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INNOVATIVE PEDAGOGICAL APPROACHES FOR STUDENTS WITH SPECIAL EDUCATIONAL NEEDS

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Abstract: This article examines the effectiveness of innovative pedagogical approaches for students with special educational needs. It provides information on measures to enhance students' creative abilities in the learning process through teaching methods developed based on modern technologies and specialized methodologies. The study explores ways to help students with special educational needs acquire knowledge more effectively and adapt better to social environments. Additionally, the article analyzes the impact of adapted curricula and ICT tools on the learning process and investigates ways to improve the effectiveness of education through specialized integrative approaches.

Keywords: innovation, inclusion, competence, multimedia, integration, technology.

INTRODUCTION

Today, the reforms being implemented in our country are based on the principle of prioritizing human interests, and significant efforts are being made to ensure that people can feel these positive changes in their daily lives. In particular, the attention paid to the education system—especially to preschool, general secondary, vocational, and higher education—deserves special recognition. The issue of providing quality education to the younger generation has been included among the key political components of our country's strategy, which is founded on the principle of "For Human Dignity." President Shavkat Mirziyoyev, explaining the concept of human dignity, emphasized: "By human dignity, we mean creating decent living conditions and modern infrastructure for every citizen, providing qualified medical services, quality education, a system of social protection, and a healthy ecological environment." In our Republic, the improvement of inclusive education has been widely reflected in many government documents, including in the speeches, lectures, and addresses of the President of the Republic of Uzbekistan, Shavkat Mirziyoyev, as well as in decrees and resolutions. In particular, a number of tasks have been defined to improve the quality of education for young people with disabilities. These include regularly (every six months) studying the demand for printed and audio books in various specialties and fields, compiling corresponding lists of literature, and establishing a system for publishing educational materials in audio format and in Braille for relevant university disciplines and specialties. In addition, the use of electronic textbooks and special software tools through modern technologies plays an important role in organizing the process of inclusive education effectively. Studying advanced foreign experiences, developing international cooperation, and integrating them into the educational

process also contribute to achieving effective results in this field. As a result of such reforms, educational opportunities for young people with disabilities are expanding, creating favorable conditions for their active participation in society. In the future, further improvement of these activities and the introduction of innovative approaches will remain among the key priorities.

LITERATURE REVIEW AND METHODOLOGY

Literature review.

Ensuring the social integration and educational inclusion of learners with special educational needs has emerged as a pressing concern in contemporary pedagogical research. A body of recent studies has examined how to increase the participation and learning outcomes of these learners within mainstream educational settings. The following synthesis highlights the principal findings and contributions of key authors cited in this study. A. I. Zayniddinova analyses the role of digital technologies and innovative pedagogical methods in implementing inclusive education. The author emphasizes the foundational principles of inclusive practice — equality of opportunity, an individualized approach, and the adaptation of methodologies and technologies to meet diverse learner needs — arguing that these principles must guide the design and application of technological solutions in mainstream classrooms. [3 Sh. H. Hamroqulova focuses on developing the creative abilities of learners with special educational needs. Her work examines the importance of specialized pedagogical methods, innovative approaches, and technological solutions that take individual characteristics into account. Hamroqulova also explores how interactive learning environments, adapted teaching practices, and rehabilitative tools contribute to fostering creative thinking and practical skills, and she offers recommendations grounded in advanced foreign experience and proven methods. [4] D. T. Usmonova investigates the criteria and levels for shaping inclusive competence and explores the potential of a contextual learning technology–based model for forming inclusive competencies in pre-service teacher preparation. The proposed model comprises a sequence of interrelated, information-oriented, quasi-professional stages. Usmonova's findings identify the factors and conditions that determine the ability of teachers to perform their professional functions effectively within inclusive education settings. [5] M. H. Asranbayeva examines the concept of inclusive education, its principal tasks and guiding principles, and ways to raise the vocational training levels of learners with disabilities within a system of continuous education. Her work outlines strategic directions for enhancing professional readiness and upward mobility for students with special needs. [6] F. E. Qodirov addresses differentiated approaches in the educational process and their significance for meeting individual learner profiles. Qodirov demonstrates how differentiated instructional strategies can be designed to align with each student's knowledge level, abilities, and interests, and analyses their benefits for adapting learning materials, expanding opportunities for independent study, and ultimately improving educational quality through individualization. [7] Collectively, these studies contribute valuable theoretical and practical insights into pedagogical design, technological integration, teacher preparation, and instructional differentiation for inclusive education. Nonetheless, there remain areas requiring further empirical validation—particularly the large-scale testing of proposed models in diverse institutional contexts, systematic evaluations of the long-term effectiveness of adapted materials (audio, Braille, digital), and research into scalable mechanisms for integrating modern assistive technologies into everyday classroom practice. These gaps motivate the methodological choices adopted in the present research.

Methodology.

To address the research aims and to build on the literature summarized above, this study will employ a mixed-methods design combining systematic literature analysis, document analysis, model development, and empirical validation. The principal methodological components are as follows:

1. **Systematic literature and policy review.** A structured review of national and international literature, including government documents, presidential addresses, decrees, and peer-reviewed studies, will be conducted to map existing approaches, principles, and policy measures related to inclusive education and assistive educational resources.
2. **Document and content analysis.** Key official documents and educational materials (curricula, guidelines, lists of adapted publications, and descriptions of electronic resources) will be examined to identify current practices, stated objectives, and the extent of implementation concerning audio and Braille resources, electronic textbooks, and specialized software tools.
3. **Model development.** Building on the theoretical frameworks reviewed (notably the contextual, information-oriented, quasi-professional model proposed by Usmonova), the study will elaborate an operational model for forming inclusive competences in pre-service teacher training and for organizing adapted learning materials within higher education programs.
4. **Empirical validation.** The proposed model and selected interventions will be pilot tested through qualitative and quantitative means. Data collection methods will include semi-structured interviews and focus groups with educators and specialists, surveys of teachers and students to assess perceived effectiveness and accessibility, and classroom observations during pilot implementations. Thematic analysis will be used for qualitative data, while descriptive and, where appropriate, inferential statistics will be applied to quantitative data.
5. **Synthesis and recommendations.** Findings from the empirical phase will be triangulated with the literature and document analyses to refine the model, identify enabling factors and constraints, and formulate evidence-based recommendations for policy and practice (including strategies for regular needs assessment and the systematic publication of audio and Braille resources).

This mixed-methods approach is intended to ensure both theoretical rigour and practical relevance: it draws on the strengths of prior research while generating contextually grounded evidence to inform the enhancement of inclusive education practices and resource provision.

RESULTS AND DISCUSSION

Innovative pedagogical approaches in teaching students with special educational needs have gained significant importance in recent years. Modern teaching methods and didactic tools create a more convenient and effective learning environment for learners who require special educational support. In this regard, several innovative approaches are of particular relevance, among which differentiated and adaptive instruction play a central role.

Within these approaches, students' individual thinking styles and learning capacities are taken into consideration. Educational programs and teaching methods are developed in accordance with each learner's abilities and interests. Differentiated instruction can be manifested in several forms, such as:

- Adjusting the complexity level of learning materials;

- Combining individual and group learning methods;
- Teaching based on personalized learning plans.

Research conducted in this area demonstrates that the use of differentiated approaches in teaching students with special educational needs significantly increases the efficiency of the learning process. Such methods help to design an educational environment that corresponds to the students' social and cognitive characteristics, playing a crucial role in the development of their skills and competencies.

The results of this study show that when adapted learning materials and diverse teaching methods are employed, students demonstrate deeper interest in the subject matter and increased activity in independent learning. These outcomes stem from the fact that such tools help students overcome certain learning difficulties, foster a positive attitude toward education, and enhance motivation and engagement.

This type of education provides opportunities for learners to strengthen their knowledge through tasks tailored to their abilities, thereby increasing their enthusiasm for learning and life in general. During the research process, it was revealed that students who studied through differentiated approaches learned more efficiently and developed stronger independent thinking skills.

Specifically, the use of adapted instructional methods for students with special educational needs has improved their learning outcomes. Teaching with the help of specialized technologies—such as audiobooks, interactive manuals, and touch-screen devices—has contributed to a higher level of educational effectiveness.

- **Audiobooks** have proven to be an effective resource for visually impaired learners. These materials, which are professionally recorded readings of scientific and educational sources, enable students to make productive use of academic literature in audio format.
- **Touch-screen devices** are among the most widespread innovations in today's education sector. They not only facilitate the learning process for students with special needs but also enhance the overall learning efficiency of all students.
- **Interactive learning** activities such as quizzes and problem-solving exercises have also shown high pedagogical value. These interactive tools engage students actively and can be created using digital platforms such as Kahoot**!**, which allows teachers to design or adapt quizzes and surveys from ready-made templates.

The findings confirm that incorporating digital and adaptive technologies into inclusive education significantly improves student motivation, participation, and overall learning outcomes. Moreover, these innovations contribute to building an accessible, engaging, and inclusive educational environment aligned with modern pedagogical principles.

RESULTS AND DISCUSSION (continued)

Interactive platforms and digital tools Among the innovative digital resources used in inclusive education, platforms such as Quizizz and Quizlet Live have proven particularly effective in creating engaging and interactive learning experiences.

Quizizz offers a wide range of ready-made quizzes on various topics while also allowing teachers to create their own customized quizzes. This flexibility helps instructors tailor assessment and review activities to the specific needs and learning levels of their students.

Quizlet Live is a quiz-based interactive game that enables students to work in teams and compete with one another. It serves as an excellent means of promoting collaboration, communication, and a sense of community among learners.

Interactive learning materials significantly enhance the quality of education for students with special educational needs. Since it is often difficult for a teacher to devote equal attention to every student during class, interactive resources provide a practical solution for maintaining continuous engagement and monitoring each learner's individual progress. Through these digital aids, it becomes much easier to involve students actively in the lesson.

Interactive tools that include video clips, educational games, animations, and interactive simulations help students better grasp and retain complex concepts. Such resources offer multisensory learning experiences and are especially valuable for learners who require differentiated instruction.

Multimedia learning environments. Multimedia platforms integrate multiple types of information — text, images, audio, video, animation, and other visual elements — making them an essential component in teaching students with special educational needs. The advantages of using multimedia in interactive learning environments are numerous:

- Visual engagement: The presence of images, videos, and animations captures students' attention and makes the learning process more dynamic and interesting.
- Improved memory retention: Videos related to the topic help students better remember information by activating multiple sensory channels simultaneously.
- Interactivity: When multimedia content includes interactive elements, it allows learners to actively participate in the process, complete exercises, and take quizzes, thus reinforcing comprehension through practice.

Lessons conducted through differentiated instruction have been shown to help students understand scientific concepts more deeply and to analyze complex topics individually. Particularly, group and pair work formats foster mutual assistance, social communication, and collaborative problem-solving skills among students. This, in turn, increases their engagement and promotes peer learning.

Adaptive education.
Adaptive learning refers to an instructional process that is designed in accordance with each student's individual needs, interests, and capabilities. Research results show that adaptive learning methods deepen students' knowledge, strengthen practical skills, and promote personalized learning pathways. Various learning materials and flexible instructional techniques help shape effective and individualized learning styles.

Furthermore, the use of individualized teaching approaches by special educators has had a positive impact on students' participation in the learning process. Findings reveal that such approaches enhance learners' independent thinking, self-assessment abilities, and sense of

responsibility in education. Each student, through level-appropriate tasks, gains the opportunity to analyze their own understanding and progress.

Therefore, the widespread implementation of differentiated and adaptive approaches for students with special educational needs should be recognized as a crucial factor in improving educational quality and inclusivity.

Diagram Analysis

This diagram illustrates the effectiveness levels (%) of various educational approaches for students with special educational needs.

1. Traditional Education (50%)

- This is a standard educational system that applies the same approach to all students.
- Disadvantage: It can be challenging for students with special needs, as their unique requirements are not taken into account.

2. Differentiated Education (65%)

- In this approach, students' varying levels of difficulty are considered.
- Advantage: Students receive different tasks based on their knowledge level.
- Limitation: Individual needs are still not fully met.

3. Adaptive Education (75%)

- This method develops an educational plan tailored to each student's needs, abilities, and opportunities.
- Advantages: Special equipment, customized learning materials, and an individual approach are utilized.

4. Adaptive Education with Interactive Methods (85%)

- This is the most effective method, combining adaptive education and interactive techniques.
- Why is it effective?
  - Students actively participate in the learning process.
  - Virtual laboratories, quizzes, and technological simulators are used.
  - Lessons are conducted through visual, auditory, and kinesthetic methods.

Conclusion

Modern pedagogical approaches play an essential role in actively involving students with special educational needs in the educational process and increasing their learning efficiency.
Research findings show that differentiated and adaptive teaching methods help address students' individual needs and facilitate their learning process.
Innovative technologies — such as interactive manuals, audiobooks, touchscreen devices, and multimedia — make the learning process more effective and engaging. Moreover, interactive

platforms such as Quizlet, Kahoot, and Quizizz play an important role in increasing students' participation in the educational process.

Through adaptive education, students have been found to develop independent thinking, self-assessment skills, and greater interest in learning.
Differentiated approaches facilitate social adaptation, the formation of professional skills, and the integration of students into society.
Therefore, expanding the implementation of adaptive and interactive teaching methods for students with special educational needs is one of the most effective ways to improve the quality of education.

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