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The use of the capabilities of modern digital technologies in academic lyceums (on the example of the Science" Informatics and Information Technology")

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Abstract

Today, in the educational process, the emphasis is on using the capabilities of Web technologies to improve the quality of classes. Thus, students need to create elecrton educational resources so that they can independently master classes using Web technologies to further their interest in subjects. This article covers the effective use of web technologies in the lessons.

Key words: *digital technology, digitization of education, risks of digital educational environment, ICT, modernization of education, information security of students, information technologies*

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Introduction

The subject" Informatics and information technology " is taught in academic lyceums at 1-2 stages of Education. The total volume of science is 104 hours, from which 72 hours are made up of lectures, 32 hours of independent educational training.

The main goal of teaching Informatics and Information Technology in academic lyceums: to create conditions for critical thinking of digital literacy and culture in the development of the Republic of Uzbekistan and the formation of Creative information and communication competencies in younger generations;

Training young people who are able to prepare for independent life, form creativity and teach teamwork through the formation of skills of the 21st century in students, find an adequate solution suitable for the right, economic, environmental trends in non-standard conditions, and show high results by participating in International Happiness programs.

The main task of teaching Informatics and Information Technology in academic lyceums:

- creation of a system for teaching "Informatics and Information Technology" in continuing education at all stages of the academic Lyceum;
- Modern form, methods and technologies of teaching "Informatics and information technology", content, modernization of its material and technical support and increase the capacity of personnel;
- Formation of intellectual potential and Digital Culture;
- Mastering universal activists such as solving, designing, modeling and managing life problems based on modern Information Communication Technologies.

Today, in the educational process, the emphasis is on using the capabilities of Web technologies to improve the quality of classes. Thus, students need to create elecrton educational resources so that they can independently master classes using Web technologies to further their interest in subjects.

In the current era, there is no area left where the computer has not entered the account. The first area to face a computer is the field of Education. Because, each Specialist will have his place in society as a cadre, first of all, studying in educational institutions such as schools, colleges, universities and institutes.

We can perfectly deliver knowledge to students through the application of modern Information Communication Technologies today. In this case, the question arises of how you can convey your information to others in the most convenient and effective way, in order to facilitate communication with a computer, draw its attention, interest it.

Multimedia technologies (multi – multi, media environment) – allow you to use several methods of presenting information at the same time: text, image, audio and video [1]. The most important feature of multimedia technology is interactivity – the ability of the user to interact in the operation of the information environment is noted. Over the past years, many multimedia software products have been created and are being created: encyclopedias, teaching programs, computer presentations and more. The creation of multimedia e-learning resources depends on the skill, experience and fantasy of the author .

We can now include electronic teaching materials in modern teaching tools. These include electronic tutorials, electronic textbooks, electronic publications, etc.k. we enter[2].

[1] https://www.researchgate.net/publication/349102060_ Technology for creating electronic resources.
[2] https://www.researchgate.net/publication/349102060_ Technology for creating electronic resources.

An electronic textbook is an existing tutorial, consisting of a set of data that is brought to a compact state using special software tools in order to make the textbook more user-friendly. It is important that the information presented in the preparation of an electronic textbook is accessible, interesting and necessary to use it[3] . Various sources give definitions of e-learning resources as follows:

An electronic tutorial is a complex of graphic, text, Digital, Sound, music, video, photo and other types of information. Electronic publication can be carried out on optional data carriers - magnetic and optical discs, as well as on computer networks.

E-learning should consist of ordered materials related to the relevant field of scientific and practical knowledge, ensure that learners and students have knowledge, skills and qualifications related to this area in an active and creative way. The e-learning edition should be distinguished by a high level of execution and decoration, completeness of information, quality of methodological instructions, quality of technical execution, expressiveness, logic and style of sequential expression.

An electronic tutorial is a text presented in electronic form and supplied with a networked communication system that allows you to instantly switch from one part to another[4].

Preparation of the e - learning manual for use is carried out at the following stages:

1) testing;

2) write instructions for use;

3) methodical supply development;

4) Preparation of materials for registration;

5) registration of e-learning manual and obtaining a grif;

6) protection and distribution of electronic teaching aids.

Electronic training manual is a educational publication created at a high scientific methodological level, fully compiled in accordance with the state educational standards of a particular direction and specialty. An electronic tutorial is an electronic publication that partially or completely replaces the tutorial and is officially approved as a publication of this type .

An electronic tutorial complements a simple tutorial and is more effective in the following cases:

- provides instant reconnection;
- simple tutorials allow you to quickly find information that is difficult to search for;
- significantly saves time when resorting to hypertext comments many times;
- shows, tells, models, etc. along with short text;
- allows you to quickly check the knowledge of a particular department.

Over the past 20 years, the concepts related to the electronic curriculum and the requirements for it have changed in a significant way. As a result of the fact that the authors of electronic textbooks oppose many controversial discussions and old-fashioned views, a certain form of the concept of electronic teaching-shamoili, requirements arose.

Below we will cite the main concepts related to the e - learning manual:

Electronic publication (EN) is a complex of graphic, text, digital, speech, music, video, photo and other information, as well as printed documents of the user. The electronic edition can be distributed on any electronic data transport devices - magnetic (magnetic tapes, magnetic disc), optical (CD - ROM, DVD, CD - R, CD - i, CD+), as well as distributed through computer networks .

[3] Begimqulov U.SH.scientific and methodological foundations of the introduction of modern information and communication technologies into the higher pedagogical education system: Ped.fan. Doc. ... dis. - Tashkent: TDPU, 2007. -250 b.

[4] Zakirova F., U.Mukhamedkhanov, Sh.Sharipov, R.G.Isyanov, F.Esonboboev, S.Dottoev. Methodology for creating electronic educational and methodological complexes and educational resources. Methodical guide. - T.: Oo'MTV, 2010. – 57 b.

An instructional electronic publication (AIEP) must contain organized information appropriate to the field of scientific and practical knowledge, ensuring that knowledge, skills related to the field are creatively and actively acquired by students and students.

Electronic textbook (ET) is a basic educational electronic publication created at a high scientific and methodological level, fully compiled in accordance with the state educational standards of a particular direction and specialty.

Hypertext is a text given and branched electronically, with a systematic linkage that provides an instantaneous transition from one fragment to another.

Also, the importance of video cameras in the preparation of teaching aids is very high.

Videolesson-short, roller created to talk a formula or process of information. Size (format) read on TV-show. Usually, for such video lessons, a "perfect" scenario is created in advance. The elements shown in each said sentence and frame Plan old[5].

10 Advantages of using video lesson:

1) the lesson mentioned can be revisited;

2) cannot collect many readers in front of one monitor;

3) it will be possible to adjust each lesson, the student's acceptance rate;

4) the opportunity arises to direct the house to independently engage in tasks;

5) the presence of the possibility of displaying micro and macro processes limited by the possibility of displaying on a simple paper carrier;

6) increased degree of exhibitionism of the lesson;

7) allow the teacher and student to ease the teaching load;

8) the presence of the possibility of applying Project style (methods) using Video lesson;

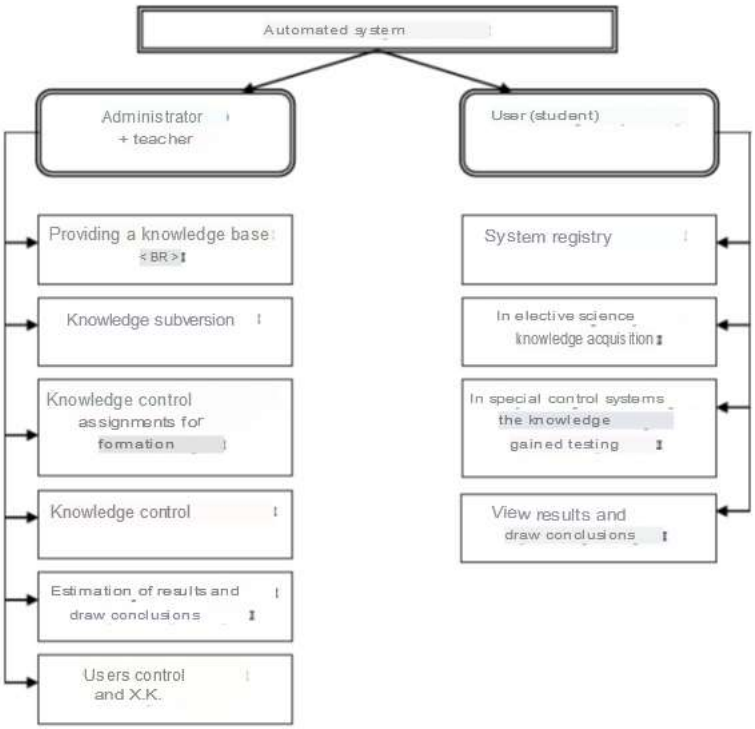
9) the emergence of the possibility of launching BYOD technology using gadgets in the hands of readers;

10) when the BYOD is launched, it is possible to achieve an increase in the culture of the use of gadgets in students.

Web technology assistance technologies for creating an e-learning resource.

In obtaining a solution to the issue of vertualization of training processes, an automated system based on web Technologies has been developed. It divides users of the system into two groups, which are ordinary user (student, independent learner) and System Administrator (server administrator, teacher)

[5] http:// baxtiyor-uz/video lesson-crack

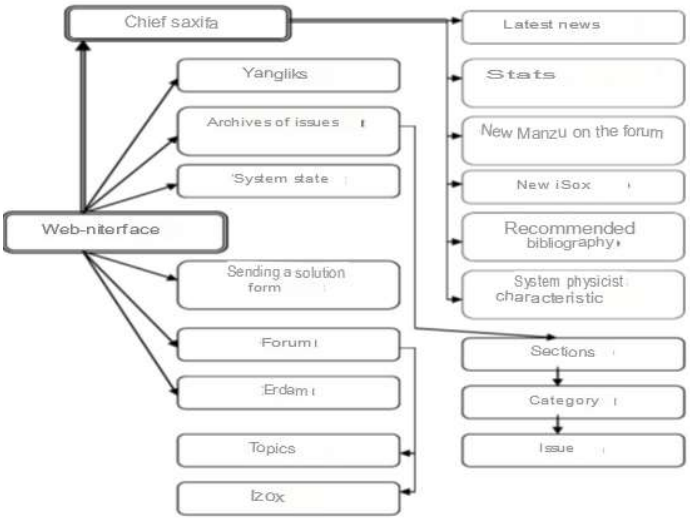


User interface of an automated system.

When developing a system that works according to the functional scheme described above, the following technologies were used, taking into account the requirements for the system and its capabilities:

1. The Borland Delphi programming environment was selected when creating a system issue solution controller. As we know, the Delphi language is one of the developing programming languages. One of the main advantages of this language is that it is possible to develop software tools in a short period of time using its rich component Bibliotheca (VCL).
2. MySQL database management system has been selected in database design and development, as this database has enormous efficiency and can achieve good results that have also been applied to large projects.
3. A fast and compact Zeos-Lib Bibliotheca was used instead of Delphi's standard dbexpress Bibliotheca to link the software tool developed at Delphi and the MySQL database. Because this allows the Biblioteca to connect with a database other than MySQL (e.g. Oracle, MS SQL) as well.
4. In developing the Web interface, the PHP scripting language was selected. It should be noted that the Web interface is developed on the principles of programming, which is aimed at a complete object. This provides much more facilities in the expansion and improvement of the system. In conjunction with this, the system interface made full use of HTML, CSS, and JavaScript elements. This in turn will save the user from installing additional software tools, which means that it will be enough to have only a Web browser to use the system.
5. MooTools Fremwork has been applied in order to increase the user accessibility and interactivity of the Web interface. The convenience of the frame is

that it has a ready-made package of instruments for the application of AJAX technology and DOM manipulation.



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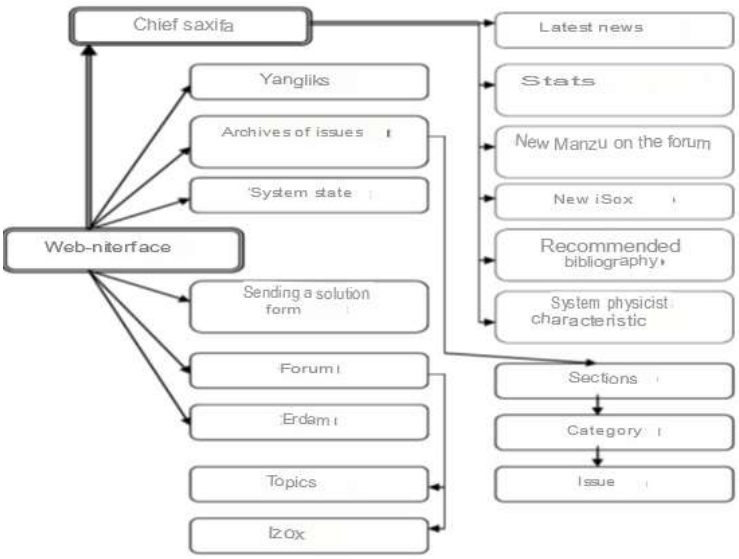
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The developed system can work in two modes:

1) mode of use in the process of practical and laboratory training in the teaching of subjects in the local network of the educational institution;

2) the mode of application for independent verification of knowledge on-line in the Internet network.

In both of these modes, the system operates on the principles of client-server technology

During the study, the pedagogical higher education institutions created an electronic information and educational resource on the subject of "network technologies", which is taught in the areas of Mathematics and Informatics Education.

This electronic information and educational resource is for students:

- computer-aided science at Voluntary Time;

-to learn knowledge that you cannot quickly learn again and again in the form of a video, text, presentation, Explanatory Dictionary of phrases;

- free choice of independent educational topics;

- study theoretical data on the modules of science

- timely submission of practical and laboratory assignments;

- refer to video cameras related to specialty and information and communication technologies, their use;

- self-assessment by answering test questions;

- the state of expertise provides opportunities such as having its own conclusions by studying interactive services.

And for a science teacher:

- obtaining methodological guidelines for teaching science topics;

[6]https://www.researchgate.net/publication/349102060_ Electronic resource generation technology

- to review the theoretical information on the topics and use it at the right time;
- test determination of student acquisition levels;
- use of presentation slides in science teaching;
- provides opportunities such as providing students with practical, laboratory training assignments and independent educational topics[7].

The methodology for using the created electronic information-educational resource consists of:

With the help of the" lecture classes " section, students are introduced to the lecture classes on the science of network technology.

In the" practical training " section, practical training in the science of network technology is placed.

The" laboratory training " section includes laboratory training in the science of network technology.

From the" independent educational assignments " button, students can view independent educational assignments and prepare them according to the sample assignment grades.

In the" Video instructions " button, video lessons on topics given in the curriculum of the subject are placed in an improved view.

From the" Test Questions " button, students can run Science-specific test Assignments, test their knowledge, and self-assess.

In conclusion, it can be said that the e-learning resource developed on the basis of Modern Web Technologies provides objective approach opportunities in assessing the knowledge, skills of a student (user). In addition, this system serves to generate enough skills for the student to work independently, which is one of the pressing requirements of the current era.

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