ISSN: 2181-4171

Engineering Problems and Innovations

Vol. 03 Iss. 01 | | Feb. 27th, 2025

Vol - 03 | | Iss. – 01
Том - 03 | | Вып. - 01

Проблемы инженерии и Инновации

Muhandislik muammolari va innovatsiyalar



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Журнал зарегистрирован 28 декабря 2022 года Агентством информации и массовых коммуникаций при Администрации Президента Республики Узбекистан

Сертификат № 055940
ISSN 2181-4171

Языки издания: Русский, английский, узбекский

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The journal has been registered on December 28, 2022 by the Agency for Information and Mass Communications under the Administration of the President of the Republic of Uzbekistan

Certificate No. 055940
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Educational technologies that change the world

JURAVLOVA VALENTINA VIKTOROVNA

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Received: 20 Dec. 2024
Accepted: 15 Jan. 2025
Published: 27 Jan. 2025

Abstract. *This article analyzes modern educational technologies that are effective in the study of educational programs, examines the learning process, and reveals the mechanisms of educational technologies such as MOOCs, adaptive learning, big data, gamification, and blended hybrid learning.*

Key words. *innovative education, hybrid, adaptive learning, game mechanics, instant feedback, blended learning, big data technology, Foursquare.*

Introduction

In the near future, everything familiar to us in education (lectures, notebooks) will become relics of the past. There are educational technologies that will radically transform the educational process. Open online courses make quality education so accessible that it was previously unimaginable – people can listen to world-class lecturers without leaving their homes and even obtain diplomas for these courses.

Methods

First, universities began to upload their lectures, particularly MOOCs, which over the years created their own library of lectures, gradually adding more functions. Two years ago, educational technologies emerged that allowed the creation of open, free courses with test assignments that could confirm successful completion. The next technology was called big data.

When you set search parameters online, the entire world adapts to your preferences. This is not yet the case in education. Previously, we obtained data by interviewing a thousand people or conducting experiments at a hundred universities or evaluating the effectiveness of teaching several times a year. Now we can measure anything with unlimited numbers of students and see what works and what doesn't. We can identify which methods and pedagogical techniques yield results and distinguish them from the unpredictable influence of a teacher's charisma and personal qualities. Big data allows for a more precise educational process and enables the next technology – adaptive learning.

Results

Adaptive learning is the ability for a teacher to receive recommendations based on big data regarding the content, process, methods, and speed of learning, allowing the creation of an individualized learning trajectory. All commercial online services (such as ticket sales websites) adapt to you infinitely because that's how they make money. Now, this is possible in education as well. For example, "learn by playing" is another powerful new educational technology – gamification. Everyone knows that learning through play is the best way to learn, as children do. This has been confirmed by research over time. The goal of gamification is to extract game mechanics, structure, and templates and apply them outside the game context – for example, turning dishwashing into a game. In Europe, people started talking about this after the rise of Foursquare (a social network with geolocation functions) that gamified its use and encouraged turning everything into a game.

Another emerging technique is "blended (hybrid) learning". It involves learning through a computer and interacting with a live teacher.

Parents, even unknowingly, are becoming more actively involved in the educational process by receiving notifications about school life via mobile phones (this already exists). Educational applications are emerging that create reports on

student performance and provide methodological recommendations on how parents can help their children with specific topics – what to visit, watch, read, say, and how to engage them.

Instant feedback, which was previously unavailable in training, is now possible. Previously, you would submit your work and receive results in a week, by which time you had already finished the next topic. If you scored poorly, no one revisited the old topic, leaving unresolved questions. Now, many things are automated online, and you receive instant feedback, immediately knowing your mistakes and correcting them right away.

Discussion

The importance of interdisciplinary connections is growing in science, and today it is possible to take courses at the intersection of subjects – combining biology, chemistry, and programming, creating your own courses that were previously impossible. The ability to individually assemble courses from different parts, gamify, adapt, collect data, and provide feedback allows for truly personalized learning trajectories, giving children control over their own learning.

Thus, the classroom system is entirely disrupted because traditional lessons no longer exist. Within the next five years, innovative educational technologies will eliminate the traditional classroom system, allowing everyone to learn at their own pace, according to their individual educational plans, and spend as much time as needed to complete programs. This means strong students can move ahead while weaker ones receive more attention and support thanks to quick feedback and the teacher's personalized time for them. Testing and final exams are being automated. The usual grading system is changing – computers can already automatically check not only tests but also essays, recognize images, assess participation in group work, and gather data on the successful completion of each example.

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E-mail:
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Наш сайт:
https://epai.uz/

Учредителем научно-технического журнала
«Engineering problems and innovations» является ООО “Fer-Teach”.
Журнал издается с 2023 года, зарегистрирован 28 декабря 2022 года Агентством информации и массовых коммуникаций при Администрации Президента Республики Узбекистан (Сертификат № 055940).

ISSN: 2181-4171.

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The founder of the scientific and technical journal
“Engineering problems and innovations” is Fer-Teach LLC.
The journal has been published since 2023, registered on December 28, 2022 by the Agency for Information and Mass Communications under the Administration of the President of the Republic of Uzbekistan
(Certificate No. 055940).

ISSN: 2181-4171.

"Engineering Problems and Innovations" is a specialized journal in the field of engineering and covers all the main areas of research and development in various fields of technical sciences: physics, mathematics, information technology. The journal also publishes scientific articles on linguistics, teaching methods and the history of the development of technical sciences.

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