



**ADVANCEMENTS IN EDUCATIONAL WEB RESOURCE  
DEVELOPMENT**

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ABSTRACT	KEYWORDS
<p>With the pervasive integration of contemporary information, communication, and pedagogical technologies, including electronic textbooks and multimedia tools, the educational landscape in the country's schools, vocational colleges, academic lyceums, and higher education institutions is experiencing a profound transformation. This concerted effort aims at a fundamental elevation of educational quality. Central to this endeavour is the strategic enhancement of educational and laboratory infrastructures through the infusion of cutting-edge educational and laboratory equipment, alongside state-of-the-art computer resources. Simultaneously, concerted efforts are directed towards cultivating an effective system aimed at materially and morally incentivizing the dedicated efforts of educators and instructors. This article delves into the intricate process of creating electronic information educational resources. It outlines their diverse types and structural elements while elucidating the stringent requisites for their development. Emphasizing the significance of these resources, the discussion navigates through the nuances of their creation, offering insights into their intricate design and delineating the requisite criteria for their seamless development. The aim is to encapsulate the essence of the article, emphasizing the transformational impact of modern technologies on educational institutions and shedding light on the process and significance of creating electronic information educational resources. Adjustments can be made based on the specific emphasis or details required for your piece.</p>	<p>Electronic Textbooks, Multimedia Tools, Educational Technology, Information Resources, Pedagogical Technologies, Educational Infrastructure, Laboratory Equipment, Computer Resources, Teacher Incentives, Educational Quality Enhancement.</p>

**Introduction**

Today it is inappropriate to talk about the popularity of the Internet. The Internet has become a part of our life, we are used to using its services every day. At present, a voluntary person can imagine that web technology has penetrated the food, commerce, politics, entertainment, and business sectors of human life and becomes a witness user of it. The Internet is bringing different people together with a common goal. Everyone tries to get some kind of information from the Internet.

There will come a time when the ability to print a document on the Internet, as well as to use a typewriter, is within the reach of every person with even an intermediate level of education. Good

memory ability, clear thinking, and a high level of mental thinking are considered important for mastering web programming languages. However, the diversity of people's worldview does not affect the uniqueness of intellect and cognitive processes. After the independence of the Republic of Uzbekistan, great changes took place in the field of education. In particular, problems related to the introduction of information technologies into the educational system, the study of the possibilities of computer technologies, and the creation of modern web resources for higher educational institutions and academic lyceums are urgent issues.

Significant results are being achieved with the application of information technology software, the Internet, the development process, and other areas. For example, A. Abdukadirov, A. Abdullayev, M. Boltayeva, V. Vergasov, P. Galperin, S. Godnik Aripov M.M., Yakubov A.Kh., Sagatov M.V., Irmuhamedova R.M. Shamis V.A. In the work of Borland and others, the pedagogical and psychological foundations of independent learning of pupils or students were studied.

## **Requirements for the creation of electronic information educational resources**

Pedagogical requirements for the creation of electronic information educational resources are as follows.

- enriching with audio files, animation, emotional impact, etc. in order to ensure easier assimilation of the studied course material, unlike textbooks in paper version;
- compliance with the level of knowledge and professional competence of the listener;
- created taking into account the emotional and physical potential of the listener;
- visualization of the topic with the help of animation or other similar audio-visual means (trigger the visual receptor) as much as possible in accordance with the content of the lesson;
- free of large calculations;
- paying more attention to the content of the studied subject, creating conditions for solving problems and examples;
- to create an opportunity to control oneself in the cross-section of topics at any stage of the studied subject;
- create the possibility to transfer the written work prepared on the studied subject to any information carrier, to present it using a disk or other information carrier;
- use keywords, additional literature, hyperlinks, and help functions as much as possible in studying the subject.

Educational and methodological requirements are also set for the creation of electronic information educational resources. They are:

## **Educational and methodological requirements for the creation of electronic information educational resources (EIER):**

- analysis by solving a large number of problems or changing primary data;
- use of graphic interpretations;
- creating conditions for the teacher to conduct the lesson in the form of an independent lesson, in this case participating in the role of a listening consultant;
- providing an opportunity to control the level of knowledge acquired by pedagogic learners with the help of tests of different complexity (formulated according to the level of complexity);
- creating an opportunity to prepare for lessons in a way convenient for the pedagogue (slides, text,

presentation, video material, etc.).

EIER must be able to perform certain functional tasks. Therefore, functional requirements are also imposed on their creation. Before elucidating the functional requirements for the creation of EIER and their essence, it is desirable to understand the dictionary meaning of the concept of "functionality".

## **Functional requirements for creating an EIER:**

- content– similar to a paper version of a book, it is searchable by keywords, enriched with additional information that complements the subject;
- Flexibility (depending on the student's level of mastery, returning to the subject, working on the subject at an individual pace);
- multi-terminal-static data analysis availability of opportunity;
- ability to analyse the listener's frequency of using EIER, test results, correct and incorrect answers, in which questions he made more mistakes;
- interactivity- imitation of natural communication (having the opportunity to feel the presence of the pedagogue using a questionnaire, verbal, non-verbal, voice, etc., establishing a dialogue between the EIER text and the listener);
- control and analysis (EIER's ability to understand the essence of questions asked by listeners, to help them understand, to create an opportunity to control the level of successful learning of the training module);
- providing feedback and individuality (creating an opportunity to correct mistakes and shortcomings made by the student in mastering the educational module with the help of complementary and advisory programs during the educational process).

Therefore, the following are the functional requirements for the creation of the EIER:

According to NAMuslimov, EIER, which is the most common type of EIER, must meet the following requirements:

1. able to meet the requirements for the publication of the curriculum and educational-methodical works (confirmed by the scientific-methodical council of the Higher Education Institution);
2. EIER is prepared as an electronic version of a methodical manual that is being presented for the first time or previously published in a specific field and is related to a general or special course in terms of content;
3. possession of a volume that allows to reveal the content of a certain educational course (or its part) and to achieve educational and methodological goals;
4. Possession of visual elements that help to achieve teaching-methodical goals (possibility of using the computer's multimedia capabilities to the maximum extent);
5. taking into account the feature of viewing the material on the monitor screen and placing it on the network;
6. of hyperlinks in the text existence, in the present tense Display of web resources and management information resources;
7. the presence of control questions that allow the listener to independently assess the level of mastery of the material;
8. working in many languages and creating special conditions for disabled listeners.

EIER is created based on a pedagogical script that is goal-oriented, designed for the development of the individual, and has methodological consistency of pedagogical methods and technologies to

achieve the educational goal. The structure of the educational material and its placement in the educational staff is carried out according to the script.

## Conclusions

Therefore, it is appropriate to take certain circumstances into account when developing the EIER scenario. Taking into account the following situations when developing the EIER scenario will make it possible for the listener to use it easily and comfortably:

1. all educational material should be logically completed, one topic should be covered in each module, each lesson should consist of theoretical and practical parts, a section of exercises for the test, and a homework section;
2. those who make up the theoretical part displayed in the window and placed in the frame, visual multimedia material should not be overlooked that it is of great importance in enhancing the perception, understanding, memorization, and mastery of the studied materials, compliance with the requirements of ergonomics in the placement of visual materials ;
3. that the textual materials placed in the frame are complete in content;
4. free movement of knowledge and topics (in this way, the listener can repeat previous topics or look at the material ahead of him in order to know what awaits him), use of hypertext content following sections and topics;
5. The EIER textbook consists of content, control questions, exercises and assignments for each section that determines the uniqueness of a specific academic subject, and the active use of interactive dialogue with the electronic textbook in these sections (the section is made up of exercises or should not be replaced with a set of tasks, on the contrary, the proposed control questions are directly related to the text of the main educational material that the listener is currently studying and serves to master this material well, as well as the listener's section the time of addressing one or other questions, exercises and tasks should be determined according to the pedagogical script);
6. Having search systems that allow quick access to basic concepts, terms, and definitions in EIER;
7. easy access to the directory from any page of the EIER;
8. EIER to conduct the trainee's current and final control test which provides a system, the student's reference to the tests should be specified in the pedagogical script;
9. EIER fully meets the rules and standards specified in "General sanitary and hygienic requirements for educational electronic resources". Creation of EIER takes place in a certain process, in several stages, like the creation of any product. At the current stages, specific tasks are solved taking into account the pedagogical, educational-methodical and functional requirements for creating EIER. The systematization of the stages of the creation of EIER ensures that the creative activities organized in this way are solved in a certain consistency, in a sequence, based on a specific goal. In addition, the stages of the creation of EIER prepare the ground for the formalization of this type of intellectual product and its recognition by the relevant responsible bodies.

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