

Using Information and Communication Technologies to Improve Subject Cooperation in Home Education

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Abstract

This article examines the use of information and communication technologies in improving cooperation among subjects involved in home education for children with special educational needs. The study highlights modern opportunities for strengthening collaboration among teachers, parents, speech therapists, psychologists, and other specialists. The integrative functions of information and communication technologies, digital monitoring tools, and distance collaboration forms are scientifically substantiated. The findings indicate that digital technologies strengthen communication among educational stakeholders, facilitate coordination of pedagogical activities, and contribute to improving the quality of home education.

Keywords: Home education, special educational needs, special pedagogy, stakeholder cooperation, information and communication technologies, digital monitoring, pedagogical collaboration.

INTRODUCTION

UY TA'LIMIDA SUBYEKTLAR HAMKORLIGINI TAKOMILLASHTIRISH UCHUN AXBOROT-KOMMUNIKATSIYA TEXNOLOGIYALARIDAN FOYDALANISH

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Surxondaryo viloyati Oltinsoy tumani 17-maktab o'qituvchi logopedi,

Andijon davlat pedagogika instituti mustaqil tadqiqotchisi.

Annotatsiya

Mazkur maqolada alohida ta'lim ehtiyojlari mavjud bolalarning uy ta'limida subyektlar hamkorligini takomillashtirishda axborot-kommunikatsiya texnologiyalaridan foydalanish masalalari tahlil qilingan. Tadqiqotda uy ta'limi jarayonida pedagoglar, ota-onalar, logopedlar, psixologlar, tibbiyot xodimlari hamda boshqa mutaxassislar o'rtasidagi hamkorlikni rivojlantirishning zamonaviy imkoniyatlari yoritilgan. Axborot-kommunikatsiya texnologiyalarining ta'lim jarayonidagi integrativ vazifalari, raqamli monitoring vositalari va masofaviy hamkorlik shakllarining samaradorligi ilmiy jihatdan asoslangan. Tadqiqot natijalari raqamli texnologiyalar uy ta'limi subyektlari o'rtasidagi kommunikativ aloqalarni mustahkamlashi, pedagogik faoliyatni muvofiqlashtirishi va ta'lim sifatini oshirishga xizmat qilishini ko'rsatdi.



Kalit so'zlar: uy ta'limi, alohida ta'lim ehtiyojlari, maxsus pedagogika, subyektlar hamkorligi, axborot-kommunikatsiya texnologiyalari, raqamli monitoring, pedagogik hamkorlik.

ИСПОЛЬЗОВАНИЕ ИНФОРМАЦИОННО-КОММУНИКАЦИОННЫХ ТЕХНОЛОГИЙ ДЛЯ УЛУЧШЕНИЯ СОТРУДНИЧЕСТВА МЕЖДУ СУБЪЕКТАМИ В ДОМАШНЕМ ОБУЧЕНИИ

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Аннотация

В данной статье анализируются вопросы использования информационно-коммуникационных технологий для улучшения взаимодействия субъектов домашнего обучения детей с особыми образовательными потребностями. В исследовании освещаются современные возможности развития сотрудничества между педагогами, родителями, логопедами, психологами и другими специалистами в процессе домашнего обучения. Научно обоснованы интегративные функции информационно-коммуникационных технологий в образовательном процессе, эффективность цифровых средств мониторинга и форм дистанционного сотрудничества. Результаты исследования показали, что цифровые технологии укрепляют коммуникативные связи между субъектами домашнего обучения, координируют педагогическую деятельность и повышают качество образования.

Ключевые слова: домашнее обучение, особые образовательные потребности, специальная педагогика, предметное сотрудничество, информационно-коммуникационные технологии, цифровой мониторинг, педагогическое сотрудничество.

Introduction

Ensuring the right to quality education for children with special educational needs is recognized as one of the priorities in the global education system. In recent years, as a result of the widespread introduction of inclusive education principles, the individualization of educational services, and the development of digital technologies, new forms of pedagogical support for children with disabilities are being formed. One of such forms of education is individual education at home, which serves to ensure the right to education of children who cannot regularly attend general educational institutions due to their health or developmental characteristics.

Home education is not only the process of mastering educational programs, but also a complex pedagogical system aimed at supporting the intellectual, speech, psychological and social development of the child. In this system, the cooperation of various subjects, such as teachers, parents, speech therapists, defectologists, psychologists, medical workers, and the administration of the educational institution, is of great importance. Because the development



of a child with special educational needs is ensured not only as a result of the activities of one specialist, but through the coordinated and purposeful activities of all subjects.

In the scientific literature, special attention is paid to the ecological systems theory, cooperative pedagogy and the concepts of person-centered education in explaining child development. In particular, according to U. Bronfenbrenner's ecological systems theory, the development of a child is the product of the interaction between the micro, meso and macrosystems surrounding him. From the point of view of this theory, the stronger the ties between the family, pedagogical and social institutions, the more effective the child's development results will be. Therefore, in the conditions of home education, the organization of cooperation of subjects is not only an organizational issue, but also an important pedagogical factor in the formation of a developing educational environment. However, the analysis of existing research shows that, although there are some methodological recommendations for organizing the cooperation of subjects in the process of home education, the mechanisms for managing, monitoring and evaluating the effectiveness of cooperation have not been sufficiently developed. Although many scientific works cover the issues of advising parents, developing pedagogical recommendations or organizing corrective training, little attention is paid to digital management mechanisms that ensure the interconnection of these activities. As a result, the process of cooperation often has an episodic nature, and the continuity and consistency of the activities of the subjects are not fully ensured.

The development of modern information and communication technologies creates new opportunities for solving this problem. With the help of digital platforms, electronic monitoring systems, video conferences, mobile applications and online consultations, it is possible to organize a regular exchange of information between teachers, parents and specialists. This, along with ensuring the openness, speed and continuity of the educational process, also creates the opportunity to comprehensively monitor the dynamics of the child's development.

Also, the use of information and communication technologies brings the cooperation of subjects in home education to a new qualitative level. Through digital tools, parents become active participants in the pedagogical process, the activities of specialists are coordinated, and the implementation of individual development programs is regularly monitored. As a result, cooperation can turn from a random or episodic form of activity into a systematically managed pedagogical mechanism.

The relevance of this study is also determined by these aspects. Improving the cooperation of subjects in supporting children with special educational needs in home education, increasing its effectiveness, and integrating information and communication technologies into this process are among the important scientific and practical tasks of modern special pedagogy.

The purpose of the study is to identify the pedagogical possibilities of information and communication technologies in improving the cooperation of subjects in the home education of children with special educational needs, analyze their impact on the cooperation process, and shed light on the scientific and practical foundations of the use of these tools.



Methods

This study was aimed at identifying the possibilities of using information and communication technologies in improving the cooperation of subjects in the home education of children with special educational needs and scientifically substantiating their pedagogical effectiveness. A set of mutually compatible theoretical and empirical methods was used in the research process. This made it possible to comprehensively analyze the problem under study and ensure the reliability of scientific conclusions. The methodological basis of the study was a systematic approach, an integrative approach, a person-centered approach, and a competency-based approach. Based on a systematic approach, the home education process was considered as a single pedagogical system. This approach made it possible to analyze the activities of subjects not separately, but as interconnected and complementary elements. The study assessed the activities of teachers, parents, speech therapists, psychologists, and other specialists as a single goal-oriented system.

Based on an integrative approach, the interaction of medical-pedagogical, psychological, speech therapy, and social services was studied. This approach made it possible to analyze the development of a child in home education not only in terms of educational results, but also in terms of indicators of his communicative, emotional, and social development. The person-centered approach was based on taking into account the individual capabilities, needs, and developmental characteristics of each child. During the study, the pedagogical needs and level of development of each participant were assessed individually.

The competency-based approach was aimed at developing the professional and communicative competencies of home education subjects. Through this approach, the cooperation competencies of educators and parents in the process of using information and communication technologies were analyzed.

The object of the study was the system of inter-subject cooperation formed in the process of home education of children with special educational needs. The subject of the study is the pedagogical possibilities and effectiveness of using information and communication technologies in improving the cooperation of subjects in home education.

The method of analyzing scientific literature was widely used during the study. Using this method, local and foreign scientific sources in the areas of special pedagogy, inclusive education, home education, pedagogical cooperation and digital pedagogy were studied. Based on the analysis of the literature, the theoretical foundations of the research problem were clarified and the advantages and limitations of existing scientific approaches were analyzed.

The pedagogical observation method was used to study the real state of cooperation between subjects in the process of home education. During the observation process, the activities of teachers, the participation of parents, the level of information exchange, and the use of information and communication technologies were systematically recorded. This method made it possible to study the object of research in natural conditions.

Using the interview method, the attitude of teachers, parents, and specialists to the process of home education and existing problems in organizing cooperation were studied. The interviews were organized in a semi-structured manner, which allowed for a more in-depth analysis of the participants' opinions and thoughts.



Data on the effectiveness of cooperation in home education, the level of use of information and communication technologies, and the digital competencies of subjects were collected through questionnaires. Both closed and open-ended questions were used in the questionnaires. This made it possible to obtain the necessary data for quantitative and qualitative analysis.

The study also used the diagnostic analysis method. During the diagnostic process, the communicative development of the child, the pedagogical activity of parents, and the level of subject cooperation were studied. The diagnostic results served to determine the effectiveness of cooperation in home education.

Comparative analysis, descriptive analysis, and interpretation methods were used to process and generalize the data. The results obtained were compared with the theoretical views presented in scientific sources and their pedagogical significance was substantiated.

The following forms of information and communication technologies were studied during the research process: video conferences, online consultations, electronic diaries, mobile messengers, digital monitoring systems, and distance learning platforms. The role, convenience, and pedagogical capabilities of these tools in the development of subject cooperation were separately analyzed.

As a result, the set of methods used made it possible to comprehensively study the research problem, identify modern mechanisms for organizing subject cooperation in home education, and scientifically substantiate the pedagogical effectiveness of information and communication technologies.

Results

The research studied the practice of organizing cooperation between subjects in home education of children with special educational needs and the use of information and communication technologies. The results showed that the use of digital tools in home education can activate interactions between subjects, accelerate information exchange, and expand the possibilities of coordinating pedagogical activities.

The analysis revealed that the most actively cooperating subjects in the process of home education are teachers and parents. However, in some cases, it was observed that the activities of speech therapists, psychologists, medical workers, and other specialists were not sufficiently integrated. This could negatively affect the fragmented maintenance of information on the child's development and the consistency of correctional and developmental work.

In the process of using information and communication technologies, regular communication between teachers and parents has become significantly more active. In particular, through mobile messengers, video conferences and online consultations, it has become possible to quickly exchange information about the child's daily development, homework completion and emerging problems. As a result, the possibilities for timely delivery and monitoring of pedagogical recommendations have expanded.

During the study, it was observed that the use of electronic monitoring elements serves to systematize the activities of subjects. With the help of digital tools, it has become possible to regularly record data on the child's educational, speech and social development. This has become important in monitoring the dynamics of development and making the necessary changes to individual educational programs.



As a result of interviews and observations with parents, it was found that the use of information and communication technologies increases their pedagogical activity. Parents noted that they began to participate more actively in the educational process through the use of methodological recommendations, video materials and electronic assignments sent by teachers. This served to ensure the continuity of correctional and developmental activities at home.

The results of the study showed that there are also opportunities for organizing medical and psychological services remotely. Providing individual recommendations to parents by specialists through online consultations, and regularly updating recommendations on the development of the child helped to increase the effectiveness of cooperation. Also, during the study, some problems were identified in the use of digital technologies. In particular, difficulties with the quality of the Internet, the insufficient level of digital literacy of some parents, and the limited availability of technical means were identified as factors affecting the effectiveness of cooperation. Despite this, it was observed that these problems did not have a significant negative impact on the overall results.

The results obtained showed that the use of information and communication technologies in home education allows for a more systematic organization of cooperation between subjects, ensuring the continuity of the pedagogical process, and expanding the possibilities of comprehensive support for children with special educational needs. Based on the results of the study, it was determined that it is necessary to develop a digital cooperation model in home education and introduce electronic monitoring systems more widely.

Discussion

The results of this study showed that information and communication technologies are an important pedagogical tool for effectively organizing the cooperation of subjects in home education of children with special educational needs. The results obtained practically confirm the principles of cooperation, integration and person-centered education put forward in modern theories of special pedagogy and inclusive education.

The scientific literature emphasizes that the development of a child is directly related to the social environment around him. In particular, according to the theory of ecological systems, the effectiveness of a child's development is determined by the quality of interactions between the family, educators and other social institutions. The results of the study also confirmed these theoretical views. Because as a result of the use of information and communication technologies, the exchange of information between educators, parents and specialists has accelerated, ensuring the continuity of cooperation. This has expanded the possibilities of making decisions regarding the development of the child and providing pedagogical support tailored to individual needs.

One of the important aspects identified during the study was that most of the problems in home education are associated with the lack of coordination of the activities of the subjects, rather than the lack of pedagogical methods. In the traditional approach, the teacher, medical worker, psychologist and parents often work separately. As a result, information about the child's development is stored in different sources and is not integrated into a single system. The results of the study showed that information and communication technologies can reduce this fragmentation and allow all subjects to be united in a single information space.



During the discussion, it was determined that the role of parents in the pedagogical process deserves special attention. A distinctive feature of home education is that parents become not only the legal representative of the child, but also a direct participant in daily educational and developmental activities. During the study, it was observed that electronic communication tools, video consultations and remote methodological recommendations served to increase the pedagogical activity of parents. This made it possible to raise parents from a passive observer to an active pedagogical partner. This situation can be considered one of the important factors determining the effectiveness of cooperation in home education.

The results of the study showed that information and communication technologies have wide potential in organizing medical and psychological services. The continuity of assistance provided by specialists was ensured through remote consultations, video consultations and electronic recommendations. This increased the consistency of the process of supporting the child's speech, emotional and social development. This approach is especially important for families living in geographically remote areas.

The study also revealed the pedagogical importance of digital monitoring systems. In traditional observation methods, the dynamics of a child's development are often limited to periodic assessments. Digital monitoring allows for regular recording and analysis of development indicators and, if necessary, prompt adjustments to pedagogical activities. In this regard, the monitoring system is important not only as a control tool, but also as a pedagogical management mechanism.

However, the results of the study showed that there are some limitations in the introduction of information and communication technologies. In particular, the insufficiently formed digital competencies of some parents, the varying level of provision with technical means, and problems with the quality of the Internet network can affect the full effectiveness of cooperation. This indicates the need to develop special programs aimed at developing the digital literacy of home education subjects in the future.

Another important result of the study is that information and communication technologies enrich cooperation in home education not only technically, but also in content. Digital tools expand the opportunities for experts to exchange experience, quickly deliver methodological recommendations, and jointly analyze data on child development. This will help transform home education from a set of separate services into a comprehensive development system.

In general, the results of the study showed that the use of information and communication technologies is an effective tool for improving the cooperation of subjects in home education. They ensure the continuity of pedagogical activities, systematize the cooperation process, increase the effectiveness of monitoring, and create a more favorable pedagogical environment for the development of children with special educational needs. Therefore, the widespread introduction of digital collaboration technologies and their methodological support in home education development strategies should be considered one of the important scientific and practical tasks.



Conclusion

Within the framework of this study, the pedagogical possibilities of using information and communication technologies to improve the cooperation of subjects in home education of children with special educational needs were analyzed theoretically and practically. The results of the study showed that the effectiveness of home education is directly dependent not only on the content and methods of education, but also on the level of cooperation between educators, parents, medical personnel, psychologists and other specialists.

The analysis showed that in home education, the lack of coordination of the activities of subjects, the slowness of information exchange and the insufficient establishment of a monitoring system are among the factors that reduce the effectiveness of the educational process. From this point of view, the use of information and communication technologies has emerged as an effective means of eliminating these problems.

The study revealed that digital technologies significantly expand the possibilities of ensuring regular communication between educators and parents, coordinating the activities of specialists, monitoring the dynamics of the child's development, and monitoring individual educational programs. It was found that the continuity and transparency of the home education process can be ensured using electronic platforms, video conferencing, online consultations and digital monitoring tools.

The results of the study also showed the special importance of information and communication technologies in strengthening the role of parents in the pedagogical process. With the help of digital tools, parents will have the opportunity to quickly receive recommendations on the development of the child, regularly communicate with specialists and actively participate in correctional and developmental activities. As a result, parents will become active pedagogical partners, not passive observers of the home education process.

The theoretical significance of the study is that it sheds light on the pedagogical foundations of organizing cooperation between subjects in home education from the point of view of modern digital technologies and identifies scientific and methodological directions for developing cooperation. The results of the study serve to enrich the theory of special pedagogy, inclusive education and home education with new scientific views.

The practical significance of the study is determined by the possibilities of applying cooperation mechanisms based on the use of information and communication technologies in pedagogical practice. The research materials can serve as a methodological resource for educators, medical personnel, psychologists, methodologists, and parents involved in home education.

Based on the research, the following scientific conclusions were drawn:

In home education, cooperation between subjects is an important factor in the educational, speech, psychological, and social development of the child;

Information and communication technologies expand the possibilities of systematically organizing cooperation between subjects;

Digital monitoring tools increase the effectiveness of systematic monitoring of the dynamics of the child's development and pedagogical decision-making;

The development of parents as pedagogical partners is one of the important conditions for improving the quality of home education;



The digital integration of pedagogical, medical and psychological services serves to form a comprehensive developmental environment;

A model of cooperation based on information and communication technologies helps to increase the effectiveness of home education.

Thus, the effective use of information and communication technologies in the home education of children with special educational needs brings the cooperation of subjects to a new qualitative level. This creates a solid pedagogical foundation for ensuring the continuity of the educational process, comprehensive support for the individual development of the child, and increasing the overall effectiveness of the home education system.

It is appropriate to consider the development of artificial intelligence technologies, electronic diagnostic systems, adaptive digital platforms, and criteria and indicators for assessing the cooperation of subjects in home education as one of the promising areas in future scientific research. This will serve to further improve home education and expand the opportunities for children with special educational needs to receive quality education.

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