COMPUTING FOR THE DISABLED

А.О. Ерёменко, студент группы 17В51,
научный руководитель: Гричин С.В.
Юргинский технологический институт (филиал) Национального исследовательского Томского политехнического университета
652055, Кемеровская обл., г. Юрга, ул. Ленинградская, 26, тел. (38451)-777-64
E-mail: eao1@mail.ru

The present paper deals with the world's statistics on the people with disabilities, various tools and technologies for facilitation such people are reviewed. It is not difficult to create favorable conditions for such people. Today's level of information technologies simplifies the lives of millions people with disabilities. Now we have to make these tools more accessible, because everyone on Earth wants to live and enjoy life. These aims also agree with the YIT plan to create a more accessible environment for students with disabilities.

With the advent of information and communications technology (ICT), new hopes are emerging for People with Disabilities. Despite the huge challenges, sincere efforts are being undertaken to implement the use of ICT to counter obstacles related to disability. The information society represents at once significant opportunities but also potential new barriers for the social inclusion of disabled people.

Information and communications technology and assistive technology offer new opportunities for everyone, but these opportunities are specifically more significant for People with Disabilities, who use assistive technology for their daily activities to a higher extent than people in general. Today's assistive technology, which is adapted to everyone's abilities, means that disabled end users are able to participate in all aspects of social life on more equal terms than ever before. It is vital that people are able to benefit on an equal basis from the rapid development of ICT, to enable them to partake in an inclusive and barrier-free information society.

Individuals with serious sensory disabilities such as physical disabilities, visual impairments or deafness have benefited more than any other group of individuals from advances in assistive technologies. The advances in technology for these individuals can lead to increased productivity, employment and recreation opportunities. Although some progress has been made towards disability-inclusive development, there have been very few initiatives aimed at including disability in the Millennium Development Goals (MDGs) "Education for All". New teaching methodologies for persons with disabilities include information communication technologies and assistive technology (ICT and AT).

On average, around 10 percent of the world population is disabled and this number is likely to increase in the near future due to various factors, according to the World Health Organization (WHO). Eighty percent of persons with disabilities live in developing countries, according to the UN Development Program (UNDP). Disability rates are significantly higher among groups with lower educational attainment in the countries of the Organization for Economic Cooperation and Development (OECD), according to the OECD Secretariat. On average, 19 percent of less-educated people have disabilities, compared to 11 percent among the better-educated. The World Bank estimates that 20 percent of the world's poorest people have some form of disability, and tend to be regarded in their own communities as the most disadvantaged. Ninety percent of children with disabilities in developing countries do not attend school, according to the United Nations Educational, Scientific and Cultural Organization (UNESCO). [1]

A new generation of gadgets, gizmos and software is making it easier for disabled computer users to travel the digital world, interact with others and get work done without hitting the roadblocks that older technologies imposed. A blind accountant can tell screen-reading software to read spreadsheet data aloud to her, while a paralyzed programmer can write code by controlling his computer with the subtle movement of his neck muscles. Now let's have a look at some tools for people with disabilities.

The Impulse system. For those with amputated, paralyzed or impaired limbs, impulse system can be the ticket to using a computer without having to resort to bulky mechanical aids. [2] Impulse replaces the traditional keyboard and mouse with a small device fitted to the user's skin that uses electromyography technology to sense, amplify and transmit the small electrical impulses sent from the brain to the muscle. It works with many different areas of the body, including the neck and face, and can turn a wink or smile into a click.

Eyegaze Edge. Quadriplegics or others who can't use a standard keyboard and mouse can control a computer simply by moving an eye. The Eyegaze Edge uses a high-speed infrared camera mounted under the system's monitor and a small external processing unit to translate eye motion into on-screen action. After calibrating the system, all the user does is look directly at control keys on the system's monitor, which can

display a keyboard, mouse controls, a speech synthesizer with series of phrases to choose from, or a program for turning lights and appliances on and off in conjunction with the optional X-10 controller kit. The system tracks where the user is looking on the control screen and "presses" a key when she looks at a key for a specified period of time.

Jouse2. A computer can be controlled with nothing more than mouth movements and gentle puffs of air. "Sip and puff" input systems employ a thin, hollow joystick that lets disabled users fully interact with a PC. The user manipulates the stick with his mouth, cheek, tongue or chin to move the on-screen cursor and can click on an item by blowing into or sucking out of the straw. This device plugs into the USB port of a Windows, Linux or Mac computer, and the articulated, adjustable arm can be mounted on a tabletop, desk or wheelchair. Users can adjust input settings such as cursor speed, double-click (double-puff) speed and sip/puff sensitivity. In addition to being a mouse replacement, the Jouse2 acts as a keyboard replacement with the company's JoyWrite software, which lets users control the text cursor and enter individual letters, numbers and punctuation by combining sips and puffs of air. Jouse2 can also translate Morse code commands into letters, where sips are dots and puffs are dashes. [3]

Lomak. A different kind of keyboard and mouse replacement, the Lomak is considered so innovative that it's earned a spot in New York's Museum of Modern Art. Art with a purpose, Lomak stands for "light operated mouse and keyboard," and for those without the use of their hands, it can mean freedom to compute on their own. The system uses a head-mounted device that shoots a laser beam to a keyboard replacement that has 105 photo-sensitive spots arranged in circles that correspond to letters and numbers, punctuation and mouse movements. When the user aims the beam at what she wants and moves the beam to the Confirm button at each circle's center, Lomak carries out the command.

BigKeys LX keyboard. Sometimes all it takes is a little thoughtful redesign to help adapt a product for someone with poor eyesight or hand-eye coordination. [4] The BigKeys LX from Greystone Digital is a novel take on the standard keyboard, with large keys and labels. The BigKeys LX replaces a standard keyboard for use with either Windows or Mac computers; no extra software is required. The keyboard has most of the keys we're used to, but at 1-inch square, they're four times the size of traditional keys, making them easy to locate and press. Note, however, that it has a somewhat odd layout, with many special-character keys off to the right, and the large key spacing requires some getting used to.

ZoomText Reader. For those with macular degeneration or poor eyesight, a screen magnifier can bring sentences or even individual letters into focus. Recent versions of Windows include a crude magnifier, but it can't go beyond a 9X zoom, and fonts look pixelated and blocky. AI Squared's ZoomText Magnifier/Reader can blow text up to 32 times its original size and display it in a variety of ways. It can also read what it sees -- including documents, e-mails, Web pages, application menus and so on -- aloud to you with its synthetic speech processor. The program can even be set to read back characters as they're being typed, for perfect letters or memos.

Braille+ Mobile Manager. Many blind people take notes in Braille, the nearly 200-year-old alphabet that's made from a series of raised dots. [5] But most Braille devices are too cumbersome to carry around. That's where the Braille+ Mobile Manager from the American Printing House for the Blind comes in. With a 60GB hard drive and a powerful processor, it weighs just 7.4 oz. and can go anywhere. Anything held in the Mobile Manager's memory can be read to the user with the device's synthetic speech engine or sent to a computer via built-in Wi-Fi and Bluetooth. It synchronizes with a Windows PC (according to a company representative, third parties are working on Linux and Mac software), is compatible with Word files and can surf the Web, play music and read books aloud. Plus, with several third-party apps and games available, Mobile Manager is evolving into a computing platform for the blind.

SmartNav 4. Another option for those who can't control a standard mouse and keyboard but do have steady control of head movements is NaturalPoint's SmartNav 4, an infrared scanner that sits on top of a monitor or notebook. The $500 device connects with a Windows PC or Mac and senses head motion in a 45-degree field of view 100 times per second. SmartNav 4 works by sensing a small reflective dot that can be stuck to the user's forehead, eyeglass frames, hat or headset's microphone; the package includes 26 reusable dots. Move your head around and SmartNav follows the motion to place the screen's pointer where you want it. Users can type using a virtual keyboard on-screen; actions such as clicking, right-clicking and dragging are controlled with a special toolbar. The software is highly configurable, offering adjustments such as separate X and Y scaling for users with limited horizontal or vertical head motion and smoothing control for those with unsteady head movements.

Conclusion

The above-described technologies were made to make the life of disabled people easier. It was also necessary to review the current state of affairs in this field in order to introduce something new for the disabled people.

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ИНТЕРФЕРЕНЦИЯ ПРИ ПЕРЕВОДЕ ТЕКСТОВ В ОБЛАСТИ МЕТАЛЛУРГИИ И СПОСОБЫ ЕЕ ПРЕОДОЛЕНИЯ

Е.А. Короткова, Л.А. Попова, студенты группы 10В41,
научный руководитель: Ульянова О.В.
Юргинский технологический институт (филиал) Национального исследовательского Томского политехнического университета
652055, Кемеровская обл., г. Юрга, ул. Ленинградская, 26

Изучение явления интерференции при переводе научно-технических текстов приобретает особую актуальность в контексте формирования переводческих умений и навыков студентов-нелингвистов, т.к. именно на этапе овладения различными видами речевой деятельности на иностранном языке интерференции может оказать наиболее деструктивное влияние на коммуникативный процесс. В вязи с этим целью данной статьи является определение интерферентов, оказывающих отрицательное влияние на перевод профессионально-направленных текстов в области металлургии и разработка рекомендаций для преодоления этого влияния.

Термин «интерференция» имеет латинское происхождение и буквально переводится следующим образом: «inter» между + «ferens» («ferentis») несущий, переносящий [1].

В лингвистику этот термин был введен учеными Пражского лингвистического кружка. Однако всеобщее признание он приобрел после выхода труда У. Вайнрайха [2], где под интерференцией понимаются «те случаи отклонения от норм любого из языков, которые происходят в речи двуязычных в результате того, что они знают больше языков, чем один, т.е. вследствие языкового контакта» [2].

«Лингвистическом энциклопедическом словаре» под редакцией В. Н. Ярцевой дает наиболее полное определение интерференции: «Интерференция – взаимодействие языковых систем в условиях двуязычия, складывающегося либо при контактах языковых, либо при индивидуальном освоении неродного языка; выражается в отклонениях от нормы и системы второго языка под влиянием родного» [3].

Лингвисты исследуют проявления интерференции на разных языковых уровнях: звуковом, орфографическом, грамматическом, лексическом, семантическом, стилистическом.[4] Этот феномен наблюдается как в устной и письменной речи на иностранном языке, так и при переводе с иностранного языка на русский.

В зависимости от «направления» интерференция может быть прямой, обратной или двусторонней; в зависимости от вида речевой деятельности –рецептивной, т.е влияющей на понимание и продуктивной, т.е влияющей на производство оригинальных высказываний на иностранном языке.

Влияние интерференции на речь билингвов может быть как положительным, так и отрицательным. В случае положительного переноса автор высказывания находит действительные сходства в родном и иностранном языках, облегчающие понимание и выражение. Однако возникающие аналогии между явлениями родного и иностранного языков могут оказаться ложными и вызвать нарушение норм и правил неродного языка, а также его неадекватное понимание.