

Basic Pedagogical Requirements for the Creation of Electronic Resources for Educational Purposes

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ABSTRACT

The article analyzes and improves the main pedagogical requirements for the creation of electronic resources for educational purposes.

KEYWORDS: *Information technologies, educational system, electronic educational literature, modeling, goal orientation, electronicization of education, individualization of education.*

The use of information technologies in the educational system required a revision of concepts both in terms of content and substance. Therefore, a new approach and attention to the processes of education and training began. When we say the educational process, we see the whole process of interaction between the teacher and the student. Now this process is being combined with educational electronic learning resources, video and audio, computer programs, television and radio training courses. Teaching in this process directly depends on the student's greater internal capabilities, intellectual potential, information reception and assimilation characteristics. Many studies have been conducted by foreign and domestic scientists on the theory and methodology and practice of educational informatization, the problems of introducing information technologies to education, the creation of electronic resources for educational purposes and their use in the educational process.

The effectiveness of electronic resources for educational purposes depends, first of all, on careful preparation for its use. Preparing for the lesson is the most responsible and important job for a teacher.

The use of multimedia technologies in organizing the educational process based on electronic resources intended for educational purposes increases students' interest in learning, develops students' thinking skills based on the interactive nature of education, and increases the efficiency of learning learning materials. In addition, electronic resources intended for educational purposes provide an opportunity to model and observe processes that are difficult or complicated to demonstrate in real situations, ensure that learning materials are effective not only according to their level, but also according to the level of logic and acceptance of students.

Preparation for the lesson with the help of electronic resources intended for educational purposes requires the teacher to initially consider the following:

- A. Identification of subject-related materials from electronic resources intended for educational purposes;
- B. determining the form of the lesson;
- C. get acquainted with the sources of the topic;
- D. to carefully read the materials related to the topic from the electronic resources intended for educational purposes, to determine the method of explaining the topics that are difficult for students to understand;

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- E. creating a lesson plan;
- F. choosing the method of conducting the lesson;
- G. use of didactic materials suitable for the purpose and task of the lesson;
- H. reveal the aspects of the subject of the lesson related to the previous and next lesson;
- I. determining the method of presentation of the topic;
- J. determining methods of checking homework;
- K. prepare questions for students and prepare their answers;
- L. prepare interesting assignments on the topic;
- M. setting homework tasks.

It is known from experience that if work is carried out in accordance with the psychological characteristics of students in the educational process, they will absorb knowledge better. An important condition for mastering knowledge is understanding it. The use of electronic resources for educational purposes has its own advantages in the development of students' creative abilities. It teaches students to think logically, to have a scientific and creative approach to science, it serves as an important factor in the formation of a scientific worldview, it helps students to master educational topics easily, to acquire knowledge, and it instills love for science and profession as a result of hard mental activity affecting emotions. Accordingly, we can emphasize that the creative activity of students and the proper organization of educational activities will create the basis for the effectiveness of electronic resources intended for educational purposes from "Mother language" and an interesting lesson using it. In this, students acquire the skills and abilities of independent study of subjects, solve practical and theoretical problems.

Applying educational, demonstrative, knowledge monitoring, student knowledge assessment computer technologies to the lesson process, creating and using electronic resources for educational purposes leads to further development of students' creative abilities [1].

However, the issue of the creation of electronic resources for educational purposes from the subject of "Mother Language" and the formation of students' skills and abilities through their use in the educational process has not yet been sufficiently researched. In this sense, electronic resources intended for educational purposes are appearing in education as a new tool for teaching activities. Creation of electronic resources intended for educational purposes for educational institutions on the subject of "Mother tongue", development of a methodology for systematization of this process and its use in the course of the lesson, determination of the main criteria for creating electronic resources intended for educational purposes, the structural structure of electronic resources intended for educational purposes.

Electronic resources intended for educational purposes consist of a didactic, programmatic and technical interactive complex of teaching in the environment of modern information technologies, and one of its advantages over other resources is that it is intended for comprehensive assimilation of educational materials and scientific information through the formation of independent education, creative thinking, skills and abilities.

Electronic resources intended for educational purposes differ from traditional resources by the concentration of scientific and methodological information, the richness of exhibitions, that is, the wide use of various animations, the age and physiological characteristics of learners.

When creating the structure of electronic resources intended for educational purposes and the materials in it, special importance should be given to the following:

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- Electronic resources intended for educational purposes should be structured in such a way that neither the student nor the teacher should have any difficulty in obtaining additional educational information from it;
- it is appropriate to use the module system when creating the structural structure of educational materials;
- it should be possible to organize independent education;
- a full instruction on study of educational materials should be given;
- there should be control tasks, self-checking questions and answers, practice tasks.

In electronic resources intended for educational purposes, knowledge is presented in an attractive, effective form, the main concepts and definitions are given clearly and controlled. Therefore, great importance is attached to the creation of electronic resources for educational purposes from all subjects. The reason is, first of all, the information in the electronic resources intended for educational purposes is fully illustrated with the help of animation and multimedia tools in a modern way. This is the main feature of electronic resources intended for educational purposes. Secondly, it is possible to monitor the acquired knowledge in an interactive way. Thirdly, the current state of teaching-methodical complexes burdens the student, therefore, it is possible to record electronic resources intended for educational purposes on a disk and use them on other computers.

It should be noted that electronic resources intended for educational purposes serve as a means of increasing the pedagogical capabilities of the teacher, but they cannot replace the pedagogue. The educational process is based on didactic principles, systematicity, demonstrability, comprehensibility, sequence and coherence of the educational material. Electronic resources intended for educational purposes do not negate the description and consistency of the teaching materials of the subject, they are supplemented on the basis of modern computer technologies.

Creating electronic resources for educational purposes is a skill-intensive and time-consuming process. Nowadays, when electronic resources for educational purposes are effective in the educational process and there is a great need for them, the creation of such tools for each subject and course has become the demand of the time.

Therefore, in our republic, at the same time, a conceptual apparatus is being formed in the field of creating electronic resources for educational purposes. In this case, the following are the main concepts: Electronic resources for educational purposes - publications related to the most important sections of the sciences in specializations and areas based on the state educational standard, a model and working plan, as well as a set of exercises and problems, an album of maps and schemes, atlases related to structures, chrestomathy, instructions on the diploma project, a reference book, an encyclopedia, a set of simulators.

Electronic resources intended for educational purposes can also be placed on the Internet site.

Thus, electronic resources for educational purposes:

- must correspond to the curriculum and meet the requirements for educational and methodological publications; Electronic resources intended for educational purposes may be completely new or being published for the first time, may be an electronic version of a previously published educational and methodological set, and may also be intended for general, special, and optional courses;
- it should reveal the content of the studied course (or part of it), have a sufficient volume to achieve the educational and methodological goal;
- to include illustrative elements that serve to achieve educational and methodological goals, that

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is, it is necessary to use the computer's multimedia capabilities as much as possible;

- hyper-referencing to other parts in electronic resources intended for educational purposes should include, if necessary, referring to external web sources and resources;
- should have control questions that allow self-evaluation of the student's mastery of the learning material and self-evaluation.
- In the process of creating electronic resources for educational purposes, it is necessary to involve specialists in various fields, at least to study their opinions. Such specialists include:
 - teacher;
 - psychologist;
 - testologist – a specialist in methods of monitoring teaching results;
 - form designer or webmaster;
 - developer.

Electronic resources intended for educational purposes differ from ordinary teaching-methodical complexes by the following characteristics:

1. Purpose.
2. Use of new methods in education.
3. Planned distribution of time allocated to the lesson.
4. The possibility of deviation from the program materials.
5. Positive changes in education.
6. Reliance on new technical means of education.

Electronic modules included in electronic resources intended for educational purposes should embody self-control and provide a learning module. In addition, in the development of electronic resources intended for educational purposes, it is necessary to consider special exercises.

Electronic resources intended for educational purposes can be supplemented by the educational institution in necessary cases with references to references and dictionaries, periodicals, industry-related and socio-political publications, scientific literature, chronographies, databases, sites, information systems, electronic directories and network resources. In this sense, electronic lectures, electronic courses, electronic control programs, electronic dictionaries and references, electronic manuals and textbooks, multimedia electronic manuals, electronic educational resources for educational purposes are a component of electronic resources for educational purposes.

Electronic resources for educational purposes used in the educational process should ensure the student's interest, independent learning of educational materials in the shortest possible time, and the use of potential opportunities of the student, such as logical thinking and memorization.

Useful electronic resources for educational purposes can be created only based on experienced information technologies and pedagogical-psychological requirements.

Improved pedagogical requirements for the creation of electronic resources for educational purposes are presented in Table 1.1 below.

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Table 1.1 Improved pedagogical and psychological requirements for the creation of electronic resources for educational purposes

№	Improved pedagogical requirements	Demand content
1.	Improved pedagogical requirements	Ensuring the content of the electronic resource is scientific
2.	Openness of electronic learning resource	Adaptation of electronic resources to educational goals, the availability of student choice, changes in the methods of managing educational activities providing input, modification options
3.	Goal orientation	Ensuring the levels of electronic resource achievement
4.	Electronic resources designed for educational purposes provide motivation	Forms of electronic resources, high visibility, timely feedback, formation of constant high motivation, strengthened by goal orientation; motivation should not come at the expense of interest in the computer itself.
5.	Availability of access control in electronic resources intended for educational purposes	Diagnosis of the student for the purpose of individualization of pre-service training; as well as provide the required first aid
6.	Individualization of teaching in electronic resources intended for educational purposes	The uniform content of the academic subject and the difficulty of the educational tasks should be considered in accordance with the individual and age capabilities of the students and taking into account the acquired knowledge, skills and abilities
7.	Provide collaborative learning in electronic resources designed for educational purposes	Electronic resources intended for educational purposes should be modeled as collaborative activities as possible
8.	Electronic resources designed for educational purposes, formation of logical and systematic thinking	Electronic resources intended for educational purposes should ensure the training of specialists who are able to see creative thinking contradictions, as well as independently pose and solve problems
9.	Provide feedback on electronic resources intended for educational purposes	Feedback should be correct from a pedagogical point of view, that is, it should include not only information about the mistakes made, but also information on how to eliminate them
10.	Availability of a support system in electronic resources intended for educational purposes	It is necessary to comply with the requirements set by the existence of multi-level organization of educational material, knowledge base, task bank
11.	Availability and openness of the knowledge base in electronic resources intended for educational purposes	In electronic resources intended for educational purposes, such a core can be provided due to the implementation of data processing methods used in the construction of expert systems and artificial intelligence tools
12.	The existence of an intellectual core	In electronic resources intended for educational purposes, such a core can be provided due to the implementation of data processing methods used in the construction of expert systems and artificial intelligence tools
13.	Pedagogical flexibility	Electronic resources intended for educational purposes should allow the student to make independent decisions about the nature of support for reading strategies, the speed of delivery

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		of educational material. Access to the previously passed educational material, the ability to exit the resource at its desired location should be provided
14.	Ensuring two-way communication	The learner should be able to ask questions, the control should be done not only by the computer, but also by the learner
15.	Option to go back	Cases of reversal of erroneous actions made by the student during independent work should be considered
16.	Presence of reflection	The program should collect the results of the reflection in order to successively correct the actions being taught
17.	Ability to document	Electronic resources intended for educational purposes should have modules designed to collect and process the necessary information about the progress of the educational process and its results. Also, electronic resources intended for educational purposes should collect and process the necessary information about the management of specialists of the educational management system.
18.	Interface availability	Electronic resources intended for educational purposes should be comprehensible and conveniently structured using all methods of displaying information in the form of text, graphics, animation, hypertext, and multimedia. The learner should be able to browse the information material in both directions, "forward", "backward".
19.	Providing the possibility of statistical copying of electronic resources intended for educational purposes	The ability to copy selected information (textual, graphic, illustrative) to a personal electronic summary, edit it and print it without leaving the software product
20.	Search system in electronic resources intended for educational purposes existence	"Magnifier", "Auto show" cases should be available
21.	The presence of a relaxation block	In electronic resources intended for educational purposes, the control block of the learner's moment of rest should contain a "bank" of homogeneous, small jokes, musical fragments, etc.

Electronic resources intended for educational purposes serve as a carrier of educational content and a teaching factor, just like other methodological complexes.

The main requirements for the organization of the interface of electronic resources intended for educational purposes and ensuring the effectiveness of its use on a computer: the style and scientificity (academicism); ease of navigation management tools in the virtual information environment of the electronic educational resource; having at least two ways to access any page of the resource; effective use of graphic and multimedia tools in elucidating theoretical topics, performing practical tasks and formulating test questions; the presence of interactive (quasi-interactive) and motivational elements when studying the content of electronic resources intended for educational purposes; justification of color selection (medicine, psychology from the point of view of ergonomics).

Rules and procedures for the use of network technologies for virtual communication between the teacher and the student should be written in methodological recommendations for theoretical or practical assignments.

In the next stages of design, methods of decorating electronic resources intended for educational

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purposes will be developed. This process is carried out based on the suggestions of WEB-design experts, software developers, as well as psychologists [2].

1. *Preparing educational material for deployment.* Electronic resources intended for educational purposes material should be prepared for placement in accordance with the artistic method used. It will be necessary to scan the necessary photo materials, digitize sound and video, prepare animated videos, organize all text materials. This process should be strictly limited and related to the size and concepts of the ready educational e-resources. The volume is calculated in advance based on the capabilities of students and options for using electronic resources intended for educational purposes. To do this, the size and format of the multimedia files must be defined in advance:

The material must be compatible with software and hardware, in particular, for viewing on a screen with a resolution of at least 1024x768 pixels.

2. *Completing structured elements of electronic resources intended for educational purposes.* It is necessary to place the prepared material on the developed templates and screen forms, organize feedback with the user and fill in the reference systems.

It is recommended to engage a specialist with qualifications and experience to check the correctness of each reference, communication and reaction of the program to the user's discretion, to remove texts, and to draw conclusions about the product, teachers, users, experts.

Taking into account the above, the following can be concluded:

1. Study and analysis of social, psychological, pedagogical, methodical literature on the creation of resources intended for educational purposes, including the scientific-theoretical study of native language education, pedagogical requirements, criteria, structure, forms and types of educational resources for the creation of educational resources as a whole integrated system determined that it should be researched as it turned out that there are not enough skills and experiences in creating electronic educational resources in the field of subjects for general secondary schools in our republic. Therefore, in the research, the creation of electronic resources for educational purposes was investigated as a pedagogical problem.
2. Forms (traditional and electronic) and types of resources intended for educational purposes - electronic resources intended for educational purposes, study guide, dictionary, explanatory dictionary, data set, course of lectures, text of lectures, methodological instructions, data bank, digest, review, electronic publication, distance courses, etc. should be clarified according to their content, in this sense, their content and classifications have been clarified.
3. Types of activities in creating electronic resources intended for educational purposes should be clarified. In this sense, this activity was divided into four scientifically based stages: creation of the concept of electronic resources for educational purposes; creating a manuscript of electronic learning resources for program and educational purposes based on the concept; approving the manuscript; publishing manuscripts of e-learning resources for educational purposes, etc.
4. The basic pedagogical and psychological requirements for the creation of electronic resources intended for educational purposes should be formulated. In this sense, the requirements for educational resources in research - methodological, demonstrativeness, logical integrity, dependence on practice, classification, taking into account the characteristics of the student's age - have been improved from a scientific point of view.

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REFERENCES:

1. Азизхўжаева Н.Н. Педагогик технологиялар ва педагогик маҳорат. Ўқув кўлланма. – Тошкент: Ўзбекистон Ёзувчилар уюшмаси адабиёт жамғармаси нашриёти, 2006. –160 б.
2. Алламбергенова М. Использование интерактивных учебных комплексов в процессе высшего образования как средство формирования творческой атмосферы // Образование. – Алмата, 2010. – № 6. – С. 132-134.
3. Тайлақов Н.И. Электрон дарслик яратишга қўйиладиган талаблар //Халқ таълими. –2005. – №2. –Б.17–20.
4. Толипов Ў.Қ., Усмонбоева М. Педагогик технология: назария ва амалиёт. – Тошкент: Фан, 2005. – 206 б.
5. Ҳамдамов Р., Бегимкулов У., Тайлақов Н. Таълимда ахборот технологиялари. –Тошкент: «Ўзбекистон Миллий энциклопедияси» Давлат илмий нашриёти, 2010. –120 б.
6. Ҳамдамов Р., Бегимкулов У., Тайлақов Н. Электрон ўқув-услугий мажмуалар. – Тошкент: «Ўзбекистон Миллий энциклопедияси» Давлат илмий нашриёти, 2010. –144 б.
7. Мамажонов, А. Т., Фозилжонов, И. С., Хақимов, Ш. Т., & Исамов, С. М. (2016). Учет затрат на осуществление производственной деятельности фермерских хозяйств в условиях рыночной экономики в Узбекистане. Издательство" Научное обозрение".-Наука и мир.- Волгоград, 2(1), 35.
8. Мамажонов, А. Т., Юлдашев, Б. Т., Фозилжонов, И. С., & Эркинбоев, М. Р. (2016). Вопросы оценки нематериальных активов и их классификация. Экономика, социология и право, (6), 22-26.
9. Мамажонов, А. Т. (2022). ТЕОРЕТИЧЕСКИЕ ОСНОВЫ ПРОВЕДЕНИЯ МАРЖИНАЛЬНОГО АНАЛИЗА В ХОЗЯЙСТВУЮЩИХ СУБЪЕКТАХ. Models and methods in modern science, 1(10), 4-8.
10. Мамажонов, А. Т., & Қодиров, Ш. Қ. (2022). ЗАМОНАВИЙ ТАЪЛИМ ВА ИННОВАЦИОН ТЕХНОЛОГИЯЛАР СОҲАСИДАГИ ИЛФОР ХОРИЖИЙ ТАЖРИБАЛАР: КЕЙС-СТАДИ. Academic research in modern science, 1(10), 4-8.
11. Мамажонов, А. Т., & Қодиров, Ш. Қ. (2022). ФЕРМЕР ХЎЖАЛИКЛАРИДА ИШЛАБ ЧИҚАРИШ ХАРАЖАТЛАРИ ВА МАҲСУЛОТ ТАННАРХИ ТАҲЛИЛИНИ ТАКОМИЛЛАШТИРИШ. Development and innovations in science, 1(10), 4-8.