

**PREREQUISITES FOR THE USE
OF INNOVATIVE TECHNOLOGIES
IN PHYSICAL EDUCATION**



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Анотація

Визначено зміст поняття «інноваційні технології». Розгляд даного терміну, на нашу думку, слід розпочати з теоретичного підґрунтя понять «інновація» та «технологія». Розрізняють такі види інновацій: технологічні, соціальні (процеси), продуктові, організаційні, маркетингові. Розглянуто сутність інноваційних педагогічних технологій. Вивчення сутності понять «інновація» та «технологія», з погляду вчених, дозволяє нам виділити ключові їх характеристики і визначити зміст поняття «інноваційні технології», як процес створення нової або вдосконалення існуючої продукції (товару, роботи, послуги).

Ключові слова: інновація, технологія, нововведення, педагогічна інноватика, професійна підготовленість, фізичне виховання.

Аннотация

Определено содержание понятия «инновационные технологии». Рассмотрение данного термина, по нашему мнению, следует начать с теоретической основы понятий «инновация» и «технология». Различают такие виды инноваций: технологические, социальные (процессы), продуктовые, организационные, маркетинговые. Рассмотрена сущность инновационных педагогических технологий. Изучение сущности понятий «инновация» и «технология», с точки зрения ученых, позволяет нам выделить ключевые их характеристики и определить содержание понятия «инновационные технологии», как процесс создания новой или совершенствование существующей продукции (товара, работы, услуги).

Ключевые слова: инновация, технология, нововведение, педагогическая инноватика, профессиональная подготовленность, физическое воспитание.

Introduction. Analysis of economic and social development shows that stable development can be achieved only thanks to innovative technologies at macro-, meso- and micro levels in all sectors. Therefore, the problems of innovative technologies are very relevant, especially in educational and recreational physical activities, because the preservation and restoration of health of different population groups is one of the relevant problems of nowadays and is not only of scientific and practical interest, but also contributes to the solution of economic, social and demographic problems of the country. Besides, the achievement of stable development at different levels will have a temporary effect without its innovative direction. Thus, today the implementation of innovative technologies will ensure the country's stable development in the long term perspective.

Despite the significant number of practices in the specified subject focus [1, 2, 6, 7, 10 – 16], the questions of theoretical justification of the concepts “innovation”, “technology”, “innovative technologies” and “innovative pedagogical technologies” remain inconclusive.

The aim of the study is to examine the scientists' approaches to regarding interpretation of the concepts “innovation” and “technology” and to define the notion “inno-



vative educational technology”.

The results of the study. The study of problems of innovative technologies requires the definition of the notion “innovative technologies”. Consideration of this term, in our opinion, should start with the theoretical foundations of the concepts “innovation” and “technology”.

In the literature there are a lot of definitions of this concept: on the basis of internal structure, on the scale, on the parameters of the life cycle, on the peculiarities of the implementation process, etc.

The term “innovation” comes from the Latin “novatio”, which means “update” (or “change”) and the prefix “in”, which translates from Latin as “in the direction”, if translated literally “Innovatio” is “in the direction of change.” The very notion “innovation” was first introduced in the scientific researches of the XIX century. The notion “innovation” got a new life in the beginning of XX century in the scientific works of the Austrian and American economist I. Schumpeter in the analysis of “innovative combinations” and changes in the development of economic systems. It was Schumpeter was first introduced this term in the economy [2].

Folomiev O. M. (1996) interprets innovation “as a form of manifestation of scientific and technological progress, the result of the creative intellectual work of a person associated with upgrading all spheres of human activity” [15].

Tilnyi I. A. (2001) interprets this concept as “newly created (applied) and (or) improved competitive technologies, products or services, as well as organizational and technical decisions of industrial, administrative, commercial or of other nature, which significantly improve the structure and quality of production and (or) social sphere [12].

“Innovation, according to T. Tidd, D. Bessant and K. Pavitt is the process of turning opportunities into new ideas, which are widely imple-

mented in practice” [1].

When conceptualizing the notion of “innovation”, it is useful to compare it with other concepts. In particular, in the scientific literature it is noted that the concept of “innovation” is often mixed with the concept of “invention” which means the creation of new technical products or improvement of old one and the term of innovation, which means introduction of new solutions. In addition, it would be more correct to call a lot of the improvements of goods and services just by the word “improvement”. The notions “changes” and “creativity” can sometimes also be used instead of the notion “innovation”.

In order to distinguish innovation from the concepts mentioned above, it is often specified as the peculiarity of innovation is in the fact that it allows one to create additional value, allows the innovator to get an additional value and it is associated with implementation. In this view innovation is not innovation until it is not successfully implemented and begins to benefit.

Based on the above mentioned interpretations under “innovation” we mean the process of creating new or improving existing products (goods, works, services) with the aim of ensuring social progress, improving level of efficiency in various spheres of human activity.

The types of innovation are as follows:

Technological ones is obtaining of new or efficient manufacturing of existing products, articles, equipment, new or advanced technological processes. Innovations in the field of organization and management of production do not belong to the technological ones.

Social (process) ones is the process of updating the spheres of human life in the reorganization of society (pedagogy, management system, charity, service, organization of process).

Provision ones is creation of products with new and good prop-

erties.

Organizational ones is improving the management system.

Marketing ones – implementation of new or significantly improved marketing methods, covering significant changes in design and packaging, the use of new methods of sales and presentation of products (services), their representation and promotion to sales markets, formation of new pricing strategies.

Innovation and technology are closely linked, because just through technology innovation finds its dissemination and diffusion. Therefore, the next step in the study of the concept “innovative technologies” is the definition of the notion “technology”.

The term “technology” was founded in the late XVIII-early XIX century by Johann Beckmann. He used the term, calling the academic discipline that he taught at the German University in Getinz, and publishing scientific work “Introduction to technology”. In general, J. Beckman considered the notion “technology” as “the totality of the crafts, skills, tools, manufacturing operations, etc.” [9].

In the dictionary definition “technology” is mostly interpreted as a combination of knowledge, information about the sequence of separate manufacturing operations in the manufacturing process of something.

So, the definition in the Big explanatory dictionary of modern Ukrainian language is as follows: “the totality of methods of processing materials, manufacture products, conduct manufacturing operations, etc [5], and in the short explanatory dictionary of the Ukrainian language – “the science of processing and treatment materials, methods of production and a set of techniques used in different types of activities” [9]. In our opinion, the last definition is worth of attention, because the technology is the science of engineering.

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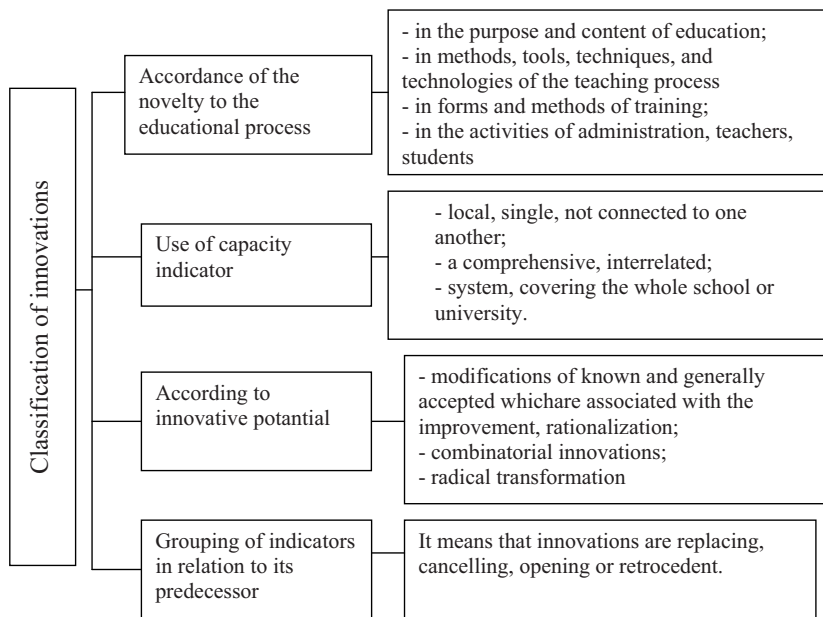


Fig. 1. Classification of innovations

F. (2000) believe that the technology is “any tool to convert the source materials, whoever (whatever) it is: people, information or physical material to produce the desired products or services” [11].

So, based on the interpretations we define that technology is the science of transforming materials or information with the purpose of influencing a particular activity or changes in general.

Studying the content of the notions “innovation” and “technology” from the point of view of domestic and foreign scientists allows us to identify the key characteristics and form the notion “innovative technology”.

Innovative technologies is the process of creating new or improving existing products (goods, works, services) on the basis of scientific transformations, and a systematic set of techniques and tools with the aim of ensuring social progress, improved level of efficiency in various spheres of human activity [4].

In today’s demanding and quick-changing social and economic environment the level of education will largely depend on the results of implementation of training tech-

nologies based on new methodological principles, modern didactic principles, psychological and pedagogical theories which develop activity-based approach to training [3]. Recently the term “innovative pedagogical technologies” has widely come into use.

The pedagogical interpretation of innovation means innovation, which improves the progress and results of the educational process: to relate the new notion in pedagogy with such characteristics as useful, progressive, positive, modern and going ahead.

Pedagogical technology is a system method of creation, application, definition of the entire process of teaching and learning using computer and human resources, which task is optimization of education forms (UNESCO) [3].

Most researchers agree that the structure of innovative teaching is ideally adapted to the nature of modern social processes. As you know, one of the features of modern society is an open term. Taking into account this innovation of education and training in contrast to the traditional one, which is sold “at present, based on past” seeks to function in

the context of the present time, focusing on the future.

As a branch of pedagogy pedagogical innovation is a fairly young science. In foreign pedagogy studying innovations launched in 60-ies of XX century and have a pronounced applied nature. They are mainly concentrated on the theoretical study, the analysis of various aspects of innovative processes in the system of training and education, development of practical recommendations for the development, implementation news, providing the optimal mode of functioning of innovative projects and programs [7].

The main indicator of pedagogical innovations is a progressive start in the development of a school or a university in comparison with the traditions and mass practices. Therefore, innovations in the education system are connected with changes:

- in objectives, content, methods and technologies, forms of organization and management system;
- in the styles of teaching and the organization of educational process, teaching software, curriculum and programs;
- in the system of monitoring and evaluation of education;
- in the system of educational work, the activity of a teacher and a student;
- in the system of financing etc.

During the development of a school or a college they take into account: an absolute novelty, that is, the absence of analogs and prototypes; relative novelty; pseudonovelty that is inventive stuff.

Types of innovations in a school and a university are grouped for various reasons (Fig.1).

In world practice, the experiments on searching for new ways of development of the school and the university are being held intensively. As a result there are a large number of different types of schools. The most famous of the “new school” of the twentieth century are “Free school communities” the



peculiarity of which is a course system of training and developing civil liability on the basis of the internationality principle ; “Labor school” provided vocational training of pupils; the school of “free education” focuses on the interests of the child, i.e. “on the basis of the child”. The training was held without grades, curriculum, not paying attention on time, the main goal is to give the child a comprehensive view of the environmental phenomena. “School for life, through life” means training and education in close connection with nature, relying on the activities and freedom of a child, close contact with students’ families. “School work” is approaching the studying to the life experiences of children. “Waldorf school” solved the problem of comprehensive development of personality by means of intense spiritual activity. The school, which is organized in accordance with the “method of projects”, studying gives students the right for free choice of occupation, that is, the curriculum is seen as a set of related tasks. “Open schools” means training is of individual nature, the rejection of the mandatory curricula and programs, the cancellation of a portion of the tuition, the elimination of clear timetable and a school regime, the abolition of the evaluation control system [7].

Researchers of pedagogical innovations try to relate the new in pedagogy with useful, progressive, positive, modern, advanced. New in pedagogy is not just ideas, approaches, methods, technologies, which have not been nominated or have not been used in such combinations yet, but also a complex of elements or separate elements of the pedagogical process, which have embraced progressive start which gives the chance under circumstances and in situations which are changing, to solve the tasks of upbringing and education effectively. In order implementation of a new predetermined positive changes, it is necessary for it to be means of solving the

task relevant for a particular institution, to withstand the demanding experimental verification.

At the present stage of development of physical culture one of the main tasks of this sector is the organization of sports and recreation activities. Therefore, considerable attention in physical education of children and youth scientists point to the use of innovative technologies that contribute to not only improving the motor qualities and the observance of a healthy lifestyle, and increases the motivation to engage in physical culture and sports. As scholars have noted, innovation has to address current problems as well as positive changes in the content, organization, and technology training.

The purpose of introducing innovative programs in physical education, according to N. Moskalenko, is to improve all components of health – mental, social, physical, [8]. Thus, the use of innovative technologies in physical education of children and young people contribute: to promote sports and recreation activities, increase of interest to systematic occupations by physical culture, form independence, creativity, initiative.

Conclusions. 1. The study of the essence of concepts “innovation” and “technology” from the scientists’ point of view allows us to identify key characteristics and define the concept of “innovative technology” as the process of creating new or improving the existing products (goods, work, services) on the basis of scientific transformations, and a systematic set of techniques and tools with the aim of ensuring social progress, improvement of efficiency level in various spheres of human activity.

2. The notion of “innovative pedagogical technology” is based on the concepts of “pedagogical innovation” and “pedagogical technology” and means a brand-new set of forms, methods and means of training, education and management,

which brings significant changes in the result of the educational process.

3. When choosing pedagogical innovations, making decisions about its appropriateness we should be guided by the analysis of the real situation and not just a personal vision, preferences. It is important at this stage to take into account technological (specifics of use) and personal (such individual qualities of the teacher as the professional level, sociability, emotionality, etc., which determines the effectiveness of the development of a new tool) aspects of the new pedagogical tools.

4. The use of innovative technologies in physical education of children and young people contribute: to promote sports and recreation activities, increase of interest to systematic occupations by physical culture, form independence, creativity, initiative.

Prospects for further research is the scientific substantiation of directions for use of innovative technologies in physical education of different population groups.

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