



Journal Website:
<https://theusajournals.com/index.php/ajsshr>

Copyright: Original
content from this work
may be used under the
terms of the creative
commons attributes
4.0 licence.

DEVELOPMENT OF INNOVATIVE TECHNOLOGIES IN EDUCATION AND FURTHER EXPANSION OF PARTNERSHIPS

Submission Date: November 20, 2023, Accepted Date: November 25, 2023,

Published Date: November 30, 2023

Crossref doi: <https://doi.org/10.37547/ajsshr/Volume03Issue11-19>

Risbay Khaydarovich Dzhurayev

Academician, Doctor Of Pedagogical Sciences, Head Of The Department "Management Education", Uzbek Research Institute Of Pedagogical Sciences Named After T.N. Kari Niyazi, Uzbekistan

ABSTRACT

The article is devoted to the consideration of the important issue of the use of modern innovative technologies in education and open innovation.

KEYWORDS

Personality formation, methods, innovative technologies, open innovation, management system, education system, information, specialists.

INTRODUCTION

The conceptual foundations of all active learning were formulated by the remarkable philosopher, psychologist and educator John Dewey (1859-1952). His wonderful thoughts, unique and so necessary for many, were, by the way, unexpected.

The purpose of education, according to Dewey, is the formation of a personality who can “adapt to various situations” in conditions of free enterprise (!). D.

Dewey and his followers believed that it was possible to positively influence the life of every person by caring from childhood about the health, recreation and, mind you, the career of a future family man and member of society. All of them proposed making the child a subject of intense influence of various factors of upbringing - economic, scientific, cultural, ethical, etc. D. Dewey believed that we know only when we can,

through our activities, actually make changes in things, which will then confirm or refute our knowledge. Without this knowledge remains only guesswork. As we can see, Dewey advocated the practical orientation of education, proposing to solve pedagogical problems through the spontaneous development of the child. Education in this context is a process of accumulation and reconstruction of experience with the aim of deepening its social content. The great idea of creating “instrumental” pedagogy, built on the child’s spontaneous interests and personal experience. According to this concept, learning should be reduced primarily to play and work activities, where every action of the student becomes an instrument of his knowledge, his own discovery, a way of comprehending the truth.

This path of knowledge seemed more consistent with the nature of the child than the usual communication of a system of knowledge to him. The final result of training, according to D. Dewey, should have been the development of thinking skills, which meant the ability, first of all, to self-learn. And the goals of training were the ability to solve life problems, mastery of creative skills, enrichment of experience, which meant knowledge as such and knowledge about methods of action, cultivating a taste for self-learning and self-improvement.

According to D. Dewey, the school (we will say today “educational institution”) must simply instantly

respond to changes in society and itself become a kind of society in miniature, must provide children with the greatest opportunities for developing a social sense of cooperation and skills of mutual assistance. The school, an educational and learning environment, must perform precisely these tasks: simplify the complex phenomena of life, providing them to children in an accessible form; select for study the most common and important points from the experience of mankind; promote the equalization of social differences by creating unity of thought and coherence of action. The content of education becomes the acquired experience, which is enriched in the learning environment. And the way to gain such experience is to solve various business problems: make a model, find an answer to a question, etc., and the acquisition, in turn, of the knowledge necessary for this is associated with the interests of the child, which ensure his attention and all subsequent activities. D. Dewey, “by the way, admitted that not everything vitally important can be of interest to children, and, in connection with this, they need to develop willpower, cultivate character (the contradiction between interest and effort is eliminated, according to D. Dewey, teacher's knowledge of children's age characteristics).

Education, according to D. Dewey, should begin with students’ activities that have social content and application, and only later should they be led to a “theoretical understanding of the material, to

knowledge of the nature of things and methods of their manufacture. The content of learning is thus assimilated as a by-product of the study of a problematic learning environment, organized as a logical sequence of pedagogical (read problematic!) situations. The only criterion for the pedagogical value of a subject was its contribution to the “formation of a system of internal personal orientation” of the child.

Dewey believed that the traditional education system, based on the acquisition and assimilation of knowledge, must be opposed to learning “by doing”, so that new knowledge is learned by a person from practical activities and personal experience. In the 50-60s of the 20th century, such ideas actively developed. As a result, two interesting concepts took shape: the “learning pyramid” and “Edgar Dale’s cone of experience.”

The “Cone of Experience” by American educator Edgar Dale illustrates what educational results can be achieved using various means or “media” of learning content.

As we can see, the data demonstrate a relationship between teaching methods and the degree of mastery of the material. Somehow it immediately becomes obvious that a classic lecture (a monologue by a teacher that is not accompanied by slides and other illustrations) is the least effective teaching method: it ensures mastery of an average of about 5% of the

content. At the same time, “active learning” (involving participants in the educational process in various types of active activities allows one to achieve significantly better results. Active learning, problem-based learning, problem-based modular learning - all this has already been done in general and higher education. However, we will, if possible, accurate and objective: at various stages of development of educational systems and paradigms, several well-defined key methodological (technological) approaches to teaching were used:

- practice;
- broadcasting of material;
- analysis and analysis of situations;
- a game;
- imitation;
- project.

Practice is the oldest way of learning. The idea is simple and clear: a person masters professional skills and tools by getting involved in real activities. This approach was used both in teaching hunting or farming in ancient times, and in craft workshops in the Middle Ages. In the modern education system, practice is also widely used in organizing internships and internships: industrial, educational, pedagogical, pre-graduate internships.

Transmission of material - let's say very utilitarianly - the transfer of knowledge about an object or method of activity from one Person to another. This approach

has been used since ancient times, when a knowledgeable and experienced teacher taught young and inexperienced students about how the world works. In the 17th century, the great Teacher Jan Amos Comenius improved this pedagogical technology, creating on its basis an equally great and immortal class-lesson system, in which students would teach less and students would learn more. In the modern education system, material is transmitted in different ways: through lectures of various types, reading books, distance learning, visiting, master classes, etc.

One of the most effective teaching methods is the project method, whose history is perhaps best known. The essence of the project approach is that the student is somehow integrated into a system of collective work aimed at solving a real practical problem. By designing the development of the situation and analyzing data, he gets the opportunity to master the methods of performing the relevant work. The group form of functioning of an educational project forces participants to organize joint activities and establish communications, that is, learn to act in a team.

So, let us clarify: the main purpose of the project method is to provide students with the opportunity to independently acquire knowledge in the process of solving practical problems or problems that require the integration of knowledge from various subject areas. If we talk about the project method as a pedagogical technology, then this technology involves a set of

research, search, problem-based methods that are creative in nature. Within the project, the teacher is assigned the role of developer, coordinator, expert, and consultant. Thus, the project method is based on the development of students' cognitive skills, the ability to independently construct their knowledge, navigate the information space, and develop critical and creative thinking.

Developed back in the first half of the 20th century on the basis of D. Dewey's pragmatic pedagogy, the project method becomes especially relevant in the modern information society. In the light of the new standards and the loud-sounding concept of competence, it can be noted that the main goal of any project is the formation of various key competencies, which in modern pedagogy are understood as complex personality traits, including interrelated knowledge, skills, values, as well as the readiness to mobilize them in the necessary situation.

In the process of project activities the following are formed:

- reflective skills;
- search (research) skills;
- skills and abilities to work in collaboration;
- managerial (administrative), organizational (organizational) skills and abilities;
- communication skills;

- presentation skills. So, the names were spoken, given

some definitions, but what exactly is “innovative educational technology”? Perhaps this is a complex of three interconnected, interdependent, mutually determining components:

1. Modern content, which is transmitted to students and involves not so much mastering subject knowledge, but rather the development of competencies that are adequate to modern life practice and professional activity. And this content should be well structured and presented in the form of various educational materials, including multimedia, which are transmitted using modern means of communication.

2. Modern teaching methods (including, of course, interactive) - methods of developing competencies based on the interaction of students and their involvement in the educational process, and not only on passive or reproductive perception of the material.

3. Modern infrastructure (technical means) of training, which includes information, technological, organizational and communication components that make it possible to effectively use the advantages of, say, distance learning.

Today, “innovative educational technologies” often mean not the use of new, cutting-edge teaching

methods, but a more active, if not aggressive, directive use of information and communication technologies - the Internet, multimedia, webinars, teleconferences. Such a narrow understanding of innovation does not make it possible to improve the quality of education.

There is another trick here - the attitude towards innovation, innovation, change in general: acceptance, indifference, non-acceptance - the scale is large, sometimes in one person/teacher various manifestations in relation to innovation coexist at the same time.

In psychology there are also classifications of subjects of innovation:

- innovators, always open to new things, keen on innovations, with a certain amount of adventurism;
- early implementers, more integrated with others, but influencing them, leaders;
- preliminary majority, which requires more time to make decisions;
- late majority, treating the new with a great deal of skepticism;
- hesitant, guided by traditional values, accepting new things with difficulty, inhibiting this process.

The teacher gets used to living in accordance with externally given norms and rules, although recent years have shown an endless stream of orders and circulars about changes, innovations, alterations and changes. Standardization of behavior and the inner

world of a teacher, adjustment of methods to testing and control and measurement materials are accompanied by the fact that in our activities, instructional instructions occupy an increasingly important place. The teacher easily fits into the teaching community, but at the same time his creative level decreases.

Pedagogical innovation, surprisingly, is in its infancy today, and not only in our country. The growing need for it is obvious - both for science itself and for educational practice. Let all of us, those who look at the future of education with optimism, make a feasible contribution to the construction of the scientific foundation of modern, updated education.

Most often, “innovation” is understood as any innovation, the introduction of modern technologies. Fewer than others are those who believe that this is the use of advances in science and technology, investments in promising sectors of the economy, social changes and specific innovations. Many find it difficult to assess (it is clear that the higher the level of education of respondents, the less difficulty they have in defining the concept of “innovation.”

Today, the word “innovation” means the result of creative activity aimed at the development, creation and distribution of new types of products, technologies, and the introduction of new organizational forms. According to the Frascati

Manual, innovation is understood as the final result of innovative activity, embodied in the form of a new or improved product introduced into the market, a new or improved technological process used in practical activities or in a new approach to social services.

American scientist Peter Drucker (1909-2005) defined innovation as “the means by which an entrepreneur either creates new resources that bring him wealth or provides existing resources with improved potential for profit.”

Note: scientists, theorists and practitioners emphasize the importance of bringing innovation to the market. In the 21st century, the competitiveness of many organizations really depends on the degree of innovation.

There are two large groups of innovations: closed and open:

② closed innovation - an approach to innovation that uses only internal sources of the organization, namely its own research and development, discoveries, inventions, patents. This approach implies that the company has a certain special department that is aimed exclusively at developing innovations: the largest ones can finance the most complex research, and as a result receive the most modern technologies;

② open innovation is an approach to innovation that allows you to use not only internal sources, but also

external ones. The idea is that not all smart people work for the same company. Open innovation theory defines the research and development process as an open system. In such an environment, there are many ideas, not only within the company, but also outside it. These ideas are available for use, and specialists can simply be hired by other organizations - many people have interesting and unusual, and sometimes incredibly revolutionary, breakthrough ideas.

Today the state, including "such a component as education, is interested in applying the open technology paradigm in its activities. Promoting the development, production and even export of educational technologies by providing support to educational organizations - developers and manufacturers (we would add - in accordance with agreements concluded between them or otherwise), influencing decisions made, and also, of course, by attracting investments. Based on the given goal, the following tasks will be formed:

— creation of innovative/integrated infrastructures, including the creation in universities of business incubators, consulting, training, coaching centers, etc., as well as systems for managing rights to innovative technologies and involving them in economic circulation;

— expansion of cooperation with leading universities, scientific organizations, innovative companies using existing innovation testing facilities;

— integration into international projects;

— formation and implementation of technological platforms.

One of the most famous aphorisms of the English philosopher and statesman Francis Bacon: "He who does not apply new means must expect new troubles." The topic of innovation is becoming more popular from year to year. This is the challenge of the 21st century. But this is a challenge to the management system itself, in our case, to the education management system, and this is what is of particular importance today, influencing the strategy, goals and methods of activity.

The term "open innovation" was given a new meaning (in fact, it was introduced into scientific circulation) by Henry Chesbrough in the book "Open Innovation. A new way to create and use technology" (2003). Open innovation is meant here as the use of targeted knowledge flows to accelerate internal innovation processes, as well as to expand markets for more efficient use of innovations. We do not forget that our main goal is to teach, to provide education, therefore new ideas, the theory of open innovation in this aspect are accepted and defined as a process of research and development, attracting new ideas and coming out

with them, with a new product, not only thanks to our own internal developments, but also in collaboration with other educational organizations. Hence the opportunity/attempt to determine on what principles open innovation in education is based:

- transition from using exclusively internal proprietary developments to using external knowledge;
- there are many ideas in the world that can be useful;
- You don't have to be a pioneer to benefit from discoveries.

Currently, education is clearly entering a new stage of innovation activity, when the sources of innovative potential are located outside the university and the country. The center of innovation formation is shifting from central research institutes and laboratories to cooperation and joint development. It may be worth adopting new strategies:

- organizing the research and development process by combining it into a common fund;
- development of individual components of an innovative product/innovative educational technology by individual universities;
- free distribution of broadly applicable developments that can be used to create various innovative techniques and technologies;
- reducing the level of decision-making bureaucracy in the field of innovation.

A competent search for fresh ideas can save a lot of human resources and time, because one of the “neighbors” may already have a ready-made solution at hand. This means that it is quite reasonable to supplement research and internal university innovations with external ones!

In the modern global educational space, leading positions are occupied by countries that understand vocational education as a branch of the economy, and universities as participants in international competition in the industry. The adopted course for the integration of higher education into the Bologna process requires an interpretation of its place in international competition, and, above all, according to the criterion of the adequacy of this task to the quality management models of higher education institutions.

Already in the last years of the 20th century. Several simultaneously operating factors began to clearly and thoroughly undermine the basic provisions of closed innovations. One of these factors is the ever-increasing mobility of professionally trained people. And the erosion factor is the growing number of people educated in higher education and even after its completion.

The implementation of new approaches to the development of higher education is in line with the transformation of traditional universities into innovative universities. The strategy for their

development is based on the implementation of the concept of the university as an educational, scientific and innovative complex. In this case, a new generation of specialists is being trained for the intellectual labor market, and universities, academies, and institutes themselves become full-fledged subjects of the market economy as developers and suppliers of intellectual property, products and services with new quality, demanded by consumers. However, development is currently held back by the burden of limiting factors:

□ Currently, everything is underway and the process of accumulating experience and information on innovative universities is underway with constant reference to foreign analogues. The next step should be the stage of scientific and theoretical processing of such information in order to formulate substantiated theoretical proposals to the legislator about innovative organizations in the university education system, and the formation of their legislative model will certainly need to be considered as one of the facets of the evolution of the traditional education system;

□ a new type of university presupposes the mandatory integration of scientific, educational and innovative activities, but the concept of “innovation activity” is not yet clear, although the problems of forming an innovation policy are quite widely covered in the scientific literature - the theoretical, and, let us mention again, the legal framework, is not sufficiently developed processes of formation and management of

innovation strategy in the conditions of emerging market relations. This is expressed in a certain subjectivism, including an unjustified diversity of approaches to defining the concept of innovation.

Based on the fact that innovative educational activities are inextricably linked with the functioning of a higher educational institution, the indicator for the information and analytical support system will be information about innovations, goals and objectives, the content of education, forms and methods, means and technologies of education, quality management of education , about diagnostic systems, control, evaluation of results. The Bank of Educational Innovations, the results of monitoring studies of the quality of education, forecasting and making recommendations, identifying possible innovations for implementation - this is the essence of the above-mentioned internal circuit.

It is possible to identify the reasons that determine the urgent need to choose a path to follow and create open innovation in the field of education:

□ with the advent of information and communication technologies, monopolies on knowledge basically simply disappear, dissolve - in almost every field there is an excess of knowledge due to the widespread distribution of publicly available scientific databases, online journals and individual articles, combined with Internet access and high transfer speeds information;

under the new paradigm of education, universities inevitably face changes and win when they boldly use not only internal, but also external ideas, without wasting effort on duplicating research. Today, powerful ways have been created to go beyond the traditional boundaries of the university and use the best practices in the field of quality management;

distributed knowledge turns out to be greater than the knowledge available at one university. And the combination of knowledge available from other universities and all stakeholders - a new approach to innovation;

many professionals capable of creating innovations work in different countries and are not members of any single organization, but work in numerous universities, institutes, and academies. It is necessary to interact with specialists not only within your organization and country, but also to obtain scientific data from outside;

sometimes innovations find value outside the university, and sometimes their value only appears after being combined with other ideas;

conservation of ideas becomes unacceptable. Ideas that are not ready to be used by the university itself may be lost to this university, since the rotation of researchers is currently increasing.

Thus, we can highlight the directions for implementing the concept of open innovation in the field of education:

- organizing networking between universities and all interested parties, exchange of ideas and knowledge;
- close monitoring of external innovations and external benchmarking. Attracting employees capable of working with external innovations and managing knowledge;
- integrating internal and external ideas and knowledge and obtaining more complex combinations of knowledge and missing elements;
- commercialization of innovations by bringing their ideas to the outside world and accessing external organizations (the opportunity to profit from the use of their ideas by others while simultaneously purchasing intellectual property from other universities, when it corresponds to their own model of innovative development and is effective). The modernization of higher professional education is taking place against the backdrop of structural restructuring and changes in the structure of the national economy. Based on global experience in overcoming crisis phenomena, the Republic is following an innovative path of development as the only correct one (to overcome the danger of lagging behind global trends in economic development).

In the context of the country's transition to an innovative path of development, the most important factor of decisive importance is the formation of such a system for managing the quality of educational activities, which would involve the use of the most modern approaches that provide sufficient competitive advantages in the international labor market. This approach could be the introduction of the principle of open innovation into the quality management system, and innovative activity in the field of education, based on openness, should be present as a mandatory and core element, as a necessary condition for forward movement and sustainable development.

We already understand that open innovation also concerns the four pillars of the economy (based on knowledge defined by the World Bank): education and training in science and technology, information and communication infrastructure, economic incentives and policies, and innovative research and development systems. In addition, they work to meet the need in both engineering and humanities specialties in the field of new and emerging technologies, the demand for which exists and will continue to exist throughout the world. And within the framework of ongoing innovative programs related to industry research and offered to faculties and students, participants will be able to gain real professional experience, turning theoretical discoveries into real products and services,

and at the same time understand how training courses will change in the future in accordance with new tasks, and what skills will be required for future practice.

Considering the engineering, social, and economic challenges that today's world faces, the need to use the achievements of science and technology for the purpose of its global transformation is not only noticeable - it becomes urgent. Therefore, engineers, scientists, and teachers can still try to find areas in which new discoveries can be made, and universities may need to create jobs (departments, departments?) related to the development of advanced technologies for the country and private capital — support investment in intelligence to help us all succeed. The best way to effectively leverage opportunities to meet these and other diverse needs is to invest in partnerships that enable the next generation of edtech discoveries.

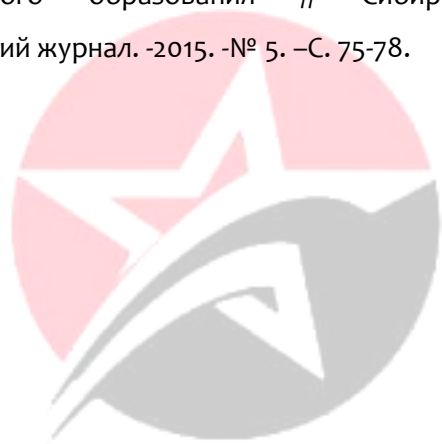
Literature:

1. Дочкин С.А., Мичурина Е.С., Тупикина Г.Г. E-learning в вузовском обучении: особенности и сложность реализации // Вестник КемГУ, - 2015. -№ 2-3. (62). –С. 38-42.
2. Лотокова В.А. К вопросу о применении инновационных образовательных методик в рамках

высшего образования // Обучение и воспитание:
методики и практика. -2015. -№ 20. –С. 30-34.

3. Ведерникова Л.Б. Педагогическая
поддержка саморазвития педагога //
Педагогическое образования и наука. -2010. -№ 5. –
С. 97-91.

4. Ведерникова Л.Б. Развитие
профессионально-личностного потенциала
будущего педагога в условиях модернизации
педагогического образования // Сибирский
педагогический журнал. -2015. -№ 5. –С. 75-78.



OSCAR
PUBLISHING SERVICES