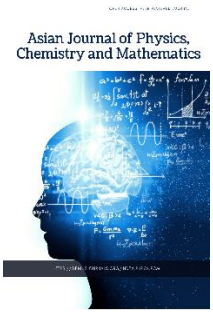

The System of Principles in Teaching Informatics as A Factor Determining the Content in Educational Practice

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ABSTRACT

The modular principle of teaching is widely applied for the training of specialists in the sphere of higher education. It is based on the principles of science and consistency. A set of new method and theses, which are united by a common idea, enables us to speak about an innovational technology of modular teaching of informatics. In this article we consider application of principles of science and consistency for modular technology of teaching of mathematics.

Keywords: System of principles, principles of education, modular system of education

The principles of training should be considered systematically. The system of teaching principles was formed through the disclosure of the interrelations and interdependence of principles and combined their pairs into common names, for example: "scientificity and accessibility", "systematicness and connection of theory with practice" and others. Thus, the system of principles expressed a general character that determines the content and course of pedagogical progress in educational practice. Thanks to this system, it is possible to strictly take into account the conditions of training and the performance of their accounting, based on interdependent requirements, rules and the selection of appropriate methods. It holistically reflects the learning process and makes it possible to take a comprehensive approach to improvement.

The system of teaching principles includes the following integrative features: expediency, efficiency, openness of content and the possibility of applying new technologies. A functional and purposeful system of principles considers obtaining the result of education, educating and developing influence on the individual as the ultimate goal. Each principle, as a component of the entire system, directly affects the planned outcome and the achievement of the overall result. An assessment of the degree of sufficientness of these principles is possible when calculating the principles of learning, which form the basis of the modern system of teaching principles.

The main system-forming principle is the principle of developmental and educative learning, which can help to reveal the essential nature of the modern concept of education. The rest of the principles included in the system occupy its different levels, corresponding to the conditions for the implementation of the pedagogical process. Any of the principles is considered effective provided that everyone works together. It should be noted that today there is no consensus among specialists on the issue of The authors of different textbooks offer different formulations and a variety of principles. However, with all the variety of

existing approaches, it is possible to identify a series of principles that have passed the long test of time and are present in one way or another in the vast majority of modern textbooks and manuals on pedagogy. Before outlining the principles. , which reveal the content of the educational process, the subject and nature of the activity determine what the principles of learning are. The principles of teaching are fundamental provisions that reflect the general requirements for the organization of the educational process. The principles are formulated on the basis of scientific analysis, the learning process, correlate with the laws, with the goals and objectives of education, with the level of development of pedagogical science, with the capabilities of the existing education system. The principles that were mentioned above include the principles of scientificity and differentiation of theory and practice, as well as the principle systematic and systematic.

The principle of scientificity orients the teacher to the formation of scientific knowledge among students. It is implemented in the analysis of educational material, the allocation of important ideas in it, the use of reliable scientific knowledge, facts and examples, as well as standard scientific terms.

The principle of scientificity is able to structure the content of education in its transition from description to explanation, from explanation to forecast, from the fiction of facts to their generalization, from the symbiosis of logical analysis and a certain historical approach to the processing of the knowledge gained and the mastery of the methods of scientific research.

The proposed structure helps in comprehending the theoretical laws of cognition of the world from theory to practice and from practice to theory. Movement can be based on various forms of work: acquaintance with facts, performance of practical tasks, exercises.

Science is seen as a system of knowledge that requires systematicism, including the operation of theoretical concepts and practicality for real transformations in reality.

The implementation of the principle of scientificity requires from the teacher:

- correct the factual errors of the trainers and organize the search and correction of such errors in the training session;

- apply the latest scientific terminology, do not use outdated terms;

-be aware of the latest scientific achievements in your subject;

-encourage research work of students;

- find an opportunity to acquaint students with the technical nature of experimental work, the algorithm for solving inventive problems, the use of reference materials, archival documents, with the processing of primary sources.

The principle of consistency includes consistency, consistency, and continuity in the narrative of knowledge, which encourages each successive step to build on, continue, and follow the previous one. The disheveled are known techniques that allow to significantly increase the level of systematization of knowledge. They are based on:

- highlighting the main thing;
- adherence to a structural approach;
- the presence of contactability of a holistic presentation of information.

On the basis of the foregoing, we can note that the principle of consistency determines the need for students to have a holistic system of knowledge and skills, topics and sections of educational material.

The principle of consistency is implemented in a set of rules, among which the following can be called:

- use plans, schemes, in order to ensure the assimilation of the student system of knowledge;

- divide the content of the educational material into logical completed parts (i.e. apply the step-by-step system), consistently implement these parts (steps, stages) and accustom students to this;

- not to allow violation of the system in the content , and methods of training, in order to prevent academic failure;

- to state the foundations of the theory, to explain the consequences of the theory and to show the boundaries of its application.

The principle of consciousness and activity is aimed at forming in students the

motivation of learning, cognitive needs, conviction in the need to study the material, interest in teaching. The essence of the principle is that the teacher should achieve understanding (and not mechanical memorization) of theoretical material by the student and his comprehension of practical actions. , to encourage them to active learning actions, to stimulate independence in cognition.

The following rules can be cited as recommendations for the practical application of this principle:

-use the possibilities of mutual learning;

-organize competition and partnership of students;

- provide conditions for the collective search for the right answer;

-introduce into the educational process entertaining tasks, game elements;

- to teach to find the secondary and the main thing in the studied material;

- use real life situations in teaching and require students to independently understand, see the differences between the facts observed in life and their scientific justification.

It should be noted that the learning process, due to its complexity and versatility, is very contradictory, while the movement, i.e. the course of the educational process, is achieved through the constant resolution of emerging contradictions.

In the light of the modernization of education in a higher school, one of the effective methods of presenting educational material is the system of modular training, which is based on the principles of consistency and scientificity mentioned above. A set of new methods and provisions, united by a common idea, allows us to talk about the innovative technology of the modular system of teaching computer science.

At the moment, the modular principle of teaching informatics is widely used to train specialists in higher technical education. It involves a rigid systematic structuring of educational information, training content and organization of the work of students with full, logically completed educational blocks (modules). Modular training in computer science is characterized by the advanced study of theoretical material and its practical application (an important condition for the professionalization of the individual), the algorithmization of his educational activity.

The essence of modular training in computer science is that the student completely independently (or with certain help) achieves specific goals in educational and cognitive activity in the process of working with the module. The computer science training module is a relatively independent fragment of the educational process that has its own goals, content, own program, didactic and methodological support, and in general the module can coincide with the topic of the academic subject. However, unlike the topic, everything is measured in the module, everything is evaluated: preparation, work, attendance at classes, starting, intermediate final level of students. M Unit training in the subject "Informatics and Information Technologies" in technical universities is a clearly built training technology based on the principle of scientific data studied, which does not add impromptu, as is possible with other teaching methods. With a modular system of teaching students of the subject "Informatics" the possibility of independent selection of the training route is provided. The development of a route for teaching informatics is defined as the profile of the specialty (faculty, department) and content, the methodology - material security, new information technologies, the effectiveness of which depends on the level of development of creative thinking and the ability to systematize significant amounts of information. It's no secret that the effectiveness of learning technology can be achieved only when students are taught not only ready-made conclusions, but also introduced to research methods that are based on the principle of scientificity. As a specific illustration of this principle, we can cite the aspect related to the optimal construction of the process of knowledge transfer. Optimal construction of the knowledge transfer process. The edagogic process implies the active use of the laws and characteristics of the processes of perception, and the thinking of students, as is customary in the modular training system. It is believed that the leading principle of selecting the content of

a modular training system should be consistency, which ensures the interrelated presentation of educational information in the form of a pedagogically based system.

It should also be recalled that optimality is assumed to be the correspondence of the content of mathematical training of students to the international standard of education, which follows from the principles of scientificity and consistency. These principles, in the general context of modular education, assume that all its basic components should be represented in the content, ensuring the development of students, as well as individualization and differentiation of their education, taking into account their interests, abilities and needs in information activities. Proceeding from the main purpose of informatics - modeling reality, we will get a rational processing of educational activities with the help of systematization material related to the organization in a certain system of studied objects. In conclusion, we would like to note that today, modular training in computer science is and remains the most rational approach to the development of optimal innovative technologies in the formation of professionally significant qualities of students. It can be carried out most effectively due to specific didactic solutions that contribute to: the development of professional and personal orientation; orientation to independence in professional development; the acquisition of skills of activity self-control; the formation of a stable motivation for professional achievements.

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