



IMPROVEMENT OF PEDAGOGICAL MECHANISMS OF PREPARING HEARING- IMPAIRED CHILDREN FOR INCLUSIVE EDUCATION IN THE CONDITIONS OF AN EDUCATION CLUSTER

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Abstract

This article covers the theoretical and practical foundations of improving pedagogical mechanisms for preparing hearing-impaired children for inclusive education in the context of an educational cluster. During the study, the content of cooperation between the structural entities of the educational cluster, the continuity of pedagogical support, and the scientific foundations of forming an individual educational trajectory were analyzed. An analysis of existing practice showed that the use of only special pedagogical approaches in the process of preparing hearing-impaired children for inclusive education is not enough. Organizing this process on the basis of integrated cooperation between educational institutions, family, healthcare system, and higher education institutions increases efficiency. As a result of the research, an improved pedagogical mechanism was developed, consisting of the stages of diagnostics, pedagogical design, integrative cooperation, reflexive monitoring and individual development. This mechanism serves to develop the communicative, cognitive and social competencies of children with hearing impairment and their successful adaptation to an inclusive educational environment.

Keywords: Educational cluster, inclusive education, children with hearing impairment, pedagogical mechanism, individual educational trajectory, communicative competence, integrative cooperation.



TA'LIM KLASTERI SHAROITIDA ZAIF ESHITUVCHI BOLALARNI INKLYUZIV TA'LIMGA TAYYORLASHNING PEDAGOGIK MEXANIZMLARINI TAKOMILLASHTIRISH

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Annotatsiya

Ushbu maqolada ta'lim klasteri sharoitida zaif eshituvchi bolalarni inklyuziv ta'limga tayyorlashning pedagogik mexanizmlarini takomillashtirishning nazariy va amaliy asoslari yoritilgan. Tadqiqot davomida ta'lim klasterining tarkibiy subyektlari o'rtasidagi hamkorlikning mazmuni, pedagogik qo'llab-quvvatlashning uzviyligi hamda individual ta'lim trayektoriyasini shakllantirishning ilmiy asoslari tahlil qilindi. Mavjud amaliyot tahlili shuni ko'rsatdiki, zaif eshituvchi bolalarni inklyuziv ta'limga tayyorlash jarayonida faqat maxsus pedagogik yondashuvlardan foydalanish yetarli emas. Mazkur jarayonni ta'lim muassasalari, oila, sog'liqni saqlash tizimi va oliy ta'lim muassasalari o'rtasidagi integratsiyalashgan hamkorlik asosida tashkil etish samaradorlikni oshiradi. Tadqiqot natijasida diagnostika, pedagogik loyihalash, integrativ hamkorlik, refleksiv monitoring va individual rivojlantirish bosqichlaridan iborat takomillashtirilgan pedagogik mexanizm ishlab chiqildi. Mazkur mexanizm zaif eshituvchi bolalarning kommunikativ, kognitiv va ijtimoiy kompetensiyalarini rivojlantirish hamda ularni inklyuziv ta'lim muhitiga muvaffaqiyatli moslashtirishga xizmat qiladi.

Kalit so'zlar: ta'lim klasteri, inklyuziv ta'lim, zaif eshituvchi bolalar, pedagogik mexanizm, individual ta'lim trayektoriyasi, kommunikativ kompetensiya, integrativ hamkorlik.

Introduction

The development of the concept of inclusive education in the world education system requires the creation of equal opportunities for children with special educational needs. In modern approaches, inclusive education is considered as a



complex pedagogical system that ensures not only the child's education in a general educational institution, but also his personal development, social adaptation and active participation in the life of society. In this regard, the preparation of hearing-impaired children for inclusive education is one of the most urgent scientific and practical issues facing special pedagogy.

In recent years, large-scale reforms have been implemented in Uzbekistan to develop inclusive education. The conditions being created for children with special needs, new regulatory and legal frameworks, and the system of advanced training of pedagogical personnel are yielding significant results in this direction. However, in the process of preparing children with hearing impairment for inclusive education, it is observed that the continuity of the activities of educational entities is not sufficiently ensured, there are gaps between the results of diagnostics and pedagogical impact, and the participation of the family in pedagogical cooperation is not at the same level.

The educational cluster approach is of particular importance in solving these problems. An educational cluster is a pedagogical system that is focused on a common goal, interacts with each other and unites resources, in which preschool educational organizations, general education schools, special educational institutions, higher educational institutions, the healthcare system, the neighborhood and the family form a single developmental environment. The main advantage of this model is that it directs all factors affecting the development of the child towards a single goal.

The scientific idea of the article is that the effectiveness of preparing children with hearing impairment for inclusive education depends not on a separate method or technology, but on the mutual pedagogical coordination of the cluster participants. It is pedagogical coordination that allows for continuous monitoring of the child's development dynamics, taking into account individual needs, and organizing the activities of all specialists based on a single goal.

The purpose of this study is to improve pedagogical mechanisms for preparing hearing-impaired children for inclusive education in the context of an educational cluster and to develop scientific and practical approaches that ensure their effectiveness.



Literature review and research methodology

Literature review

Research aimed at improving the theoretical and practical foundations of inclusive education has increased significantly in recent years. In the international scientific literature, early pedagogical intervention, active family participation, development of individual educational programs, and multidisciplinary cooperation are recognized as the main factors in preparing children with hearing impairment for inclusive education. However, most studies study these factors as separate areas and do not sufficiently reveal their interrelationships in a single pedagogical system.

According to modern scientific views, the success of inclusive education is determined not only by identifying the individual capabilities of the child. The educational environment, professional competence of teachers, the pedagogical culture of the family, and the support of society also directly affect the child's educational outcomes. Therefore, in recent years, concepts such as "collaborative pedagogy", "educational ecosystem", and "educational cluster" have been actively entering scientific circulation.

Studies conducted with hearing-impaired children have widely covered the issues of speech development, effective use of residual hearing, use of digital technologies, and the formation of communicative competencies. However, in most of these studies, the organization of the activities of a preschool educational organization, a general education school, a sign language teacher, a psychologist, parents, and higher education institutions on the basis of a single mechanism is not sufficiently substantiated.

Although important reforms are being implemented in Uzbekistan to develop inclusive education, a scientific and methodological model for preparing hearing-impaired children for inclusive education within the framework of an educational cluster has not yet been fully developed. In practice, cooperation between cluster participants has acquired a more organizational character, and its pedagogical content, functional tasks, and effectiveness criteria have not been sufficiently clarified.

In this regard, the main scientific difference of this study is to interpret the educational cluster not only as a form of management, but as an integrated



pedagogical system that ensures the continuous development of the child. Through this approach, all stages of preparing hearing-impaired children for inclusive education are coordinated on the basis of a single goal and a common pedagogical strategy.

Research methodology

The study was carried out in specialized preschool educational organizations and general schools in Tashkent region, Samarkand region and Tashkent city during 2023–2026. 100 hearing-impaired children were involved in the study, 50 of whom formed the experimental group and 50 formed the control group.

The methodological basis of the study was a systematic approach, a competency-based approach, a person-centered education concept, and the principles of inclusive pedagogy. These approaches made it possible to identify the individual development needs of the child, adapt pedagogical tools, and coordinate the activities of cluster subjects.

The following methods were used during the study:

analysis of scientific and methodological literature;

pedagogical observation;

interviews and questionnaire surveys;

pedagogical pilot-test work;

comparative analysis of results;

pedagogical generalization.

The experimental work was organized in three stages:

The first stage was a diagnostic stage, during which the communicative development of children, speech activity, social adaptation, and the level of readiness for inclusive education were assessed.

The second stage is the formative stage, during which an improved pedagogical mechanism based on an educational cluster was implemented in the experimental group. At this stage, close cooperation was established between the surdopedagogue, class teacher, psychologist and parents.

The third stage is the control and analysis stage, during which the results obtained in the experimental and control groups were compared and the effectiveness of the proposed pedagogical mechanism was assessed.



The methodological feature of the study is that it studied the preparation of hearing-impaired children for inclusive education not as a separate pedagogical activity, but as a continuous and coordinated process of cooperation between the participants of the educational cluster. This approach made it possible to clearly define the functional tasks of each participant, ensure the continuity of pedagogical influence, and regularly monitor the dynamics of the child's development. Improved pedagogical mechanism and research results

Improved pedagogical mechanism for preparing hearing-impaired children for inclusive education in the context of an educational cluster

Based on the research results, an integrated pedagogical mechanism for preparing hearing-impaired children for inclusive education in the context of an educational cluster was developed. The main purpose of this mechanism is to coordinate the activities of cluster participants on the basis of a single pedagogical strategy and comprehensively develop the child's readiness for inclusive education.

The proposed mechanism includes five interrelated components.

1. Diagnostic component

At this stage, the child's level of development is comprehensively assessed. In this, not only the state of hearing is analyzed, but also speech development, cognitive processes, communicative activity, social adaptation, and readiness for educational activities. The results obtained serve as the basis for determining an individual pedagogical direction.

2. Pedagogical design component

Based on the results of the diagnostics, an individual development path is developed for each child. At this stage, educational goals, educational content, methods, tools and assessment criteria are adapted to the needs of the child.

3. Integrative cooperation component

This component represents the main scientific idea of the study. In it, the functions of the cluster participants are distributed as follows:

preschool educational organization - forms primary communicative and social skills;



comprehensive school - creates an inclusive educational environment and adapts the educational process;

surdopedagogue - provides special pedagogical assistance in the development of speech and hearing;

psychologist - supports emotional stability and social adaptation;

parents - continue pedagogical recommendations at home and actively participate in the development of the child;

higher educational institutions - provide methodological support, scientific advice and professional development of teachers.

This cooperation ensures the continuity of pedagogical influence and directs all participants to a common result.

4. Developmental component

At this stage, classes are held aimed at increasing the child's readiness for inclusive education. The classes cover the following areas:

development of oral speech;

effective use of residual hearing;

use of visual and multimodal teaching methods;

development of teamwork skills;

support for independent educational activities;

formation of social communication competence.

5. Monitoring and reflection component

At the final stage of the pedagogical mechanism, the dynamics of the child's development are systematically assessed. Based on the results of monitoring, the necessary changes are made to the individual development program. This increases the flexibility and efficiency of the educational process.

Analysis of research results

During the pilot study conducted in 2023–2026, an improved pedagogical mechanism based on an educational cluster was gradually introduced in the experimental group. Observations have shown that regular cooperation between cluster subjects has a positive effect on the development of the child.



In particular, children in the experimental group:

increased activity in communicating with the teacher and peers;

increased speech activity and interest in completing educational tasks;

developed elements of independent activity;

accelerated the process of social adaptation;

activated the participation of parents in the pedagogical process.

Although natural development was also observed in the control group, due to the lack of systematic cooperation on the basis of the cluster, the dynamics of development were not equally stable.

The analysis shows that the pedagogical mechanism based on the educational cluster serves to consistently and continuously organize the process of preparing for inclusive education. Its main advantage is that the activities of all participants are coordinated on the basis of a single goal and a single development strategy.

Scientific novelty of the research

The scientific novelty of this research is manifested in the following:

the educational cluster was scientifically substantiated as an integrated pedagogical environment for preparing hearing-impaired children for inclusive education;

a five-component pedagogical mechanism was developed, consisting of diagnostics, pedagogical design, integrative cooperation, development and monitoring;

the functional tasks of the cluster participants were systematized;

a pedagogical approach based on continuous monitoring of preparation for inclusive education was proposed.

Conclusion

The results of the study showed that the effectiveness of preparing hearing-impaired children for inclusive education in the context of an educational cluster directly depends on the consistency of the pedagogical process, the continuity of cooperation between subjects, and the organization of education tailored to the individual needs of the child.

During the study, the educational cluster was interpreted not only as a form of organizational cooperation, but also as an innovative system that ensures the



integration of pedagogical resources, coordination of the educational process, and continuous development. This approach allows organizing cooperation between a preschool educational organization, a general education school, a sign language teacher, a psychologist, parents, and higher education institutions in preparing hearing-impaired children for inclusive education based on a single goal.

An important advantage of the proposed pedagogical mechanism is that it does not divide pedagogical activity into separate areas, but combines the activities of all participants into a single developmental system. As a result, the child's communicative development, social adaptation, independent learning activities and readiness for inclusive education will consistently develop.

The implementation of this mechanism in practice will:

increase the quality of inclusive education;
strengthen professional cooperation between teachers;
activate the participation of parents in the pedagogical process;
serve to accelerate the adaptation of children with hearing impairment to the educational environment.

Practical recommendations

- Based on the results of the study, the following recommendations were developed:
- develop and implement a unified cooperation algorithm for participants in the educational cluster;
- systematically improve the inclusive competencies of teachers of general education schools;
- develop individual development programs for children with hearing impairment based on the results of diagnostics;
- establish systematic pedagogical consultations and trainings with parents;
- expand the scope of use of digital educational resources and assistive technologies;
- develop criteria for assessing the effectiveness of the educational cluster and improve the monitoring system;
- implement practical programs for improving the skills of sign language teachers and inclusive education teachers in collaboration with higher education institutions.



References:

1. O‘zbekiston Respublikasining “Ta’lim to‘g‘risida”gi Qonuni. O‘RQ-637-son, 2020.
2. O‘zbekiston Respublikasi Prezidentining 2020-yil 13-oktabrdagi PQ-4860-son “Alohida ta’lim ehtiyojlari bo‘lgan bolalarga ta’lim-tarbiya berish tizimini yanada takomillashtirish chora-tadbirlari to‘g‘risida”gi qarori.
3. O‘zbekiston Respublikasi Vazirlar Mahkamasining 2024-yil 25-yanvardagi 46-son qarori “Alohida ta’lim ehtiyojlari bo‘lgan bolalar uchun ta’lim va reabilitatsiya tizimini takomillashtirish chora-tadbirlari to‘g‘risida”.
4. United Nations. Convention on the Rights of Persons with Disabilities. New York: United Nations, 2006.
5. UNESCO. Global Education Monitoring Report 2024: Leadership in Education. Paris: UNESCO Publishing, 2024.
6. UNESCO. Guidelines for Inclusion: Ensuring Access to Education for All. Paris: UNESCO.
7. UNICEF. Seen, Counted, Included: Using Data to Shed Light on the Well-Being of Children with Disabilities. New York: UNICEF, 2021.
8. Booth T., Ainscow M. The Index for Inclusion: Developing Learning and Participation in Schools. 4th ed. Bristol: Centre for Studies on Inclusive Education, 2022.
9. Mitchell D. What Really Works in Special and Inclusive Education: Using Evidence-Based Teaching Strategies. 3rd ed. London: Routledge, 2020.
10. Florian L. The SAGE Handbook of Special Education. London: SAGE Publications.
11. Hallahan D. P., Kauffman J. M., Pullen P. C. Exceptional Learners: An Introduction to Special Education. 15th ed. Boston: Pearson.
12. Friend M. Special Education: Contemporary Perspectives for School Professionals. Boston: Pearson.
13. CAST. Universal Design for Learning Guidelines Version 3.0. Wakefield, MA: CAST, 2024.
14. Kenjebaeva K. Inclusive Education in Uzbekistan: Current Challenges and Potential Solutions. Acta Education, 2024, 1(1), 34–38.



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15. Jalilova D., Zayniyev B. Inclusive Teaching Problems in Uzbekistan. Eurasian Scientific Herald, 2022, 270–272.
 16. White J., D'Agostino T., Ikromova Sh., O'Neill S., Conaghan B. Uzbekistan Inclusive Education Diagnostic Study. University of Notre Dame, 2022.
 17. Muminova L. R., Uzakova Z. F. Experience of the Republic of Uzbekistan in the Transition to Inclusive Education. Inclusion in Education, 2019.
 18. O'zbekiston Respublikasi Maktabgacha va maktab ta'limi vazirligi. Inklyuziv ta'limni rivojlantirish bo'yicha metodik tavsiyalar. Toshkent, 2024.
 19. UNESCO va UNICEF. O'zbekistonda inklyuziv ta'limni rivojlantirish bo'yicha qo'shma dastur materiallari. 2024–2025.
 20. O'zbekiston Respublikasida inklyuziv ta'limni rivojlantirishga oid zamonaviy ilmiy maqolalar va OAK jurnallarida e'lon qilingan tadqiqotlar (2020–2026).