Trakia Journal of Sciences, Vol. 8, Suppl. 3, pp 283-285, 2010

Available online at:
http://www.uni-sz.bg

ISSN 1313-7069 (print)
ISSN 1313-3551 (online)

POSSIBILITIES FOR APPLICATION OF THE INFORMATIONAL TECHNOLOGIES WITH THE TRAINING OF CHILDREN AND STUDENTS WITH SPECIAL EDUCATIONAL DEMANDS

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ABSTRACT

During the recent years our educational system has drawn up the schemes of the real changes unto children and students with special educational demands with the possibility of educating and developing of their potential. The ICT facilitate their access to the kindergarten and school, the assimilation of knowledge, give them confidence with less efforts to develop their intellectual qualities. With the present study an attempt is made to represent some of the possibilities of the technologies for facilitation of the training of children and students with special educational demands.

The orientation unto the problematic indicated originates from the very possibility the informational and communicational technologies to be part of the training of children and students with special educational demands for the formation of basic computer skills

Key words: children and students with special educational demands, highly technological electronic (Hi-tech) support technologies

INTRODUCTION

In the modern society of knowledge, the work with IT and communicational technologies is a compulsory component of the intellect of the modern educated personality, no matter the professional orientation thereof. In the comparative report of the training of adults from nine EU countries of the secretariat of the organization for economical cooperation and development OECD, the ICT are determined as the "path unto informational economy and society, and that is why if no skills are acquired in relation thereof, this may put at risk the fundamental civil rights and obligations."

During the recent years our educational system has drawn up the schemes of the real changes unto children and students with special educational demands with the possibility of educating and developing of their potential. The ICT facilitate their access to the kindergarten and school, the assimilation of knowledge, give them confidence with less efforts to develop their intellectual qualities. Due to its multifunctional manifestation, associated not only with the justifying of the scientific knowledge, but also with the transition unto fuller realization of its human and personal measurements, the issues for the ICT can not stand out of the context of the training of children and students with special educational demands. And provided that due to the force of its social determined nature, the ICT are in the base of the purposeful development and self improvement, which has its direct relation unto the actual problem for the successful integration of the children and students with special educational demands in the kindergarten, school, and independent life, with their resultative participation in the process of the own training.

PURPOSE OF RESEARCH

With the present study an attempt is made to represent some of the possibilities of the technologies for facilitation of the training of children and students with special educational demands.

The orientation unto the problematics indicated originates from the very possibility the informational and communicational

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technologies to be part of the training of children and students with special educational demands for the formation of basic computer skills.

RESEARCH METHODS

comparative, theoretical analysis, enquiry, watching.

Didactic aspects of electronic technologies

With the help of the alternative keyboards and even the most illegible handwriting becomes beautiful, and with several movements of the mouse, the childe creates a pictures, which can not be painted with pencil. With the help of the specialized software and peripheral devices, alternative of the traditional ones, a computer configuration can be achieved which is adapted unto the individual demands of the children and students with special educational demands, the said additions unto the standard PC are classified unto the so called highly technological electronic (Hi-tech) support technologies, which could be used both as a group, and individually. The thing which unites the high technological support technologies is the accessibility, that is the features of the certain hardware and software system, which makes it suitable for usage by people with one or more physical disabilities, for example restricted mobility, disorders of the eye perception, hearing, etc.

The hi-tech conditionally can be divided into the following groups:

1. Hardware components, facilitating the training of children and students (as well as adults training themselves) with special educational demands;
2. Standard settings for accessibility of the working ambient of the products of Microsoft.
3. Support programs of accessibility - screen readers, speech distinctive programs, etc.
4. Fragments from computer lessons and good practices for utilization of the informational technologies, created with the participation of special pedagogues

Hardware components with facilitated access

Systems for transference and scanning:

Scanner with optic reading of symbols OCR - peripheral device with software which is used for processing of information. Appropriate, both for students with eye perception disorders, as well as for students, with cognitive disorders.

Manual scanner (Note taker)- support technology, which through its inbuilt software scans information in the form appropriate for transference in computer. This combination of scanning pen having link with computer, allows the students having cognitive disorders to record and transfer printing information for later processing and use (3).

Alternative keyboards are appropriate for students with physical, eye perception and cognitive disorders there are proposed various models with variants of the form and sizes:

Ergonomic keyboard s- developed as design and form, which ensures support for the wrists and hands and does not require movement of the hand for reaching the necessary keys. The diversity of models includes the keyboard for writing with one or two hands, some of the variants are even adapted for writing with one finger or with extended keyboard.

Keyboard with big keys – it can help students, both with physical disorders, who need bigger working surface, as well as students with visual disorders. Provides bigger zone for pressing of every symbol with possibility for change of the order in accordance with the specific needs of the disorders or the software.

Mini-keyboards- they have limited number of buttons and are developed so that to facilitate the users with difficulties of the fine motorics of the hands. The user utilizes the keyboard pressing various combinations of buttons and similar to the guitarists form accords playing the guitar. The advantages of the said device are in the usage of the one hand only, compacts, and the lack of need of movement of the hands in case of usage.

Extended sensor keyboard- this device is with flat sensitive (sensor) surface. It provides extended zone for pressing of each symbol with possibility for change of the order, in accordance with the specific needs of the disorder or software.

Keyboard assistant – this is a simple frame, which covers the standard keyboard with cut therein holes for each key, with the purpose of directing of the fingers of the user so that to prevent simultaneous pressing of two keys or the pressing of wrong key. It can be worked out from different materials and with various form for every type of keyboard.

Alternative mice:
Mouse with trackball – the user directs the cursor through the freely rotating sphere, which size can be from too small to too big. This popular model with the average size, about the sphere has four key located with functions which can be programmed. It is suitable for students with physical disabilities, which are reflected unto the fine motorics of the hands.

Mouse with joystick – it can be with various forms and sizes, different manner of holding, control of movement, as well as to conform unto the various specific needs of the users. Similarly to the trackball, it proposes stable support and minimal movements during usage, unlike the standard mouse

Mouse with cursor controlled by foot- the system works in two variants, of interchangeable pedals. The first pedal is furnished with 360 degrees mechanism, which allows the user to control both the direction and the speed of the cursor with one foot, whilst with the other pedal, is used as the key fro choosing. The left and the right pedal are equivalent to the left and right key button of the mouse, and providing this manner all the typical functions of the standard mice. It is suitable for students with physical disabilities.

Other periphery devices:
Touch screen and touchpad- devices which allow the user to move the cursor pressing directly the screen with finger or pen.
The technology can be inbuilt in the monitor or to be used additional device , which is put on the screen. Those screens, sensitive to access are suitable for students with cognitive, physical and multiple disabilities.

Brail display for keyboard- give the possibility for students with visual disorders to control the actions on the screen of the PC, provided the information which is on the screen of the computer, provided the information which is on the screen is reproduced on tactile display on the grounds of the Brail alphabet. It is suitable for people who use Brail.

Brail printer device which prints texts on Brail. There is a big diversity of models. Suitable for people with visual perception disorders, who use Brail.

Standard settings for accessibility of work environment of Windows – those settings provide the minimum level of functionality for users with special needs.

Utility manager- starts the programs – Magnifier, Narrator, and On-Screen Keyboard.
The program *Magnifier*- facilitates visually the users with difficulties crating separate window where parts of the screen are magnified. The *Screen keyboard* (Cyrillic and Latin) helps for the introduction of symbols of people with motive difficulties, while the standard mouse is replaced with indicating device or joystick. A selection is done between pressing or indicating of the screen buttons, and this could be also accompanied by sound. The *Narrator* – only in English, pronounces the content of the keys chosen.

Setting of Accessibility Options of the Control Panel – here one can find the options for accessibility, related with the readability of the screen, with visualization of some of the system sounds, with alleviation of the problems when holding a key, when entering a key combination, sound tips, when locking the keyboard- Caps Lock, Num Lock, Scroll Lock

RESULTS AND DISCUSSION

From the oral questioning with the teachers community, we establish that on the present stage of the integrated training, in the kindergartens and school, the above mentioned technologies are not used. As a result of the problem discussed, the opinion for the substantial influence of the technologies on the training of the children and students with special educational demands is put on the front.
Based on the real application of the ICT in the training of children and students with special educational demands, the following problematic fields can be underlined:

- lack of knowledge of the technologies for children and students with special educational demands by the pedagogical community;
- qualification /training of the teachers with support devices and technologies for children and students with special educational demands facilitating training;
- lack of highly technological support devices in the schools;

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