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FEATURES OF PERCEPTION INFORMATION IN COMPUTER-ORIENTED LEARNING ENVIRONMENTS

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The paper deals with the main principles and features of the process of information perception in computer-oriented learning environment. With the development of computer technology nonlinear form of presentation of textual information has become more convenient, so called hypertext is being widely used by the computer-oriented learning environment. Shown the peculiarities of use of hypertext in presentation of educational materials.

Keywords: multimedia, learning environment, hypertext, information, electronic textbook, e-course

Relevance of research. The emergence of multimedia made it possible to identify the fundamentally ineradicable vice of text learning materials, which is that they do not allow using huge reserves of the performance of the human brain, related to its ability of rapid processing of large volumes, panorama-perceived information contained in educational computer environments.

Analysis of previous research. A perception of learning environment is not new to educational research (M. Basov, S. Shatsky et al.). In different historical periods different content was given to this concept. S. Frene believed that educational environment serves as a field for a variety of human activities, development of their creativity, where man creates cultural values, exploring the real world in an atmosphere of freedom to choose knowledge areas that are of its interest. Modern pedagogical theories do not share the views of S. Freni or A.Neyla on the role of "free activity in the environment", but remain relevance to the person, as a subject of activity that enriches their personal experiences in the process of interaction with others in the learning environment.

According to Mr. Krasyl'nikova, educational environment is a multifaceted, holistic, socio-psychological reality that gives man the material and spiritual conditions for its educational activities, set of the necessary psychological and pedagogical conditions to provide a dive human into the flow of purposeful prepared information and methods of its representation in the study, comprehensive development of the individual. S. Lobachev and V. Soldatkina in educational environment sees a series of information resources, learning technologies and learning support process, implemented within the framework of common principles of design, that provides full cycle or logically completed part. D. Kasatkin by computer-oriented learning environment understands *only informational-educational environment, built on the informational integration of computer and communication technologies (virtual libraries, distributed databases, optimally structured educational and methodological complex) and aimed at self-development.*

Thus, the concept of educational environment is considered by many authors with varying completeness of reflection of the essence.

The goal is to distinguish features of the process of perception of information in computer-oriented learning environment.

The main article. The invention of text books and computers with a text interface was "unnatural" event. Firstly, the working view has narrowed significantly since the solid angle of the text page or screen of text display is much smaller than the physiological view. Secondly, speed of information processing significantly decreased because visual analyzer, designed by evolution, for the rapid perception of huge amounts of information that is at wide field of view, instant selection of the most important information and quick decision, forcibly turned to artificially slow and hence inefficient mode, inevitable when reading linear text. Thirdly, when reading text, there appears undesirable offset in the distribution of load between the two visual subsystems – the central and peripheral, causing the latter to weaken its role. Peripheral system is more important than central, because "for an adequate understanding of the visual scene, ability to simultaneously analyze large-scope relations between objects is more important than the possibility of fine central vision of individual parts." From clinical experience we know that damage of all the

peripheral areas of the visual field besides central, is equal to blindness [1]. Thus, the use of text books and computers with a text interface leads to an artificial disconnection of the large part of peripheral vision, which is equivalent to a partial "blindness" and the exclusion of a large part of the brain, resulting in huge reserves of human intelligence is not used. Probably for this reason in modern study software graphical user interfaces are being used [2, S.153].

Experienced teacher, trying to instill in students methods of scientific cognition in the process of mastering the subject, always involves mechanisms of visual thinking using sign properties of the educational materials [8]. This is naturally in relation to all others, because, according to M. Idei, "... those images that can be seen, amenable to study much easier than ephemeral images those are perceived auditory or sensory systems" [3 S.2]. In this situation, a complete image adequately considered when the elements build a connection between the students, that is formed by a logical chain of reasoning-knowledge.

An essential element acts the skill of the teacher to provide visual information, to find images that adequately convey the essential features of the subject. In some situations, drawing, depicting even a separate ecological issue can carry information, statement of which would require considerable time to create this concept in an accessible for students form. "Any flight attendant uniform, waiter, railway servant or police officer – a sign that shows us the diversity of human relationships with us and the community, sign is accurate, clear, and therefore economical in the sense of "compressed" amount of information contained in it "[4, p.72]. Teacher certainly tends to reinforce illustrations forming beliefs that serves as signals to the conscious actions targeted at knowledge. The use of computer-based learning environment can significantly increase the effectiveness of "inclusion" in the educational process the mechanisms of visual thinking.

The property that is inherent to visual information allows with a special organization and natural design to affect various aspects of thinking: abstract and logical. However, this is necessary to correctly implement this feature, so that the meaning of concepts that generates the information became clear and visible.

In computer-oriented learning environment "interactive visualization" is implemented, allowing to see something, that is not always possible to see in the real life, even with the most sensitive and accurate instruments. Even more, presented in the electronic form objects different actions can be performed to examine them not only as a static image, but also in the dynamics of the different conditions. With this, computer allows us to isolate the main patterns of the studied object or phenomenon and examine it in detail. Different forms of representation of the object can change each other with the student's action or with the program event, alternately or simultaneously using creative, analytical and verbal presentation. This allows as either to condense the information from the object, or expand it. Processes modeled by computer may be different by the form and content and relate to physical, social, historical, environmental and other processes. Visibility, provided by the computer, suggests a powerful new tool for learning - computer graphics that not only represents knowledge in the form of images, pictures and text, but allows you to visualize human knowledge for that there are no text descriptions found, or require higher levels of abstraction. The process of perception of information in computer-oriented learning environment is accelerated and simplified by a new, non-verbal, and functional communication environment, like light around us. The exchange of information is in the form of models (similar to that instead of book, functioning technical device or an idea is being sent acting like a visual functions, formulas or theorems). The information in this case is immediately and fully perceived as an image. There is an imitation of sharing objects by users, although in fact, designed information transmitted over the information channels. With intelligence of device, it is interpreted. In this case, all the amenities of information transfer saved (unlimited reproduction, high speed, low cost and low power consumption), namely transmitted "feeling" of things from the real world, increases the ergonomic quality of the information.

With the development of computer technology nonlinear form of presentation of textual information has become more convenient, so called hypertext is being widely used by the computer-oriented learning environment. On the screen blocks of text elements are displayed in which selected words are pointers to the related by the

content texts, stored in the databases of information, and have a different geographic location, similar to when the print edition has a reference that can be in different libraries and storages. But in the computer-oriented learning environment, using hypertext technology, user does not experience difficulties in access to information due to geographic distance. Note that the representation of text in hypertext form, its reading and analysis cannot be performed without special software, which "provides convenience" for the implementation of these actions, in this case provides "relationships support." Therefore hypertext, same to other operation that is performed in computer-oriented learning environment, is not only a form of textual material, but also technology. Encyclopedia with nonlinear structure of texts can be created by an author or group of authors who are experts in any subject area. The work on the organization of communication between the texts is difficult. For skilled in the field of knowledge worker, who are a user of the system, it is difficult to passage the route in accordance index and search for required texts. Hypertext eliminates complexity for both the teacher and the student, if their skills in computer information environment similar to skills of writing and reading.

With the help of hypertext takes place unifying of theories, concepts, ideas, notions, providing access to related concepts.

Hypertext is widely used in the design of computer-based learning environments. This is due to learning objectives that are aimed at understanding concepts, ideas, knowledge elements and their relationships by the students. The organization and the route is determined by human relationships, the computer only enhances this ability, freeing from routine operations, thereby supporting more intensive process of thinking that promotes more effective connection, pre-existing concepts are being formed again. When using hypertext in learning process, it can be effective when it became no the object of the study for the participants in this process, but the tool for the implementation of professional learning of teachers and students.

The following functions can be identified when working with computer-oriented learning environment: descriptive, explanatory and design.

Descriptive function clearly and accurately disclose significant aspects of practical learning. This means that regardless of personal qualities, using appropriate tools, any expert describes the same process.

Explanatory function reveals components of learning and their combinations that provide process efficiency (i.e., efficiency of different methods and their combinations).

Since the adaptability provides reproducible of the process and results, the projecting function is carried out at all levels, including the level of teacher's implementation.

L. Sheremetov and B. Uskov refers the following functions to the computer-oriented learning environment: planning and administration, support of creation of e-learning courses, testing and evaluation of students' knowledge, communication between participants of the process, information retrieval and some other [5,6].

When working in computer-oriented learning environment, the following happen:

- description of the ultimate goals (objectives) of the educational system;
- description in terms of intermediate diagnostic purposes;
- reasonable design of learning content;
- recommendation of the standard learning technologies that guarantee the achievement of the goals and provides objective methods of quality control training;
- description of organizational forms and the learning environment.

Computer-oriented learning environment allows:

- handle text (using word processors (editors);
- automate input - system scanning and character recognition; speech text input system,whose primary function is the input and presentation of textual information, storage, viewing and printing (for example, a word processor - MS Word from the MS Office);
- graphics processing - software that lets you create and convert images. Graphical display of data from spreadsheet, database or individual graphics in the form of charts, graphs, histograms. Technologies of

illustrative graphics with the ability to create illustrations for a variety of documents;

- database management system (DBMS) designed for automation of procedures for the creation, storage, processing and retrieval of electronic data.

The main functions of the database includes: creating, structuring, organizing data acquisition and format for various purposes, such as MS Access database from the package MS Office:

- hypertext - nonlinear organization of information units combined together with directed connections;
- multimedia technology - combined presentation of information in various forms (text, audio, video, etc..);
- hypermedia - a set of media, combined together with directed connections;
- network technologies;
- WWW-technology, which is a distributed hypermedia system documents, the distinguishing feature of which, in addition to attractive appearance, is an possibility to cross-reference each other;
- E-mail (E-mail) - a system for storing and forwarding messages between people who have access to a computer network.

Conclusions and further research. We found the basic features that can be do with computer-oriented learning environment:

1) contributes to the organization of cognitive processes by external (objective) and internal (mental) modeling;

2) provides system training actions, its control and correction;

3) creating new forms of educational process, modeling joint activities such as "teacher↔computer↔student", "computer↔student", "computer↔group of students", " teacher ↔ computer ↔ group of students" .

Training of future professionals to use computer technology in professional activities in our study is not a goal itself. The ultimate and primary goal is to build a learning environment where skills of using information technologies in the future

agrarian specialists became similar to skills of writing, reading and elementary math calculations that are part of key competencies.

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