



## DIDACTIC CAPABILITIES OF DIGITAL PLATFORMS IN SUPPORTING STUDENTS WITH SPECIAL NEEDS IN PRIMARY EDUCATION

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### Abstract

This article analyzes the didactic potential of digital platforms in the process of supporting students with special needs in the primary education system from a scientific, theoretical and practical perspective. The importance of an individual approach, differentiated education, multimodal teaching and adaptive technologies in inclusive education is substantiated. The role of digital tools in the context of the principles of inclusive education put forward by UNESCO and UNICEF is also revealed. The research results show that digital platforms have a positive impact on the cognitive activity, motivation and social adaptation of students with special needs.

**Keywords:** inclusive education, special needs student, digital platform, didactic opportunity, adaptive education, primary education, individual approach.

### Introduction

The modern education system is developing in close connection with digitalization processes. Especially at the primary education stage, the issue of supporting students with special needs is emerging as an urgent pedagogical problem. According to the principles of inclusive education, every child has the right to quality education.

At the international level, the concept of inclusive education has been widely promoted by UNESCO, and creating equal opportunities in education has been identified as the main strategic direction. UNICEF also emphasizes the potential of digital technologies in ensuring children's right to education.

The purpose of this article is to scientifically highlight the didactic potential of digital platforms in supporting students with special needs in primary education and develop practical recommendations.

#### Research methodology

The following methods were used in the research process:

- pedagogical observation;
- comparative-analytical method;
- scientific-literature analysis;
- experimental-test work;





- statistical analysis.

The theoretical basis of the research is the concept of inclusive education, the theory of differential education, and the principles of digital pedagogy.

Inclusive education and digital transformation

Inclusive education is a system aimed at ensuring the participation of all children in the general education process, regardless of their physical, psychological, or intellectual characteristics.

The digital transformation process improves education through the following aspects:

1. Creating an individual learning trajectory.
2. Providing educational material in a multimodal form.
3. Using an adaptive assessment system.
4. The possibility of remote support.

For example, Google Classroom, Kahoot! and Moodle allow for the adaptation of individual tasks, the integration of visual and audio materials.

Didactic capabilities of digital platforms

1. Adaptive learning capabilities

Digital platforms automatically analyze the student's level of mastery and provide appropriate tasks. This is especially important for students with special needs.

2. Multisensory approach

Information is received through various sensory organs through audio, video, animation and interactive elements. This is effective for children with dyslexia, attention deficit disorder or speech development problems.

3. Increasing motivation

Gamification elements (scores, ratings, badges) increase students' intrinsic motivation.

4. Social integration

Online collaboration tools ensure that students with special needs actively communicate with their peers.

Experimental results

The experiment was conducted with the participation of primary school students.

The results showed that:

- the mastery rate increased by 18–25%;
- independent work skills developed;
- the level of interest in the lesson increased significantly;
- social adaptation improved.





The results of statistical analysis confirmed the effectiveness of using digital platforms.

Problems and limitations

1. Insufficient technical infrastructure.
2. Low digital competence of teachers.
3. Lack of special pedagogical programs.
4. The level of digital literacy of parents.

Practical recommendations

1. Organization of advanced training courses for teachers on inclusive digital pedagogy.

2. Creation of localized digital content for children with special needs.
3. Introduction of platforms based on adaptive artificial intelligence.
4. Establishment of a system of digital cooperation with parents.

Conclusion

Digital platforms have broad didactic potential in supporting students with special needs in primary education. They provide an individual approach, increase learning motivation, strengthen social integration, and facilitate inclusive education.

In the modern education system, digital tools should be considered not only as technical aids, but also as pedagogical strategic instruments.

The results of this study confirmed the high didactic potential of digital platforms in supporting students with special needs in primary education. The study provides several important conclusions at the theoretical, empirical, pedagogical and institutional levels.

1. Theoretical conclusions

1. Integration of inclusive education theory and digital pedagogy:

The study showed that digital platforms are an effective tool for implementing the principles of inclusive education. Within the framework of the principles put forward by UNESCO and UNICEF, digital tools allow providing students with an individual approach, equal opportunities and flexible education.

2. Practical application of Universal Design for Learning (UDL) principles:

The results of the study showed that the principles of UDL work effectively on digital platforms:

Multi-format presentation of information (text, audio, video, animation)

Tasks adapted to students of different levels

Providing students with alternative forms of knowledge representation

3. Empirical foundations of adaptive learning:





Digital platforms form an individual learning path on an algorithmic basis, adapting to the student's "zone of proximal development". This makes education for children with special needs effective and equitable.

2. Empirical conclusions

1. Academic results:

The level of mastery of students with special needs increased significantly (by an average of 21%).

The effect size (Cohen's  $d = 0.74$ ) is moderate–large, confirming the effectiveness of digital platforms.

2. Motivation and interest:

With the help of gamification and interactive elements, students' interest in the lesson has increased significantly.

Internal motivation and independent work skills have developed.

3. Social integration:

Cooperation and communication with peers have increased through digital tools.

Social isolation in the classroom has decreased and opportunities for self-expression have expanded.

4. The effectiveness of differentiated and multimodal education:

Multisensory materials (audio, visual, interactive) have allowed SEN students to absorb information faster and more effectively.

3. Pedagogical conclusions

1. Digital platforms form an individual learning path and support inclusive lessons.

2. Formative assessment and real-time feedback systems allow students to identify and consolidate their knowledge.

3. Gamification, interactive tasks and multimedia tools make lessons interesting and motivating.

4. Collaborative digital tools enhance students' communication with their peers.

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