

The Implementation of Educational Innovative Technologies in Educational System of the Republic of Kazakhstan

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Abstract: The present article examines the key issues of the reconstruction of the modern system of education in the Republic of Kazakhstan. The new stage of development of the Republic of Kazakhstan is oriented onto the accelerated entrance of the State into the community of 50 most competitive countries of the world. In connection with this the educational policy of Kazakhstan is focused on the formation of national model of education which is integrated into the world educational space and is providing the training of specialists that will be competitive in the global labor market. The modern reformatations in the Kazakhstan society, the new strategic guidelines in the process of market economy development, the openness of society, its quick informatization and acceleration capacity have fundamentally changed the requirements for education and its interaction with the business environment. This happens due to the fact that the educational systems of most of the leading countries of the world within the decades have been forming the objectives, the content and technologies of education according to the eventual results expected from it. In the present article the author pays a special attention to the definition of “technology” which in the context of educational process is used more often instead of the term of “methodology”. The technology differs from methodology in such features as the reproducibility, the stability of results and the lack of numerous conditions of use (the talented teacher, the capable students, etc.). The term of “technology” is close in its meaning to the definition of “pedagogical management” which means in its turn the cognitive activity terms management.

Key words: Technology • Technologism • Algorithm • Internalization • Innovation • Paradigm • Innovative technology • Educational technology • Management • Designing

INTRODUCTION

In the present time the level of the country economic development mostly depends on the intensity of innovative activity: in global competition only those countries that provide the most favorable conditions for innovations can score gains. Consequently the development of innovative economy is one of the most effective ways to improve the competitiveness of the country. From the foreign countries' experience and on their examples it is possible to make a conclusion that the national innovation system will be effective and will bring high incomes only if the country's society has a high level of culture of innovations perception. The innovations reflected in the new scientific knowledge, products, technologies, services, staff qualification and methods of management are the key factor of competitiveness in all economically developed countries.

Main Part: For the efficient development of the economy every country must have a strong science and education. The key condition for the sustainable development of modern economic systems is the maximization of innovation factor. The innovative activity in economy in a greater degree determines the economic growth and labour productiveness in the leading countries of the world.

The science and education as for the process of innovations are the factors of implementation which create all the necessary conditions and suppositions, as well as the general intellectual background for it. The last decades have incontrovertibly proved that the scientific knowledge implemented in the new technological developments have become the strong engine of economic growth. Due to innovations in the sphere of microelectronics, computer science and biotechnology the major structural changes have taken place in conventional

industries; the marketplaces, the study of which have become one of the major sources of the gross domestic product increase first in the Largest Economies and then in the newly industrialized countries, have appeared [1].

The scientific knowledge is starting to play a new role in economic development and this role is growing steadily. These tendencies were fixed in scientific literature of the last years where the market economy of post-industrial type is more often referred to as “economy based on knowledge” [2].

The development of innovative activity in any country in a large measure depends on the level of education of society and scientific personnel training that can not only suggest some innovative ideas but also implement them on practice. It is notable that many countries of the world are “drawing over” the highly experienced scientific personnel that help them to develop the innovative activity with minimum costs and maximum rates.

One of the key factors of innovative development of the country is the adoption of innovative technologies into the system of education.

Innovation (from Latin word «innovation»-novelty, change, renovation) is the efforts to create, to develop, to use and to spread something new with the stable task-oriented change that brings new elements into environment and entails changes of the system from one condition to another.

Innovations in the system of education are the essentially another approach based on the new idea which significantly changes the existing educational technologies and stipulates a new type of educational organization. Thus, the innovative technologies in education are the production (invention) of the new component for the system of education.

Nowadays the innovative education in our country enters a new phase of its development-the breakthrough of innovative education, the strategy of the development of which was initiated by the President of the Republic of Kazakhstan Nursultan Nazarbayev. At the present moment the main accent of the state policy of Kazakhstan in the sphere of education should be related to the radical solution of problems of modernization of the content and the structure of the system of education, its management and new professionalism of a modern teacher. The strategy of innovative education breakthrough covers all the stages of the system of education, starting with the preschool education and finishing with the postgraduate study.

The innovative educational projects are the main resources of transition to the modern model of education, modernization of national system of education and the entrance of it into the international educational community and are the new step of integration of education, science and business.

Nowadays the definition of “technology” is more often used instead of definition of “methodology”. With respect to the educational process many scientists give different definitions to the term of “technology” [3].

- Pedagogical technology is the set of psychological and educational settings which define the special set and layout of forms, methods, techniques, ways of teaching and educational facilities; it is the organizational and methodological tool of pedagogical process (B.T. Lihachev).
- Pedagogical technology is the comprehensive technique of educational process implementation (V.P. Bespalko).
- Pedagogical technology is the description of the process of achievement of the planned results of education (I.P. Volkov).
- Technology is the art, skill, ability, the combination of methods of processing, the change of state (V.M. Shepel).
- Pedagogical technology is the worked out in all details model of joint educational activity in the sphere of design, organization and conduction of educational process with the absolute ensuring of comfortable environment for students and teachers (V.M. Monahov).
- Pedagogical technology is the systematic method of creation, application and definition of the whole process of teaching and studying taking into account the technical and human resources and their interactions, which is concentrated on the process of optimization of forms of education (UNESCO).

A growing number of researchers claim that the integration of innovative technologies of education into the educational process should be included on an ongoing basis into the practice of teachers’ training [4, 5]. The scientists-researchers see the solutions of the problem of improvement of educational personnel training in implementation of innovative technologies at the stage of realization of academic program of pedagogic education [6, 7, 8]. Many researchers believe that the use of educational technologies is an important professional competence of each teacher [9].

In last years such definitions as the “technology of education”, “pedagogical technology”, “educational technology” and “technology of pedagogical cooperation” have started to hold a high position in the system of education in the Republic of Kazakhstan [10].

In our opinion, for the implementation of the process of innovative education in the Republic of Kazakhstan the separate priority must be given to the innovative educational projects related to:

- Technological innovations: the informatization of educational institutions, informational and satellite-based educational technologies, informational system of educational planning, the monitoring of the quality of educational process, collective trainings (including online training) and others;
- Technological innovations concerning the sphere of technological infrastructure of educational process (e-registration of classroom attendance, electronic reference room, electronic and online dispatching, etc);
- Research innovations that are focused on the formation of competence for innovations in business, professional educational programs, etc;
- Didactic innovations which include the methods and the means of innovative educational process and individual modular planning.

As to our mind, the technology of education (pedagogical technology) is taken as a processual part of didactical system and as a sphere of scientific researches on revelation of principals and the development of optimal systems for didactic reproducible processes with the predetermined characteristics designing. In this regard the technology of education detaches the key components of innovative educational project which are the subject of development. They include:

- The goal setting for innovative education;
- The development of training materials and procedures of innovative education; and
- The development of materials for current and final estimation and correction of results of innovative education.

The determining value in technification of educational process belongs to the process of goal setting. The diagnostic goals setting in innovative

education of exact academic discipline lies in the fact that the goals of education are formulated due to indicators which describe the training skills of the student and which can measure the level of their formation.

The technology of innovative education is focused on the guaranteed achievement of goals and complete digestion of educational material. After the goals setting for a particular academic discipline the algorithm of innovative educational process can be described as follows:

- The whole educational material is divided into fragments-elements which are the subject of digestion;
- The testing works on sections (the sum of the elements of training) are developed;
- The study, the check-up, the running check, the correction, the additional changing and the working out-study are organized.

The algorithm of innovative educational process is implemented cyclically until the complete digestion of the given educational elements.

The inclusion of skills of creative thinking into the process of education development will require the changes in implementation of pedagogical process which are directed from traditional didactic methods of teaching to interactive and dialogical pedagogy with the reference onto the searching methods of perception [11].

For transition from reproductive abilities to the searching ones the following variant of education is suggested:

- The transfer of necessary knowledge.

The formation and development of skills on creative level:

- The demonstration of activity generally and by parts (this can be combined with the transfer of knowledge basing on "demonstration + explanation" principle).
- The organization of individual practice training with the constant feedback and permanent support from the teacher's side.
- The transition to searching, production phase.
- The creation of different problematic situations-the solution of separate problem and the simulated service test.

The essential feature of technology of education is the reproducibility of the training cycle. The training cycle contains the following steps: the establishment of objectives of study; the pre-assessment of the level of training; a set of training procedures and the correction according to the results of the feedback; the final assessment of results and the new goals setting. In such case the process of education receives the so-called modular character which is composed of blocks filled with different content.

The essential feature of technology of education which we should examine in more details and carefully is the *feedback*. According to the principle of the feedback, the tests questions require the answers of two different types:

- The selection of one proper answer from the several proposed (usually four or five);
- The constructive response and its free formulation by the student.

We believe that the above formulated principles of innovative education will become a source of modern creative thinking of students and the dominant idea of improvement of the quality of the system of education.

CONCLUSION

At the present time the key accent in the system of high education must be paid onto the formation of such quality as the wish and ability to success in professional activity. This quality can be formed on the basis of confidence in the systemacity of the gained professional knowledge, creativity and systemacity of thinking, ability to orientate in the changing conditions due to implementation of the intellectual skills gained in the higher education institutions. The content of education is a set of actions that are performed by a teacher together with the students. Thus, the process of education is the two-sided process, the process of joint activity of a teacher and a student the main object of which is the development of students, the formation of their knowledge and skills in exact academic disciplines.

The paradigm of the modern times which combines both the content of education and the content of training is considered by the scientists at the level of new world-view ideology focused on improvement of professional competence of students [12].

The present researches have brought to light the efficiency of means which contribute to the achievement of goals in the proper organization of design and assessment of results of educational process. It is shown that the technology of education can act as such a mean. For the purpose of making the students to be professionally competent and meet all the requirements of modern times the theoretical, basic and action-oriented problems were examined during the process of educational process monitoring.

Key Takeaways: In fine, we can say that from all existing educational innovative technologies the most effective ones can become the following: the technology of design, the technology of modeling, the problematic-searching technology, programming technology, the technology of modules and blocks classification, the expertise technology, the technology of domestic intellectual capacity implementation, etc.

The education is the basis of scientific potential of the country and is one of the priority areas of the state policy.

We conceive that the modern pedagogical science has enough developed ideas, theories, conceptions and models of innovative pedagogical processes which, however, are not implemented into the real practice of education enough intensively. The innovations in education science must obligingly provide the design of technological level of pedagogical theory implementation.

The breakage between the fundamental researches and application innovation theory is filled with the pedagogical design which, according to V.O. Sukhomlinsky, is the main mean that combines the pedagogical (educational) theory and the practice. At the same time the scientific researches have no systematic analysis of pedagogical technology as an object of design of its parameters, criteria of innovation theory, as well as the process of developing of educational technologies which are the main tasks of our study.

On the basis of the conducted analysis it is possible to take up the position that the selection of pedagogical technologies is the result of design and that's why it can not be unambiguously recommended as it is not based on a simple comparison of different possible combinations of content, organizational forms, methods and methodological techniques of education. The selection of pedagogical technologies is based on identification and consideration of all factors that affect the efficiency of educational process. This problem requires the additional multi-faceted research.

In this regard the further work on the system of our higher and postgraduate study implementation will continue. The number of higher education establishments which have passed the international accreditation will increase; the issue of the number of teachers from the leading international educational institutions that are working in Kazakhstan will be examined. Nowadays the system of the higher education in the Republic of Kazakhstan is passing through the period of radical transformation. For the purpose of the science and education developments, the increasing of competitiveness of the domestic economy and the rightful place on global stage taking, the reformation of the system of education at which the priority tasks will be the implementation of new technologies of education and the complete computerization of education must be conducted. One of the key requirements of the modern times is a radical change of two most important components of the educational process: the technologies of education and the forms and methods of educational information providing.

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