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DEVELOPMENT OF THE EDUARENA PLATFORM AND ITS APPLICATION IN TEACHING THE "ELECTROMAGNETIC INDUCTION" CHAPTER

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Abstract

This article briefly and in detail describes the experimental work and results obtained from the creation of a digital educational platform called Eduarena and its effective use in practical exercises on the topics of the chapter "Electromagnetic Induction" of the physics course of higher educational institutions. In addition, the necessary recommendations and conclusions are given on the use of the Eduarena platform in classroom exercises.

Keywords

Digital platform, EduArena, physics simulators, quiz tests, statistics, analytical report.

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In recent years, digital transformation processes have begun to be widely implemented in the field of education worldwide. In the context of information globalization and digitally oriented education, the innovative readiness of teachers is required to align with the cognitive abilities and intellectual potential of talented students.

In higher education, the use of modern information technologies in teaching the chapter "Electromagnetic Induction" helps students understand the subject more deeply and makes the learning process more engaging and effective. These technologies are especially useful in explaining complex physical theories in a simple and interactive way, as well as in developing students' practical skills.

LITERATURE REVIEW AND DISCUSSION

Organizing lessons through modern information technologies makes it possible to assess students' knowledge in real time. Through tests, online assignments, and automated assessment systems, it becomes possible to quickly determine students' knowledge levels and identify their difficulties. This not only saves time but also helps in identifying students' individual needs.

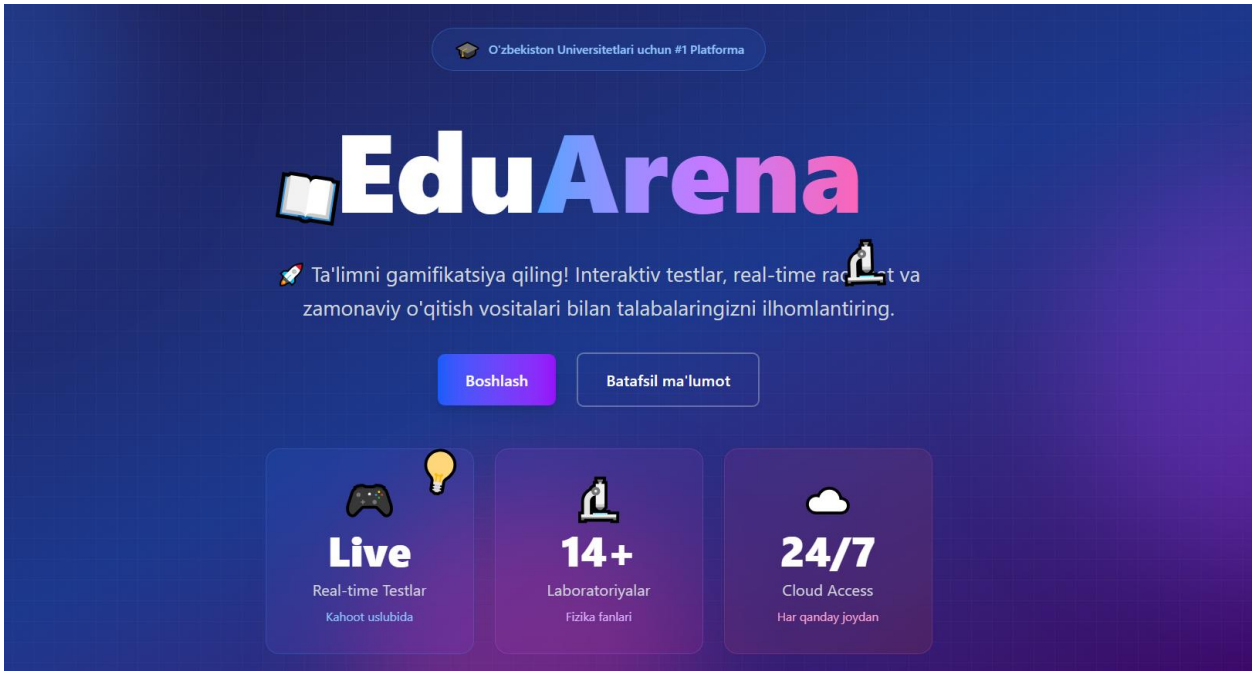
The role of pedagogical software tools in higher education:

- Creates an interactive learning environment;
- Ensures flexibility;
- Develops professional competencies;
- Automates assessment;
- Forms an innovative approach.

The development of feedback systems allows teachers to provide individual recommendations, as students' results are automatically recorded [1].

EduArena is a modern digital learning platform designed for university teachers and students, aimed at automating, enhancing interactivity, and simplifying the educational process.

The platform called EduArena, developed by the teacher, integrates many modern educational technologies into one system. It includes tests related to topics in the “Electromagnetic Induction” chapter, which can be solved individually, in groups, and through real-time interactive games.



Through the platform, it is possible to develop lecture materials for lecture sessions, game-based tests for seminar topics, and virtual laboratories for laboratory classes [2].

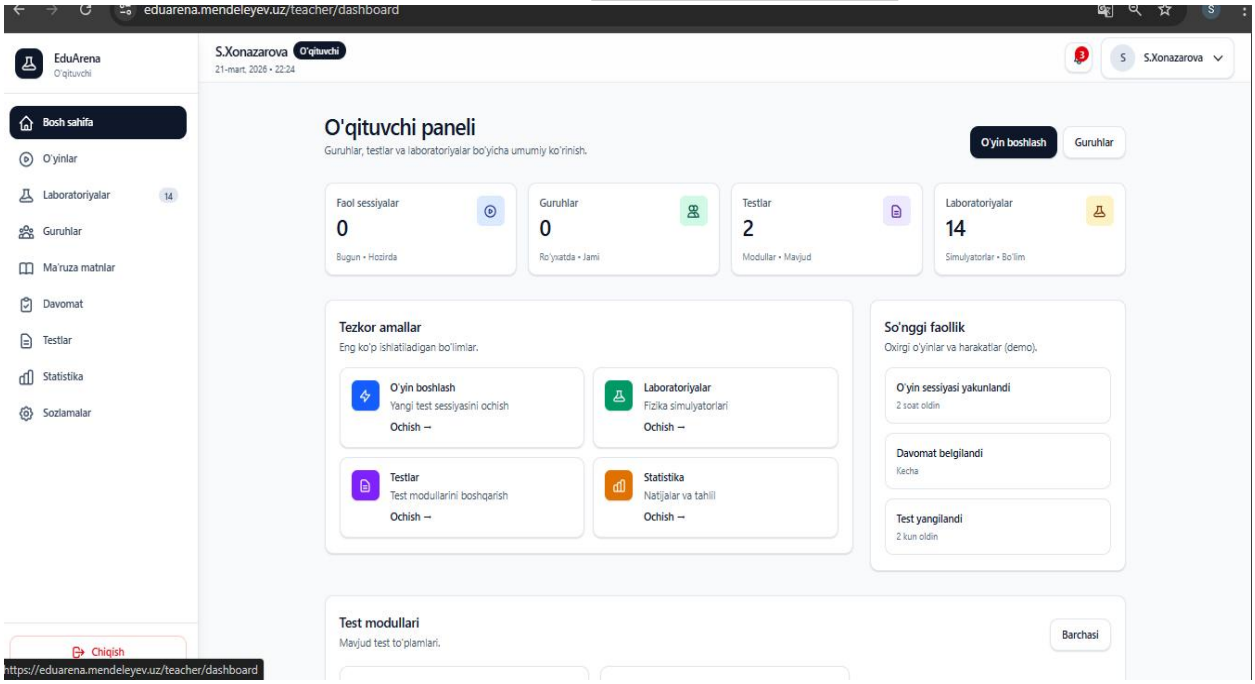
Main Functions

The main functions of the EduArena platform include:Test system (classical tests), Kahoot-style real-time quizzes, Attendance system, Lesson and lecture management, Laboratory simulators, Results and statistical analysis, Authentication via Telegram

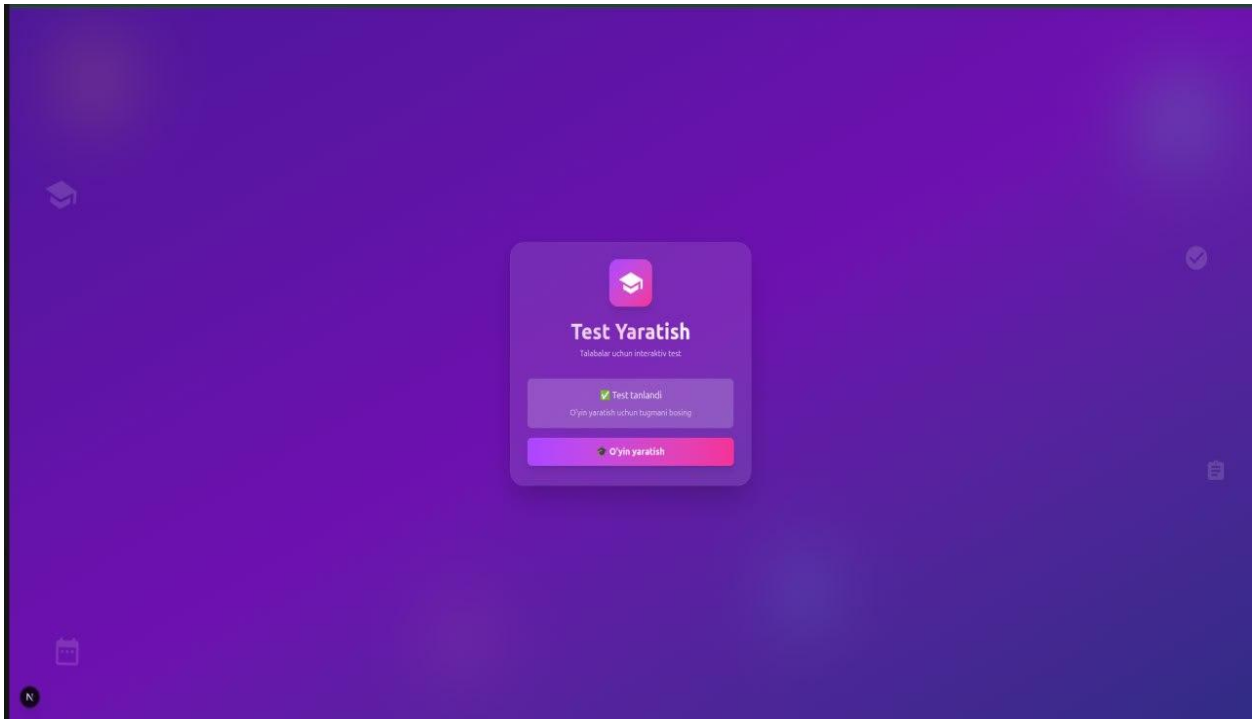
EduArena does not use a traditional login/password system. Authentication works as follows:

- The user registers through a Telegram bot
- A one-time verification code (OTP) is sent
- The user logs into the system using this code
- There is no need to store a login or password

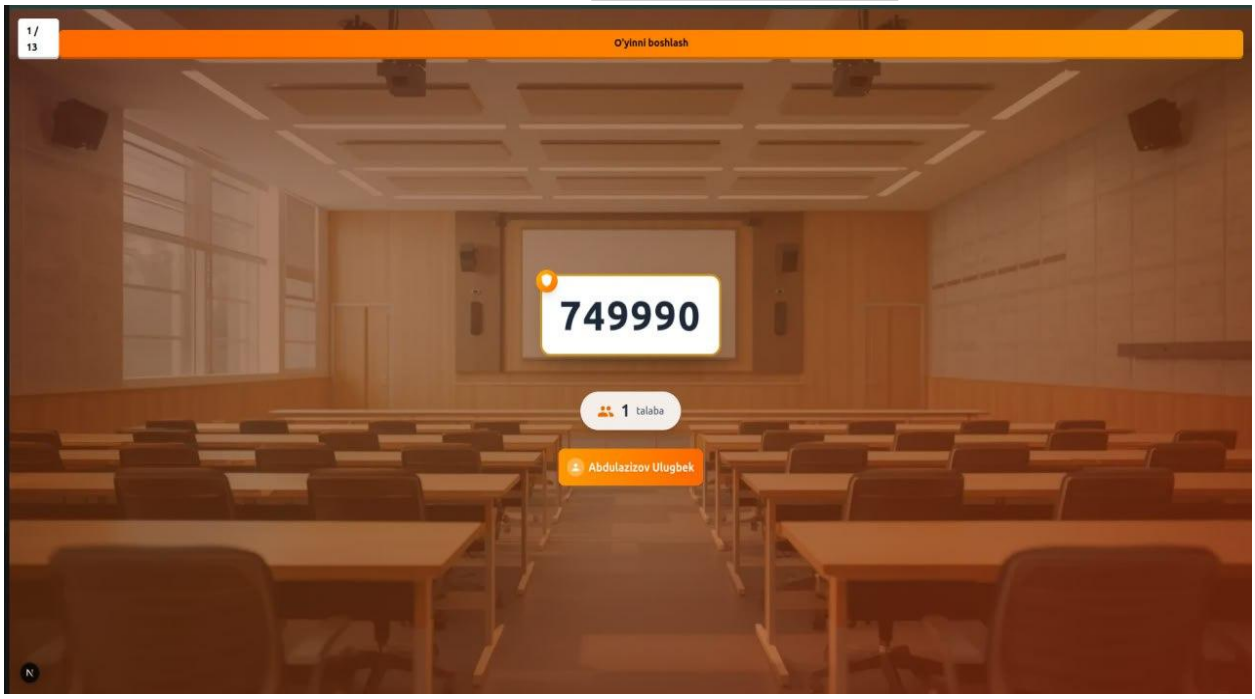
The teacher creates a game-based test, and students can join it. The main screen displays the following:



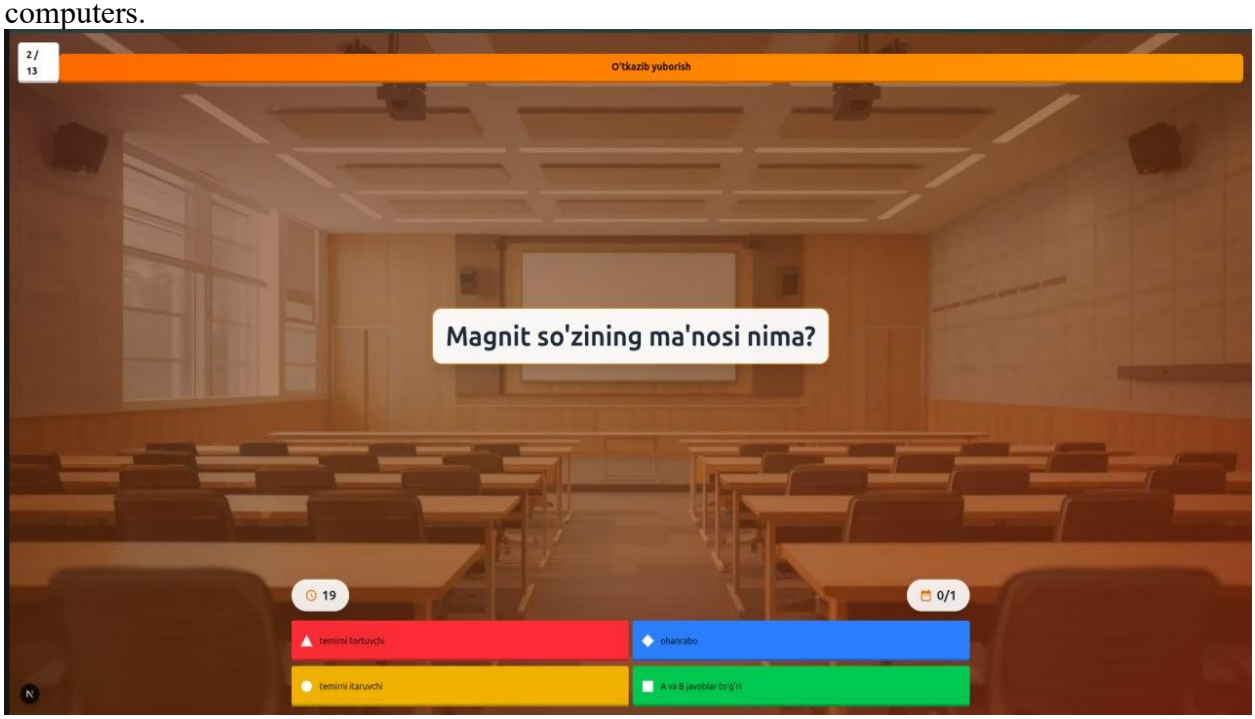
Students can participate in the test using the provided PIN code. This interface is displayed on the student's mobile phone or personal computer. Students join the EduArena platform via Telegram using special codes provided to them. By completing the available tests, students assess their acquired knowledge, evaluate themselves, and are automatically graded.



The platform is available at https://eduarena.mendeleyev.uz, and users can register and log in through the @eduarena_robot Telegram bot.

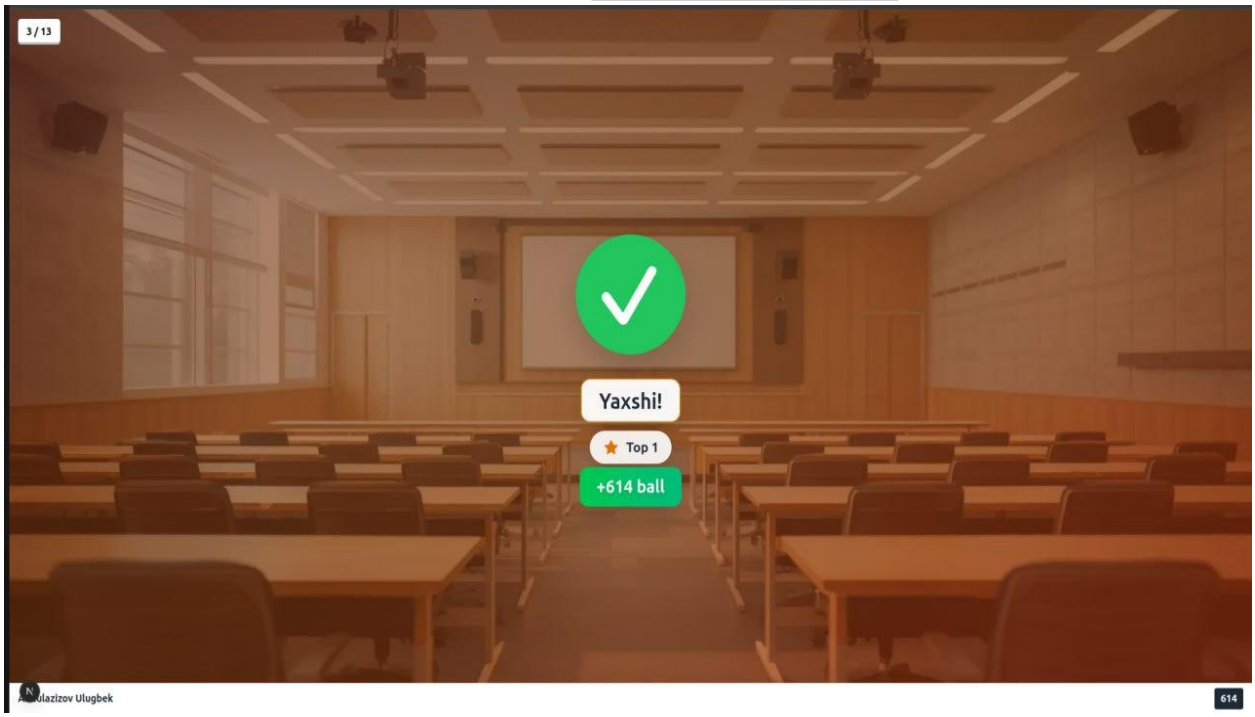


The question options are displayed on both the teacher's and the students' mobile phones or
computers.

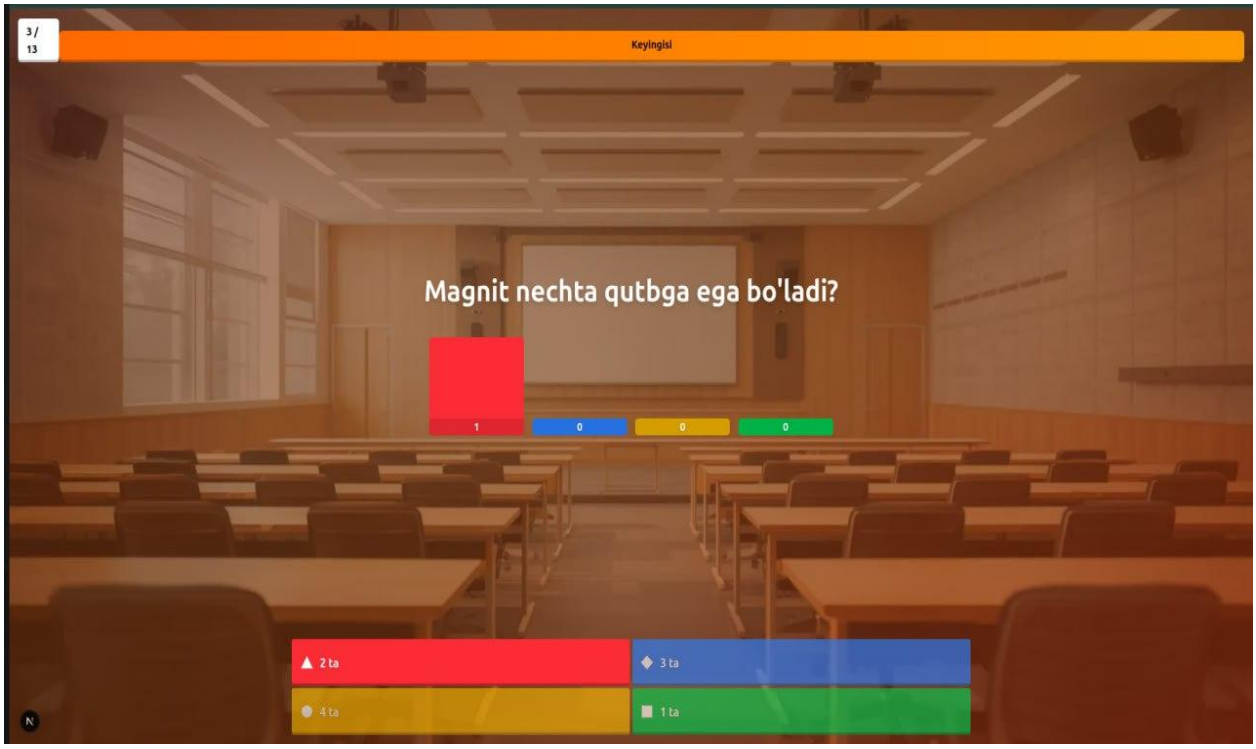


Students select their answers, and the system automatically assigns scores based on both speed and accuracy, after which the results are displayed. This process continues in the same manner.

The platform provides teachers with the ability to conduct tests, track attendance, and analyze student performance, while for students it offers opportunities to acquire knowledge, participate in tests, and use laboratory simulators.



The teacher can use the following functions: Managing subjects and groups; Viewing and editing the student list; Tracking attendance; Creating tests (both standard and real-time); Managing live (real-time) tests; Viewing test results and statistics.



After the test is completed, students are ranked based on the points they have earned. A student can receive a maximum score of 100 points, and it is clearly displayed on the screen

whether each answer is correct or incorrect. By implementing such tests in classroom sessions, not only academic performance but also attendance during the lesson can be monitored.

Conclusion:

The main objectives of the EduArena project are as follows: Full digitalization of the university educational process; Increasing interactivity between teachers and students; Automating testing, attendance, and assessment processes; Conducting real-time tests (in a Kahoot-style format); Simplifying system access as much as possible. The following opportunities are available for students:Logging into the system and participating in tests via a Telegram bot; Taking part in live tests in real time; Accessing lecture and lesson materials; Using laboratory simulators; Viewing their test results and grades. One of the key features of the EduArena platform is the live testing system:The teacher launches the test in live mode; Students join using a special test code; Questions are displayed in real time; Answers are submitted instantly; Results are calculated automatically; Rankings and statistics are generated.

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