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ОБЛАСТІ ВИКОРИСТАННЯ КОМП'ЮТЕРІВ У СПЕЦІАЛЬНІЙ ОСВІТІ

Стаття розкриває безліч аргументів та прикладів які переконливо доводять цінність комп'ютерної освіти для дітей та молоді з особливими потребами. Все більше і більше можливостей з'являється у таких осіб реально виконувати роботу на відстані - за допомогою Інтернету. Електронний підпис дозволяє їм подолати комунікаційні бар'єри, а системи домашнього кінотеатру - приймати участь у різноманітних культурних подіях не виходячи з дому, що значно підвищує як рівень їх самооцінки так і впевненість у собі.

Ключові слова: система інтернету, діти інваліди, динамізація, комп'ютерна освіта.

Статья раскрывает множество аргументов и примеров которые убедительно доказывают ценность компьютерного образования для детей и молодежи с особыми потребностями. Все больше и больше возможностей появляется у таких лиц реально выполнять работу на расстоянии - с помощью Интернета. Электронная подпись позволяет преодолеть коммуникационные барьеры, а домашний кинотеатр - принимать участие в различных культурных событиях, не выходя из дома, что значительно повышает как уровень их самооценки, так и уверенность в себе.

Ключевые слова: система интернета, дети инвалиды, динамизация, компьютерное образование.

In every society there is a certain percentage of people who, for various reasons, differ from the common standards because of their developmental deficits. The number of people physically and mentally disabled is a growing part of society in which living conditions and standards are primarily tailored to the needs of healthy people. This is particularly true in relation to people with intellectual disabilities and from ancient times it constituted a social problem. The modern progress in science and technology not only did not eliminate this problem, but even in some aspects sharpened it. The steadily increasing pace of life in the modern world causes different kinds of

threats to intellectually disabled people and is not conducive for such individuals to be able to find a safe place in society.

Although the situation of people with intellectual disabilities (even with a mild intellectual disability) provides them with social welfare, healing, rehabilitation, revalidation, appropriate instruction based on the principles of special education, at the end is an unfavorable situation for them. They are perceived as being "worse", "other", "less valuable". Hence the reluctance of such individuals and to contact them, both in social, cultural and social activities. The mistrust in their abilities often contribute (despite the widespread idea of integration) to the unemployment of these people. The graduates of special schools and centers in the era of universal automation and computerization of life can not find jobs, they are doomed to dependence on state aid.

These are just some reasons why the current education, including those with reduced intellectual ability, must be forward-looking. Education should not only include mitigation the effects of hereditary, rehabilitation of disturbed mental and organic functions, broadly understood removal and compensation of developmental gaps, but also create a modern revalidation action programs based on new available educational means, trends and technologies in relation to global progress. These actions would allow to develop the impaired functions in order to give people with intellectual disabilities the chance for a more equitable start in life. This is particularly important at the early education level for children with a mild intellectual disability as they have to live and study in the era of computerization and automation of universal life and the widespread idea of integration. The current pace and progress requires them to penetrate new areas of knowledge and skills. Those requirements are higher than those required by their peers in previous years. The turn of the century forces them to work harder in order to achieve future independence in adult life, find work and deal in different situation equally with children with normal development. This is a challenging task that is put in front of special educators. These include the discovery and implementation of such activities, methods, forms, means that are aimed at improving the adaptability of students to present life and full integration with their peers.

It is necessary to prepare the teaching staff and equipment in the rich repertoire of modern means in order to fulfill the function of special education outlined above.

One of the characteristics of modern education is the use in the teaching process modern educational means, which – in combination with traditional forms – became the basis for the development of multimedia learning strategies. The purpose of this training is to provide students access to complementary sources of knowledge and provide the necessary information through various media: audio, video, print. So it is a multi-code teaching,

which helps to run a variety of learning activities: perceptual, manual, intellectual and emotional.

It is commonly believed that implementation of multimedia training, extensive use of new educational technologies and rich media programs significantly contribute to make learning a more attractive process and – what is more important – significantly contribute to effective implementation of the program content. The fact that this means that the Polish school is closer to European standards is not without significance. These remarks do not concern only mass education that is addressed to a child with normal developmental plan. It also applies to all persons requiring special educational attention and teaching according to special education programs.

Recent years have enriched the repertoire of available special education resources education in the computer, which is a new tool in a group called: "educational means". The achievements of pupils in general schools in the assimilation of knowledge and skills while using computers have encouraged the special educators to apply this tool to the process of teaching and rehabilitation of physically and mentally disabled students.

Currently, computer-aided instruction is used with very good results in the rehabilitation of children with reduced mobility, deaf and visually impairments through the so-called. computer programs for rehabilitation. Many schools and centers benefit from these programs. These are the sets of educational programs, among other: audiometry based on playing, mathematics, reading and writing educational programs. These programs are being used for example in rehabilitation of dyslexia, dysgraphia, as well as in the development of mathematical skills, stimulation children's verbal behavior (autistic children), etc. The playful form of these programs raises educational outcomes and the attractiveness of the activities, as well as allows to achieve higher results in the concentration, which is the a key element in teaching children with congenital or developmental delays.

The past experience shows that using computer programs in rehabilitation works very well regarding the equalization of the delays and mental function of children with mild intellectual disability. The schools that offer this type of teaching can be included in a nationwide program of computerization of education, including special education. The computer-aided classes help to promote, develop and shape a disordered mental function of these children. The attractiveness of activities also raises the level of concentration, which is the most impaired function in relation to pupils with special needs.

The developed since the early 80's the educational programs in the European Union highlight in a very clear point the specific group of users, and postulate a variety of projects designed to enrich the educational process of children requiring special attention due to their impaired or developmental

deficits. Those postulates include the use of multimedia and computers. Both the scientific research, as well as educational practice have shown that students developing very slowly, with great difficulties and limitations in the understanding of mathematical concepts, especially abstract, require unconventional, other than the traditional methods of teaching, including teaching assisted by new technologies.

The computers and a variety of multimedia software – games, publications – provide to the children the full contact with the cultural, science and education. All those tools make it easier to receive a variety of content and contribute to the development of operational thinking, cause and effect thinking and – not a fully functioning – logical memory, widen the narrowed range of cognitive interests. They also develop the capacities but do not lead to fatigue and exhaustion, because the main idea of working with these new media of communication is: joy and approval of actions in a fun atmosphere.

The intellectual effort is sustainable activities consistent with learners' wishes and also includes the teaching values but all is happening without the burden and stress. It promotes discharge of energy, power and boosts the prestige and self-esteem of disabled people. The modern educational technologies stimulate cognitive development and they meet the need for joy as well. They can also help to reduce shyness and alleviate fears of the unknown.

Furthermore, the use of computers in teaching also leads to gain basic computer skills. This ability will be probably helpful in the independent functioning of practical-life.

However, the emergence of computers and the their increasing availability, including special education, is notably only a potential opportunity to use this modern educational means in an efficient manner. There is no generally available and good patterns and papers on the methodology of using computer to support educational processes. Special educators who understand and endorse the need to support education of handicapped children using computer and educational software are faced with many difficulties along the way. A very important reason for this is lack of hardware and software tailored to the needs of special education. The cash available to special schools are not sufficient to satisfy the demands in this area. And there is no literature on the possibilities and ways to use computers in special education, which would be readily available and function as a teacher's guide on the use of the above mentioned methods. Teachers who reach in their work for a modern tools, usually are guided by intuition, their own ingenuity and often by trial and error method. If any questions or success in this field appear, they have no space and no support group, where they can share the experience gained by them. They lack a

specific database on educational programs that are useful or being used in an interesting way in teaching mentally disabled children.

It is rather commonly believed that working with a computer requires the specific skills, especially in terms of user's level of intellectual performance and as such is not available to people whose cognitive sphere is disturbed. The experience contradicts this simplified view. Children with disabilities, including those with a mild intellectual disability, for whom were conditions created of access to a computer, usually gladly make use of this opportunity, quickly master the basic, usually fairly simple rules of operation of presented computer's programs and are committed to climb the levels of computer "initiation". The teachers who work with children with special needs and use in their work modern technology, argue that the computer can be a useful means of enriching the learning process of these children. These teachers admit with surprise that the learner, who presents difficulties even in a relatively simple task, rather quickly masters the basic skills in computer operation.

An undoubted advantage of the computer is its attractiveness to students, which produces a positive motivation for learning, promotes interest in science, stimulates activity, etc. It should finally be emphasized that students with cognitive problems are characterized by – contrary to so-called students with normal developmental plan – a natural reluctance to learn. If the teacher wants to start-up children's activity it requires more specific motivational treatments and ability to activate the perception, attention and memory processes etc. The computer – through its technical attractiveness and even mystery – activates interest and a positive incentive to work with this complex, but making the "orders" device, triggers and sustains the student's activity.

Currently pedagogy and teachers face an important question: how to use modern tools of information for the personal development of individuals with reduced efficiency (first of all pupils in schools) and how to use these tools in outside school learning situations. The point is that – if we want to create the opportunities for social functioning for people with disabilities (integration into society without disabilities), we should prepare them to use these tools and resources that are being used by the general public.

The assertion that the computer and computer work have become synonymous with modernity does not include an exaggeration. The enterprises and institutions, which do not benefit from hardware today do not deserve – in a common opinion – to be assessed as modern. What is more, the modernizing action, leading to improve the organization's work and increase its efficiency and effectiveness are usually inextricably linked to the introduction, dissemination or use of IT. A similar trend is also observed in the school. The school computer lab still is still enhances the prestige of the

school. And teachers, who use computer equipment are classified as part of an outstanding teaching staff.

A recent survey organized by the Polish Ministry of National Education shows that over three quarters of primary, middle and secondary schools were equipped with computers. On average, nearly nine computer stations accounted for one school. This data is as up to date and reasonably well reflecting the state of the hardware equipment in mass education.

In recent years, the special education institutions increased their hardware resources, characterized by decent technical parameters. A number of competent and motivated staff of special educators is also increased. The teachers are able to make effective use of specialized educational software. The shortages are noted in the scope of specialized educational software, which can be an effective means of teaching used in the process of corrective and stimulating actions. The lack of these programs is caused by at least two circumstances:

- a small interest of producer of educational software programs addressing special educators (predicted low profits from distribution of the prepared program do not offset the cost of its production);
- widespread belief that working with a computer requires the user's specific abilities.

This belief often leads to the rhetorical questions, for example: *how people with intellectual disabilities can use computers, since we – with fully intellectual abilities – can not deal with it?* or *is funding an expensive equipment a school for mentally disabled, a simple waste of resources?* These and similar questions oblige to consider issues regarding the merits of use the computer equipment in the special education.

In relation to the mass education, the imposes area of examining this issue has a pragmatic dimension, referring to the practical-life and occupational functioning of human being. The fact is pointed out usually that the progressive computerization processes require, or even force, the acquisition of computer skills and the demand for IT specialist, new professions are crated etc.

In the case of special education, this perspective is, in our opinion, unfounded. And this perspective – in any case – can not be the dominant one. The basic premise of using computers in education of students with disabilities should be the revalidation value of IT. Than, our initial question is: if and how the computer use enable the intensification of processes aimed at the revalidation of disabled students. The search for answer to this question focuses on the general category of disability and resigns from the isolation of individual types of deviations from the norm.

The special education tycoons distinguish four basic ways to direct the revalidation work, including: *compensatory actions, corrective actions, improvements actions, arouse of revalidation's dynamic.*

It is worth to consider above-mentioned "paths" determining attention to those aspects that are related to the previously posed question of the value of computer-aided revalidation work.

The compensatory actions are based on making such conditions available to the person undergoing rehabilitation, which will replace the distorted features with something that has a comparable meaning for her. The simplest compensatory actions are those that include various types of development of prostheses. The more complex ones refer to a compensation in the intellectual or emotional sphere.

It is impossible to overstate the compensation opportunities created by the computer in the process of revalidation. The computer is sometimes one of the few devices that enable physically disabled people to operate independently. A specially instrumented computer's set allows, for example children with cerebral palsy (with strongly disturbed motor area, and sometimes also with difficulties with speaking, writing, drawing) to use alternative communications programs. The visually impaired users can use simple programs magnifying writing on monitors and blind users can use the devices allowing them to read, write and print Braille texts.

The use of Internet or open for all cyberspace can help all those who – for some reason – have a mobility difficulties or can not move to overcome the locomotif and communicate barrier with their environment.

Let's go back to the example of the special compensation because related to limitations in the intellectual sphere. The computer programs allow to replace the complicated – for the cognitive structures – phenomenon with simplified representations. Another advantage of the computer is expressed in its use as a means of visualization. In this regard, the computer is able to effectively replace not only the traditional means of visualizing such as chalk and blackboard, but also those more modern. For example, computer graphics creates an easy way to control the exhibited content by mapping the object or its fragments. Moreover, the possibility to quickly compile the desired combination of images and create moving images is not without significance for the teaching purposes.

The corrective actions are based on correcting the impaired organic or psychological function. These actions supported by computer may bring a whole new quality. The use of a computer allows the teacher and student to carefully monitor actions taken and sometimes even forces the precision of their execution. The effect mentioned above can be obtained, because the computer creates a wide range of possibilities to visualize a proper operation pattern and its result, which allows quick correction of errors. This concerns not only the correction of impaired physical sphere, but also speech defects or abnormalities in the mapping process.

The another area of the corrective action aided with computer is the cognitive sphere. Here, the use of computer again creates the possibilities to

remove fixed mistakes in writing, grammar, spelling, arithmetic and finally in correcting improperly formed concepts.

The improvements actions create another range of computer applications in revalidation. The operation of the system requires the use of keyboard or computer mouse and that is why it improves hand, hand-eye coordination and develops the ability to focus attention, perception, and other perceptual functions.

The educational computer programs provide an excellent tool to practice different skills. In this regard, the traditional teaching usually goes to paper and pencil. Students spend a lot of time on grammar, stylistic and arithmetic exercises and they put a lot of effort into the tasks, because of the need of writing. If the task is presented with computer, a significant part of such exercises can be done faster and with better results, as well as in a more attractive way.

The arouse of revalidation's dynamic is perhaps the most important dimension of the revalidation work regardless the type of disability. To achieve this goal it is necessary to influence the motivation sphere and closely related to it emotion sphere as well.

The rehabilitation process supported by computer brings sometimes astonishing results in the highlighted aspect. This is due to the attractiveness of a computer for children and young people. The teachers using computers in their work admit that students start to work with a computer with the joy and enthusiasm, as well as they can observe internal mobilization and perseverance in carrying out exercises, and the pursuit of a diligent and accurate fulfillment of orders. The tedious work requires to overcome the reluctance, weaknesses – what children with disabilities generally have difficulty in, here becomes a pleasure, pleasure, for which students eagerly await. The apathetic, unwilling to carry out any effort people in front of the computer become active and involved.

It is impossible not to mention one more aspect of "dynamizing" role of the computer. Children with special needs are aware of their "otherness" and disability. Giving them the opportunity to work with the computer brings them to the 'normal' world, enhances self-esteem and raises their self-confidence.

We believe that the above-mentioned arguments and examples adequately demonstrate the value of computer-supported improvement's process.

The use of information tools for revalidation can not obscure a different perspective and evaluation of the computerization process for special education. The issue raised above is multidimensional. The processes of computerization social communication undoubtedly create opportunities, which are seen also in terms of brand new, previously nonexistent, opportunities to facilitate the practical-life of people with disabilities. More

and more realistically the capabilities to perform work at a distance are represented, internet shopping became a reality, an electronic signature allows you to overcome communication barriers, home theater system allows contact to the selected cultural events without leaving home. These are just some examples that can be seen as situations facilitating the realization of the idea of social integration.

The arguments and examples adequately demonstrate the value of computer-supported revalidation process. What has been said, as well as the practice prove that the dissemination of computer education for children and youth with special needs is a chance to equalize opportunities in life.

Keywords: Internet, children with disabilities, dynamization, computer education.

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КОМПЕТЕНТІСНИЙ ПІДХІД ЯК СИСТЕМОУТВОРЮЮЧИЙ КОМПОНЕНТ СПЕЦІАЛЬНОЇ ОСВІТИ

*"Образование – это умение правильно действовать в
любых жизненных ситуациях"*

Джон Хиббен

В цій статті розглядаються питання трансформації змісту, методів і засобів спеціальної освіти в контексті компетентісного підходу. В ній розкриваються ключові освітні компетенції спеціальної освіти, конкретно-дидактичні орієнтири реалізації компетентісного підходу, структурні і змістовні компоненти диференційованої моделі формування ключових освітніх компетенцій.

Ключові слова. Компетентісний підхід, спеціальна освіта, модель навчальної програми, диференційована модель формування ключових освітніх компетенцій.