TECHNOLOGY OF DEVELOPING A MULTIMEDIA LEARNING PORTAL

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ABSTRACT

The article is dedicated to the development of a multimedia learning portal. The portal is designed for distance learning and controlling knowledge in various school subjects. The article describes the stages of development and functionality of the portal, preparation of relevant content and video materials.

Keywords - portal, multimedia, education, innovation, program, system, website.

1. Introduction

At the present stage of development, the education system faces the problem of technologizing the learning process. This problem was especially acute in connection with the pandemic, because of which the education system switched to distance learning. Various educational technologies are analyzed, the experience of innovative teachers is studied and introduced into school life.

Information and multimedia technologies are increasingly used. Pupils have to buy a lot of books and testbooks for passing tests and exams, they hire tutors and go to training centers in order to enter various educational institutions. But there are not always such opportunities in remote rural areas of Kazakhstan, and accordingly, the quality of education there is lower than in the city. In addition, Kazakhstan has a low population density (a large area and a relatively small population). Many village inhabitants live far from cities and do not have access to better educational infrastructure. In this regard, creation of a multimedia learning portal enables pupils to prepare for tests and exams fruitfully and within the shortest possible time, and improve the quality of their knowledge. Pupils living anywhere in the country have the opportunity to listen to the lessons of the best teachers in the country, watch high-quality instructional videos, perform test tasks in various formats and work with e-textbooks.

2. Multimedia learning portal

The table method – the <table> tag, was used in the process of work. The advantage of this method is the relative ease of placement, the disadvantage is the duration of the placement process. Some browsers, such as Internet Explorer, do not retain specific text properties and cell sizes, but Firefox and Google Chrome identify these characteristics. In addition, images are "connected" with a tabular method, which increases the complexity of creating a sheet [1].

Tables, a search bar, a button, images and hyperlinks were needed to make the website function. Hyperlinks as usual are blue and underlined, the reduced one is purple. These properties have been modified using a hierarchy of tags, i.e. an internal tag applied to the text is considered a priority. For example, changing the color of the link of the top <font> tag determines only the color of the bottom line if the color of the text is set on the <font> tag. Figure 1 shows the process of designing the website view.

The path and input button for the search are indicated in the <form> tag. It should be noted that in the <input> tag, which creates shape elements, it is possible to display the image in the form of a standard description, so you can get any type of button instead of the usual one, for example, a round one. This button can be created in any graphics editor. The search bar searches through Google.

Elements of the table are adjusted by dimension cells, as well as by controlling the size of the edges. Not all browsers support forced placement features. Table alignment is in the middle. The parameters topmargin, altmargin, leftmargin and rightmargin are used to save the image size of the website when the window is resized. Below are the corresponding screenshots. All links on this website are redirected to the same website, but it is possible to change the path in the href parameter, and then the links will redirect to other pages [2]. Developing a multimedia learning portal comprehended methods and technologies of optimal management of its resources and ensuring security and reliable operation, which are described in the works [3-9].

Figure 1 - Designing the website view

The website is independent of the operating system and requires a special browser to view. It is also attached to the website creation folder, otherwise all images will be lost. Figures 2 and 3 show the logon window (registration) and the entrance to the portal (log-in).

Figure 2 - Logon window

Figure 3 – Entrance to the portal

The database contains users' tablets. It contains user data (username and password). The table designer has a user table with 7 fields. Then the MySQL database was created. The table shows the values of each registration line. Figure 4 shows a user table with fields. The table is included in the bd.php file. The reg.php file was created. It saves registration information. A file was created for data input into the database and saving the user.

Field	A type [documentation]	Lengths/ Values*	Attributes	Null	Default**	Additionally	Primary	Index	Un
id	INT			not null		auto_increment	○	○	○
login	VARCHAR	15		not null			○	○	○
password	VARCHAR	15		not null			○	○	○

Figure 4 - Table

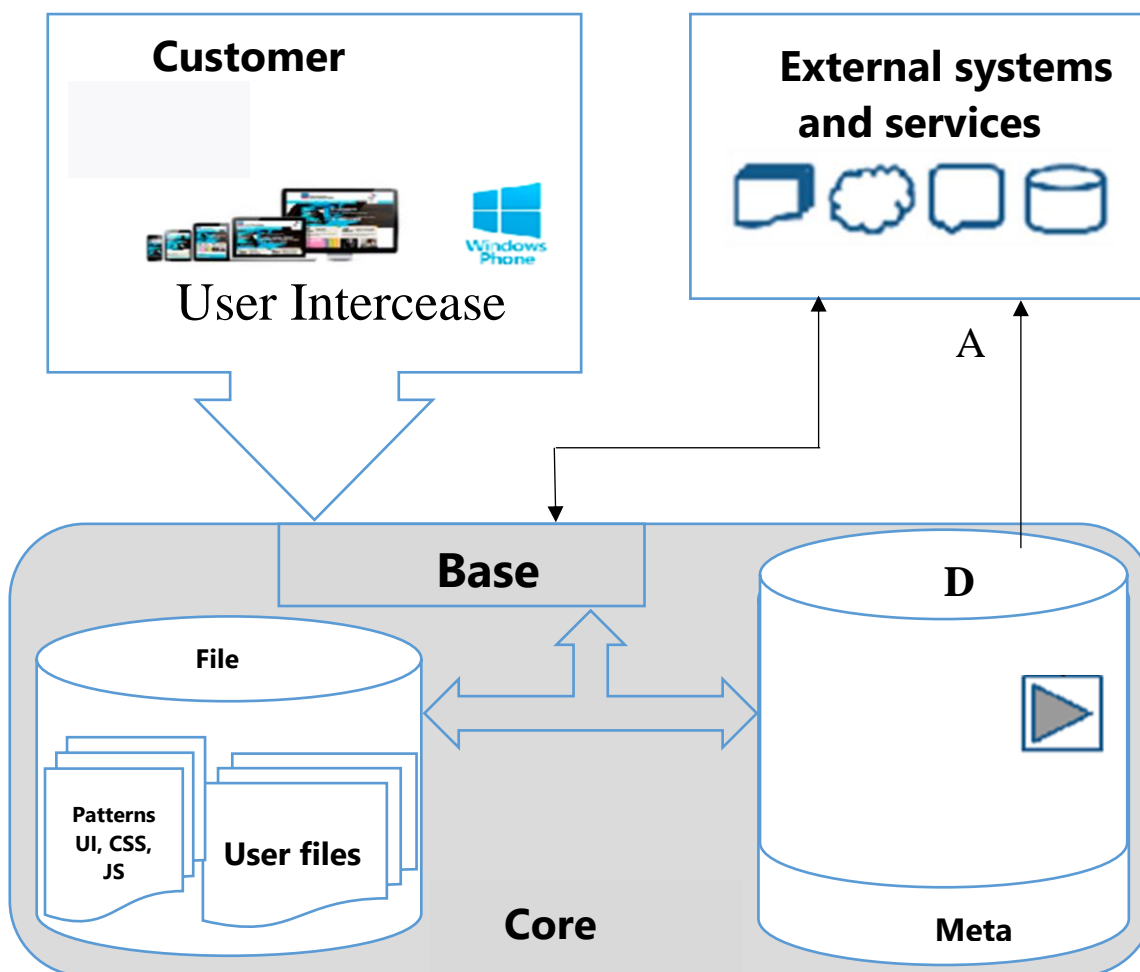Figure 5 shows the architecture of the database management system.

Figure 5 - The architecture of the database management system

The portal is designed to provide users with convenient, mobile and immediate access to educational resources. It is available in three languages: Kazakh, Russian and English. Information on the portal is grouped in such a way that the user is given only the information that relates to his/her request. A pupil can take the required test and then count the points scored.

The applicant receives information about preparing for university admission. He/she can pass an online test on the subjects of the Unified National Test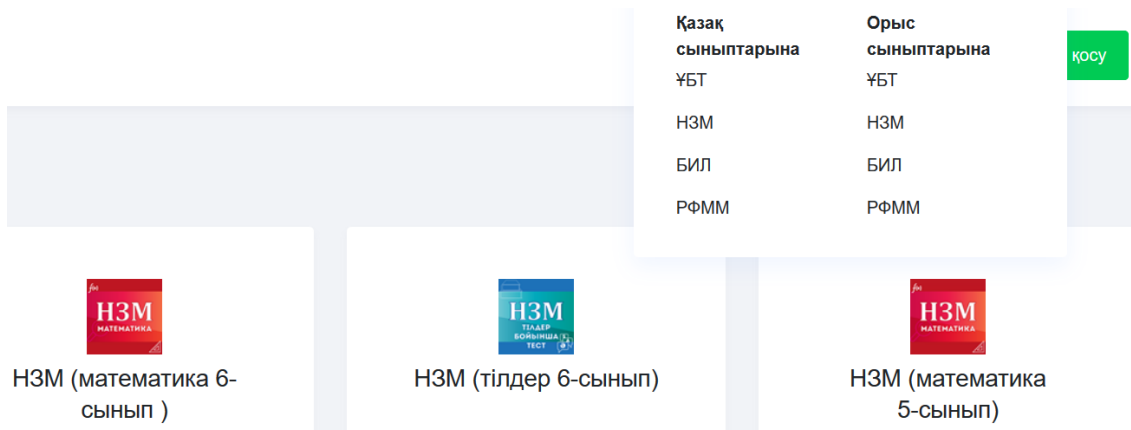ing. The system is constantly being improved. By entering the "Tests" section, pupils can select and pass the test they need. For example, a pupil of the 10th or 11th grade, by clicking an appropriate button, selects a specific subject and passes a test on it. Upon completion of the test, he/she can immediately see the results. If a pupil makes a mistake on a topic, he/she can watch a video on this topic and pass the test again. The test database is large and the options are randomly generated. Pupils with discounts can take the test for free using special promo codes. Figure 6 shows the testbase of the portal.

Figure 6 - The portal's testbase

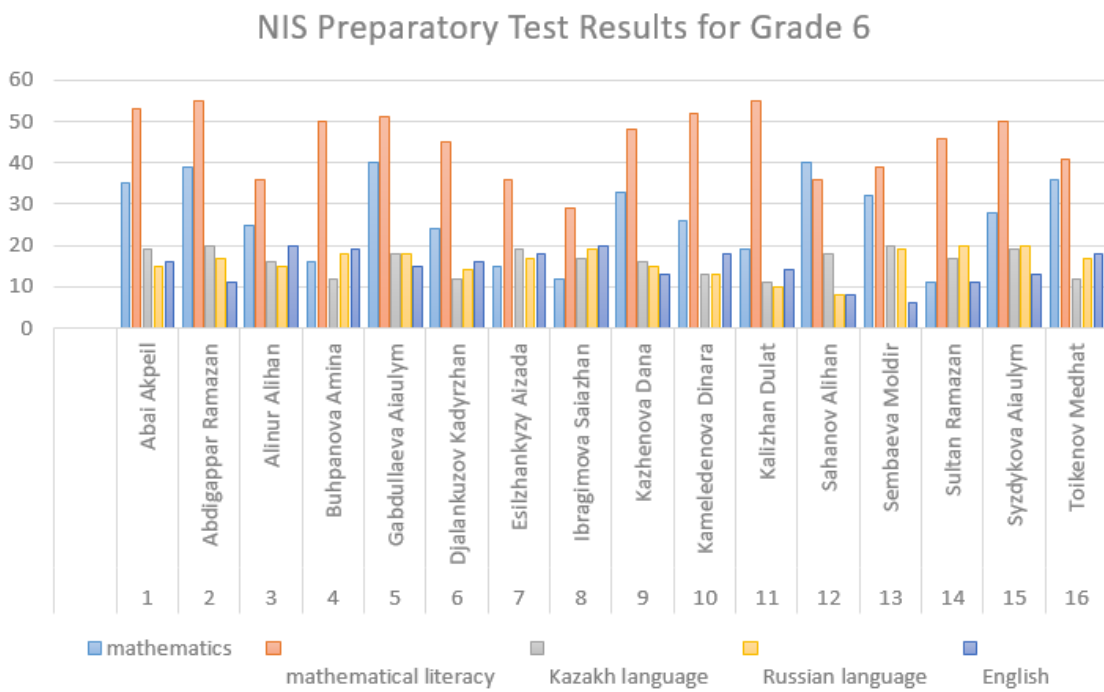Figure 7 shows an example of test results of the 6th grade pupils.

Figure 7 - Test results of the 6th grade pupils

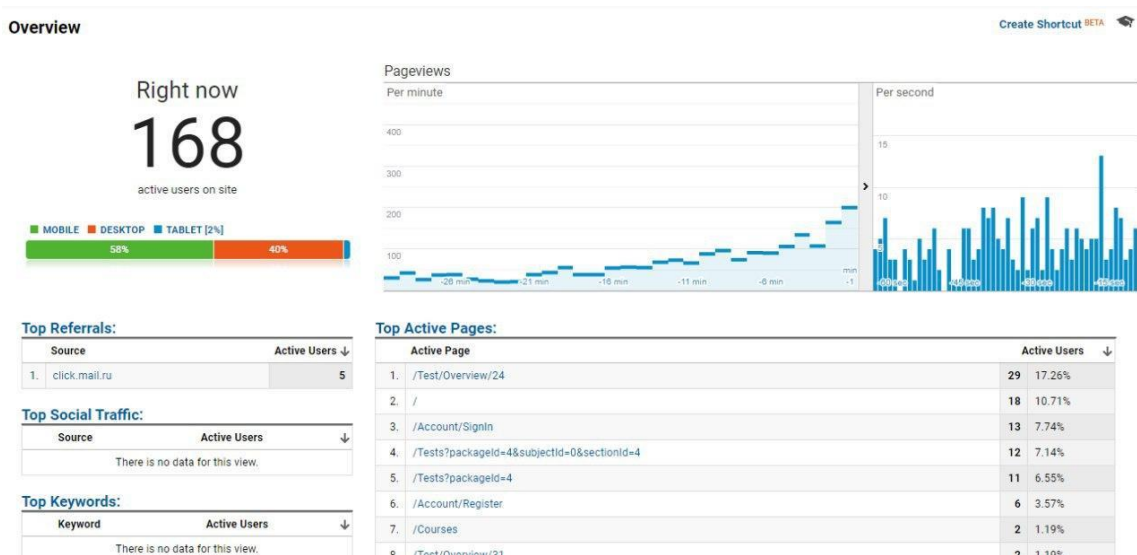Figure 8 shows an example of a graph for monitoring test participants.

Figure 8 - Graph for monitoring test participants.

In the "Courses" section, a pupil can purchase the course needed. For example, if we take a topic of mathematical literacy, all topics related to the Unified National Testing will be covered. In addition, video tutorials for each topic will be uploaded. For user convenience, video tutorials are uploaded in several resolutions (360, 480, 720hd, 1080p). Figure 9 shows a window with training courses.
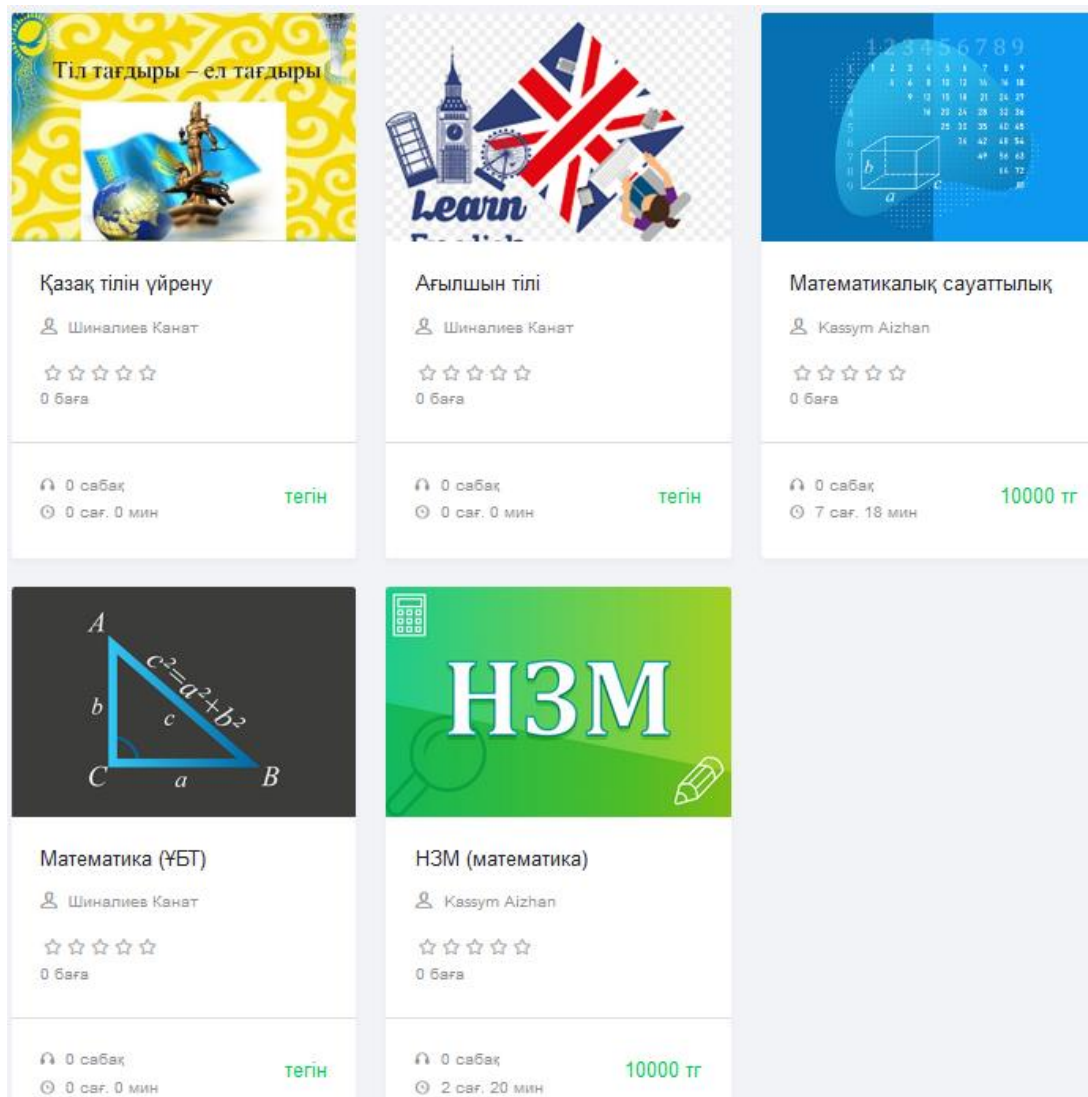

Figure 9 – Training courses

The forms of content used on the learning website:

-Text content – the main one (tests, reports, information and video for each topic).

- Visual content – a complement to the text. Visualization is achieved using the "Jalinga" interactive whiteboard.

Visual content simplifies the process of perceiving text content, affects user behavior and can become an additional source of traffic if search engines have a good rating. High-quality video is interesting, as it gives an opportunity to convert material and make text content more visual. Its multifaceted influence (evoking emotions, creating moods) makes it an effective marketing tool, because the participation effect occurs.

Sources of website content:

-Author's content. Original texts are highly regarded by search engines and users. Methods of preparing materials: independently; from freelancers, article markets, photo banks, etc.; order or purchase of finished works.

- Custom content. This is informational content that is created directly by users: views and comments, reports and much more. Custom publications can be additional or main content.

Content preparation for each subject is entrusted to qualified and experienced teachers. A teacher prepares materials and tests for the full course in his/her subject. Then administrators upload the finished content to the website.

Jalinga studio is a program for recording video and conducting webinars. It provides video tutorials and video lectures, video classes and conferences, and provides unique opportunities for working with presentations. Buttons, panels and other controls are highlighted in red. This is necessary to attract attention. Teachers prepare scenarios to shoot videos in their subjects. Then designers create slide shows for these scenarios. The necessary drawings and animations are made in all subjects. Programs such as Adobe Premier Pro, Adobe After Effects, Adobe Photoshop, Adobe Illustrator are used to give slides artistry and attractiveness. After developing the slides in the Jalinga app, the lecturer begins to record video.

3. Conclusion

One of the priorities of the country's long-term development is the development of education and science. Here, distance learning plays an important role. Also, the current situation with the pandemic, which swept the whole world, has shown the need for the development of distance learning and related information and communication technologies. All this suggests the need to create multimedia learning portals with high-quality content for distance learning.

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