Information and communication technologies in special education and their role in improving the quality of life of a child with special needs
Pedagogical technology

Technical facilities learning (TFL)

Informational educational technology (IET)

Computer pedagogical technology
Information and communication technology learning

set of techniques, methods, forms of education based on information technology tools (computers, cinema, audio and video equipment, telecommunication networks)

creating favorable conditions for teachers and students for free access to cultural, educational and scientific information

Informatization of education:
Varieties of the use of computer pedagogical technologies in the learning process:

- texts on electronic media;
- electronic textbooks and reference systems;
- computer models and demonstrations;
- electronic laboratory workshops;
- electronic educational and methodical complexes;
- training programs;
- computer testing programs;
- Internet resources;
- remote methods based on the use of Web servers and e-mail;
- multimedia presentations based on projection technology
The benefits of implementing information technology in the educational process

For students with special needs

- access to information in the adapted, most convenient form;
- implementation of the process of communication and interaction;
- modification of activity through increasing motivation to study;
- creation of conditions for more effective independent work, creativity, acquisition and consolidation of various professional knowledge and skills.
The benefits of implementing information technology in the educational process

For teachers

- implementation of fundamentally new methods and forms of education;
- use of new approaches to the organization of the learning process;
- improving the quality of learning through better use of available information;
- increasing the efficiency of the educational process on the basis of its individualization and intensification;
- the achievement of the required level of professionalism in mastering the means of computer science and computer technology;
- increasing the professional competence and competitiveness of future specialists in various industries.
Areas of using information and communication technologies in special education

- ICT for solving compensatory tasks;
- ICT for solving didactic tasks;
- ICT for solving communication problems.
## Assistive technology for students with movement disorders

<table>
<thead>
<tr>
<th>Special devices</th>
<th>Software</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Special keyboards (reduced, enlarged, with touch pads)</td>
<td>• Keyboard setup</td>
</tr>
<tr>
<td>• Trackball Manipulator</td>
<td>• Manage operating system functions and enter text using voice.</td>
</tr>
<tr>
<td>• Joystick</td>
<td>• Predicting and completing words as you type text from the keyboard.</td>
</tr>
<tr>
<td>• Electronic Positioning Devices</td>
<td>• Virtual keyboard</td>
</tr>
<tr>
<td>• Touch screen</td>
<td></td>
</tr>
<tr>
<td>• Microphone</td>
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Computer buttons, control

Switches
INNOVA
Touch keypads
Keyboards are special

Large keyboard with integrated and remote keys with a numeric keypad

Split keyboard

Keyboard for left-handed use

Small keyboard on a tripod
Mice and joysticks special

Foot mouse

Head mouse
## Assistive Technology for Students with Language and Speech Disabilities

<table>
<thead>
<tr>
<th>Special devices</th>
<th>Software</th>
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</table>
| Auxiliary communicative sound device (Voice Output Communication Aid, VOCA) | ▪ Predicting and completing a word when entering text from the keyboard;  
▪ Verification of the text and correction of errors in it;  
▪ Formatting and replacing textual information |
Communicators
### Assistive Technology for Visually Impaired Students

<table>
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<tr>
<th>Special devices</th>
<th>Software</th>
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<tbody>
<tr>
<td>▪ Braille display</td>
<td>▪ Support of the display in the operating system</td>
</tr>
<tr>
<td>▪ Braille printer for printing in relief-dot typeface</td>
<td>▪ Text processing for printing in relief-point font.</td>
</tr>
<tr>
<td>▪ Reading machine</td>
<td>▪ Voice Access Programs (screen readers)</td>
</tr>
<tr>
<td>▪ Closed Circuit TeleVision (CCTV) magnification systems</td>
<td>▪ Enlarging and adjusting the image on the screen</td>
</tr>
</tbody>
</table>
Braille line

Computer with keyboard for the blind

Computer without monitor
Electronic magnifying devices
Electronic notebooks
Electronic reading machines
Braille displays
Braille printer
Computer mouse for the blind
Large programmable keyboard
# Assistive Technology for Students with Hearing Impairment

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<th>Special devices</th>
<th>Software</th>
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| Stationary sound-amplifying wired and wireless equipment for collective use (multi-frequency FM-systems) | - A message to the user about events occurring in the system or application by issuing text or graphic messages on the screen  
- The implementation of simultaneous translation of oral speech in writing (presented on the monitor screen) |
Assistive technology for students with intellectual disabilities and learning difficulties

<table>
<thead>
<tr>
<th>Special devices</th>
<th>Software</th>
</tr>
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<tbody>
<tr>
<td>• Special keyboards (alternative, lightweight, touch)</td>
<td>• Predicting and completing a word as you type from the keyboard</td>
</tr>
<tr>
<td>• Trackball Manipulator</td>
<td>• Verification of the text and correction of errors in it</td>
</tr>
<tr>
<td>• Touch screen</td>
<td>• Computer voice control and text input</td>
</tr>
<tr>
<td>• Electronic calculators, dictionaries and encyclopedias</td>
<td>• Compilation of mind maps and work plans</td>
</tr>
<tr>
<td></td>
<td>• Correctional and educational programs aimed at the development of reading technology</td>
</tr>
</tbody>
</table>
Touchscreen and keyboard
Manipulators

Joystick

Scooter
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