of high school and, what subsystems can be allocated in it.

Further to this, we consider that two scientific approaches can be applied at the analysis of structure and an estimation of innovative potential of high school.

The resource approach which is based on definition of presence (size) of various resources that the high school uses at all stages of innovative process. For its realization it is necessary to define: the kinds of activity classified as innovative; kinds of resources and expenses that will be considered at estimation.

The resultantly approach which is based on identification of possible effects that high school has already received or will receive from the realization of innovative activity. For realization of the mentioned approach it is necessary to identify effects (economic, scientific and technical, social, ecological) which will be considered at an estimation of innovative activity.

As high school carries out educational and scientific activity the scheme of the analysis of innovative potential structure should reflect each kind of activity.

#### 1. Educational activity.

In the resource approach the innovative potential of high school consists of three components, and each one can be estimated with the certain set of indicators:

- Personnel potential (a share of the teachers having a scientific degree and a status, full-fledged members and member-correspondents of the Russian Academy of Sciences, middle age of the faculty, etc.);

- Material resources (the educational/laboratory areas for one student/teacher, the presence of the modern educational equipment, average quantity of computer hours for one student/teacher, etc.);

- Information-methodical supplying (presence of the interactive information-library centre, total number of storage units of high school library fund, etc.).

In the resultantly approach the innovative potential of high school is defined by its demand:

- Entrants (competition for one budgetary place, number of winners of the All-Russia Olympic Games enlisted on 1 course, mean score of the state exam among enlisted on 1st course, etc.);

- Employers (a share of students trained under target contracts with the enterprises, quantity of contracts with the enterprises on passage of all kinds of practice for students and training for teachers, etc.);

- The state (a share of students trained within the limits of the state order, the state awards of high school, the creative collectives, separate employees, etc.);

- A foreign recognition (a share of foreign students, post-graduate students and the trainees trained under programs of the

international cooperation, foreign teachers and the experts involved in educational process, etc.).

## 2. Scientific activity.

In the resource approach the innovative potential of high school develops from the following components:

- Personnel component (a share of employees of the high school taking part in research effort and having scientific degree and a status, of quantity of post-graduate students and persons working for doctor's degree, etc.);

- Material component (presence of modern research base such as laboratories, techno parks, business incubators, etc.);

- Information component (presence of the interactive scientific and technical information centre, an access to Internet large libraries, a subscription for authoritative scientific and technical editions and etc.).

In the resultantly approach the innovative potential of high school can be estimated in following directions:

- The number of the candidate and doctor's degrees in relation to the number of employees of high school (and-or to last year);

- Quantity of winners of awards of the state level in the field of science and education;

- The cost of executed research effort and engineering development (including, state budgetary) in relation to number of employees of high school (and-or to last year);

- The balance cost of the equipment for the research purposes;

- The number of publications (including, monographies) in recognized Russian

and foreign publishing houses (including theses of the reports represented at representative conferences and symposiums), etc.

So the control system of innovative potential development of high school should be capable to realize at least base functions of management.

1. The planning Subsystem should be able to solve following problems:

- The analysis and a substantiation of perspective directions of innovative workings out in the field of science and education;

- Regular planning of innovative activity of high school including working out and realization of strategic and tactical plans for innovative activity;

- Planning of personnel potential development of high school, material base and a supplying with information of innovative activity of high school according to the accepted innovative orientation.

2. The organizational subsystem should be able to solve following problems:

- Distribution of the rights and of organizational responsibility between participants of innovative process in high school;

- A substantiation of necessary and sufficient structure of functional organizational zones (environment research, staff, workings out, etc.) for providing of innovative process;

- Working out and current adaptive organizational structure for realization of innovative process;

- Working out and current support of standard maintenance of functioning of adaptive organizational structure of innovative process.

3. The motivation subsystem should be able to solve following problems:

- A substantiation of principles and approaches for innovative activity in high school;

- A substantiation of motivation levels (for example, for high school it is a financial supplying of innovative process, for creative collective or the separate researcher there must be some system of bonuses);

- Working out of effective financial sources for development of innovative activity;

- Working out of effective models of motivation for employees of the high school participating in innovative activity

4. The analysis and control subsystem should be able to solve following problems:

- The analysis and a substantiation of effective approaches for an estimation of innovative potential and innovative activity of high school;

- System engineering of estimated indicators of innovative activity;

- Current monitoring of innovative activity of high school;

- Working out of the mechanism of development and decision-making on development of innovative potential of high school.

Thus, there is a possibility of purposeful development of innovative potential of high school at continuous monitoring of productivity of all its components.

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