



Formation of Criteria for Choosing the Content of The Teaching Methodological System from The Point of View of The Project-Information Approach

Shukurov Akmal Uktamovich

Associate professor of the Department of Information Technology at the Institute of counter-engineering and economics, Uzbekistan

OPEN ACCESS

SUBMITTED 30 October 2024
ACCEPTED 30 December 2024
PUBLISHED 30 January 2025
VOLUME Vol.05 Issue01 2025

COPYRIGHT

© 2025 Original content from this work may be used under the terms of the creative commons attributes 4.0 License.

Abstract: When considering the question of the choice of teaching methods, we consider that in any action of educational activity there will be several methods at once; when talking about the use of a particular method, we mean its priority role at each stage of the educational-cognitive process. This situation is evident with the emergence of AKT in recent decades.

Keywords: Information, Communication, Technology, Project, approach, Foundation, OSM, student, teaching, criterion, content, selection, formation, preparatory, improvement, society, education.

Introduction: Integrity and continuity criteria-the study of NTM indicates that the engineer-builder is an important link in the preparation of a single base.

Criterion for compliance with training goals. The content of NTM should be considered from the point of view of the educational science that forms a system for engineering-construction OTM students. The content of this integrative course is compiled in accordance with the state educational standard of higher vocational education, but at the same time the goal of maintaining the proportion between the subjects was not set. The reason was that it contradicted the didactic principle of openness, as well as the most important principles of Project systems – the principles of open architecture and openness of information.

Association of the criterion of Science with existence, rigor and systematicity of submission (inclusion in the content of the fundamental rules of modern science, taking into account the basic knowledge of applicants).

Didactic isomorphism criterion. In accordance with this criterion, the main structural elements and units of meaning in the content areas of the Natural Science of "mechanics" should go to NTM in a didactic revision, that is, adhere to the following universal principles:

- systematicity and sequence principle – the content must be placed in a strict logical sequence, in which the next educational material is logically related to the previous one, relying on it and preparing to learn something new;

- the principle of theory and practice dependence implies that, in addition to the traditional interpretation, the content of teaching should show students a professional direction;

- the principle of consistency-requires the emphasis on the material that must be remembered most firmly in the content of training (thesaurus formation).

The consistency criterion (G.G. Integrativity on hamov). The science of NTM at the engineering and construction OSM should ensure a smooth transition from the fundamental level of rigor in the presentation of the material to practical activities, that is, prepare the student to study professional and special subjects, including specialty and elective subjects.

- Criterion of unity of educational content. The content of the joint teaching of individual educational disciplines should ensure the formation of a holistic scientific landscape in the mind of the future engineer, which will serve as a scientific basis for his further engineering activities.

- Criterion of foresight. In accordance with this principle, it is necessary to include in the content of training not only mechanical departments, which are now important for professional activities, but also departments with a basis for thinking that they will be in demand due to new technologies in the field of construction and architecture.

- Criterion for taking into account the means of training. Automated systems have been adopted as the primary medium of instruction, which include a wide range of traditional teaching tools as well as ICT-based teaching tools. The modular structure of the content of training systems allows applicants to quickly and flexibly respond to the basic training and changing requirements of the labor market by "creating" the necessary qualification units. The formation of the content of modules is based on the following characteristics:

- study of theoretical material in the module;

- Association of integrative and private didactic goals;

- relative independence of the elements that make up the module;

- the ability of students to repeat educational material.

Currently, there are more than fifty teaching methods and their classifications. In our opinion, the classifications on the following grounds are considered the most justified:

- source of transmission and nature of reception: verbal-visual, practical (Golant E.Ya., Perovsky E.I.);

- degree of inclusion in productive (creative) activities: explanatory-illustrative, reproductive, problematic statement, partial research, research methods (Skatkin m.N., Lerner I.Ya.);

- didactic goals: methods of acquiring new knowledge, the formation of skills and abilities and the application of knowledge in practice, methods of checking and evaluating knowledge (Danilov m.A., Esipov B.P.);

- educational content: knowledge (information about the world), experience in the implementation of methods of activity, experience of creative activity, experience of emotional-valued attitude (Kraevsky V.V.; Lerner I.Ya.);

- the nature of educational-cognitive activity: methods of organizing educational-cognitive activity, methods of stimulating educational-cognitive activity, methods of controlling the effectiveness of educational-cognitive activity (Babansky Yu.K.).

We take into account the possible connections between teaching methods. Among the reasons that encourage the development and introduction of new methods, an important role is played by the changes taking place not only in the goals and content of education, but also in its tools. This situation is evident with the emergence of AKT in recent decades. The use of computers in education required the development of new specific methods to help achieve educational goals. Among the traditional methods most used in OTM education, the following methods should be distinguished:

- Organization of educational and cognitive activities: Lecture, explanation, conversation, instruction, work with scientific and educational literature, visual, practical, laboratory, as well as based on an automated system of teaching;

- promotion of educational and cognitive activity: creative assignment, discussion, temporary work in groups, tasks of professional importance selected according to the purpose;

- control of the effectiveness of educational and cognitive activities: monitoring educational activities,

laboratory, automated test control, self-control, examination.

There are many different private methods that fall into one or more of the considered Groups at the same time. For Example, G.G. In his monograph, khamov considers 15 such methods. Including: strengthening the motivation of educational activities; comprehensive statement of the material; highlighting the base material and concentrating the educational material of the subject around the base material; drawing up and applying algorithms.

Let's look at the methods of the Loiyhaviy methodological system.

1. The method of using a computer as a means of expanding the illustrative base of the course of study. Here it is intended to use ready-made visual programs: to display geometric objects in both static and dynamics. Obviously, this method I.Ya. Lerner and M.N. It belongs to the group of explanatory-illustrative methods introduced by skatkin. N.I. Pak argues in his study that the display of visual examples is particularly expedient in the following cases:

- when a visual example serves as a direct object of study, in which students receive knowledge about the forms, characteristics and relationships that are visible through the perception of models in direct vision during the observation process;
- when a visual example serves as an aid to the teacher in the oral interpretation of the characteristic features of the phenomenon or process being studied, its internal connections;
- when a visual example serves as the starting point of a statement about events and contacts that are still unknown to students.

As a tool for displaying examples, the computer has a number of advantages:

- individual observation of objects on the screen allows you to control this object, which takes on an independent educational character;
- multiple repetitions, allowing you to work at an optimal pace;
- visual displays on the computer are considered interactive (conversational) and modeling.

For example, USA, Tacoma (Washington state), 1940. The bridge, 855 m long (the third largest in the world in terms of length in those years), collapsed 6 months after its commissioning. This problem is a problem of theoretical mechanics. The main reason for this is that the bridge is very sensitive to wind speed, while the calculation of its strength does not correctly take into account the dynamic components. Viewing this

accident on a computer screen allows students to focus their attention on a number of issues. It is visually understood that the task of mechanics is to give a mathematical apparatus for solving technical problems to Applied Sciences, for example, construction mechanics. A faulty model of an event or a faulty solution can and will lead to catastrophic consequences too.

2. The method of using a computer in the formation of the algorithmic culture of students. In the study of most subjects in higher education, algorithms are a necessary methodological tool for the implementation of educational issues and the optimal direction of organized knowledge. Algorithms form a clear style of thinking in students. Working with ready-made algorithms belongs to reproductive methods. In our system – this is the process of obtaining and learning knowledge to solve sample issues.

3. A method for solving problems with the help of a computer that requires a large amount of arithmetic operations. As the main tasks of the mechanics of a deforming solid, in engineering calculations for strength, bikirlik bikirlik and stability, it is important for students to perform a large amount of computational work, bringing these calculations to a certain number of results. The most important aspect of the solution is the reliability of the result obtained. In these calculations, the “creative” and “identical parts of the work stand out. The performance of the” creative " part requires the student to analyze the problem on the basis of fundamental knowledge, and to choose methods and programs for solving the issue. The "" uniform part is the solution itself, which involves multiple-volume iterative calculations (scheduling functions, solving large systems of equations, etc.). In a properly executed analysis (performed with a creative component), all “identical” calculations are given to the computer.

4. A way to experiment and use computer technology as a modeling tool. Visualization of laboratory work does not replace real work, but complements it, allows you to perform repeated verification, change the parameters of the experiment. This makes it possible to have a clear idea of the physical nature of what is happening, about the consequences that can occur as a result of the misjudgement of parameters that fall into the calculations of robustness, indifference and stability. Modeling is also used in the visual model.

5. Project method. The term "project “comes from the Latin word” projectus“, meaning” thrown forward“. Design means building a project, proposing to do something in the future, setting an activity plan.

CONCLUSION

In relation to the educational and cognitive activities of

students, we define design or project activities as an effective type of activity related to planning and modeling, aimed at creating any educational projects, and also used to solve various educational issues at theoretical and empirical levels.

REFERENCES

Богмаз И.В. Научно-методические основы базовой подготовки студентов инженерно-строительных специальностей в условиях проективно-информационного подхода 13.00.02 – теория и методика обучения и воспитания (информатизация образования). диссертации на соискание ученой степени доктора педагогических наук. Пермь. 2012. 313 стр.

Богомаз, И.В., Михайленко Л.П., Кухтецкий С. В., Компьютерный учебник по Т М «Статика» (учебное пособие CD-R -Электронный ресурс) Красноярск, КрасГАСА, /Statika/ HTML, 1998.

Ergashev, Nuriddin. "Ergashev Nuriddin G'ayratovich N. G'. Ergashev, A. O'. Shukurov. SN Siradjev. Raqami axborot texnologiyalari. O 'quv qo 'llanma. Intelkt, Qarshi 2023. 220-b.: N. G'. Ergashev, A. O'. Shukurov. SN Siradjev. Raqami axborot texnologiyalari. O 'quv qo 'llanma. Intelkt, Qarshi 2023. 220-b." E-Library Karshi EEI 1.01 (2023).

Shukurov, A. U. "Didactic opportunities for the introduction of cloud technologies." Electronic journal of actual problems of modern science, education and training 10.2 (2021): 29-35.

Razzoqovich, T. S., and S. A. Uktamovich. "IMPROVING THE LEARNING PROCESS AND INFORMATION LEARNING SPACE USING GOOGLE'S CLOUD SERVICES International conference on multidisciplinary research and innovativ." (2021).

Shukurov, Akmal. "THE ROLE OF DIGITAL TECHNOLOGIES IN THE DEVELOPMENT OF THE NEW UZBEKISTAN." Models and methods in modern science 1.18 (2022): 35-38.

Uktamovich, S. A. "Specific Aspects Of The Methodology For Using Cloud Technologies In Virtual Education. Eurasian Scientific Herald 13, 47-54." (2022).

Uktamovich, S. A. "STAGES OF DEVELOPMENT, DIRECTIONS AND COMPARATIVE ANALYSIS OF CLOUD TECHNOLOGIES European Journal of Research and Reflection in Educational Sciences Vol 8 (12)." (2020).

Uktamovich, S. A. "Stages of development of cloud technology in education Eurasian Scientific Herald 5, 48-51. 2022."

Gayratovich, Ergashev Nuriddin, Shukurov Akmal Uktamovich, and Jabborov Elbek Erkin o'g'li. "Using the

capabilities of modern programming languages in solving problems of technical specialties. academia An International Multidisciplinary Research Journal. 2019. 686-696."

Uktamovich, Shukurov Akmal. "Specific Aspects Of The Methodology For Using Cloud Technologies In Virtual Education." Eurasian Scientific Herald 13 (2022): 47-54.

Uktamovich, Shukurov Akmal. "STAGES OF DEVELOPMENT, DIRECTIONS AND COMPARATIVE ANALYSIS OF CLOUD TECHNOLOGIES." European Journal of Research and Reflection in Educational Sciences Vol 8.12 (2020).

Uktamovich, Shukurov Akmal, and Nekboyev Xurshid Xoliyorovich. "INCREASE IN ENERGY EFFICIENCY AND DATA CENTER EFFICIENCY WHEN SWITCHING TO CLOUD COMPUTING." Intent Research Scientific Journal 2.12 (2023): 100-105.

Uktamovich, Shukurov Akmal. "IMPROVING THE BASE TRAINING OF STUDENTS OF TECHNICAL OSMS BASED ON THE INFORMATION DESIGN APPROACH." American Journal of Pedagogical and Educational Research 18 (2023): 199-204.

Uktamovich, Shukurov Akmal. "OLIY TA'LIMNI BULUTLI TEXNOLOGIYALAR ORQALI TAKOMILLASHTIRISH." Наука и технологии 1.1 (2023).

Uktamovich, Shukurov Akmal. "MODERN TECHNOLOGIES FOR THE CREATION OF INFORMATION SYSTEMS (GAT TECHNOLOGIES, WEB TECHNOLOGIES)." Open Access Repository 4.03 (2023): 16-21.

Uktamovich, Shukurov Akmal. "Specific Aspects Of The Methodology For Using Cloud Technologies In Virtual Education." Eurasian Scientific Herald 13 (2022): 47-54.

Gayratovich, E. N. (2019). USING VISUAL PROGRAM TECHNOLOGY METHODS IN ENGINEERING EDUCATION. European Journal of Research and Reflection in Educational Sciences Vol, 7(10).

Gayratovich, E. N. (2021). SPECIFIC ASPECTS OF EDUCATIONAL MATERIAL DEMONSTRATION ON THE BASIS OF VISUAL TECHNOLOGIES. International Engineering Journal For Research & Development, 6, 3-3.

G'ayratovich, E. N. (2022). It Is A Modern Educational Model Based On The Integration Of Knowledge. Eurasian Scientific Herald, 5, 52-55.

G'ayratovich, E. N. (2022). The Theory of the Use of Cloud Technologies in the Implementation of Hierarchical Preparation of Engineers. Eurasian Research Bulletin, 7, 18-21.

Gayratovich, E. N., & Yuldashevna, T. O. (2020). Use of visualized electronic textbooks to increase the effectiveness of teaching foreign languages. European

Journal of Research and Reflection in Educational Sciences Vol, 8, 12.

Ergashev, N. (2020). Didactic fundamentals of electronic books visualization. An International Multidisciplinary Research Journal.

Ergashev, N. (2020). Using the capabilities of modern programming languages in solving problems of technical specialties. An International Multidisciplinary Research Journal.

Ergashev, N. (2022, May). FEATURES OF MULTI-STAGE TRAINING OF TEACHERS' CONTENT TO PROFESSIONAL ACTIVITIES USING CLOUD TECHNOLOGY IN THE CONDITIONS OF DIGITAL EDUCATION. In International Conference on Problems of Improving Education and Science (Vol. 1, No. 02).

Ergashev, N. (2022, May). THEORETICAL STAFF TRAINING USING CLOUD TECHNOLOGY IN CONTINUING EDUCATION. In International Conference on Problems of Improving Education and Science (Vol. 1, No. 02).

Ergashev, N. (2022, May). PROBLEMS OF USING DIGITAL EDUCATION IN PEDAGOGICAL THEORY AND PRACTICE. In International Conference on Problems of Improving Education and Science (Vol. 1, No. 02).

Ergashev, N. (2022, May). THEORY OF TRAINING OF PEDAGOGICAL PERSONNEL IN HIGHER EDUCATION USING CLOUD TECHNOLOGIES IN THE CONDITIONS OF DIGITAL EDUCATION. In International Conference on Problems of Improving Education and Science (Vol. 1, No. 02).

Ergashev, N. (2022, May). PROBLEMS OF DIGITAL EDUCATION IN PEDAGOGICAL THEORY AND PRACTICE. In International Conference on Problems of Improving Education and Science (Vol. 1, No. 02).

G'ayratovich, E. N. (2022). The Problem of Training Future Engineer Personnel on the Basis of Cloud Technology in Technical Specialties of Higher Education. Eurasian Scientific Herald, 13, 1-4.

Gayratovich, E. N., & Jovliyevich, K.B.(2023). Theory and Methodology of Software Modeling Using the Web Platform. Eurasian Scientific Herald, 16, 59-63.

Ergashev, N. (2023). Methods of teaching parallel programming methods in higher education. Electron Library Karshi EEI, 1(01). Retrieved from <https://ojs.qmii.uz/index.php/el/article/view/271>.

ERGASHEV, N. THE ANALYSIS OF THE USE OF CLASSES IN C++ VISUAL PROGRAMMING IN SOLVING THE SPECIALTY ISSUES OF TECHNICAL SPECIALTIES. <http://science.nuu.uz/uzmu.php>.

Gayratovich, Ergashev Nuriddin. "A MODEL OF THE STRUCTURAL STRUCTURE OF PEDAGOGICAL

STRUCTURING OF EDUCATION IN THE CONTEXT OF DIGITAL TECHNOLOGIES." American Journal of Pedagogical and Educational Research 13 (2023): 64-69.

Shodiyev Rizamat Davronovich, and Ergashev Nuriddin Gayratovich. "ANALYSIS OF EXISTING RISKS AND METHODS OF COMBATING THEM IN CLOUD TECHNOLOGIES". American Journal of Pedagogical and Educational Research, vol. 18, Nov. 2023, pp. 190-8, <https://www.americanjournal.org/index.php/ajper/article/view/1522>.

Shukurov, Akmal. "ITS FEATURES AND USE IN THE EDUCATIONAL PROCESS OF WEB-TECHNOLOGIES." ПЕДАГОГИКА И ПСИХОЛОГИЯ В СОВРЕМЕННОМ МИРЕ: ТЕОРЕТИЧЕСКИЕ И ПРАКТИЧЕСКИЕ ИССЛЕДОВАНИЯ. 2021.