

The Role and Importance of Multimedia Software in Improving the Quality and Efficiency of Distance Learning

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ABSTRACT

In recent years, improving the quality and efficiency of the education system in our country, the formation of modern knowledge and skills among students, close cooperation and integration between education systems and science, Systematic work is being done to ensure its continuity and continuity. At the same time, the current state of the national education system requires its modernization in accordance with modern requirements, the education of young people as highly educated, physically and spiritually healthy people, the prestige of managers and teachers of educational institutions. increase requires the implementation of consistent measures to create the necessary conditions for their effective operation.

Aim: to substantiate the role and importance of the creation and use of multimedia programs, multimedia educational and methodological complexes in improving the quality and effectiveness of distance learning, as well as to give recommendations on distance learning.

Methods: Experimental-test and comparative research methods, survey and observation methods were used, which can be applied in the study of improving the quality and effectiveness of distance education.

Conclusion: The creation and use of multimedia training courses open up great opportunities for local computers and the Internet. Placing multimedia training courses on the worldwide computer network, which allows them to be applied directly in the educational process, allows students to find, search for information,

and also shape and expand educational activities. When creating multimedia training courses, first of all, it is necessary to pay special attention to the interactive components created by various software tools. In the context of the COVID-19 pandemic, the use of distance learning has expanded. This, in turn, requires the development of multimedia programs to improve the quality and efficiency of distance learning.

Keywords: Distance learning software, modern education, modern information and communication technologies, Moodle platform, multimedia programs, new forms of teaching, new pedagogical and information technologies.

I. Introduction

Bringing up all segments of society, especially young people, with high spirituality and enlightenment is a topical issue today. In the developed period of our society, it is desirable not only to use the previous methodological manuals but also to make the educational process more interesting and meaningful for listeners, using scientific and technical innovations, the Internet and high technology. Today in our country great attention is paid to the development of computer technology and the Internet. Accordingly, along with computer science and new information technologies, the teaching of subjects related to vocational education in educational institutions remains a requirement of the time [1]. To this end, the use of information technology, the introduction of world-class information technology in the educational process to improve the quality of general education and training of professionals is also important. Moodle is one of the most effective technologies for modern information technology and distance learning. The development of individualized teaching methods based on new technologies (for example, in the Moodle system) also solves the problem of forming and improving student knowledge. The use of distance learning technologies in the educational process has a strong impact on changes in the content, forms and methods of education [2, 3].

In distance learning, constant communication between teacher and student is maintained, even if they are separated by distance. This is done through e-mail and Internet technologies, which are separate way to control learning. Distance learning

exists for more than 100 years, but with the emergence of the Internet it gains a new dimension, and because of that it is considered a new phenomenon. The concept of DLS is applicable to all levels of education, from primary through secondary and higher, to various forms of education and training during working life at the workplace and outside it (lifelong learning) [7]. Many universities in the world, to equalize the level of knowledge that is given to students, instead of the praxis of professors travelling to other faculties, introduced a practice of exchanging ideas by using telecommunication technologies. The professors give lectures at the university, and it is transmitted over the Internet to other locations. With this, the long-term intentions of managers in education, that instead of people, ideas are the ones that should travel, are realized which significantly reduces faculty material costs. Distance learning represents an instructional model that does not require the presence of students and lecturers in the same room [4].

The use of distance learning technologies in the educational process as an activity aimed at developing the creative potential of students is a key factor in the development of student learning, improving the educational process, improving the quality and effectiveness of education. The use of distance learning technologies in the learning process consists of 3 parts, namely, the goal-motivation method. The purpose of this activity:

- a) a) development of creative abilities of the student
- b) b) development of educational activities;
- c) c) increase all levels, quality and efficiency of the educational process.

II. Literature Review

The issues of computerization of the education system, the effectiveness of the use of technical means of teaching, the effectiveness of the use of modern information technology in the education system have been studied in the scientific works of leading foreign scientists such as Bougon G.D, Gregori K., Lorens K., Geri X., Djeyms X., Meri D.F. [4-7]. well-known scientists from developed CIS countries such as Potemkin VG, Arthur K., Shikin.EV, Yarovud A., Epanishnikov M. make a worthy contribution [7-11]. In Uzbekistan A.Abdukodirov, Gulomov S.S., Imamov

E.Z., Pozilov AM, Abduvoxidov AM, Novosardova S.A., Kurbanov SH.E. and several other scholarly works have addressed these issues in Project Work [12-14]. However, the problems of developing an effective system for organizing distance learning courses and creating the necessary applications for the new generation of courses in the system of continuing education of the republic are not fully covered.

III. Materials and methods

It is well known that the role of modern information technologies and systems in the gradual implementation of the goals and objectives of the Law of the Republic of Uzbekistan "On Education" and the "National Training Program" [15]. Modern information technologies: multimedia, translation from one language to another, conversion from one alphabet to another, computer test control, scanning technology, internet, email, Web technology, electronic virtual library, distance learning, presentation technology, artificial thinking systems, etc.

3.1. Software for creating distance learning courses. The quality of distance education also depends on its software and the content of educational materials. The main indicators of the software product are its functionality, reliability, practicality, mobility. Functionality is assessed by the program's functional suitability, correctness, interoperability, reliability is determined by fault tolerance, resilience. Practicality is assessed by the simplicity of the structure, ease of use, clear and free control, mobility, flexibility, simplicity of installation, mobility.

The “Automated education and monitoring system ZIYOKOR” (founded in 2004) was developed, which was registered in the State Patent Office of the Republic of Uzbekistan in 2010 [16, 17]. The system was tested in several educational institutions and was subsequently improved. In the system, the solution of the above problems allowed us to obtain the following results [16-19]:

1. A unified database of complementary different types of education has been developed: database of the personnel department; training and support units.
2. A secure system has been developed that manages the created database in local, corporate and Internet networks.

The system allows: management of educational programs; curriculum management; assessment and testing; preparation of various reports, in particular on attendance and progress; maintaining the website of the department and group. The system has many benefits for teachers, student (students), parents, educational institutions, and the educational management system.

Moodle is a course management system developed by Martin Dougiamas (data management system) and is also known as an education management system or virtual learning environment. It is a freely distributed (distributed under the GNU GPL license) web application that allows you to create sites for online learning. The distance learning process can be organized using the LMS Learning Management System. Moodle is a product management (Content Management System - CMS) site, tutorials for creating online courses for teachers, and a workflow system. Such E-learning systems are often referred to as Learning Management Systems (LMS) or Virtual Learning Environments (VLE). Moodle is a repository of tools not only for creating and running online courses but also for working with educational websites. The program is based on the construction of social theory and training in its use. The Moodle system provides a wide range of opportunities for distance learning and full support of the learning process - a wide range of educational materials, the ability to check and manage the level of knowledge.

Currently, the Moodle system is used in major universities around the world. Moodle has about 2 million registered users, 46,000 learning portals in 70 languages and 300 programmers in 200 countries. Moodle works on modified Unix, Linux, FreeBSD, Windows, Mac OS X, Netware and other PHP-supported operating systems. The data is stored in MySQL and PostgreSQL databases. Installing Moodle is not complicated and does not require "updates" or "transfers". The latest version of Moodle - SDO Moodle can be downloaded from the website of the World Association of Customers <http://www.moodle.org>. Moodle is a software package for distance learning courses and website creation. The main features of the system are:

- The system is designed taking into account the achievements of modern pedagogy and the focus on cooperation between students, the discussion.

- Can be used for both distance learning and full-time learning.
- Has a simple and efficient web interface.
- The design has a modular structure and can be easily modified.
- Connectable language packages allow full localization. Currently, 43 languages are supported.

3.2. LMS Moodle Features The Moodle LMS (Learning Management System) class is an education management system. Moodle is free GPL licensed software that allows you to use the system for free. It also allows you to easily use it in accordance with the needs of the educational institution and combine it with other products. Due to its functionality, the system is widely popular and successfully competes with commercial LMS. Moodle has been used in more than 30,000 educational institutions around the world and has been translated into more than 80 languages. Detailed information about Moodle can be found on the official website of the project. Moodle provides the ability to design, create, and manage an information-analytical environment. The interface of the system is intended for teachers who did not have in-depth knowledge of programming and databases, websites, etc. from the beginning. The system is user-friendly and has an intuitive interface. The teacher can independently create and manage an e-course using only a data system. Placing tables, diagrams, charts, videos, flash, etc. is not difficult. With the help of a convenient control mechanism, the course developer can easily choose colours and other elements of the study material, even if he does not know HTML.

3.3. The technology of creating educational software in programming languages.

Software tools such as Microsoft Front-Page (HTML-Hyper Text Markup Language), Allaire HomeSite (HTML), Microsoft PowerPoint, Microsoft Word are used in the development of hypertext documents of pedagogical software. It is necessary to use programs that work with raster or vector images to create teaching materials on the basic concepts of the subject. These include Corel Draw, Corel Xara, Corel Photo-Paint, Adobe PhotoShop, Adobe Illustrator. Special programs such as Discreet 3D Studio MAX, Alais WaveFront, Maya, LightWave, SoftImage 3d, Adobe Image Ready, Gif Animator, Macromedia Flash, Adobe Premier are used to create dynamic

illustrations. Presenting and editing sound processes is done using SonicFoundry SoundForge, Wave Lab, Sound Recorder and other programs. Databases are created using programs such as Microsoft Excel and Microsoft Access.

IV. The content of the software used to create the software.

HTML hypertext documents are used to place software on the Internet, as it is the hypertext language of the Internet, and the program for reading documents created in it is part of the operating system Microsoft Windows. It should be noted that the capabilities and perfection of pedagogical software are limited only by the level of skill of the programmer. It takes a lot of preparation to create multimedia software products. The future specialist should have knowledge not only of many programming languages but also of the methodological principles of creating teaching and control programs. Here it is advisable to carry out preparation in the following stages:

- General principles of computer science;
- work with graphics;
- voice work;
- work in an integrated environment;
- mastering the techniques of creating educational programs.

These steps are important in developing the skills to create multimedia tutorials. Not mastering a stage does not guarantee the completeness of the learning process. If a prospective teacher already knows at any stage, he or she will have additional opportunities to improve their skills. Computer programmers are often involved in the development of instructional multimedia software. But while these programmers may have a good knowledge of the quality of the product they are creating, in many cases they may not have mastered the training methodology. This does not guarantee that the training software fully meets the methodological requirements. Therefore, it is necessary to carry out a multi-stage preparation to develop the skills to create software multimedia products.

The first stage of this preparation is related to the study of computer science, and the study of the general basics of computer science provides an introduction to

popular programs. In the beginning, it is necessary to study the MS Windows shell and the MS Office software package. Mastering these programs will form the basic skills of using modern information technologies. At the same time, the formation of the ability to work with graphical shells is important in the early stages of the study of practical methods of computer technology in simple and understandable programs. Because MS Office components are, in a sense, universal, they provide a solid foundation for students to master information technology. The second step is to learn how to work with graphics programs. This step is divided into several sub-steps according to the type of graph:

- raster;
- vector;
- three-dimensional;
- animated.

The sequence of learning is not very important, but it is advisable to get acquainted with the basics of animation after mastering all types of static graphics. Three-dimensional graphics do not have to be part of the overall program, as they are only used to model real objects. However, it is recommended that 3D be included in the curriculum for teacher training in specific and natural sciences. The most common three-dimensional editors are 3D Studio Max and Maya. They have a simple interface. With knowledge of raster and vector graphics, you can quickly master the skills of working with three-dimensional graphics.

It is possible to create animated graphics in the above programs with close interfaces. They differ mainly in the types of graphics: Adobe ImageReady for raster graphics, Corel R.A.V.E. for vector graphics, and 3D Studio Max for three-dimensional graphics. The next step is to learn how to work with sound. The issues of recording, editing and recreating sounds are important here. These issues can be resolved using the Sound Forge program. This program records audio and converts files to major audio formats. You can also edit sounds and add special effects to the sound. You can use the popular Winamp program to hear sounds. However, in multimedia products, the sound is integrated with the program and does not require

special hearing aids. An expert with the knowledge and techniques of graphics and sound processing will then learn how to present and create multimedia products. This includes, first of all, HTML-programming, ie working with MS Word, MS FrontPage, Macromedia Dreamweaver, which belongs to the WYSIWYG group of programs, and preparing presentations in MS PowerPoint. You can also recommend Macromedia Flash, a more sophisticated multimedia interactive presentation program, graphics and sound processing, as well as Adobe AfterEffect, an animation program, and more. At this stage, the student should be able to create multimedia applications that he or she teaches. The methodical step is to ask the future specialist "how and by what means to deliver the training materials to the student?" must answer the question. At this stage, based on their knowledge of graphics and the audio capabilities of the computer, they need to know exactly in which situations it is appropriate to transmit information [20-22].

V. Results and discussion

The creation of distance learning software courses (Distance Learning Software) is one of the most pressing tasks for teachers today. Distance learning software is becoming more and more integrated into the education system due to its flexibility to change the educational process and the possibility of various changes. To date, software for the development of distance learning software in various forms and in accordance with a wide range of international standards has been developed. The development of distance learning software puts new functional responsibilities on the teacher. These include:

- Designing the goals and objectives of teaching science, depending on the resources of distance learning software and other pedagogical software;
- direct creation and search of various pedagogical software tools for educational purposes, including didactic materials, lectures, multimedia materials, fragments of audio and video materials, web courses;
- To make the teaching process more interesting, meaningful and understandable than distance learning software in higher education and secondary special vocational education;

- Use of the website, ie updating of educational and informational content, work with virtual dean's office and virtual study groups;
- The introduction of modern computer technology in the educational process requires the teacher to know how to create tests, create books using pedagogical software, create glossaries and use software designed to integrate them with educational technology.

Learning how to create 11 types of tests using Mytest, and how to create glossaries and e-books using iSpring is one of the most important tasks today. With the development of distance learning software, the role of the teacher is transferred to the computer, and there is no denying that there is a notion that the teacher is given "general guidance". We believe that the teacher has always been given a leading role in the educational process. Develop a methodology for the use and application of distance learning software in any part of the educational process. Distance learning software is tasked with planning and determining curriculum compliance, student assessment, and more. The notion that computer technology and distance learning software are "perfect in every way" is misleading. Because the integration of information and pedagogical technologies is based on educational goals.

The pedagogical process is multifaceted, it is impossible to create universal pedagogical software. An experienced teacher uses pedagogical software in different groups in the same learning process, depending on the level of preparation of students, the specifics of the field of study, and even when they are used. However, distance learning software developed at the level of demand has been successfully used in today's educational process. There is no doubt that such courses are visual, multimedia, equipped with audio and video information, have effective use of animation effects, increase the effectiveness of education.

VI. Conclusion

It is necessary to study the experience of foreign countries and pay special attention to the creation of multimedia - electronic textbooks, electronic libraries, audio and video textbooks to implement the system of distance learning in higher education institutions of the country, to make it better. The effective use of new

information technologies plays an important role in the ongoing reforms in the education system of our country. The second phase of the National Training Program focuses on strengthening the material and technical base of educational institutions and providing them with advanced pedagogical technologies. Therefore, large-scale work is being carried out in higher education institutions, professional colleges and academic lyceums on the introduction of new pedagogical technologies in distance learning.

VII. Acknowledgement

The authors acknowledge the immense help received from the scholars whose articles are cited and included in references to this manuscript. The authors are also grateful to authors/ editors/publishers of all those articles, journals and books from where the literature for this article has been reviewed and discussed.

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