

## Статьи

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**ТЕХНИЧЕСКИЕ СРЕДСТВА  
РЕАБИЛИТАЦИИ ЛЮДЕЙ С  
ОГРАНИЧЕНИЕМ  
ЖИЗНЕДЕЯТЕЛЬНОСТИ:  
МЕТОДИЧЕСКАЯ РАЗРАБОТКА  
ПО АНГЛИЙСКОМУ ЯЗЫКУ ДЛЯ  
СТУДЕНТОВ-ДЕФЕКТОЛОГОВ**

Аннотация. В статье представлен конспект занятия по английскому языку для студентов-дефектологов. Цель занятия – совершенствование навыков чтения специальных текстов, содержащих лексико-речевые конструкции, необходимые для осуществления коммуникации на английском языке в сфере образования лиц с ограниченными возможностями здоровья.

Ключевые слова: виды устройств, люди с ограниченными возможностями здоровья, реабилитационные технологии.

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**DEVICES FOR THE DISABLED  
METHODIC WORKING STUDIES  
IN ENGLISH FOR SPECIAL  
NEEDS STUDENTS**

Abstract. The article is devoted to the methodic working studies in English for special needs students. The aim of studies is development skills in reading special texts containing vocabulary for communication in English with socially handicapped people.

Keywords: types of device, disabled people, assistive technology.

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Dear students, today we discuss assistive technology.

How we know technology offers many different ways to help people with disabilities lead more normal lives. Devices that help them perform an activity are called assistive technology. Assistive technology can help people reach their personal and professional goals.

There are many devices to help people with disabilities use computers. There are ways for people to operate a computer by moving their heads or even just their eyes.

There are also keyboards that can be used with only one hand. One of these small keyboards is called a FrogPad. One young girl used the

FrogPad at school. Her mother said the small keyboard helped her daughter work normally at school, and her friends thought the FrogPad was great.

Students with disabilities want to be like their friends; they want to be able to do things as normally as possible. So for young people, technology must not only help them do their work. The devices must also be cool.

For example, Ben is a fifteen-year-old boy in Maine. He was born with a condition called spina bifida. He cannot move his arms or legs. He uses a small device called a TongueTouch Keypad, made by a California company, newAbilities Systems.

The keypad is placed in the mouth. Ben learned to use his tongue to touch different keys. They operate his telephone, his computer, his electric wheelchair, his bed and his music player.

Ben is able to get in and out of his house without help. And he can even turn his music up loud if he wants to.

Many times, the technology that helps people with disabilities is invented by people who have disabilities themselves.

So, TecAccess is a company that helps government offices and companies provide technology for people with disabilities. TecAccess has fifty-two employees. Forty-six of them have one or more disabilities.

The company is in Virginia, but its employees work all over the world [Leggett 2007].

To sum it up assistive technology can do a lot to improve the quality of life for people with disabilities.

**1. In pairs, look at the words in the box and use as many of them as you can to make the sentences [Santiago 2008: 43-46].**

blind person	adapted keyboard
motor-impaired person	on-screen keyboard
screen magnifier	voice recognition system
Braille printer	screen-pointing device
adaptive switch	screen reader
touch screen	pneumatic switch (sip and puff)

## 2. In pairs, discuss these questions.

1 What sort of difficulties do you think are experienced by computer users with limitations of vision or mobility?

2 What types of device could be helpful to blind users?

3 How can a person with mobility limitations communicate with a computer?

## 3. Read the text and find the following.

- the laws which ensure equal opportunities for people with disabilities in the USA and the UK
- how the blind student in the photo interacts with the machine
- the systems which type on the screen what is being said in meetings
- the type of software which reads printed material, recognizes the text and then sends it to the PC
- the system which is activated by the user's eye movements
- the switch which can be used by someone with quadriplegia
- the function of voice recognition devices

### Computers for the disabled

Computers have taken a dominant role in our society, meaning most jobs now require access to computers and the Internet. But what happens if a person is blind, deaf or motor-disabled? They needn't worry. The latest assistive technology is designed to help them use computers and do their jobs in the office, learn at school, or interact with their families at home. In addition, new laws oblige companies to adapt the workplace to accommodate disabled people. For example, the Americans with Disabilities Act (ADA) and the UK's Disability Discrimination Act make it illegal for employers to discriminate against people with disabilities.

To work effectively, most blind users need to have their computers adapted with technologies such as **Braille, screen magnifiers, speech synthesis and Optical Character Recognition (OCR)**.

**Braille keyboards** have Braille lettering on keyboard overlays, allowing the blind user to easily identify each key. For output, there are printers, called **Braille embossers**, that produce tactile Braille symbols on both sides of a page at high speed.

For someone with limited but usable vision, a screen magnifier may be appropriate. This type of software can enlarge text and images appearing on the screen by up to 16 times.

A speech synthesis system is used to read aloud the work on the computer. It has a speech synthesizer, which produces the audio output, and a screen reader – the program which reads aloud text and menus from word processors, databases and the Web.

OCR uses a flatbed scanner and specialized OCR software to read printed material and send the text to the computer. The PC can then produce a copy of the text in Braille, a magnified copy, or a version that can be read aloud by a speech synthesis system.

Deaf computer users can overcome many communication difficulties with the aid of **visual alerts**, **electronic notetakers** and **textphones**. Visual alerts are indicators that alert the deaf user when they receive new mail or when there is a system error. So instead of hearing a sound, the user is alerted by a blinking menu bar or by a message on the screen. Electronic notetakers use software that types a summary of what is said in meetings onto the computer screen.

**Textphones** allow the deaf to type and read phone conversations. They are also called **TDDs** (Telephone Devices for the Deaf) or **TTYs** (TeleTypewriters). They can be used in combination with relay services, where an operator says what the text user types, and types what a voice phone user says. Deaf people can also communicate via SMS and instant messaging.

Motor-impaired workers unable to type on a standard keyboard can employ **expanded or ergonomic keyboards**, **on-screen keyboards**, **adaptive switches** and **voice recognition systems**.

On-screen keyboards are software images of a keyboard that appear on the screen and may be activated with a trackball, touch screen, screen-pointing device, or eye movements. In an **eyegaze system**, the keys on the virtual keyboard are activated by the user's eyes when they pause on a key for two or three seconds.

**Switches** come in many shapes and sizes. They are operated by muscle movements or breath control. For example, a **pneumatic switch** – known as a **sip and puff** – allows someone with quadriplegia to control the PC by puffing and sipping air through a pneumatic tube. People with quadriplegia can also use sip and puff joysticks.

Finally, there's voice recognition, which allows the computer to interpret human speech, transforming the words into digitized text or instructions.

#### 4. Complete the crossword with words from the text ACROSS

2 An ..... keyboard presents a graphic representation of a keyboard on the desktop screen and allows people with mobility impairments to type data using a joystick or a pointing device.

4 Visual ..... allow deaf users to be notified of incoming mail or error messages without hearing a tone.

6 A screen ..... makes the computer screen more readable for users with poor vision.

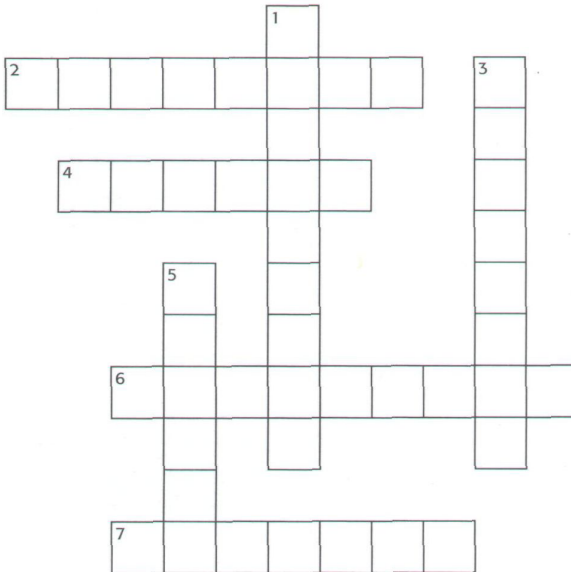
7 A system of reading and writing using raised dots, which enables blind people to read by touch.

DOWN

1 Unlike a standard telephones ..... has a small screen and a keyboard that transcribes a spoken voice as text. It is used for text communication via a telephone line, ideal for people who have hearing or speech difficulties.

3 A Braille ..... is an impact printer that prints text as Braille, by punching dots onto paper.

5 A speech synthesizer is used in conjunction with a screen ..... to convert screen contents into spoken words.



## **БИБЛИОГРАФИЧЕСКИЙ СПИСОК**

Leggett K. This is America – How technology can help disabled people live more normal lives [Electronic resource] // VOA Special English. – The Ultra Network Service [Online], 2007. – URL: <http://www.unsv.com>.  
Santiago R.E. Infotech. English for computer users. – 4<sup>th</sup> ed. – Cambridge University Press, 2008. – 172 p.