

## TECHNOLOGICAL FUNDAMENTALS OF CREATING INTERACTIVE E-LEARNING COURSES BASED ON MULTIMEDIA TECHNOLOGIES

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### ABSTRACT

Interactive e - learning course provides the assimilation and implementation of educational programs – electronic courses, educational or practical manuals on a specific part of the educational plan, science or course of study, test materials for quality control of mastering the activities mentioned, methodological recommendations for studying a science or course and performing control and coursework, covering educational (didactic) manuals and collections of issues, arranged.

The main requirements for organizing an interactive e-learning course interface and ensuring the effectiveness of its computer application are the following: the lame and scientific nature of the style (academism-derived from the French word "Academis" gives the meaning of theorist, theorist, theorist. Immersion in dry theory in educational institutions, disconnection from life and practice); accessibility of navigation management tools in the virtual information environment of an electronic educational resource; the presence of at least two ways to get to any page of the resource; effective use of graphics and multimedia tools in covering theoretical topics, performing practical tasks and forming test questions; the presence of interactive and motivational elements, when the content of an interactive e-learning course is studied; the justification of color selection (from the point of view of medicine, psychology ergonomics).

Methodological recommendations regarding the course or practical work assignments should include the rules and procedures for the use of network technologies for virtual communication of the teacher and educator.

When using an interactive e-learning course, students are actively involved, professors do not remain idle when working, but work on assignments and tasks set on themselves, can discuss other people's feedback, listen, ask questions, ask each other for help, learn to help others.

The content of the interactive e-learning course should ensure the formation of the skills of learners of independent and free thinking, step-by-step enrichment, improvement, Independent Education, search for new knowledge.

An interactive e-learning course is a course based on modern information technology that has the capacity to concentrate, describe, update, maintain, provide and control knowledge in an interactive way.

The interactive e-learning course is designed to apply a teaching style based on computer technology, to independent education and to comprehensively efficiently master materials related to the sciences, in which: educational scientific materials are only in verbal (text) form; educational materials are in verbal (text) and two-dimensional graphic form; multimedia (multimedia - multi-informational) manuals, that is, the material is; tactile (sensory, perceptible) is expressed in a characteristic form that creates a tassavur of bringing the student into the real world, where a Stereo copy is depicted in the "screen world", and moving in relation to the objects in it.

Now let's give a brief description of the main criteria in creating an interactive e-learning course, the stages of its creation, commissioning, creating an interactive e-learning course in collaboration, the main features of an interactive e-learning course.

The interactive e-learning course should be user-friendly and it should meet the following basic criteria: be interesting and engaging; allow the user to improve his skills, knowledge, concepts and worldview about science; include the material required in the official curriculum; be understandable and accessible to use; provide examples, issues, life situations and practical concepts; have pictures and diagrams to help link practice and theory; aimed at mid-level users, the level of knowledge is to take into account both high and low level users, etc.

The interactive e-learning course is introduced into the learning process through information and communication technology tools. Electronic format copies of traditional textbooks, teaching and methodological manuals and other published materials are used to create an interactive e-learning course.

The interactive e-learning course should be composed of the following components: a science learning instruction with methodological guidelines for independent work; a practicum that forms qualifications and skills for the application of theoretical knowledge; tests that help determine the degree of assimilation of theoretical and practical educational materials; tables, formulas, cumulative materials in science, etc.

The interactive e-learning course has the following features in a particular area of science:

- 1) the educational material is described in a certain area of knowledge;
- 2) the educational material is illuminated at the level of modern achievements of Science, Technology and technology;
- 3) the educational material is systematically stated in textbooks, that is, it describes the entire completed work in itself, which provides the integrity of the textbook, consisting of many elements with a meaningful attitude and connection.

Signs of interactive e-learning courses that differ from normal courses of study include:

1. Each interactive e-learning course describes a certain initial and final level of the teaching process. An interactive e-learning course in a specific educational subject can store material of several levels of complexity in its composition. In doing so, they will have kept multi-option assignments designed to test knowledge in an interactive layout for each level within their structure.
2. In an interactive e-learning course, exhibitionism is higher than in an e-learning course, and exhibitionism is also supported by the use of animasias, sound observations, hyperlinks, video games, and other multimedia technologies.
3. The interactive e-learning course provides multiple variants, multiple levels and diversity of Test assignments and tests, providing an opportunity to give all assignments and tests to an interactive and educational person in an orderly manner. It is possible to achieve a clear response through explanations and comments during an ambiguous response.
4. When creating and distributing an interactive e-learning course, printing works are not performed and are considered to be an open system in structure. They can be replenished and improved in the process of use.

5. The rapprochement of an interactive e-learning course with learners is higher than that of e-learning courses, and when demand increases, its number (copy) can be easily increased or sent by Network.

6. Interactive e-learning courses can have a variety of structures to ensure their multitasking depending on usage and Development Goals.

According to our opinion, interactive e-learning courses have the following capabilities:

an inductive approach to traditional courses of study makes it easier to understand the studied material by transmitting it in ways that affect auditory and emotional memories;

adapts to the needs, level of training, intellectual capabilities of learners;

saves complex calculations and substitutions by allowing you to look at a large amount of material and assignments and solve more practical issues, focusing on the essence of the subject of study;

provides ample opportunities for self-examination at all stages of learning;

allows beautiful, clear formalities of the work and its submission to the teacher, printed on a file or paper;

performs the task of an experienced teacher by providing unlimited explanations, countless repetitions, reminders.

The interactive e-learning course provides the following opportunities for practical classes held in specialized study rooms:

free from the time it takes to complete a large number of tasks using computer supports, analyze solutions and their graphical interpretation;

allows the teacher to train in the form of independent work in front of the computer by participating as a leader and consultant;

allows the teacher to quickly and effectively control the knowledge of the learners using a computer;

it is possible for the teacher to convey materials that are small in size but extremely important in composition at his discretion in theoretical and practical classes, so that the learners can independently engage in solving issues that can be learned beyond the scope of the audience's training;

frees the teacher from hard work such as homework, various calculations and checking control work;

allows individualization of work with learners, especially with respect to the part of homework and control work.

Of course, each curriculum has its own concepts and arguments. The teacher will determine the structure of the course, indicating which parts it will be composed of. Each curriculum can be divided into parts and elements. Some part, the result of teaching an element, can be the initial concept of the next, while some of their elements will be connected to each other in some way. In this case, the creation of one course can be according to the other.

Interactive e-learning course is not only a course, but also a completely didactic, methodological and interactive software system. Didactic aspects are based on the general legal norms of the educational process, while methodological aspects are associated with the fact that a teaching process is carried out based on a certain specific order.



Of course, this cannot be without taking into account regulatory aspects. We will look at these aspects in the process of creating an interactive e-Learning Course program for higher education institutions.

Interactive e-learning is one of the main tasks when creating a course and is the choice of software tools. This, of course, depends on the experience and knowledge of the programmer. In addition, the use of theoretical techniques is also of great importance. Such methods will help to easily solve the complex requirements for creating an interactive e-learning course. An interactive e-learning course may have primarily involved some chapter of a textbook, assignments, or lab-internship training.

At the same time, the interactive e-learning course should be in the form of a complete set on a floppy disk along with the textbook section. If the textbook contains a description of the materials, the options for using different programs will be presented on the floppy disk.

The interactive e-learning course should be based on all tasks, with the manifestation of theoretical materials, the organization of the application of the initial acquired knowledge, control the level of mastering, feedback without the help of materials on paper, and so on.

In addition, the interactive e-learning course should act as a trainer, be based on checking the acquired knowledge, have a material search base, use a computer visual math, in addition, an interactive e-learning course should act as a trainer, be based on checking the acquired knowledge, have a material search base, have a mathematical and imitation modeling using computer visualization, and servant functions satisfying

Of course, creating an interactive e-learning course that meets the above requirements requires a lot of effort. It is impossible to create an interactive e-learning course without observing the psychological requirements for working with a computer. First of all, it is necessary to take into account the pedagogical-psychological framework of the interactive e-learning course from a psychological point of view. Secondly, the user works both with an interactive e-learning course and with a textbook.

When organizing the educational process, the user's mindfulness, application of his knowledge in practice, thinking should be taken into account when repeating the educational material. We see that interactive e-learning helps to further increase the effective possibilities of mastering the educational material, keeping information in mind and thinking of the course.

The organization of this element of educational activity using an interactive e-learning course is distinguished by many of its distinctive features.

First of all, when performing a teaching practice task using an interactive e-learning course, we can cite the location of information on the screen in the desired order, the color designation of the main elements, the use of "convenient instruments" for the user, and so on.

Secondly, the student performs some manual actions with the help of various attendant functions. As a result, the completion of the task is accelerated.

In this way, it is organized that the educational process is carried out to the student without excessive difficulties. This, in turn, requires the creation of interactive e-learning courses on the basis of multimedia technology.

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