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USE OF ASSISTIVE TECHNOLOGIES IN SPECIAL AND INCLUSIVE EDUCATION

Usmanova Mukhlisakhan Sobirovna
assistant professor of Kokand DPI
E-mail: usmonovamuxlisaxon@gmail.com (ORCID 0000-0003-1603-9455)
Joraboyeva Sadokatbonu Ilyasbek qizi
2nd stage student of Technological Education

Abstract: The article discusses the use of assistive technologies in technology classes in specialized schools and boarding schools for children with disabilities.
Key words: assistive, touch and sound devices, braille displays, audiovisual technologies, cognitive development, social adaptation, Intellectual assistive technologies, visual schemes, diagrams.

Assistive technologies in special and inclusive education are tools that help people with disabilities learn. They are aimed at reducing or eliminating various restrictions in the educational process, ensuring the opportunity to learn based on the capabilities of each student.
The use of assistive technologies is an important tool in making the education system equal for all. For their widespread implementation, it is necessary to improve the knowledge and skills of teachers, as well as to equip educational institutions with technology.
Assistive technologies are devices, software, or other tools designed to overcome limitations in daily life, education, or work for people with disabilities. They help individuals move independently, access information, communicate, and perform various tasks.

Types of assistive technologies

1. Touch and audio devices
- Screen reader programs (e.g. JAWS, NVDA) convert text to audio for the visually impaired.
- Braille displays or keyboards.
- Voice-activated or voice response systems.
2. Special applications for mobile and tablet devices
- Audiobooks and e-books for listening.
- Communication apps for people with speech and language disorders (e.g. "Proloquo2Go").
3. Tools for physical movement assistance
- Special keyboards, joysticks, and grouped buttons.
- Adaptive computing devices for students with mobility limitations.
4. Learning support software
- Speech-to-text technologies.
- Visual aids for those with autism spectrum disorders or learning disabilities.
5. Emotional and cognitive assistive technologies
- Tools to facilitate the presentation of educational materials using diagrams, visual schemes.
- Special applications for memory and attention disorders (for example, "Reminder" systems for time planning).

The main functions of assistive technology are:

1. Alleviating functional difficulties - supporting the special needs of individuals.
2. Increasing opportunities for all - creating equal opportunities in education, work and social activities.
3. Ensuring independence - helping individuals to do their jobs independently.

Examples of assistive technologies:

- Physical assistive technologies:

- Mobility aids (e.g., wheelchairs, prosthetics).
- Adaptive keyboards or joysticks.
- Speech and communication technologies:
- Communication tools for non-verbal communication (e.g., "Proloquo2Go").
- Speech-to-text or text-to-speech applications.
- Audiovisual technologies:
- Hearing aids or audiobooks for listening.
- Screen readers convert text to speech for the visually impaired.
- Cognitive assistive technologies:
- Special applications for improving memory or planning daily tasks.
- Visual charts and diagrams that focus on consequences.

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- Speech-to-text or text-to-speech applications.
- Audiovisual technologies:
- Hearing aids or audiobooks for hearing.
- Screen readers convert text into speech for the visually impaired.
- Intellectual assistive technologies:
- Special applications for improving memory or planning daily tasks.
- Outcome-oriented visual charts and diagrams.

Are assistive technologies necessary for students with intellectual disabilities?

Yes, assistive technologies are very important for students with intellectual disabilities because they help students overcome limitations in the educational process and provide opportunities for reading and learning according to their individual needs. Assistive technologies support the cognitive, emotional, and social development of such students.

Why are assistive technologies needed?

1. Facilitate learning: Students with intellectual disabilities have difficulty understanding and processing information. Technology improves their understanding through visual and interactive support.
2. Increase independence: Technology allows students to complete tasks even when they are not dependent on them.
3. Increase motivation: Modern and interesting technology increases children's interest in learning.
4. Personalized support: Technology can be used to meet the individual needs of each student.

Types of assistive technologies for students with intellectual disabilities:

1. Interactive software:

- Educational applications in the form of games for children. For example, visual and audio aids for developing mathematical skills.
- Applications that help develop memory, for example, image matching games.

2. Visual aids:

- Flipcharts, picture diagrams and icons.
- Visual guides that explain various tasks based on pictures.
3. Speech and communication devices:
- Audio apps for explanation and learning.
- Apps like "Proloquo2Go" help with expressing thoughts.
4. Tools for cognitive development:
- Special games designed to improve memory and attention.
- Electronic devices such as clocks and timers for time management.
5. Support for reading and writing:
- Text-to-speech apps.
- Keyboards with autocorrection to alleviate repeated difficulties.

Results of using assistive technologies:

- Increased self-awareness and confidence: Students with intellectual disabilities begin to believe in their own abilities.
- Cognitive development: Thinking, understanding, and decision-making skills are improved with the help of technology.
- Social adaptation: Assistive technologies help with social interaction and inclusion.

Properly selected technologies can improve the quality of education for students with intellectual disabilities and help them develop as full members of society.

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