INCREASE OF THE LEARNING EFFICIENCY ON THE BASIS OF STRUCTURIZATION THE MAINTENANCE OF THE THEME OF ALGORITHMIZATION AND PROGRAMMING LINEAR COMPUTING PROCESSES

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INCREASE OF THE LEARNING EFFICIENCY ON THE BASIS OF STRUCTURIZATION THE MAINTENANCE OF THE THEME OF ALGORITHMIZATION AND PROGRAMMING LINEAR COMPUTING PROCESSES

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Annotatsiya: Izlanish maqsadi dasturlash fanini tarkibini strukturabal o’qitish borasida zamonaviy axborotli va telekommunikatsiyali texnologiyalar majmuasi qanday yaratilishi to’g’risidagi masala ko’rilgan, hamda ta’limda maqsadli (sohaga yo’naltirilgan) kasbiy salohiyatining sifatini oshirishni ta’minlaydigan o’quv – uslubiy vositalarni va dasturiy pedagogik majmualarni yaratish va tadbiq qilishdan iborat.

Kalit so‘zlar: Strukturash, algoritmlash, dasturlash, hisoblash jarayoni, chiziqli algoritmlash, samarali ta’lim, pedagogik texnologiya.

Аннотация: Цель исследования состоит в решении вопроса, какой должна быть совокупность современных информационных и телекоммуникационных технологий в преподавании курса Программирование на основе структуризации содержания дисциплины, которая бы обеспечивала повышение качества профессионального, целенаправленного (отраслевой ориентированного) образования на основе создания и внедрения комплекса программно-педагогических и учебно-методических средств.

Ключевые слова: Структурирования, алгоритмизация, программирования, вычислительный процесс, линейный алгоритм, эффективность обучения, педагогическая технология.

Abstract: The purpose of the study is to address the question of what should be a set of modern information and communication technologies in the teaching of...
specific subjects on the basis of structuring the discipline that would ensure improvement of the quality of professional, targeted (industry based) education through the creation and implementation of complex software and teaching and teaching methodical.

**Keywords:** Structuring, algorithmization, programming, computational process, linear algorithm, learning efficiency, pedagogical technology.

**Introduction**

In modern conditions of intensive development of information technologies there is a necessity for creation of other educational environment. Now the question of use of programmno-pedagogical and information-telecommunication means in educational process of high schools and is actual, in particular, at training humanitarian, natural, general vocational disciplines. Many scientific researches basically mention various aspects of information of process of training of school disciplines, in high schools methodological, conceptual questions application of information-telecommunication technologies are in an initial condition.

In training of disciplines at school Antsiferova L.I., Izvozhikova V. A, Kondrateva A.S., Laptev V.V., Smirnova A.V.'s researches are devoted questions of the theory and a technique of application of information-telecommunication technologies, etc. with use of information technologies the organisations of educational physical experiment with computer use are devoted. Private questions of a technique of teaching of school disciplines Abrosimov P. V's of research and Svetlitsky S.L. technique as means of an individualization of training at school is devoted Klevitsky V.V. research, a technique of use of the COMPUTER as means of development of thinking of pupils at training of school disciplines – Chekulaeva M. E's research. Nurkaev I.M.'s research is devoted a technique of the organisation of independent work of pupils with computer modelling programs on school employment, in particular on the physicist.

THAT) on the basis of information-telecommunication technologies begins with mastering by the teacher of bases of designing and designing of technology of
training new pedagogical thinking: clearness of the didactic purposes, training in a context of the future professional work, structure of teaching material, clearness of methodical language, validity in management of informative activity of students. At the same time this work assumes formation at the teacher of technological vision of process of training, its features and specificity according to the subject maintenance преподаваемой a subject matter. A following important design stage and designing THAT is a stage of structurization of the maintenance of a teaching material.

The analysis of scientifically-methodical researches and modern condition in high school formation allows to speak application of new modern information and telecommunication technologies about existence of the whole complex of contradictions [1-4]:

- Between requirements of the modern pedagogical paradigm putting in the forefront idea of development of the person and considering subjects as means of development of students, and orientation IIIIC to formation at students, basically, knowledge and abilities;
- Between possibilities of computer training and absence of system of application of modern information and telecommunication technologies in educational process of high school;
- Between a significant amount of works in the field of information technologies and practical absence of a technique of application of set of various means of new information technologies in training of high school disciplines etc.

The research objective consists in the decision of a question what should be set of modern information and telecommunication technologies in teaching of a course Programming on the basis of structurization of discipline which would provide improvement of quality professional, purposeful (branch focused) formations on the basis of creation and introduction of a complex of programming-pedagogical and educational-methodical, multimedia means.

On the basis of the logic scheme, discipline elements the count of the educational information represents all its tops (elements) settle down on horizontal
lines, each of which corresponds to the allocated basis of the count. For its construction the specification of the bases of the count – the list of its bases presented in defined, according to logic accepted by the teacher of a statement of a material at first is formed, and then by means of logic-schemes elements of the count are selected. Actions of the teacher on structurization of the maintenance of a teaching material by the given technique it is carried out by a special technique [4. § 6].

The described technique gives the chance to the teacher to allocate an information component of a subject matter on a scientific basis (“знанієвую” area), allowing it in educational process to the full to provide preparation of the technical expert according to requirements of State standard and qualifying requirements.

By means of logically structured analysis of a teaching material the teacher can allocate the most essential (basic) educational elements of a theme (module), reveal the system of the communications defining efficiency of functioning of didactic system as a whole. Analyzing the maintenance of the structured subject matter, it is expedient to allocate elements of logic structure (a category, definition and concept) on which training should be conducted at level of knowledge, abilities, skills, the creative approach to practical application.

In the pedagogical literature on the given problem by present time a considerable variety of such forms is developed. In particular, in V.P.Bespalko, A.A.Zolotaryov's works and other scientists it is underlined possibility of evident representation of the maintenance and structure of a teaching material in the form of matrixes of communications, counts of the educational information, structurally-logic schemes, network schedules, plans of carrying out of studies, sheets of the basic maintenance, etc.

On the basis of described to a technique we develop theme structurization «algorithmization and programming of linear computing processes» a course "Programming" which are presented on fig. 1 and 2.

For an example we will open essence of such forms of structurization of a teaching material, as a matrix of communications of the educational information.
Matrixes of communications in the evident form reflect substantial and semantic communications between subject matters (interdisciplinary communications), themes (inside subject communications) or between theme questions (inside dark communications). Any matrix is under construction by one rule: on crossing of lines and columns it is marked, it is for example familiar "+" or figure "1" presence of communications between

**Figure. 1. The logic scheme of a theme programming of linear computing processes (LVP)**

1. Programming /BN
   1.1 Algorithmization
      1.1.1 Algorithm
      1.1.2 Algorithmization
      1.1.3 Properties of algorithm
         1.1.3.1 Step-type
         1.1.3.2 Productivity
         1.1.3.3 Orientation
         1.1.3.4 Mass character
         1.1.3.5 Other properties
   1.1.4 The description of algorithms
      1.1.4.1 Words
      1.1.4.2 Tables
      1.1.4.3 The graphic
      1.1.4.4 The program
      1.1.4.5 Other ways
   1.1.5 Algorithm elements
   1.1.6 Algorithm performance
   1.1.7 Vychisl the algorithms
      1.1.7.1 Sle dol /BN
      1.1.7.2 Razvet /BN
      1.1.7.3 /repeat - BN
   1.1.8 Other properties (function) of algorithm

1.6 Programming /BN
   1.6.1 Data input
      1.6.1.1 In the program
      1.6.1.2 Through keyboards
      1.6.1.3 Reading from a file
   1.6.2 Conclusion of data
      1.6.2.1 The monitor
      1.6.2.2 The printer
      1.6.2.3 File of data
   1.6.3 Other possibilities of the program (a design and management)

1.2 The program beginning
1.3 The program end
1.4 Data
1.5 Program structure
1.5.1 Program name
1.5.2 Label
1.5.3 Constants
1.5.4 Types of data
1.5.5 Variables
1.5.6 The operator of
1.5.7 Record of expressions
1.5.8 Procedures and functions
1.5.9 Program body

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Figure. 2. The topological scheme of studying the theme programming of linear computing processes (LVP)
Analyzed didactic units (questions, themes, disciplines). If maintenance communications do not contradict laws of formal logic at correctly constructed sequence of considered structural units, the matrix will be diagonal and below its diagonal there will be no filled cages. If it is not present, updating of the maintenance and change of sequence of its studying achieve correct logic sequence of studying of a teaching material. We will construct matrixes of communications for the module programming (Vt-questions that, ЧС – number of communications between elements) – 1.6:

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The establishment of logic structure of a teaching material which exists in the theory and training practice, is displayed in didactic model of logic structure of knowledge of the scientific phenomenon, process and an object condition.

Experimental check of efficiency of the allocated requirements of structurization of a teaching material of the given theme has shown efficiency of the developed technology and has shown improvement of system knowledge of students.

Thus, on the basis of the developed logic structurization of linear computing processes to develop information, algorithmic, programm-pedagogical tutorials of a course of the programming, satisfying to modern representations of multimedia training courses, promotes activization of activity of students, and also allows development of informative independence, will improve quality of knowledge of pupils. The given technique can be the basis for creation of electronic courses of discipline.

References:


