

Results Of Using Html5 Language In Creating Web Platforms In Digital Educational Environments

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ABSTRACT

This article highlights the possibilities of creating interactive web platforms through the effective use of HTML5 technology in the digital educational environment. The article analyzes the main capabilities of HTML5, the role of platforms created through it in education, and the conveniences and advantages of HTML5 based on examples.

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Introduction

In recent years, the digital transformation of the education system in the world has been proceeding at a rapid pace. This process requires the renewal of educational technologies in content and form, the introduction of modern information and communication tools. Especially during the COVID-19 pandemic, the global introduction of distance learning has dramatically increased the role and importance of web technologies and digital platforms in organizing the educational process and remains a pressing problem today.

The digital educational environment is an interactive and individual learning environment that provides information exchange between all participants in the educational process (teacher, student, administration), transmits educational content in electronic form. In this environment, platforms created through web technologies expand students' opportunities for independent learning, increase the number of didactic tools, and simplify the educational process.[1]

Among web technologies, HTML5 holds a special place. It is the most basic and universal tool for creating web pages, allowing educational content to be presented to the user in a multifunctional, aesthetic, and interactive form. The advantages of HTML5 over previous versions are that it supports multimedia components, semantic structures, user interface elements, and allows creating educational resources in an intuitive and user-friendly form by providing the browser with independent work capabilities.

This article is aimed at studying the methodological and technological foundations of web platforms created using HTML5 in a digital educational environment, analyzing their effectiveness, and making proposals based on practical experience.[2]

Methods

In this study, comprehensive approaches were used to substantiate, analyze, and practically verify the scientific ideas put forward. The research was conducted on the basis of a number of methodological foundations. Based on scientific sources, international articles, and modern technological solutions, the role, possibilities, and practical application of HTML5 technology in education were studied. The existing scientific

literature on the integration of HTML5 with other web technologies (CSS3, JavaScript) was also analyzed. Interviews were conducted with specialists with experience in web platform development. Through these conversations, real educational projects created on the basis of HTML5 were analyzed, opinions were received on their technical characteristics and user experience (UX). Within the framework of the study, an experimental educational platform based on HTML5 was developed. The platform has implemented interactive user interaction, content delivery through multimedia tools, testing, and evaluation functions. Observations were conducted with users using the experimental platform, and based on their experience, the advantages and disadvantages of the platform were identified. The functionality effect was assessed based on user statistics (number of visits, lesson time, test results).[3]

The platform, created on the basis of HTML5, was compared with other technologies (for example, systems based on Adobe Flash or CMS). As a result, the simplicity, universal functionality, and interplatform compatibility of HTML5 were analyzed.

These methodological approaches made it possible to deeply analyze the effectiveness of digital educational platforms created using HTML5 technology and determine the directions for their further development.[4]

Results

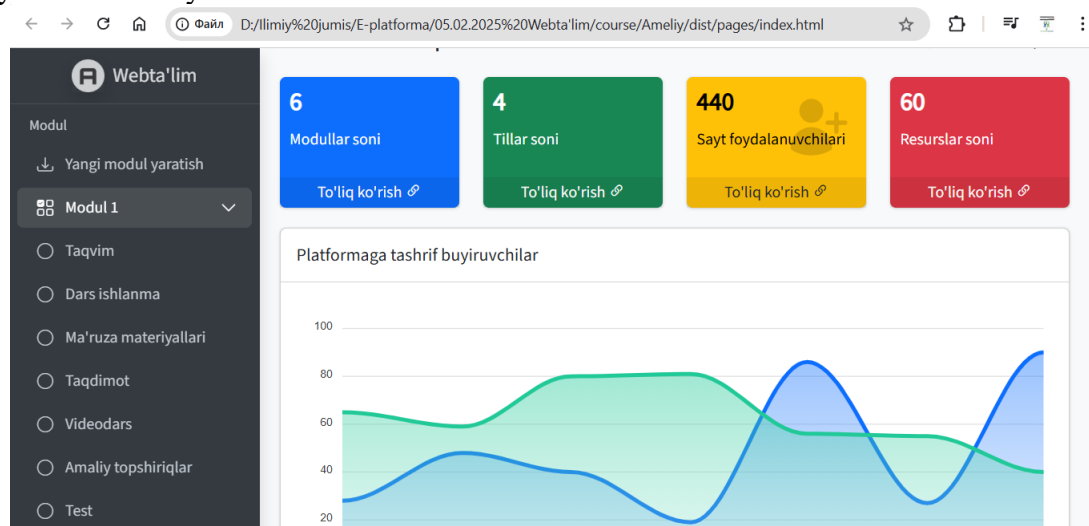
Within the framework of the study, a deep analysis of the role and capabilities of web technologies, in particular the HTML5 language, in the digital educational environment was carried out, and several important practical results were achieved. For example:

1. *The educational advantages of HTML5 technology have been identified.*

The possibilities of semantically and structurally clear organization of educational content using the HTML5 language, the use of multimedia tools directly through the browser, and active communication with the user using interactive elements were practically tested. These features distinguish HTML5 as one of the main technologies in the creation of educational platforms.[4]

2. *A web-education platform has been developed.*

During the study, a "Web Education Platform for Teaching Website Creation" was developed. This platform is built on the basis of modern HTML5 technologies and provides users with a high level of interactivity and flexibility.



Platform homepage

The platform is based on the concept of modular education, and each topic is structured in the form of a separate module. This module includes:

Lecture texts - cover the theoretical foundations of the topic;

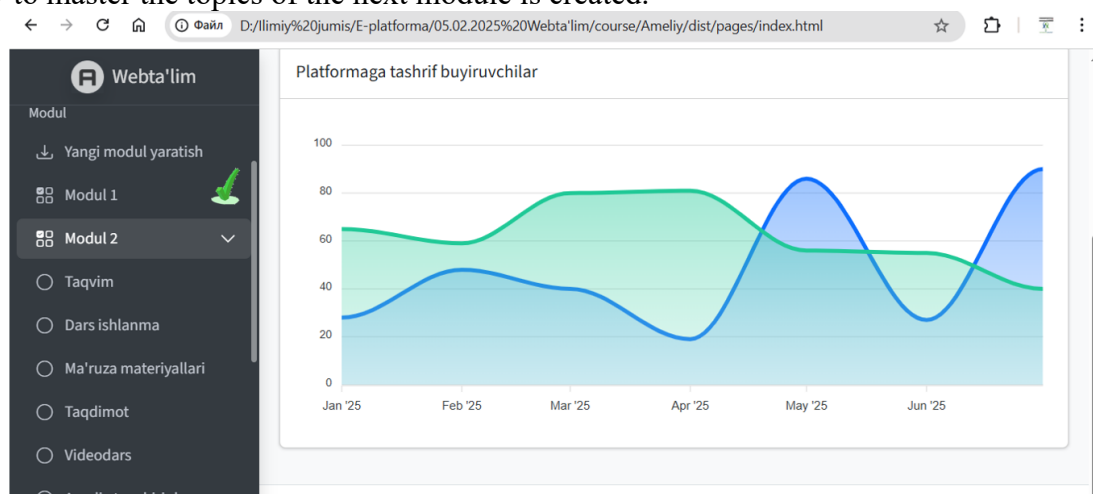
Presentation materials - visually demonstrate the main concepts;

Video lessons - help students understand complex processes in real time;

Practical tasks - allow for the consolidation of acquired knowledge;

Interactive tests serve to automatically assess the level of knowledge.

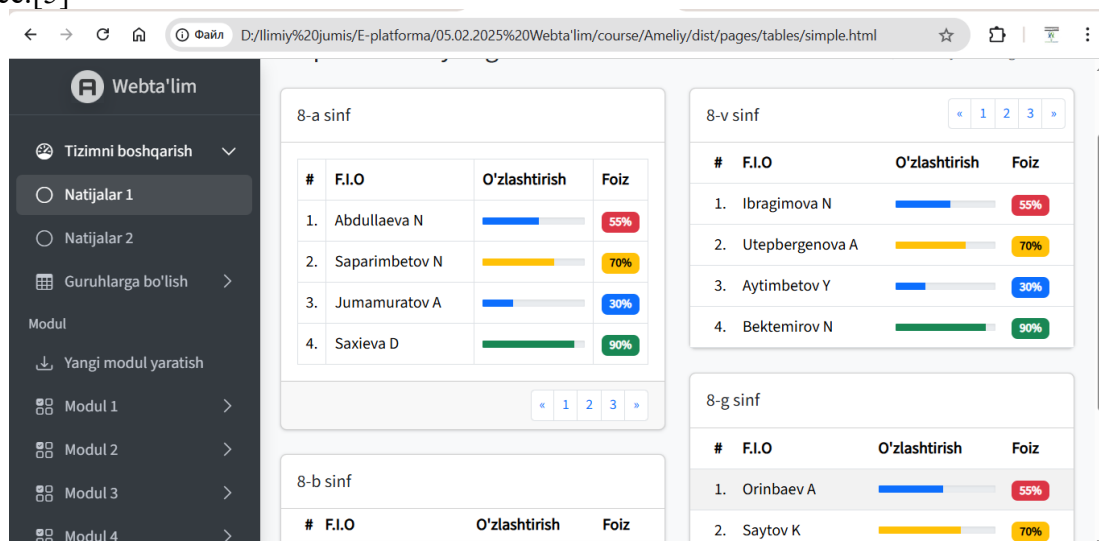
When a student masters the sections of each module, the next module opens automatically, and the opportunity to master the topics of the next module is created.



Module section

The user who completes each module is automatically issued an electronic certificate by the platform. This system creates the opportunity to motivate students, document their knowledge, and apply it in subsequent stages.

At the same time, a personalized learning environment was provided on the platform. The platform automatically forms a personalized learning environment based on the speed of user assimilation, activity statistics, and areas of interest. Thanks to this, the student has the opportunity to move at their own individual reading pace.[5]



Person-centered education department

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Results of experimental analysis.

The platform was implemented experimentally with the participation of a group of students and teachers. The effectiveness of the platform was positively assessed based on user feedback and statistical indicators recorded in the system (module completion time, test results, user activity).

These results showed that HTML5 technology has high effectiveness in creating modern, flexible, and user-oriented platforms in the digital educational environment. Also, the technical and pedagogical solutions of the platform allow it to be implemented on a large scale.

Summary and conclusion

HTML5 technology plays an important role in the formation of a modern digital educational environment. Web platforms created on the basis of this technology not only simplify the learning process, but also increase the effectiveness of education through interactivity, flexibility, and ease of use. Through the HTML5 language, it is possible to develop user-friendly interfaces, multimedia elements, interactive tests, and visual textbooks, which, in turn, significantly improve the quality of digital educational resources.[6]

According to the research results, the use of HTML5 provides the following advantages:

- The ability to create the same functional web applications on different devices (responsive design);
- Support audio, video, and graphic content without third-party plug-ins;
- Presentation of educational materials in an interactive form;
- Ensuring speed and simplicity on platforms running through the browser.

The above conclusions show that the effective use of HTML5 technology enriches the digital educational environment, improves the quality of the educational process, and allows the creation of digital platforms that meet the needs of modern students.[7] Therefore, one of the urgent tasks today is to consider HTML5 as a necessary tool for teachers, programmers, and specialists working in the field of education, and to expand its practical use.

References

1. Kenesbayev, A. (2025). THE IMPACT OF DIGITAL EDUCATIONAL PLATFORMS ON THE QUALITY OF EDUCATION. Multidisciplinary Journal of Science and Technology, 5(1), 541-545.
2. Kh, A. M. Advantages of using e-learning resources in preschool education. International journal for Innovative Engineering and Management Research, 9, 5-9.
3. Allambergenova M.Kh. Didactic possibilities of teaching information technologies through electronic educational resources with a focus on professional activity. // Science and Society. - Tashkent, 2021. No3. 98-100 P.
4. Yelibayevich, B. J. (2023). Innovative Methods of Teaching Informatics in Schools.
5. Атаджанов, Х., Кунназаров, А., & Балтабаев, Ж. (2023). WEB-ДАСТУРЛАШНИ МУСТАҚИЛ ТАЪЛИМ ОРҚАЛИ ТАШКИЛ ҚИЛИШНИНГ ИНТЕРАКТИВ ТИЗИМЛАРИДАН ФОЙДАЛАНИШ. QUALITY OF TEACHER EDUCATION UNDER MODERN CHALLENGES, 1(1), 1135-1138.
6. Khaytbayevich, A. M. (2025). USING A PRACTICE-ORIENTED APPROACH IN TEACHING NETWORK TECHNOLOGIES. Multidisciplinary Journal of Science and Technology, 5(3), 660-662.
7. Ilyasova Z. K. bo'lajak boshlang'ich sinf informatika o'qituvchilarini kasbiy tayyorlashning muhim xususiyatlar // Innovations in Technology and Science Education. – 2023. – T. 2. – №. 15. – С. 99-105.