NEW INFORMATION TECHNOLOGIES IN TEACHING PROCESS, CREATION OF INTERACTIVE ELECTRONIC TEXTBOOK

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When elaborating electronic textbook (ET) it is necessary to take into account its using during the computer lesson. Hence there arises a problem of succession construction of the computer lesson from the point of view in searching the optimum number of fragments of the program (stills of the course) which is necessary to give to a student and how many questions to ask him while giving an account of theoretical material. The basic principle of solving this problem is the principle of interactivity of ET. To be an interactive electronic textbook it must work for acceptance and keeping (information data of marks and rising the level of difficulty). For example, if the mark is "2" it is necessary to deepen testing and ask deeper questions on the previous subject.

Keywords: elaboration of the electronic textbook (ET), succession of the computer lesson is the basic principle of interactivity ET, of interactive electronic textbook

The modern period of the development of the society characterizes the informatization of all spheres of human activity. This process cannot avoid the pedagogical sphere which brought about the appearance of the term "new information technologies of education" in the theory of training. There are some definitions of the information technology of education. The term "information technology" was introduced by V.M. Glushkov. He defined "information technologies – as the process connected with information processing" [1]. The educational process is also connected with transference and processing in which information is transferred from a teacher to a pupil. The information processed by a pupil is converted into knowledge.

While increasing the volume of information which is necessary for mastering educational discipline there sharply arises the question of efficiency of its transference, organization of maximum activity of students' perception as well as methods and means promoting to increase the creative interest to the discipline which they study. The use of the computer technology in educational process allows to change the dataware of the last one. Under modern interpretation of this notion the information technology of education is understood as the totality of methods, forms and ways of organization of education process using computer technology for training. The use of computers both for information transference and for supporting the active creative process of its perception by students is the basis of information technology education. In other words, the information technology of education is the process of preparation and information transference to students the means of which is a computer. A computer can promote the development of a person's cognitive need transferring such knowledge to a person who cannot get it without its help but it can give him powerful stimulus for developing external prestigious motivation.

Can a computer promote the development of creative thinking? Certainly can. However it is necessary to formulate clearly the purpose of training (education) by using a computer, to check whether the purpose is achieved and by maximum using psychological knowledge of ways and means to achieve this purpose. Laboratory experiments show that under conditions of using computers including the direction of a person's cognitive activity one can achieve higher factors of a person's creative activity than under traditional conditions [2].

The essence of psychological and pedagogical problems of educational informatization in our opinion consists of understanding what possibilities information technologies possess by improving the process of training and how to include them in the structure of pedagogical activity in order to solve pedagogical problems more effectively and how to the best advantage to combine a person and a machine in complex man-machine system of education and what theories of mastering knowledge and psychological mechanisms of training must be used in order such system functioned effectively [3].

The realization of information technologies in (training) educational process takes place by using its definite toolbox which has got the name "means of new information technology". Under it one ought to understand "program and apparatus means and devices functioning on the basis of microprocessor computing machinery".

Among the means of information technology indicated above the packages of applied educational programs are the most important ones. They have got the name "applied software programs".

The methodical purpose of applied software (educational programs) is conditioned (caused) by need of intensification of educational process and by transferring it to a higher level.

Requirements to applied educational programs (AEP) are considered from different points of view.

New methods of training (education), founded on active and independent forms of acquiring knowledge and work with information displace the methods of traditional education which are founded on collective perception of information. At the same time we have the process of using applied educational programs to support traditional methods of education (training). Applied software (applied educational programs) used for teaching (educational) purpose are transferred some training functions, consequently each program must be designed in accordance with didactic principles of education (training) which determine requirements to AEP. It is known that teaching method of each educational subject in its turn takes into consideration (accounts) originality and peculiarities of the corresponding science, and so it is legal to speak about methodical requirements to applied software which foresee specifics and originality of each concrete science and its corresponding educational subject. Determining (defining) pedagogical requirements to applied software (AS) it is necessary to provide checking pedagogical efficiency using AS.

On the basis of analysis of requirements to AS we can draw a conclusion that by elaborating the software it is necessary to pay great attention to the educational technology being used was adequate to processes of mastering this information by a learner. It is necessary to remember that combined models of presenting material enlarge the depth of information processing in the learner's brain and in this way they provide educational efficiency of training. But superfluous detailization of presenting attracts unnecessary information for the given subject (theme) which a student possesses. It prevents him from mastering it.

When elaborating AS (applied software) it is necessary to take into account its using during the computer lesson. Hence there arises a problem of succession construction of the computer lesson from the point of view in searching the optimum number of fragments of the program (stills of the course) which is necessary to give to a student and how many questions to ask him while giving an account of theoretical material. In AS this problem must be solved (realized) as checking which includes organizing well-timed help to a learner when some difficulties arise working with educational material. The basic principle of solving this problem is the principle of AS interactivity which is determined by the following factors:

a) to allow a learner to define the succession of a lesson when the contents is well known or there are some insignificant difficulties in understanding; to provide the direction of a learner (if he ch00ses checking there must be strict direction on the part of the program;

b) to use structures (designs) of educational programs adaptable to individual particularities and need as alternative to linear structure;

c) to provide the receptivity of branching to presentation educational information to questions and examples given to every learner as well as for accounting time to demonstrate educational material necessary for each learner individually. For example, the learner who made a great number of mistakes answering the questions needs not more questions but simply more time for reading and thinking over this educational material.

Software programs created on the basis of multimedia and hypermedia technology have recently got the name of an electronic textbook [4].

Distance education developing for the last years where the system of telecommunication service is used has brought about the appearance of the term "electronic textbook" (ET) and its considerable expansion of understanding each computer training system as an electronic book. Electronic textbooks more often shape up hypertext which presents itself as a complex of information, graphic, methodical and software program of automated education on a concrete discipline based on a personal computer. Such textbook includes six components as minimum: dataware (hypertext with graphic illustrations of the educational material and album of dynamic drawings; a package students, checking, imitating and other dialogue programs for checking; software (the methodical instructions for laboratory practical work); the system software of the electronic textbook for integration of the rest components into the united system and give a user required service. The information is extracted from the textbook by means of interactive searching method.

To be an interactive textbook it must work for acceptance and keeping data (information of marks and to rise the level of difficulties). For example, if the mark is "2" one must deepen testing and ask deeper questions on the previous subject.

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