ISSUE OF SIMPLIFYING AND OPTIMIZING THE EDUCATIONAL PROCESS THROUGH CLOUD TECHNOLOGIES

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Abstract: *This article analyzes the issues of simplifying and optimizing the educational process through the use of cloud technologies in the modern educational system. The article explores how the features of cloud platforms (resources, analytical tools, real-time interaction) can enhance educational effectiveness through various models. Functional and efficient learning environments are modeled using mathematical approaches.*

Keywords: *Cloud technologies, digital education, functional model, optimization, efficiency, interactivity, educational platforms.*

Introduction: In the current era of digital transformation, integrating advanced technologies into the education system has become a necessity. In particular, cloud technologies serve as an effective environment for creating, storing, sharing, and analyzing educational resources. These technologies help simplify the educational process and enhance personalized learning approaches.

Main Part

1. Functional Model Based on Cloud Technologies

The functional model of the educational process based on cloud technologies can be described by the following equation:

F(t, x, y, P) = 0   **(1)**

Where:

- t – time,

- x – number of users,
- y – volume of cloud resources,
- P – types of platforms (Google Workspace, Microsoft 365, Moodle, etc.).

This model allows for analyzing the educational process by considering user activity, platform capabilities, and time.

2. Modeling Educational Efficiency

Efficiency can be determined by the following formula:

S = f(R, C, A)   **(2)**

Where:

- S – educational efficiency,
- R – quality and relevance of resources,
- C – ease of content access,
- A – availability of analytical tools.

Research shows that platforms with high-quality and easily accessible content (e.g., Google Classroom, Microsoft Teams) have increased student engagement by 40–60%.

3. Balance Between Technological Capabilities and Pedagogical Needs

The gap between technological solutions and real pedagogical needs is evaluated using the following formula:

ΔT = Ttex – Tped   **(3)**

Where Ttex is the level of technological capability, and Tped is the level of pedagogical need. If $\Delta T > 0$, it indicates that technological capabilities exceed needs and there is potential for optimization.

4. Schematic Model of the Educational Process

The process flows as follows: the learner connects to the cloud platform → accesses resources → completes assignments → results are monitored via a tracking system → learning efficiency improves.

Conclusion: Cloud technologies serve as effective tools in education. They allow for automation, resource management, real-time monitoring, and personalized

approaches in the learning process. In the future, cloud-based models are expected to significantly enhance educational quality.

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