



ADAPTED EDUCATIONAL MATERIALS FOR CHILDREN WITH SPECIAL NEEDS

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Abstract. This article analyzes the theoretical and practical foundations of creating adapted educational materials for children with special needs. In inclusive education, such materials play a vital role in expanding learning opportunities for students and supporting their social integration. The article outlines methods for developing learning resources based on principles such as simplification, visualization, multimodality, and the use of digital technologies. Furthermore, it examines international experiences and the current challenges and prospects in the education system of Uzbekistan in this field. The findings suggest that the implementation of adapted learning resources is essential for ensuring equal participation of children with special needs in the educational process.

Keywords. Inclusive education, adapted educational materials, children with special needs, simplification, visualization, digital technologies, educational equity, UDL (Universal Design for Learning), differentiated instruction.

Аннотация. В данной статье анализируются теоретические и практические основы создания адаптированных учебных материалов для детей с особыми потребностями. В инклюзивном образовании такие материалы играют важную роль в расширении возможностей обучения для учащихся и способствуют их социальной интеграции. В статье изложены методы разработки учебных ресурсов на основе таких принципов, как упрощение, визуализация, мультимодальность и использование цифровых технологий. Кроме того, рассматривается международный опыт, а также текущие проблемы и перспективы системы образования Узбекистана в этой области. Результаты исследования показывают, что внедрение адаптированных учебных ресурсов необходимо для обеспечения равного участия детей с особыми потребностями в образовательном процессе.

Ключевые слова: инклюзивное образование, адаптированные учебные материалы, дети с особыми потребностями, упрощение, визуализация, цифровые технологии, образовательное равенство, UDL (Универсальный дизайн обучения), дифференцированное обучение.

Introduction

In an era when the principles of human rights, equality, and inclusiveness are being widely implemented in the field of education, creating conditions that ensure quality education for children with special needs has become a pressing issue. Inclusive education requires not only the physical adaptation of general educational institutions but also the adjustment of educational content to meet the needs of all students. In this process, preparing adapted educational materials for children with special needs plays a crucial role. Adapted educational materials are resources created taking into account students' individual capabilities, levels of development, sensory-motor, psychological, or speech limitations. This

article discusses the theoretical foundations, practical approaches, and effective methods for developing such materials, illustrated through international experiences. Additionally, attention is given to the current situation and promising directions in Uzbekistan.

Main Part

Traditional educational materials provided for children with special needs (those with visual, hearing, intellectual, physical, emotional, or social development disabilities) are often unsuitable. These children may:

- struggle to understand complex concepts;
- be unable to perceive visual or audio materials;
- have limitations in performing certain physical actions.

Therefore, it is necessary to prepare educational materials that match their individual abilities. Such materials enhance children's self-awareness, motivation to learn, and social integration. Adapted educational materials should be based on the following principles:

Simplification – using short, clear, simple phrases instead of complex texts;

Visualization – explaining concepts through images, pictograms, and colored symbols;

Multimodality – combining text, sound, movement, and visual tools;

Flexibility – offering different levels of materials to match students' stages of development;

Feedback capability – providing assessment and testing tools to determine how well the student has understood the material.

The following types of materials can be adapted for children with special needs:

Textbooks (in Braille, large print, or as audiobooks);

Workbooks (with pictograms, interactive tasks using QR codes);

Video and audio materials (with subtitles or sign language for students with hearing impairments);

Educational play tools (cubes, mosaics that facilitate kinesthetic learning);

Digital applications (special software used on iPads, tablets, or computers).

Opportunities for creating adapted materials through digital technologies are expanding.

For example:

Speech-to-text technologies help students with hearing impairments by converting speech to text;

Screen reader software allows visually impaired students to read texts;

Gamification can motivate students through game-based lessons.

In Uzbekistan's educational system, the introduction of interactive whiteboards, tablets, and multimedia platforms further enhances these opportunities. In recent years, reforms have been implemented in the field of inclusive education in Uzbekistan. However, the following challenges remain:

a lack of sufficient adapted textbooks and resources;

insufficient methodological training of teachers;

limited infrastructure for using digital resources.

Nevertheless, there are positive developments. For instance, in cities like Tashkent, Nukus, and Andijan, some general education schools are implementing pilot projects to develop materials based on differentiated teaching.



International experience. Many developed countries (USA, Canada, Finland, Japan) have special programs for developing adapted educational materials for children with special needs. For example:

Universal Design for Learning (UDL) model – aimed at creating convenient and appropriate learning environments for all students;

Bookshare – a special digital library for blind and other disabled students;

Accessible Educational Materials (AEM) – allows any learning material to be adapted to individual needs.

Applying these experiences in accordance with Uzbekistan’s context can increase the effectiveness of inclusive education.

Conclusion

Creating adapted educational materials for children with special needs is an integral part of the inclusive education system. Such materials ensure equal educational opportunities and help each child realize their full personal potential. Adapted materials not only meet students’ educational needs but also play an important role in their social integration, development of independent thinking, and life skills. In Uzbekistan, accelerating the development of such materials, providing methodological training for teachers, and widely introducing digital technologies will pave the way for modern and inclusive education. Combining international experience with local needs is of great importance in this regard.

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