

THE ROLE OF ASSISTIVE TECHNOLOGIES IN INCLUSIVE EDUCATION: PROBLEMS OF SOCIALIZATION OF CHILDREN WITH SPECIAL NEEDS

Yesengeldieva Aidana Bolatbekovna

lecturer, Khoja Ahmed Yasawi
International Kazakh-Turkish University,
Turkestan, Kazakhstan

Abilashimova Aruzhan

3rd year student, Khoja Ahmed Yasawi
International Kazakh-Turkish University,
Turkestan, Kazakhstan

Annotation. The article examines the theoretical and methodological foundations of the use of assistive technologies in the modern inclusive educational space. The author characterizes the concept of assistive technologies not just as a technical tool, but as an integrated system combining tools and pedagogical strategies. The study analyzes the role of assistive devices in compensating for the functional limitations of children with special educational needs, increasing their autonomy and supporting the process of socialization (communication, assimilation of social norms, realization of personal potential). The main conclusion of the article is to substantiate that the integrated use of assistive technologies is a key factor ensuring not only equal access to education, but also the full integration of students into the system of public relations.

Keywords: inclusive education, assistive technologies, socialization, special educational needs, alternative communication, independence, equal opportunities.

Introduction

Inclusive education is one of the main directions of the modern education system. This concept provides opportunities for all students, including children with special educational needs, to learn and develop on an equal footing in the common educational space. Physical access or tutorials alone are not enough for inclusion to be successful. In modern educational conditions, assistive technologies have an important impact on the full-fledged participation of children with special needs in the educational process and their socialization.

Inclusive education is one of the most important areas of the education system today. Assistive technologies provide children with special needs with an important opportunity not only to participate in the learning process on an equal basis, but also in social interaction and socialization. With the proper implementation of these

technologies, children's academic achievements, communication skills and social activity will increase.

However, their effectiveness depends on many factors — technological capabilities, teacher training, infrastructure, and public perception. Therefore, the use of assistive technologies in the inclusive education system requires an integrated approach, resource planning and support from all sectors of society.

Inclusive education is the process of adapting the education system to meet the needs of all students, involving them in social relationships and ensuring equal opportunities. This model assumes the full involvement of children with disabilities in the educational content and environment, rather than isolated placement in a separate educational institution.

Assistive technology is a set of technical, software and methodological tools aimed at expanding the functional capabilities of people with special educational needs, increasing their independence, facilitating the process of acquiring knowledge, communication and adaptation to a social environment.

In the scientific literature, the concept of assistive technology is considered in a broad sense and includes not only technical devices, but also pedagogical approaches and methodological solutions for their application. In other words, assistive technology is the unity of a tool and a strategy for its application.

In the context of inclusive education, assistive technologies are one of the main factors ensuring equal access to an educational environment for children with special needs.

The main goal of assistive technology is to create conditions for the full-fledged participation of children with special needs in the educational process, social life and public relations.

Results and discussion. This goal is achieved through the following tasks:

1. Ensuring equal access to educational content;
2. Compensation or relief of a child's functional limitations;
3. Knitting and increasing self-reliance in daily activities;
4. Expanding communication opportunities;
5. Support the process of social adaptation and socialization.

Assistive technologies are aimed not at "eliminating" a child's defect, but at developing his capabilities. This is fully consistent with the humanistic principles of inclusive education.

Assistive technologies are a set of tools, equipment, software products and systems aimed at increasing access to information, participation and self-service opportunities for people with disabilities or functional difficulties. These

technologies play an important role in the learning and socialization of children with special needs in the inclusive education system.

Assistive technologies are an integral part of inclusive education. Its purpose and content are aimed at expanding the possibilities of learning and socialization, taking into account the individual characteristics of the child. Only a combination of technical, programmatic, pedagogical and social components ensures the effectiveness of assistive technologies.

Socialization is a complex process aimed at adapting a person to a social environment, at finding his place and role in society. It's a process:

1. assimilation of social norms and values,
2. formation of communication skills,
3. establishing mutual social ties,
4. full realization of personal potential.

For children with special needs, socialization is not only about getting an education, but also creating opportunities for social interaction and self-expression.

Materials and methods: The pedagogical and strategic role of technology. The integration of assistive technologies into the learning process allows us to solve the following important tasks.

Assistive technologies make it possible to differentiate educational material in accordance with the individual sensory or cognitive characteristics of the student. At the same time:

- a) transformation is carried out depending on the level of perception of complex information;
 - b) conditions are created for students to independently master educational content without outside help, which implements the principle of equality in education.
2. Deepening of social and communicative integration.

AAC (Augmentative and Alternative Communication) systems play a crucial role in removing communication barriers. With the help of visual symbols and voice synthesizers:

- a) students with language and speech impairments have the opportunity to express their thoughts openly;
- b) the social interaction of students (group work, discussions) increases, and the process of their integration into the academic environment accelerates.

3. Psychological adaptation and self-actualization. The use of assistive devices helps to eliminate the "psychological barriers" of the student. Successfully completed assignments and free communication strengthen the student's self-confidence, allow them to fully realize their personal potential and increase the level of self-adaptation in the social environment.

Thus, assistive technologies are not only a technical application to inclusive education, but also a comprehensive didactic system that forms the autonomy of the student's personality through the expansion of his capabilities. Their effective use directly affects the humanization of the educational process and the achievement of academic success by each student.

In an inclusive educational environment, assistive technologies (IT) are a set of technical and methodological solutions aimed at expanding the cognitive and physical capabilities of students with special educational needs. Their structure consists of the following components:

According to the specifics of the technical implementation of the assistive technology system, it can be divided into three main groups:

Hardware support

- This includes devices designed to compensate for physical limitations: alternative input devices (special keyboards, joysticks), tactile displays, and screen readers for people with visual impairments.

Software

- Algorithms that provide digital access: speech synthesis, audio command recognition systems, and specialized applications for alternative-enhanced communication (AAC).

Didactic and adaptive means

- Tools that facilitate the perception of educational content: visual support strategies (tables, pictographs), interactive indicators and mechanisms for presenting content in a simplified format.

Assistive technologies help children to correctly perceive social signals in the environment, build relationships with friends, and actively participate in classroom and group activities.

For example, alternative communication systems (AAC) for students with low speech skills: they reduce language barriers and improve social communication.

The use of assistive technologies strengthens understanding and mutual support among students, prevents negative stereotypes, and ensures the perception of children with special needs as full members of a group of students.

Although the idea of inclusive education has gained international recognition, its implementation in practice is fraught with many difficult problems. These problems

manifest themselves at the pedagogical, social, psychological, logistical and managerial levels.

1. Regulatory and management issues.

In many countries, including Kazakhstan, there is a legislative framework aimed at the development of inclusive education. However, in practice, there are: actual non-compliance with regulatory documents, inconsistencies between inclusive policies and school-level plans, and insufficient coordination in the management system. This situation directly affects the quality of inclusive education and hinders the systematic use of assistive technologies.

2. Insufficient material and technical base. To create an inclusive environment, specially equipped classrooms, assistive technologies, and adapted textbooks are needed. However: many schools lack the necessary technical facilities, existing assistive technologies are outdated, and the problem of accessibility in rural schools is obvious. This limits the educational opportunities of children with special needs and negatively affects their socialization.

3. Low professional training of teaching staff.

Inclusive education requires a teacher to have high professional competence. The main problems are: insufficient experience of teachers working with children with special educational needs, insufficient skills in using assistive technologies, lack of continuous professional development in inclusive pedagogy. These factors make it difficult to individualize the learning process and reduce the effectiveness of an inclusive environment.

4. Weakness of the psychological and pedagogical support system.

In the context of inclusive education, such problems often arise as: lack of psychologists, speech therapists, speech pathologists and social educators, poor teamwork between specialists, poor-quality development of individual educational programs. This situation negatively affects not only the child's academic performance, but also his social adaptation.

5. Socio-psychological barriers and stigmatization.

Inclusive education requires the preparation of not only the education system, but also society as a whole. The main difficulties are the negative attitude towards children with special needs, rejection or isolation from peers, and parents' distrust of inclusion. These factors affect a child's self-esteem, making the process of socialization more difficult.

6. Inflexibility of curricula and assessment systems.

In most cases, general education programs: They do not take into account the individual characteristics of all students, adaptive approaches to assessment are not applied, they focus only on the result, and not on the dynamics of the child's

development. This can cause stress in children with special needs and reduce motivation to learn.

7. Insufficient interaction with parents.

Parents are important partners in inclusive education. However, there is insufficient methodological and psychological support for parents, weak communication between school and family, and some parents do not fully understand the essence of inclusive education. This situation hinders the sustainable development of an inclusive environment.

Conclusion. The implementation of inclusive education is a complex process that requires a multifaceted and systematic approach. Logistical support, teacher training, psychological support, vision of society and management effectiveness are interrelated. Until these problems are solved, the potential of assistive technologies will not be fully realized. Therefore, the development of inclusive education requires a comprehensive government policy, scientifically sound methods and the active support of all members of society.

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