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USE OF LEARNING MANAGEMENT SYSTEMS TO CREATE ELECTRONIC EDUCATIONAL RESOURCES

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Abstract

In modern conditions of general informatization and the development of information technologies, the methods of obtaining and perceiving information are also changing. Teaching methods must correspond to modern realities, therefore, systems are increasingly appearing in the educational process to ensure the availability of educational and methodological materials in electronic form, called electronic educational resources. The article considers the possibilities of implementing learning management systems in the process of creating modern electronic educational resources. Approaches and didactic principles of designing educational content on the platform of the electronic learning management system Moodle are analyzed. The main components for the functioning of the electronic resource are considered. The methodology of development and use of educational content on the platform of the electronic learning management system Moodle is based on a set of didactic principles (scientificity; consciousness and activity of students; systematicity, consistency and continuity in training; visibility). They involve principles and requirements that determine the work in the electronic information and educational environment of the university (selection and the structuring of educational content in the electronic training course; interactivity; personalization; redundant reuse of educational content in the electronic course).

1. Introduction

A learning management system (LMS) is a platform or software application designed to integrate learning tools, as well as administration, management and distribution of educational and informational materials, formation of analytics and reporting (Moodle is a distance learning system).

The realization of e-learning courses is carried out on the basis of various educational platforms, one of which is the learning management system (LMS) Moodle, which provides the technological component of distance learning.

An example of such systems is Moodle, a system that focuses on the interaction between a teacher and students and is suitable for supporting learning and organizing traditional distance courses.

2. Problem Statement

Moodle is currently the most widely used LMS in the world (Garayeva, 2021a, 2021b). Moodle provides communication and collaboration of all users through blogs, forums, glossaries, seminars and chats, etc. A learning management system provides the ability to track the frequency of its use by students, the duration in time and the nature of work: logging in, downloading certain content, testing, attaching completed tasks, viewing video files). The University's EIOS provides an opportunity to study in the Moodle system, which ensures all the necessary conditions to support basic professional educational programs. The methodology of development and use of e-learning courses in the Moodle system is based on a set of principles. The analysis of scientific literature allows us to state that it is possible to identify both the principles of traditional "pre-digital" didactics and the principles of learning in a digital environment that best meet the existing conditions of digital reality.

The Moodle system is distributed free of charge, as it is an open source software product, which makes it possible for anyone to use it.

Due to the development of modern methods of communication and data exchange, modern information technologies, it becomes possible to create and apply new methods in teaching, namely electronic web resources, textbooks, tests, glossaries, surveys, wikis, videoconferences, chats, etc. One of the possibilities of using such methods and technologies is the freely distributable learning environment Moodle, which is a content management system for educational websites, specially designed for creating and managing courses. The Moodle system (modular object-oriented dynamic learning environment) is a learning management system designed to organize interaction between a teacher and students of distance courses and support face-to-face training. The main features of Moodle are:

i.   modern pedagogical achievements taken into account;

ii.   realized interactions instructor-student, student-student;

iii.   possibility to create interactive tests and lectures;

iv.   used for both distance and face-to-face learning;

v.   user-friendly web-interface;

vi.   editing accounts, adding photos, and changing personal information;

vii.   design presented as a modular structure and easily changed;

viii.   different course formats: thematic, calendar, forum courses;

ix. interactive elements used: test, lecture, book, wiki, etc.;

x. built-in text editor.

To work with the distance learning system, the user must have good computer skills, be able to send and receive e-mail, be able to start and perform basic operations in an Internet browser.

To work with Moodle, it is enough to install on your computer a Web-server with PHP support, and a SQL-type database (e.g. MySQL). In addition, the system works under all known operating systems: Windows, Mac and Linux.

In order to use Moodle, it is enough to have a browser program installed on the computer; this makes the use of the system convenient for both the teacher and the learner.

Using this system, teachers can create courses in which they can insert text, test tasks, graphics, tables, various schemes, video materials, etc. At the stage of checking the fulfillment of assignments, the teacher can view the results and give a grade; in addition, there is an opportunity to leave comments (Naurusova & Deikun, 2021). Hence, Moodle can be used to create electronic educational resources for better educational activities.

Moodle allows you to create and manage the resources of the information educational environment. It has an intuitive interface, any teacher can create an electronic resource and manage its work independently, it is enough for him to use the help system provided in the program (Moodle is a distance learning system).

The course author can use either a thematic or a calendar structure. In the thematic structure, the course is divided into sections by topics, while in the calendar structure each week is represented by a separate block. This structure is convenient for organizing distance learning and allows you to properly plan the training work.

The course content can be modified by the author himself in any order and even directly in the course. Various elements can be added to the electronic resource, such as theoretical material, assignments, forum, glossary of theoretical material, etc. Each course has a convenient page for viewing all current changes made by the course author.

LMS Moodle provides the teacher with enough tools for organizing learning activities (individual and group), presenting educational and methodological materials, conducting theoretical and practical classes (Deikun, 2016).

The Moodle system is oriented to distance education and has a large number of communication tools; among them, there is e-mail, chats, private messages, forums (news forum for all registered users and group forums for individual courses and/or with different students; it is allowed to exchange student with teacher attached files).

The Moodle learning management system has a multifunctional testing part. In addition, Moodle has quite a few tools to create tests and check the knowledge of learners through testing. In LMS Moodle, it is possible to use several types of questions (matching questions, right/wrong questions, single and multiple-choice questions, etc.).

For text processing, there are a number of functions that can be used to obtain detailed statistical data on the results of the test.

Only registered users can work with the system; so at the first stage of work with the system, it is necessary to specify a user login and password, which should be obtained from the course administrator.

Authorized login to the system gives access to the main page, in the center of which there is a list of electronic resources, to the left and right there are various functional blocks designed to configure the system.

The central part of the page contains the course content, the thematic sections are highlighted, and the edges are functional and informational blocks. For the design of the Moodle interface, we have chosen icons, each of which is associated with certain objects or actions. This is done for the convenience of using the system and will make it easy to understand where the theoretical and practical material is located, and where the task is located (Tenischeva et al., 2020).

In the system, it is allowed to edit a personal profile of a teacher/student. Among the main fields, it is possible to note the field "Description", in which you can specify information about yourself; you can add a photo to your profile. With the help of the "Show e-mail" setting, you can prohibit or on the contrary allow informing other users of the system about your e-mail, including allowing certain groups of registered users to see this information or disable e-mail address display completely.

Among the blocks of the electronic resource, there are:

The People block as a list of faculties and students in the course.

The Course Elements block. This block specifies the course elements that are available for viewing and/or executing.

The "Manage" block contains the Grade Log/Grades, i.e. the grades you receive for answering assignments, tests, etc.

The News Forum" block is lists news posted in the information system.

The "Coming Events" block contains a calendar with a description of events that are to take place in the near future.

The "Recent Events" block contains information about course updates, changes in the placement of materials, and answers to assignments or tests. This block can be customized for each course participant.

The Calendar block is the calendar of upcoming and upcoming course events. The calendar displays not only course events (due dates for assignments, tests, chats, etc.), but also events that course participants add manually. The calendar allows you to keep your own work schedule and flexibly plan your work schedule (Kondratiev, Boran-Keshishyan, et al., 2019).

The "Users on the site" block shows the users who are currently working with the system resources.

Five types of users are identified in the Moodle LMS:

i. administrators,

ii. course creators,

iii. faculty members,

iv. students;

v. guests.

Depending on the user's role, each of them has certain rights to work with electronic resources of the system. If necessary, the number of user groups can be changed.

The greatest rights are granted to the administrator and the course creator. The teacher has the rights to check the work done by the students and to participate in the discussion of the completed assignments.

The "Students" user group has the right to view course materials, perform various assignments, discuss various questions about course materials on the forum, in the chat room, send personal messages to other course participants.

The "Guest" user is only allowed to view certain materials.

For users with certain rights (an administrator, a course creator, in some cases, a teacher), the "Management" mode is available, where you can edit and change courses as a whole, change individual topics, blocks, add necessary resources, etc. (Kondratiev, Khekert, et al., 2019; Makashina et al., 2016).

To fill the electronic resource, the system has a built-in text editor with an intuitive interface. If necessary, the window size of the editor can be changed. The built-in editor supports all basic text formatting operations; besides, it allows adding tables, pictures, hypertext links, etc.

Another feature of Moodle is the creation of a separate catalog for uploading all course materials and files.

The possibility of free use of the Moodle learning system is the main advantage, while the functionality of the system is not inferior to other commercial analogs. Another undoubted advantage of the system is the fact that it is distributed with open source codes, which allows you to use it to solve any problems facing the educational system (Garayeva, 2021b).

3. Research Questions

It is worth noting that the main goal of the Moodle project is to provide teachers with the best tools for managing the learning process and promoting it.

4. Purpose of the Study

Currently, computer technology and the Internet are developing at a rapid pace, and learning methods are developing along with them. One of the ways of learning using information technology is distance learning. Thanks to the development of modern methods of communication and data exchange, the development of modern information technologies, it becomes possible to create and apply new methods in teaching, namely electronic web resources, anthologies, tests, glossaries, surveys, wikis, video conferences, chats, etc. One of the possibility of using such methods and technologies is the freely distributed learning environment Moodle - which is a content management system for an educational website, specially designed for creating and managing courses..

5. Research Methods

Electronic resources developed using the Moodle learning system include:

i. resources or theoretical materials for study. They can be presented as ready-made files or as links to external sources;

ii. tasks or practical tasks, the solution of which should be provided electronically (as a file or a group of files);

iii. survey as a mechanism that allows you to check the current knowledge of students by answering questions (with one or more answer options);

iv. seminar as a type of class where learners evaluate the work of other learners;

v. lesson as an activity in which learning material may be given in parts;

vi. tests as the main module for checking the final knowledge in the training system.

The modern educational system offers teachers the opportunity to choose from a large number of innovative methods "their own", to look at their work experience in a different way. Today, in order to have a well-conducted lesson, one has to understand his/her position in a new way, to see and reflect on why and for what reason these changes are necessary.

6. Findings

The methodology of development and use of educational content on the platform of the electronic learning management system Moodle is based on a set of didactic principles (scientificity; consciousness and activity of students; systematicity, consistency and continuity in training; visibility). They involve principles and requirements that determine the work in the electronic information and educational environment of the university (selection and the structuring of educational content in the electronic training course; interactivity; personalization; redundant reuse of educational content in the electronic course) (Tenischeva et al., 2019)

7. Conclusion

Course development tools embedded in Moodle will allow developers to reduce the cost of course development and solve the problems of compatibility of these courses.

The advantages of the Moodle learning system also include the absence of problems during installation, as well as updates when upgrading to new versions. The Moodle learning system is a client-server Web-application, which makes its use convenient for all participants

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