Methods used in education of children with multiple disabilities

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Zavod za gluhe in naglušne, Ljubljana

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CONTENTS

INTRODUCION

The project Methods used in education of children with multiple disabilities plan of all schools followed the long-term plan of development and further education of pedagogical staff. The main impetus for the schools involvement in the project was the requirement to acquire new knowledge in the field of special education. The main goal was to improve existing knowledge, acquire new ones and support the motivation of teachers in teaching children with multiple disabilities. The project was prepared as a two-year mobility period. 4 mobilities were planned in four different destinations (Slovakia, Czech Republic, Poland, Slovenia). We obtained partners for the project based on the contact of the HIPEN organization, of which we are a member. The school has selected teachers who are key to meeting the projects planned goals.

The output of the project is a brochure that can be used by all teachers to implement new teaching methods and others interested in working with children with multiple disabilities. The brochure is meant for special education teachers, tutors, assistants who are working with children who require special educational methods regarding their prime and additional disability and for those who have no previous experience in working with students with special needs.

It was created on a basis of common and individual experiences, sharing knowledge in thes trategic partnership / school cooperation. Methods that were described were being presented to the project participants during international project meetings and in between these meetings during the project. The team involved in these activities was composed of special educators, teachers, psychologists, social workers, vocational school teachers, speech therapist, interpreters, school counseling staff and other specialists.

Various didactic methods have been presented. Partners selected the most useful ones for their institutions and adapted them to the individual target groups.

The brochure was created by the project partners: Spojená škola internátna, Kremnica - Slovakia, Zavod za gluhe in naglušne Ljubljana - Slovenia, Specjalny Ośrodek Szkolno – Wychowawczy dla Niesłyszących im. Janusza Korczaka, Cracow - Poland on Creative Commons Licence (CC BY-NC-SA 4.0), ZŠ a MŠ pro sluchově postižené, Plzeň - Czech Republic during the project timeline from 1. 9. 2018 until 31. 5. 2021.

1 Methods used in education of children with multiple disabilities in Spojená škola internátna Kremnica (Slovakia)

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1.1 The use of basal stimulation as a method of education of pupils with multiple disability.

Concept of Basal Stimulation / theory

Basal stimulation is the concept of supporting individuals in crisis situations by which exchange and regulatory competences are significantly reduced or permanently limited. It is a form of holistic, body-related communication between people with severe constraints. It is a pedagogical - nursing concept supporting the perception, communication and movement abilities of a human. The concept is based on the assumption of individual care based on the individual's anamnesis. The basis is the care of the individual in accordance with its needs and its possibilities so that all its possibilities, the maintenance of social relations and communication are used. Basal stimulation allows individuals to realize themselves, their bodies, their surroundings, and establish relationships with it at a certain level of communication. The aim of the concept of basal stimulation is to support and enable perception to support the development of perception of one's own identity, to improve communication with the surroundings, to master orientation in space and time, and to improve the functions of the organism. Basal - means offer of elementary stimuli in its simplest form. Stimulation - means offering of incentives wherever an individual cannot provide enough stimulus because of a severe disability. The basic requirement of basal stimulation is integrity. This means that the individual areas interact with each other to form a united whole. All areas are equal and none of them may be preferred. It concerns the following areas: perception, thinking, feelings, movement, communication, physical experience and social experience. In the context of basal stimulation, two-level offers of stimuli can be set aside. The first are the basic stimuli - somatic, vestibular and vibration. The second is an expanding stimulation that includes stimuli: auditory, visual, olfactory, taste, and tactile-haptic.

Description of methods

Somatic stimuli affect the skin and the muscles of the child. Stimulation occurs through touch, pressure, movement, and temperature perception. The basic means is the touch by which we try to convey a positive physical experience. Furthermore, somatic stimuli help to realize one's own body and create a body scheme that is undifferentiated in children with severe disability.

Vibration stimuli allow the child to experience its own nasal apparatus (bones, joints), as children with severe disability are unable to gain the experience they normally obtain when crawling or walking. It helps the child to perceive the shake or sounds and perceive the direction from which they are coming. The nasal apparatus can be stimulated by vibration devices which are attached to the individual body parts.

Vestibular stimuli help the child to perceive and realize the change of body position in space. The stimuli are provided in the form of slow rhythmic swinging, rocking or rotation in different directions. The child should learn to perceive different positions - up, down, round. It learns to orient by head in the space. Vestibular stimulation improves muscle tone and body stability. Swings, big balls or rollers can be used.

Tactile-haptic stimuli should activate mainly the hands area and should lead to active touching and grasping of objects. We help the child to know the given object, its size, shape, surface or weight. The child learns to use its hands functionally to actively know its surroundings.

Auditory and visual stimuli are no longer bound to the body and therefore it is difficult for children with severe disability to process these stimuli. The purpose of stimulation is to teach the child to watch and listen. We offer contrasting sounds (noise - silence) and images (light - dark). We lead children to register close and distant objects, to the production of sounds.

Oral stimuli. The child learns to activate the mouth area, it learns the hand-mouth relationship. It learns to activate olfactory stimuli - to assign smell and taste - to recognize pleasant and unpleasant. It learns to know that mouth and nose can convey useful sensations.

Olfactory stimuli. For the olfactory stimuli in this surroundings we use light aromatic fragrances, perfumed pads, soaps., also the common scents of food, laundry.

Methods of somatic stimulation, which we use in the educational process of our pupils, are soothing somatic stimulation, encouraging somatic stimulation, developing somatic stimulation, positioning (mummy position and nest position) and massage stimulating breathing.

The aim of **soothing somatic stimulation** is the stimulation body scheme perception, experience with own body, reduction of unwanted states, induction of total body relaxation. We provide the pupils with mental disability with support in the learning process - to learn to perceive and know own body. This method allows us to establish communication with the pupil. We also apply the method to pupils with increased muscle tone to relieve muscle tension.

Encouraging somatic stimulation allows the perception of one's own body, increases pupil's attention, increases muscle tone, heart rate and blood pressure, supports pupil activity and prepares it for the next lesson.

We provide **developing stimulation** to pupils whose body scheme is not stabilized or needs to be further developed. By applying developing stimulation, we promote perception of body scheme and also emphasis of body symmetry and body center occurs.

Positioning

The concept of basal stimulation provides the long-term immobile pupil with the ability to get information about its body and to stabilize the body scheme perception through the positioning of the nest and mummy. When changing the pupil's position, i.e. when positioning, we simultaneously apply vestibular stimulation. Positioning also allows the optical stimulation of pupil, because we change its viewing angle by changing its position. The aim of positioning is to stimulate and stabilize the perception of one's own body, pedagogical offer, to learn new experience with one's body, to ensure the comfort of lying, to enable the relaxation of the body, to relax, to support tactile abilities, motor skills of hand, to enable visual stimuli, optical stimulation, support of communication, to enable orientation in space, overview in space.

Mummy position

The mummy's position is mainly used by pupils who need very intense stimulation of perception of their own body. These are pupils with deep mental retardation. The aim of this positioning is to allow the pupil to mediate perceptions from its own body and allow it to feel the boundaries of its

body. Mummy positioning can be combined with nesting positioning. The child in the nest position can be wrapped in a blanket with all the positioning cushions, or, on the contrary, the child in the mummy is covered with positioning cushions around the body.

Nest position

This position allows pupils to relax and it induces pleasant feelings in them in the sense of "I am feeling good". At the same time, this position offers them a feeling of security and safety and an improvement in the perception of boundaries of their body. The position is suitable not only for immobile pupils, but also for the restless and aggressive pupils. During the stimulation, the pupil becomes calm.

Massage stimulating breathing is a massage in the rhythm and with sufficient continuous pressure of our hands in the area of the back or part of the chest. It is a breathing gymnastics that allows the stretching of the breathing muscles and lung ventilation. It gives the pupil relaxation, a feeling of security and proximity, and allows the teacher to express his / her empathy towards the pupil. It reduces restlessness and confusion. Psychosomatic tension is released, physical and mental relaxation occurs. The aim is to help the pupil to switch to a quiet, deep and regular breathing. Massage helps to reduce stress hormone leaching.

Vestibular stimulation. The concept of basal stimulation allows the **vestibular stimulation** to transfer information to the vestibular nucleus in the brain, and subsequently to convey position information in space, to reduce dizziness from rotating motion, to reduce flexors and extensors tension, to prepare the organism for mobilization. The goal is better spatial orientation and perception of movements in the space.

Work position: Teacher´s assistant in Special Elementary School „C“ variant

Trained by: INSTITUT Bazální stimulace, s.r.o., J. Opletala 680, Frýdek - Místek

- Basic course of Basal stimulation, Handlová
- Extension course of Basal stimulation, Social Services Home Hrabiny, Nová Baňa
- Deepening course of Basal stimulation I., Ostrava – Pustkovec
- Deepening course of Basal stimulation II., Ostrava - Pustkovec

The knowledge and practical experience, which I use during the application of the concept of basal stimulation, are coming from the following literature:

- Textbook for accredited educational program
  Basic course of Basal stimulation
  Basic module I.
- Textbook for accredited educational program
  Extension course of Basal stimulation
  Extension module II.

  Author: PhDr. Karolína Friedlová, certified lecturer of Basal stimulation, executive of INSTITUTu Bazální stimulace

- Basal stimulation for carers, therapists, speech therapists and special educators.
  Author: PhDr. Karolína Maloň Friedlová

I use the concept of Basal stimulation in the educational process of pupils with multiple disability. The therapy plan is subject to an individual educational program developed by a class teacher. The scope of the Basal stimulation concept is subject to the individual requirements of each pupil, who is assigned to me by a class teacher.

1.2 Artephiletics with pupils with multiple disabilities

Definition of the term „artefiletics“

Artefiletics is a specific concept of upbringing by art with an interest in artistic expression, and it encourages children to creative recognition.

The author of the term "artefiletics" and such spiritual father of this discipline is Ján Slavík - who defines artefiletics as a special concept of art or in the broader sense expressive upbringing, which touches the boundaries of the art therapy and turns primarily to the authentic experience recognition of man and his culture, to develop emotional, social and creative aspects of human personality.

Artefiletics is a discipline that is closely related to the art therapy and uses similar techniques to those in art therapy, but artefiletics is essentially done only in the field of upbringing - it is a directed and targeted activity using various art activities, such as drawing, painting, modelling, collage ... The emphasis is placed on the art creative process itself, on its perception and experience, the development of creativity, spontaneous art expression and non-verbal communication with the pupil through artistic activities. Art therapy is a psychotherapeutic and psychodiagnostic discipline that uses only artistic art forms when working with client. Its aim is to heal, it is a teamwork in collaboration of several experts.

Aims of artefiletics

The main aim of artefiletics is to offer to express by an art expression and by that to express its doubts, inner conflicts, feelings of dissatisfaction, fear or anger, but also to express joy, happiness, love and other positive emotions. The emphasis is placed on the active relationship of the child to the world through experiences and the uniqueness of experience during the creation.

However, the social aims of artefiletic techniques and methods are also significant and are related to the development of prosocial behaviour, to the fulfilment of social needs such as communication, cooperation, appreciation, support, tolerance, development of empathy, joint sharing and dealing with stressful situations. Artefiletic techniques and methods have a positive effect on class climate and the importance of artefiletics as a relaxing and stress-releasing creative activity is also invaluable.

Artefiletics is applied to children who are not spontaneously expressive. These are children who have difficulty to establish verbal contact with adults, are unable to express their inner needs, and are too sensitive or closed. They cannot express or process their fantasies, emotions, complexes and conflicts.

Every child's artistic expression is tied to its current mental state, drawing is a statement of his inner world, its feelings, experience, desires and dreams. Thus, the most appropriate approach to knowing the child's personality is child's drawing. The child draws, employs and coordinates hands, eyesight, hearing, touch and sends out the signals it feels, drawing helps the communication with the surroundings. It does not matter how well and consistently a child can draw, but whether it has a positive relationship to the art activity, whether it enjoys it and fulfils it. This is the basis of release and relaxation.

Artefiletics with children with multiple disability

Working with multiple disabled has its own specifics, depending on the individual types and degrees of mental and sensory disability and the level of communication and adaptation skills associated with them. The artistic expression of children with moderate mental disability is marked by a significant stereotype, which means of multiple repetition of the same learned elements, children draw "cephalopods". The artistic expression of children with severe mental disability remains largely at the level of doodles and various painting games. The behaviour of pupils with multiple disability is fluctuating, unstable, accompanied by unwanted moments of emotional expressions and fluctuations in emotions such as irritability, tendency to affective reactions and annoying mood. Artefiletic techniques and methods help to divert children from the destructive behaviour of such undesirable behaviours.

Drawing as such is of particular importance for pupils with intellectual disability for their intellectual development, it is necessary to lead pupils to drawing according to reality and thereby they acquire clearer ideas, develop imagination of thinking and speech.

The importance of artefiletics

- develops fine and gross motor skills
- calms down, reduces nervousness and tension
- enriches imagination and creativity
- strengthens healthy self-confidence, belief in own abilities

- develops the ability of self-evaluation and evaluation of others
- improves concentration
- practices patience and perseverance
- grows strong will
- in speech problems, it helps to communicate and express one's own feelings, desires and needs
- increases optimism
- helps to divert from the destructive behaviour of unwanted expressions of behaviour
- relieves aggression
- achieves release
- serves as self-realization, active and purposeful use of leisure time

Description of methods

Artefiletics offers unconventional methods, it does not point to the detailed planning, its aims are looser, the teacher often finds himself/herself in an unexpected situation in which he/she has to improvise. The main aim is to provide the child with relief and experience and, in addition, the child learns to express its emotions, develops its creativity and increases the sense of self-acceptance.

During individual artefiletics, the art material is offered to the child (sometimes a piece of paper and a pencil is enough) and the relationship is established by common creation and mutual supplementation.

The paper offering method also helps with aggressive behaviour when we ask a particular pupil to paint its anger - the pupil will calm down over time. I will share my personal experience with a particular pupil: at first it chose red aggressive colours, it literally got overwhelmed itself by

them, but I gradually offered it other colours, a particular pupil chose a green colour, it painted without words, it tried to cover the whole area very quickly, it was so focused that it didn't see anything, it literally "painted out of anger".

During the group artefiletics it is being worked with the whole group/class, it is quite demanding and therefore it is appropriate to follow the individual stages.

1. **Warm-up activity - game** inducing mental well-being, release and tuning for artistic activity
2. **Art activity** - main art activity
3. **Reflexive dialogue** - an opportunity to speak about your feelings and experiences, to communicate, to express emotions,
4. **closing activity** - calming down.

In order to create a creative atmosphere, it is necessary to point out the importance of a non-directive approach that supports ideas, teaches pupils the artistic skills of a particular technique. Individual approach to the pupil is essential.

Spontaneous artistic expression - based on spontaneity,

immediacy, impassion. It uses techniques

of drawing, painting and doodles.

An object or person appears in the drawings

which impressed the child the most and has a great meaning for it.

Child will often draw extraordinary experience for it

and it puts everything in the drawing what it can't express in words.

Finger painting – is one of the most effective and most used techniques in art therapy. As the name suggests, it is painted with fingers. It stimulates creativity and curiosity, develops the child's subtle motor skills. Paint can be applied and imprinted in different ways. Tactile perception during painting releases tension. Therefore, it is also used by children with problematic behavior and neuroses.

Modelling – work with modelling material increases manual skill, develops fine motor skills and besides that it is also relaxing as finger painting

Liquid sand – joint creation in a special playful atmosphere

teaches the ability to work in a group; increases interest in work,

induces personal satisfaction

Doodles – free thoughtless paper doodling, focused on relaxation, release and joy of the creation process

Collage - an attractive technique of sticking the cut out pictures. Children do not feel deficiencies in their art expression. Additionally drawn collage - creating of new pictures by additional drawing into the cut out pictures.

Painting game - there are different forms of work e.g. embedding into wet base, embedding of paint, imprinting of various objects, such as crumpled paper, cardboard, rag, sponge, vegetables, natural materials, and so on. Imprinting is a method of work with paints and the effect is amazing. Imprints can be additionally drawn according to fantasy.

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Name of the activity: **Painting game**

Time of realization: 1 lesson, 45 min

Aim: experimenting with paints, fixing of colour names, naming colours, mixing of paints

Tools: finger paints, drawing

Procedure:

1. Warm-up activity - observing the world through coloured slides
2. Art activity - pupils soak their fingers into paint, starting with yellow colour, gradually spreading the colour over the surface, after some time we add red, green and blue colour. Pupils observe mixing of paints, leaving scratches with nails into paints, fingerprints….
3. Reflexive dialogue - appropriate to age and disability

   How did you create it?

   Which color do you like?

   How did you feel during finger painting?

   What reminds you of the picture?

4. Closing activity - calming down - in a relaxing corner

1.3 Use of non-direct play therapy with children with multiple disabilities

Introduction

The playforms an essential and inevitable part of the child's life. According to Hartl and Hartlová (2000), the play is one of the basic human activities that further include work and learning. Vymětal and Rezková (2001) claim that the play is the most natural means of self-expressing of the child. Since children gain the ability to express themselves in the abstract way in the 12th year, it is natural that the play has become a frequently used means of psychotherapeutic work with a child client. According to Říčanet al. (2009) in developmental periods, when abstract handling of reality through speech and thinking is not yet a therapeutically effective means for a child, the play is usually the most appropriate instrument of psychotherapy. There are several approaches within the therapy, each of which is looked at the therapy in a specific way. Therefore, there is no single particular definition of play therapy and there are a number of definitions in the literature that seek to define it. The American Play Therapy Association (2012) defines it as the systematic use of a theoretical model to create an interpersonal model in which trained play therapists use the therapeutic power of the play to help clients to prevent or resolve psychosocial difficulties and achieve optimal growth and development. The British Association of Play Therapists (1996) defines play therapy as a dynamic process between the therapist and the child in which the child discovers, at its own pace and agenda, past, present, conscious, or unconscious issues that affect the child's current life. Through the therapeutic alliance, the child's inner resources are able to summon change and growth. Play therapy is aimed at the child. The play is the primary medium and speech is the secondary medium. A common feature of the individual definitions is the use of the play in the context of the therapeutic relationship between the therapist and the child, which helps the child to solve its difficulties and at the same time leads to its growth.

Types of play therapy

Play therapy involves many approaches, while primary we distinguish so-called non-directive play therapy (e.g., *child centred game play*) where the play is led by the child and the therapist stands for a facilitating role, directive play therapy (e.g., *cognitive - behavioural play therapy*),

where the play is managed by the therapist and family play therapy (*directive - e.g. theraplay, or non-directive - e.g., filial therapy*). There is also a collaborative approach where the therapist applies both direct and non-directive strategies. However, all approaches perceive the play as a child's means of communication. In Slovak and Czech literature (Vymětal, Rezková, 2001) we will also see the designation as playful or play therapy, which the authors use as a synonym for play therapy. Similarly, in our paper we will use all these terms to refer to play therapy.

Child centred play therapy

In our paper, we will continue to focus on the child centred play therapy (*child centred play therapy, CCPT)*, which Landreth (2002) defines as a non-directive approach therapy that helps children with their emotional and behavioural difficulties. We focus on its use in the work of school psychologists and special school teachers with children with aggressive expressions in behaviours. The founder of the child-centredplay therapy is Virginia Axline, a student of Carl Rogers, who in her publication*Play therapy*(1947) describes the basic principles of such understood therapy and the therapist's role as follows:

1. The therapist develops a warm, friendly relationship with the child, trying to establish a therapeutic alliance as quickly as possible.
2. The therapist accepts the child as it is.
3. The therapist creates a feeling of tolerance in the relationship so that the child feels completely free to express its own feelings.
4. The therapist notices the child's feelings and reflects these feelings back to the child in order the child gains insight into itsbehaviour.
5. The therapist maintains a deep respect for the child's ability to solve its own problems as long as the child has the opportunity to do so. Responsibility for making decisions and bringing about change belongs to the child.
6. The therapist does not try to decide, the child gives the direction, the therapist follows it.
7. Therapist does not accelerate therapy. It's a gradual process.
8. The therapist determines only those boundaries that are necessary to anchor the therapy in the real world and which allow the child to be aware of its responsibility in relation.

Geldard and Geldard (2008) report that in many ways Virginia Axline's work can be regarded as a parallel to Rogers' work with adults. She, too, believed in the ability of children to successfully solve their own problems in a safe and stable therapeutic relationship. She used Rogers' active listening technique and followed the principles of empathy, warmth, acceptance, and authenticity.

The basic premise of this approach remains a commitment to certain beliefs about children and their natural potential to grow and mature. Vymětal and Rezková (2001) report that the therapist is convinced that the child has the potential to solve its problems itself. The role of the therapist is to create an atmosphere of safety in which the child can demonstrate its potential and develop safely. He/she does not manage and direct the child, the therapeutic process is based on "being with the child", "attuning" to its current state of mind. A child,not a problem, or an attempt to correct its behaviouris at the centre of the therapy as the therapist believes that child´s behaviour is motivated by a tendency to grow (Landreth, Bratton, 2006).

Indication of child centred play therapy, organisation of therapy and equipment of the playroom.

According to Vymětala (1996), under the indication for psychotherapy, we understand the diagnostic procedure and its outcome, which we choose for a certain type of psychotherapy of patients, about whom we assume that this treatment will help them. There are three types of indication - general, adaptive and specific - prognostic. Indication is essential for the efficacy of psychotherapeutic treatment, which, according to its type, is significantly differentiated, therefore the indication must be differentiated. According to Landreth (2002), therapy is designed for both children and adolescents with various emotional and behavioural difficulties. Landreth (2010) describes the effectiveness of child centred play therapy in groups of children such as: tortured and abused children, children with aggressive behaviouralexpressions, impaired relationship, autism, chronic illnesses, hearing and physical disability, specific learning disabilities, intellectual disability, impaired communication ability, hospitalized children and other difficulties such as anxiety disorders, schizophrenia and others. The duration of therapy is individual for each client. Usually, one play session takes 45 minutes. It is essential to consult the child's condition regularly with the parents or their legal representatives during the duration of the therapy. The therapist introduces the playroom as a place where child can play with toys in the way it wants. The playroom is equipped with such toys that the child cannot hurt itself with the manipulation. We can categorize toys to subgroups such as: toysfor expressing aggression, toysfor expressing creativity and toys from real world.

Play therapy focused on children and pupils with multiple disability

According to Landreth (2010), the fears and obstacles that are brought by the application of non-directive play therapy in these children are secondary. What is important is that these children are essentially the same as other, healthy children, and their reactions and feelings are the same. All children need understanding, acceptance, and human value. Health disadvantages do not change these needs. It is possible that children and pupils with multiple disability will be more likely to slowly find trust in the therapist, because they have many experience with rejection and underestimation from many adults in the past.

Children who have some kind of health disadvantage, including children with multiple disability, often react negatively to interventions that seem to reveal their observable differences, increasing their discomfort, lack of acceptance and inadequacy (Landreth, 2010). It is for this reason that non-directive play therapy seems to be a suitable alternative for children and pupils with multiple disability.

Course of play therapy at children and pupils with multiple disability

Mills and Allan (1992, according to Johnson, Chuck, 2001) recorded four phases through which children work during the play therapy process: 1) occurrence, creation of relationship, 2) border testing, 3) work on personal needs, 4) stabilization and termination.

Case report

Briefanamnestic data

Name: Lucia

Age: 11

Conclusions of psychological examination:

Child with special educational needs – healthy disadvantaged – with multiple disability, mental disability, hearing disability, symptomatic speech disorder,deprivation syndrome. Current performances in the area of non-verbal intellect reduced to the zone of slight mental retardation. Personality immature, affective labile, frustration tolerance reduced.

Conclusions of special pedagogical examination:

Child with special educational needs, healthy disadvantaged– with multiple disability –with mental disability. Disrupted communication ability – disrupted speech development - specific speech and language development disorder (F 80.0).

Personal anamnesis:

A child from the first physiological pregnancy, prematurely born in the 36th gestation week by section (1760 g), AS unspecified. A child immature, with a hypotrophic syndrome, with good immediate postpartum adaptation.

Family anamnesis:

Both parents were alcoholics, they grossly neglected childcare. The family was under the supervision of Central Office of Labour, Social Affairs and Family. Father and mother died when Lucia was 4 years old. The child was placed in a children's home in Prešov, later in a children's home in Kremnica. The condition after the death of the parents was solved by a pedopsychiatrist for subdeprivation syndrome; treatment by medicine was indicated.

School anamnesis:

Lucia did not attend kindergarten, postponement of compulsory school attendance was recommended to her. She was trained in the preparatory year in Special elementary boarding school for pupils with hearing disability V. Gaňuin Kremnica.

Pupil´s current situation:

Currently, Lucia is living in children´s home in Kremnica, its staff described the adaptation period after arriving into children´s home, when Lucia tended to look for food in containers and baskets, she expressed herself vulgarly and she manipulated aggressively with toys. The mentioned behaviour persisted for approximately one year.

Reasons for inclusion into therapy:

We began to work intensively with non-directive play therapy with the pupil (once a week, 45 minutes) upon the request of a class teacher about a month after her school start. The reason was auto-aggressive behaviour, hyperactivity, restlessness, as well as frequent fights with classmates in the classroom.

Course of non-directive play therapy:

During the first four sessions, Lucia often went away from the individual activities, initially she sat with her back to the therapist. She was always looking forward to the playroom, she tended to please the therapist. There was a break at the ninth meeting and the topic of childcare and fulfilment of the child´ needs appeared in the pupil's play. Since this meeting, the theme of saturation, care and protection has repeatedly appeared in the play. While playing, she took on the role of a "caring parent" who wants to and can take care of the child. Altogether, we attended 25 playful meetings with the pupil. During the last three, when we started preparing her for the end of therapy, the topic of care for the therapist appeared (she cooked food for the therapist, invited him/her to a feast, etc.).

Results of non-directive play therapy:

The class teacher described the reduction of the frequency of expressions of Lucy´s auto-aggressive behaviour after about 15 meetings in the playroom. Lucy's behaviour seemed to be more peaceful, more conscious to the class teacher in the school environment. Her position in the classroom is still dominant, but the number of conflicts with classmates has been reduced.

Conclusion

Play therapy is a safe environment for children with multiple disability, where they can express their feelings of pain, anger and confusion. The combination of a safe surrounding and an empathetic, accepting relationship with an adult who has trust in the child and its potential to grow helps children to find solutions to their difficulties without looking at them as a problem. We perceiveplay therapy as one of the effective interventions that seeks to facilitate the child's relationships as well as itssurrounding. It is designed to improve children's mental health as well as their coping skills.

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1.4 Motion programs focused on regenerative exercises

Introduction

The importance of movement is undeniable for health. Movement should become part of the lifestyle of today's man. The effects of physical activity help to regulate blood pressure, oxygen consumption for the heart, increase the amount of active muscle mass, improve body posture, increase lung capacity, affect positively the nervous system, improve memory, concentration, etc. The lack of physical activity weakens human health. Movement along with the right diet are the most effective means of the prevention and treatment of many physical and mental illnesses. The lack of exercise is a consequence of various musculoskeletal disorders.

The regeneration of forces includes all activities that are aimed at full and quick recovery of all physical and mental processes. Therefore, regenerative exercises can be a suitable physical activity to ensure the improvement of the health of the population, including children with multiple disability.

„The task of the school is to ensure a comprehensive movement regime of the pupils of the given school“ (ŠVP,2009).

The school can implement regenerative exercises into the morning exercises as well as into physical classes during lessons. Similarly, large breaks, lessons of physical and sport education, physical activities in the school club, as well as hobby groups are also suitable. According to the suitable choice of exercises school in nature is also a good area. When designing the curriculum, each teacher has the possibility to choose the adequate physical means with respect to the real conditions of the school and the specifics of the group of pupils. During these exercises, the pupil recognizes its own body, own possibilities and limits. It can evaluate proper body posture at various positions. It knows how to breathe properly and how to relax. It perceives muscle tension It gains experience and knowledge about itself through movement, resulting in self-knowledge, self-improvement, and individual action.

Physical and sport education

School subject physical and sport education is the main subject in the educational area Health and movement.

It is dedicated to health care, it is focused on physical, functional and movement improvement, which helps to strengthen health, increases the pupil's fitness and physical performance.

In this paper we will briefly get acquainted with:

- Diagnosing of pupil´s muscle imbalance,
- Techniques and procedures during prevention and removal of muscle imbalance,
- Practical implementation of regeneration exercises with pupils,
- Creation of own set of exercises for the performance of preventive and corrective exercises.

Motion stereotypes

Body posture and movement stereotypes are individual, different. They are not fixed and encoded forever.

Keeping an upright figure is one of the most important movement mechanisms. Incorrect movement habits, long standing or sitting often result in improper body posture. Outwardly, it is manifested by changes in body shape caused by shortening or weakening of some muscle groups and non-physiological spinal curvature.

Muscle imbalance

Another basic mechanisms is to maintain muscle balance.

Normally, the tone of the muscles around the joint and their contribution to its strengthening is balanced. But, there is not always the best match between the muscles, and it happens that one prevails over the other, the balance is interrupted, and a **muscle imbalance** occurs.

If the situation is not adjusted, the deviation and its causes persist, the disproportion increases. Increased muscle tension - **hypertonus** is escalating, sometimes to spasmodic tension - **spasm**. Finally, a structural rebuilding occurs in this muscle, which cannot relax – it shortens and this results in a limited range of motion.

Tonic – postural muscles

Muscles that tend to shorten, which work with long-term tension, help to keep the body in the upright position.

Phase muscles

The muscles located on the other side of the joint or the joint chain also undergo significant changes. There is a decrease in muscle tension in the muscles. Gradually, they are disabled, they stretch out, weaken and lose weight. These muscles are applied in the rapid dynamic movement.

Postural

- are shortening- we stretch them
- are very persistent
- have greater tension- hypertonus
- can go into tension-spazmus
- have a tendency to shorten, we have to know how to stretch them

Phase

- are weakening – we strengthen them
- are not persistent
- have smaller tension- hypotonus
- do not have spasm
- have a tendency to weaken, they weaken when they are not trained

Summary

Muscle imbalance „will not satisfy with itself“. If it is not removed, it joins together and induces chain reactions that also gradually affect and disable also other parts of the body. Therefore, the prevention is important, to learn how to use your body's musculoskeletal system properly, to keep it in the best condition by physical exercise

Important: At first release and stretch shortened muscles, then strengthen weakened muscle groups.

Testing the musculoskeletal system.

The corrective exercises help to eliminate muscular imbalances and functional disorders of the musculoskeletal system. In order to choose the right exercises, we need to test the muscular apparatus, identify shortened and weakened muscles, and measure the mobility of the joints and spine.

Janka, pupil with hearing disability.

- Shortened left trapezoid muscle (right shoulder is lower, left higher)
- Enlarged lordosis
- Axis deflected to the left (shortened back muscles - right side, weakened spine muscles- left side)
- weakened interscapular muscles
- shortened posterior thigh muscle

1. Test from behind

Shortened left trapezoid muscle - right shoulder is lower, left shoulder is higher.

Axis is deflected to the left – shortened spine muscles – right side, weakened muscles – left side.

2. Test from the front

Height of the shoulders – right shoulder is lower.

Pelvis position – moved to the right side.

3. Side bend to the right

Standing – 56,5 cm

Side bend – 49 cm

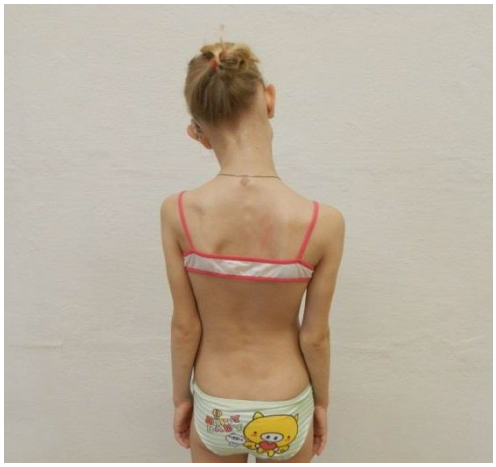
4. Side bend to the left

Standing – 57,5 cm

Side bend – 50,5 cm

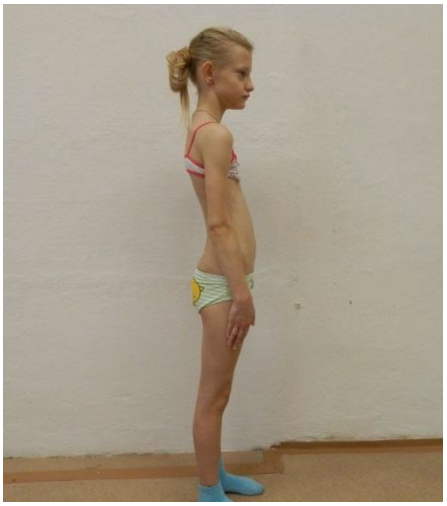
5. Tilt of the cervical spine to the right

6. Tilt to the left



Shortened left trapezoid muscle.

7. Physiological curvature of the spine



Enlarged lordosis.

8. Test in forward bend

Distance from the pad - 29 cm.

9. Back tight muscles

Right muscle significantly shortened.

Left muscle shortened less.

On the basis of the testing, we precisely determined the weakness of the pupil.

- Shortened left trapezoid muscle (right shoulder is lower, left is higher)

- Enlarged lordosis
- Axis deflected to the left (shortened back muscles - right side, weakened spine muscles - left side)
- weakened interscapular muscles
- shortened back thigh muscles

We proposed a motion program for selected weakness, which will contain: releasing (stretching) and strengthening exercises.

Time range: 10 min – 4x weekly.

- releasing of trapezoid muscles: tilts with head – to the left and to the right side several times, askew forward, pushing-rolling head forward, turning to the left and to the right, R – 5x, L – 3x

- lordosis: side bends of lumbar spine to the right and to the left several times, R – 3x, L – 5x

- stretching of back thigh muscle: put leg on a chair, while sitting stretching to the legs, while laying pulling straight leg with expander, R – 3x, L– 3x

- strengthening of interscapular muscles: pulling hands – shoulder blades back while standing, while laying down on stomach 5x

After six months of exercising.

Test from behind

Before exercise

Shortened left trapezoid muscle - right shoulder is lower, left shoulder is higher.

After exercise

Height of the shoulders has slightly improved.

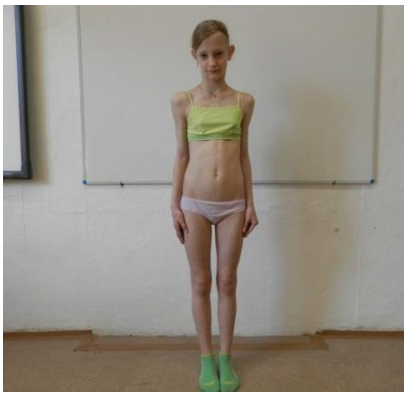
Axis is deflected to the left – Axis is still deflected to the left. Shortened back muscles – right side, weakened back muscles – left side.

Test from the front

Before exercise

Height of the shoulders – right shoulder is lower.

After exercise



Height of the shoulders – slightly improvement

Test – side bend of the cervical spine to the right

Before exercise

Shortened left trapezoid muscle.

After

Side bend significantly better.

Test – side bend of the cervical spine to the left

Before exercise

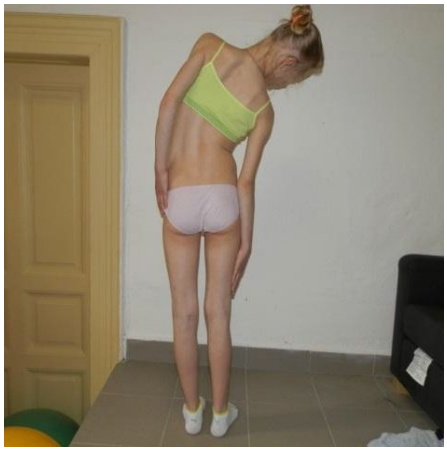
After exercise

Side bend - improvement.

Test – side bend to the right

Before exercise

After exercise



Standing - 56,5 cm

Side bend - 49 cm

Standing - 58 cm

Side bend- 46 cm

Test – side bend to the left

Before exercise

Standing - 57,5 cm

Side bend - 50,5 cm

After exercise

Standing - 58 cm

Side bend - 47 cm

Test- physiological curvature of the spine

Before exercise

Enlarged lordosis.

After

Small improvement

Test in forward bend

Before exercise

Distance from the pad - 29 cm.

After exercise

Distance from the pad- 24 cm - improvement.

Conclusion

When practicing the individual sets, it should not be forgotten that the musculoskeletal system should be seen as one unit. Respective exercises are carried out in a gentle and slow manner, it is necessary to highlight the inadequacy of rapid, violent and force movements. The aim of the exercises is to show the children the proper movement habits and to practice basic postural mechanisms such as sitting, standing and walking.

References

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1.5 Methods and forms of work in practical school as an additional level of education for pupils with multiple disabilities

Practical school – next stage of education of pupils with multiple disability

What is Practical school

A training program for a practical school which shall provide education and preparation for the performance of simple working activities to pupils with intellectual disability also in combination with other types of disability, it allows to continue in education to graduates of Special Elementary School of A, B, C variant

Goals of upbringing and education

The practical school is supposed to provide the pupil with the ability to physically and mentally grow up, so that it is able to work as independently as possible in everyday life, to work in a protected workplace, to socialize itself. The most important goal is to prepare in the field of self-service, simple practical works in the household such as cleaning, kitchen work, household hygiene, simple handworks and it shall train the pupil in the works of profiling optional subject (AWD, AWK) in order to perform meaningful work - auxiliary works in the protected workplaces under the supervision of a competent person and to integrate it into the society.

Practical school pupils are educated according to educational document the ISCED 2C - lower secondary education. Pupils are admitted to the practical school after completing the Special Elementary School A, B, C variant or after reaching the age of 16, after passing the entrance exams. The education in the PS lasts 3 years, min. 26 hours per week. Each year is structured **by framework curriculum** of teaching subjects. Pupil obtains lower secondary vocational education. The final certificate is the proof of the acquired level of education.

Educational areas

Educational areas include areas where issues excluded from the content of general education is included, they are of a cross-subject nature and are divided into selected subjects. The content of the education in the Practical School consists of a curriculum of compulsory and optional subjects. The school can add optional subjects to the subjects that are determined by the **National**

Educational Program according to their possibilities / e.g. spatial possibilities, qualifications possibilities of the teaching staff, material equipment... / - **School educational program**

Individual subjects are divided into **educational areas**:

Educational area /EA/:

- **Language and communication – Slovak language**
- **Mathematics and work with information– Mathematics**
- **Human and society – Education to morality and citizenship**
- **Art and culture – Music education, Art education**
- **Health and movement – Physical education**
- **Specialized-practical subjects – Family education, Health education, Handworks and sewing, Household works and household maintenance, Food preparation and nutrition**
- **Optional subjects – Auxiliary works and decoration, Auxiliary works in the kitchen**

Individual subjects are further divided into:

- **General-educational subjects - /National Educational Program /**

Slovak language and literature – SLL - 2 lessons per week

Mathematics – MAT - 2 lessons per week

Education to the morality and citizenship – EMC- 1 lesson per week

Art education – AE - 1 lesson per week

Music education – ME - 1 lesson per week

Physical education - PE - 3 lessons per week

- **Specialized-practical subjects - / National Educational Program /**

Family education – FE - 2 lessons per week

Health education - HE - 2 lessons per week

Hand works and sewing - HWS - 2 lessons per week

Household works and household maintenance - HWM - 2 lessons per week

Food preparation and nutrition – PJV - 3 lessons per week

- **optional subjects - / National Educational Program** / - in our school

Auxiliary works and decoration - AWD - 4 lessons per week

Auxiliary works in the kitchen – AWK - 1 lesson per week

Teaching strategies

When choosing the methods and forms of work we arise from the content focus of the lesson, its goals, the pupil's peculiarities in order that they will take into account its needs, develop the

pupil's key competences, create a desire to learn, create a social atmosphere. The teacher selects the methods and forms of work, their organization and combination according to the subject, content of the matter and the specific situation, it adapts them to the needs of pupils

For the fulfilment of goals we use:

lesson / L / - of motivational, exposure, fixation, diagnostic type, L on the land, in the training kitchen, practical activity, excursion, individual teaching, group teaching, field observation, visit at the doctor, in the library, visit of the exhibition, theater, concert

The choice of methods and forms of work is based on the content focus of the subject, its objectives, but mainly on the pupil's specificity so that we arouse the pupil's desire to learn, develop the pupil's key competences, create a social atmosphere, take into account the pupil's needs, therefore we approach each pupil individually

We all know that motivation has great important in teaching and learning. It is very important to arouse the primary interest in learning, but also to motivate others to further continuation in learning / the most proven is the **motivational dialogue**, talking, demonstration, group teaching, creative teaching.. / We use motivational methods on all subjects. Similarly, the **fixation methods** are important, because mentally disabled pupils acquire knowledge after multiple repetitions and quickly forget and therefore they tend to practice, fix and strengthening of the curriculum.

Often, pupils of practical school are educated according to IUEP, which respect their individual upbringing-educational needs/ it is necessary to accept specifications arising from health condition of the pupil, accept increased tiredness, slow working tempo, impose adequate requirements on the pupil, positively motivate pupil and positively highlight also small successes, impose adequate requirements on pupil...

Given that practical school is attended by pupils with intellectual disability and often with other serious diagnoses, e.g. Down syndrome, autism, serious psychiatric diagnosis ... pupils are educated as needed according to the **individual upbringing-educational program - IUEP**, which respects the pupil's upbringing-educational needs - resulting from the diagnosis and prognosis of further development. The plan is elaborated by the teachers of the individual subjects after they identified the initial state of knowledge and skills of the given subject and is aimed at further development.

The method of evaluation and classification:

The pupil's evaluation is carried out according to the Methodological Guidelines no. 34/2015 for

the evaluation of pupils of practical school

General-educational subjects - / National Educational Program /

Slovak language and literature /SLL/ - educational area /EA/ language and communication. – 2 lessons per week

The aim of the language part is the development of communication skills, vocabulary, practice of common social conversation, development to comprehensibly express both verbally and in writing, writing of practical documents, development of reading literacy, positive relationship to the reading, interest in theatre... / During the explanation it is necessary to use opinion and multisensory approach. It is often necessary to accept deficiencies in writing and reading caused by disability, we use innovative methods, e.g. working with ICT, interactive whiteboard, cooperative teaching, practice examples, excursions, learning through experience, playful activities, role games, working with text, reading with understanding. ***We use the following on this subject: work on an interactive whiteboard, we work with a book - with text, reading with understanding, rewriting, creating sentences, answering questions, fixing the curriculum by different methods...***

Mathematics /MAT/ - educational area /EA/ mathematics, work with information - 2 lessons per week

The aim is to acquire skills and habits that enable pupils to solve mathematical tasks in everyday life, e.g. money handling, calculator, clock, computer, weights, ... important is the development

and strengthening of memory counting./ we use practical methods - manipulation with objects, multiple repetition, excessive highlighting, work with ICT, interactive whiteboard, .. /

Education to the morality and citizenship /EM/ - ***EA human and society*** – 1 lesson per week

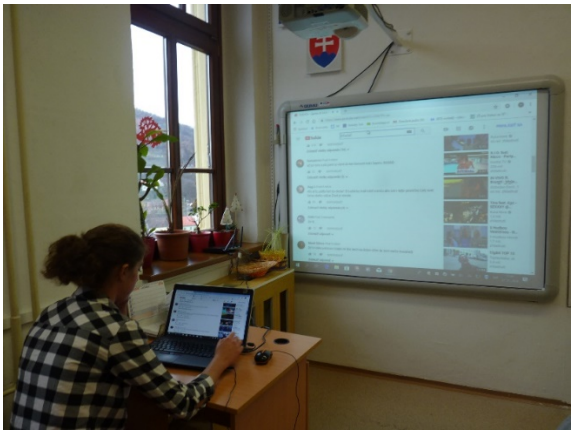
The aim is to lead pupils to patriotism, to provide information about democratic society, to shape life attitudes and opinions, to inform pupils about the rights and duties of citizens ... / We use situational methods - solving problems in real situations, model situations, dramatization, learning through experience, learning through ICT, practical activities, didactic games, excursions, ... /

Art education /AE / - EA art and culture - 1 lesson per week

The aim is the aesthetic cultivation of the pupil, the improvement of artistic expression, work with different materials according to individual abilities, shaping a positive relationship to art... / in addition to illustrative of work procedure and guidelines aimed at the development of aesthetic feeling, imagination, skills, we also apply work in a group, in pairs, ..

Music education /ME/ - EA art and culture - 1 lesson per week

The aim is to create a positive relationship to different music genres, recognizing musical instruments,...



Physical education /PE/ - EA health and movement - 3 lessons per week

The aim is to develop lifelong care for health, movement, socialization of the pupil within its movement possibilities

Specialized-practical subjects - **/** National Educational Program /

Family education /FE/ - 2 lessons per week

The aim is to acquire basic knowledge about the family and its functioning, education to healthy life style mainly through situational and role games and other non-traditional forms of teaching / we use mainly illustrative methods, dramatization, discussion, work with interactive whiteboard, book, magazines. .. excursions,..

Health education /HE/ - 2 lessons per week

The aim is to know one's own body and to protect the personal health and health of other family members by means of practical exercises, discussions.. / we mainly use illustrative methods, dramatization, discussion, work with encyclopaedia, interactive whiteboard, book. We regularly use **excursions / e.g. doctor, pharmacy... work on PC, interactive whiteboard, illustrative methods, role play, work with book, dramatization, fixation methods, practical exercises, discussion..**

Household works and household maintenance /HWM/ - 2 lessons per week

The aim is to acquire basic knowledge and skills in the family area and its functioning, to learn how to operate sparingly, economically and safely in the household, to positively develop the relationship to the household hygiene and common household works / we use methods of verbal, illustrative, explanation, description, instruction, discussion, work as an educational method, ICT, work with text../.

Preparation

Thematic area: ironing -2 lessons per week

Main aim: acquire basic knowledge and skills about ironing

Procedure 1 lesson: / lesson is usually done in the classroom or in the dormitory laundry /

- acquainting with the activity and its aim

- discussion about what we did the previous lesson - washing in the hands or in the washing machine

why we have to wash laundry, the importance of hygiene, and the laundering process – discussion how we washed, what we used and why - reading a brief summary of the text washing - repetition and fixation

- ironing - safety - what we need - tools - naming - ironing board, iron, ... procedure - demonstration

- pupils take turn in the ironing - they work according to their abilities individually or with the help - guidance

- evaluation

Hand works and sewing /HWS/ - 2 lessons per week

The aim is to acquire basic knowledge and skills in the area of clothing, fashion, hand works, garment maintenance and their use in the household according to the individual abilities of the pupil / we use the methods of verbal explanation, description, instruction, discussion, work with the book, magazine, ICT, .../

Food preparation and nutrition /FPN/- 3 lessons per week

The aim is to acquire basic knowledge and skills in the area of food preparation, dining, hygiene and kitchen safety, work with a cookbook, healthy lifestyle.. /We use verbal methods – explanation, description, instruction, discussion, work with ICT, book,

When choosing the methods and forms of work we are based on the content focus of the lesson, its

aims, the pupil's peculiarities in order to take into account its needs, develop the pupil's key competences, encourage the learner to learn, create a social atmosphere,

Preparation

Thematic area: Potatoes – simple meal from potatoes - 3 lessons per week

Main goal: acquire the basic knowledge and skills of preparing a simple potato meal

Procedure 1 lesson: / lesson is usually done in the classroom/

- acquainting with the activity and its aim
- discussion about potatoes - origin, types, processing - searching for basic information about potatoes on the internet, **reading short prepared text about potatoes and their processing and searching for recipes from potatoes on the internet, or in the cookbook** - most often we

use explanatory explanation, verbal explanation, description, instruction, discussion, work with a book, magazine, ICT, group work, work in pairs, manipulation with specific objects, fixing methods.... / the pupils have already been encountered with potatoes as an ingredient for cooking so we repeat information about other kinds of vegetables - in the form of work with illustrative objects and their connection with the terms - subject + ticket / - discussion what we cooked from vegetables, what food from vegetables you prefer, .. - / curriculum from the previous lessons /

-choosing a meal which we cook on the next lesson and work with a recipe - reading, explaining how much and what we need, in which shop we can buy the necessary ingredient and about how much money we need, we will agree on who will bring what kind of ingredient / in case they probably do not have the necessary ingredients at home we buy them together in a nearby shop/

- crossword vegetable - we solve the crossword focused on vegetables and fruit either separately according to the possibilities of the pupils or with the help

- evaluation of the course of the lesson

Procedure 2-3 lessons: / realized in the kitchen/

- acquainting with the safety and hygiene observance in the classroom / electricity handling, hand washing, coats../

- What will we do today? - Acquaintance with the work procedure - preparation of potato meal - potato soup

- work with the recipe - reading the recipe - checking the necessary ingredients, naming and their preparation for the desktop

- division of works - what we will need - what tools - / potato peeler, knife, bowl, pot ... we name the used things in order that the pupils will know the tools and equipment needed in the kitchen /

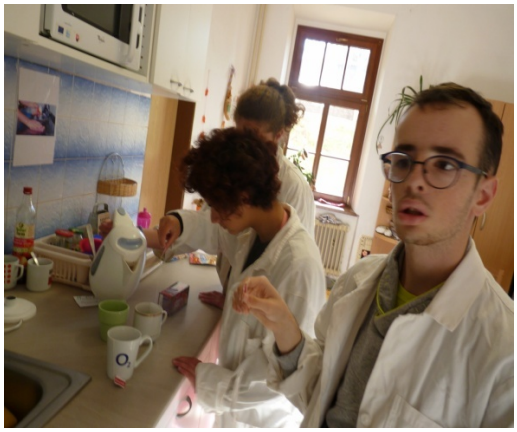
- Pupils peel the necessary amount of potatoes - they prepare the necessary ingredients according to the illustration either separately or with the help according to the skills and instructions, e.g. onions, salt, herbs..

- after the preparation of the ingredients, I will guide the pupils how to continue - / according to the recipe I will assign who will do what /

- cooking - / safe operation of the stove and other electrical appliances such as refrigerator, kettle, .. / during cooking we will continuously clean the kitchen, wash the used tools, or store the remaining ingredients as needed ... / continuously I use the verbal methods - explanation, description, instruction, discussion, illustrative and help according to the individual abilities of the pupil / - it is a repetition of the curriculum the kitchen equipment

- dining and consumption

- evaluation




Optional subjects - **/** National Educational Program /

Auxiliary works in gardening and arranging - /AWA/ subjects – 4 lessons per week

The aim is to learn simple plant cultivation work, to create and develop work skills during working in the garden, to practice simple arranging techniques and to recognize materials / we use a method of explanation, description, instruction, discussion, cooperative teaching - group teaching based on the mutual interdependence of members groups, work on the land - where work is an educational method, /

Preparation

Thematic area: Work with natural material - 4 lessons per week

Main aim: acquire basic knowledge and skills in working with natural materials

Aims: – recognition of natural materials

– practice of simple arranging techniques - wreath made of natural material

Procedure 2 lessons: / it usually takes place in the nature /

-acquainting with the activity and its aim

-Discussion What will we do and why?

- collection of natural materials in the yard, school garden, eventually in the meadow and in the nearby park - acquainting with the safety during the collection of natural materials

- searching for natural material for further use - cones, stones, dry flowers, branches, ..

- What did you find and what could we make of it? - discussion - fantasy development, mutual cooperation and help

- return to the school and processing and storage of collected material

- evaluation

Procedure 2-3 lessons: / it is realized in the classroom /

- acquainting with the activity and its aim - discussion What did we do on the previous lesson and why?

- natural material – what did we bring from the excursion in the nature and how we could use it What will we do today? - familiarization with the work procedure

- familiarization with the safety at work in the classroom / handling of electricity, working with a fuse gun,

- arranging, guidance / as inspiration we can see some pictures or products - most often we use illustrative explanation, verbal explanation, description, instruction, discussion, work with book, magazine, ICT / manipulation with specific objects, we will work alone or with the help if needed /

- What did you make and why? How did you proceed?

- evaluation

Auxiliary works in kitchen /AWK/ - 1 lesson per week

The aim is to get the right relationship to the hygiene and maintenance of the kitchen, following the FPN,

/ we use illustrative explanation, description, instruction, discussion,

Conclusion

The practical school provides the possibility of further education and subsequent integration of pupils with intellectual disability into society.

The practical school is supposed to provide the pupil with the ability to work as normal as possible in everyday life, to operate in the family - in the field of self-service and practical household works. The practical school should train the pupil in the work of profiling optional subject (AWA, AWK) in order the pupil can carry out meaningful work - auxiliary works in the protected workplaces under the supervision of a competent person and to integrate the pupil into society.

The practical school allows pupils to visit the group on a regular basis, to meet people, to build the habits necessary for day-to-day living, but also to develop within their abilities and opportunities, to socialize and it gives them the space to make every single pupil need and useful.

Similarly, the school also provides parents with the space for socialization, for a short break, because the entire social system hardly places pupils into society after leaving the school and it forces parents to often close with their children at home without contact with surroundings. These two factors are just the most important according to the parents.

1.6 Possibilities of using EEG Biofeedback for working with children and pupils with multiple disabilities

INTRODUCTION

Some specific methods have proven themselves in the stimulation, correction, or education of pupils with multiple disability over the past two decades. In particular it concerns basal stimulation, orofacial stimulation, Snoezelen and other. Current time is characterized by a continuous supply of new information, which is mainly mediated by information technology. As a result of the rapid expansion and enhancement of computer devices, new knowledge is discovering in the field of neurosciences, while new knowledge is subsequently transformed into other science disciplines, thereby significantly influencing their overall direction. This includes the problem of brain neuroplasticity, on the basis of which new concepts and theories of central nervous system mechanisms have been developed, related to the formation of new synaptic connections, information transfer, changes in the internal structure (RNA) of the nerve cell as a result of the learning process, memory formation or other important physiological processes. Revision of established theories has occurred in many disciplines, including special pedagogy, which includes pedagogy with multiple disabled persons. New knowledge about brain neuroplasticity have brought with them a number of new therapeutic methods useful in different scientific disciplines and target groups. These methods include EEG Biofeedback-based neurotherapy. The EEG Biofeedback method was originally used in people with epilepsy, but gradually its usage is increasing, and it is also used during work with individuals with multiple disability.

Multiple disability term

Vašek (2003) presenting the term of "multiple disability" identifies himself with the occurrence of a new quality of disability different from the simple sum of the present disabilities and disruptions. He explains the occurrence of a new quality of disability from the perspective of interactions and mutual overlap of participating disabilities or disruptions, thereby creating a so-called synergistic effect, i.e. new quality of disability. Vašek (2001) also approaches the definition of “multiple disability” from a special pedagogical point of view, defining it as a failure of the information flow.

The author (2001, p. 163) arises from the above mentioned knowledge, while claiming that "in essence, it is the possibility of receiving, processing, storing and handling information in limited sensory channels or the difficulties of transforming information into knowledge due to intellectual disability, but also communication difficulties as a result of expression disruption."

Schäfferová (1995, In: Vančová, 2001) introduces a new term "people with elementary life development" in later publications reflecting the principle of humanism and normalization in education. The term "elementary" expresses the need for learning to be the most fundamental elementary experience. "Life" expresses in teaching the need to go out of every day, ordinary life situations, and "development" indicates the progressiveness, progress, tendency to develop.

Historical development of EEG Biofeedback in the world and in Slovakia

Krivulka (2002) states that the history of EEG Biofeedback began with the discovery of electroencephalography by Hansom Berger in 1908, who published its findings ten years later (1918), pointing to the discovery and resolution of the presence of alpha and beta waves in the electroencephalogram. In the 1970s, Sterman and subsequently Lubar began to apply neurofeedback in epilepsy and attention deficit disorder (ADD/ADHD). First articles on therapeutic efficacy of neurofeedback began to be published. The following experts published their findings, e.g. Brownová (1970, In: Krivulka, 2002), who practiced the occurrence of alpha, beta, and theta activity using visual feedback signal, Budzynski (1972, In: Krivulka, 2002) presented the view that positive information is better remembered in the theta state. Green, Greenová, Walters (1986, In: Krivulka, 2002) studied alpha/theta training, pointing out that theta states achieved in training enabled access to unconscious material. Birbaumer (1981, In: Krivulka, 2002) studied slow reactions of cortical potentials in patients with epilepsy as well as schizophrenia.

As stated by Jancurová (2014), a significant milestone in the history of EEG Biofeedback was the discovery of Sterman, who started to experiment with brain waves of cats in 1965 at the Department of Neurobiology and Psychiatry UCLA. In 1972, he first showed that cats and later humans can learn to increase the sensomotoric rhythm (SMR - 12 -15 Hz, the state of released concentration) sensed from the sensomotoric region of the brain (gyruspraecentralis, gyruspostcentralis). Increased production of SMR protected cats from epileptic seizures induced by hydrazine. Later, it turned out that after SMR training, people had a significant reduction in seizure alertness. These findings gained from the collaboration with NASA in the detection of

epileptic seizures in aviators were the basis for further research in the given field. Another important representative of EEG Biofeedback was Joel Lubar, a professor of psychology at Tennessee University in Konxville. He dealt with the issue of Attention Deficit Disorder ADD/ADHD and found that with QEEG (Quantitative EEG) it is possible to distinguish children with ADD/ADHD from children without attention deficit disrders. In 1989 he proved that neurofeedback SMR training can improve the attention and performance of children with ADD/ADHD (Krivulka 2002). As Jancurova (2014) states, with the arrival of new brain imaging methods, a period of great boom has begun, and as a result of new knowledge into neuroplasticity, the impact of neurotransmitters on learning, memory, and the like, we can expect to see new opportunities and researches in the given field in the world and in our country in the future.

According to Jancurová (2014), the development in Slovakia points to two generations of experts dealing with neurofeedback. It concerns an older and younger generation. The chief representative of the older generation was Dr. Krivulka, who in the 1990s of the last century brought from Dr. Tyla from Czech Republic and applied the first therapy in Slovakia (Rimavská Sobota). He also trained a number of neurofeedback therapists working in different territories of our country. In recent years, as Jancurová (2014) states, the emerging group of speech therapists, psychologists, special educators, parents of children with disability, and others who are under the supervision of young and experienced neurotherapists are covering the so-called new generation of EEG Biofeedback by an institution called Biofeedback Instituts.r.o. can be observed. It is this institution that is one of the few that is dedicated to individuals with multiple disability. In her practice, she has a lot of experience with individuals with severe and deep mental (multiple) disability.

Biofeedback, EEG Biofeedback

The International Society for Neurofeedback & Research (ISNR) characterizes biofeedback in general as the process of identifying physiological variables that are produced by the autonomic nervous system (e.g., muscle activity, peripheral skin temperature, regional blood flow, style and respiration rate, heart rate variability, brain waves, and others) for the purpose of helping an individual to develop a higher sense of self-awareness, improving health and overall performance. Biofeedback is realized through technical tools that measure physiological activity such as brain waves (electroencephalograph - EEG), muscle activity (electromyograph - EMG), heart function

(electrocardiograph - EKG), skin temperature (thermometer) etc. These tools are able to quickly and accurately transfer information back to the individual in the form of feedback (visual, auditory, tactile, for example via computer game). Subsequently, through the influence of learning, the individual is able to acquire self-regulation mechanisms aimed at solving various health problems and complications, or increasing the personal performance in improving the effectiveness of their own work. Tylová (2011) presents the following types of biofeedback:

- EEG biofeedback (neurofeedback),
- HRV biofeedback (heart rate variability),
- EMG biofeedback (muscle tone),
- EDR biofeedback (skin resistance),
- PST biofeedback (body temperature),
- HEG biofeedback (haematoencephalography).

Dobrovolný, Kuchtová, Naďová (2013) state that EEG Biofeedback is a method based on the principle of self-assertion (through operative conditioning) and is based on the Thorndike's act of effect (reinforcement theory) - the behaviour that leads to reward, positive feedback, will be repeated more likely than behaviour that does not lead to reward. Following the EEG Biofeedback as Jancurová (2014) states, we can say that when the brain produces the activity that is desired and rewarded for it, it experiences success, it will want to produce the activity itself, to experience a sense of success, joy and happiness consequently, after continuous, prolonged action of this evoked activity, it can adapt, change its own biophysical and electrophysiological operations.

EEG Biofeedback with children and pupils with multiple disability

According to Jancurová (2014), the issue of the application of EEG Biofeedback to multiple disability is very rarely described in the literature. Evidence of this may be the existing significant deficit of theoretical and practical knowledge concerning the application of EEG Biofeedback in a given group of people, not only in Slovakia but also in global scale. However, given the nature and nature of multiple disability, there is nothing to wonder about according to the author (2014). It is very difficult to meet the required requirements within the research, both in terms of methodology and in terms of creating a homogeneous experimental and control group, and so on. In our paper, we bring some of these studies, and this review cannot be considered exhaustive.

The first published case reports concerning a diagnosis other than autism and multiple epilepsy include cases of cerebral palsy. Experts from Germany, Austria and Italy Neuper, Műller, Kübler, et al. (2003) have tried to influence the formation of brain waves in a 32-year-old male with cerebral palsy based on EEG and computer interfaces in order to establish communication through the computer, which they have succeeded in. A year later, Bachers (2004) published a case report of a 13-year-old boy with cerebral palsy, who had 200 sessions, a two-week session intensity (even home training), with a 20-minute sitting period, at a locations in the central sensorimotor band, significant improvement in behavior, reduction of aggression, improvement of communication, experiencing, reduction of excessive neuromuscular excitability as well as the overall intellectual and emotional balance occur. After four years, boy´s IQ points increased by 24 in the verbal part of the WISC-III. In the same year, Ayers (2004) in the United States, publishing her most successful case, Jamie (9-year-old), who was unable to speak, was blind, could not read Braille, had cerebral palsy, and considered him an autistic, severe mentally retarded boy unable to learn in the school. The author does not describe the duration and duration of therapy in detail, but points to positive to changes in speech and motorics. The boy began to talk, feel, compose music, dance and play the piano.

Another case study is EEG Biofeedback applied in 7 children with Down syndrome, aged 6-14 years, who have completed 60 sessions. Initially, the training was delta and theta inhibition, and after the amplitudes of these frequency bands were reduced, SMR and beta activity increased. Sűrmeli, Ertem (2007) report positive changes in these children, especially in the areas of speech, memory, attention, behavior and balance. In 2010, the authors published another study involving 23 probands with Down syndrome in the mid-mental retardation range, aged 7 to 16 years. Based on many diagnostic methods, they found out a significant improvement in almost all probands not only in questionnaires filled in by parents, but also in exact results. They also pointed out that in two cases, although there was no improvement in overall IQ, there was an improvement in individual subtests, which, according to the authors, can also be considered a great success.

In the Czech Republic, as Kuchtová states (2011) a research of the use of the EEG Biofeedback method in five children with cerebral palsy (DMO) in 1998 was executed. The authors of the research concluded that EEG Biofeedback helped all children with cerebral palsy, while the biggest success occurred in the area of attention, behavior, reduction of motor unrest. Children were more balanced, mature and more calm. Also, the quality and length of sleep have been

adjusted. In Slovakia, there are partial results of research on the effect of EEG Biofeedback on children and pupils with multiple disability, especially results published in various final theses. Naďová (Dobrovolný, Kuchtová, Naďová, 2013) in her practice at BiofeedbackInstitutes.r.o. deals with the issue of multiple disability more significantly, while this institute also provides those interested with vocational training entitling them to carry out the EEG Biofeedback therapist's activity. Also Associated boarding school Československej armády in Kremnica (Slovakia) thanks to the support of Endowment fund at Pontis foundation trained expert employees of the school and purchased technical equipment necessary for the implementation of EEG Biofeedback therapy for pupils with multiple disability. Thus, professional employees can also use this relatively modern method to improve pupils' quality of life and improve their overall functioning.

CONCLUSION

The aim of any intervention, education, rehabilitation for children and pupils with multiple disability is to get them to a level where they can engage as much as possible in everyday life. Humanistic oriented society is obliged to create such mechanisms that allow these children and pupils to be a valid and active part of society in all its spheres. One of these mechanisms is the process of education of children and pupils with multiple disability in Slovakia, which reflects the demands of individuals with multiple disability and their families and responds flexibly to changes in their education and therapy by applying the latest knowledge from various scientific disciplines to their practice. EEG Biofeedback, which we briefly introduced in our paper, is one of the methods that is difficult to classify and narrowly define its integration into one of the disciplines or disciplines of science, a method that requires a multidisciplinary approach. However, it is definitely a method that is beneficial for children and pupils with multiple disabilities.

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1.7 Using Snoezelen as a method in the education of pupils with multiple disabilities

Introduction

Education of pupils with multiple disability requires the use of many different methods and the cooperation of a professional team, which is essential to ensure their versatile and optimal development. New and alternative approaches are increasingly being used today and emphasis is put on fulfilling all the needs of this group of children and pupils. These procedures include, e.g. Bobath concept, ergo therapy, drama therapy, music therapy and other methods, or concepts including Snozelen. Like many of the above-mentioned approaches and methods, the Snozelen method was created abroad, particularly in Hartenberg, the Netherlands, and gradually it found its application in Slovakia. The term "Snozelen" was created by combination of two Dutch words: “snuffelen”, which means sniffing and “doezelen” as snooze, while as Filatová (2014) states, this term is used especially in Europe, Israel and Japan. The abbreviation MSE (Multisensory Environment) is then used mainly in America and Australia.

Theoretical basis of term Snoezelen

“Snoezelen term means an organized surrounding that is intentionally and artificially planned and created. Snoezelen is one of the newest concepts of caring for individuals with different types and degrees of disability or disturbance. We can characterize it as so-called “Snoezelen Triangle”, which arises by the harmonic relationship and the interplay of three factors: the ordered space - the client (user) - the guide (therapist) and in its centre we see the Snoezelen effect” (Janků – Filatová, 2010, p. 22).

The Snoezelen method is used in various facilities: kindergartens, primary schools, social services homes, sheltered workshops, various rehabilitation facilities. Guide - the therapist should know the essence of individual sensory perceptions so that he/she can safely use them. The relationship between the therapist and the client (child) with special needs is very important. Therapist - the teacher should be characterized by sympathy and emotional warmth, empathy, patience, creativity, the ability to motivate, he/she should be based on the knowledge of client's diagnosis, be in personal touch with the client (Janků – Filatová, 2010, p. 23).

Snoezelen as therapeutical concept

"Snoezelen therapy can be called such method of work with client, which is managed by a competent, trained expert whose actions lead to the alleviation or elimination of the client's difficulties. An indispensable part of Snozelen therapy is a plan of appropriate length therapy with a clearly specified goal based on comprehensive diagnosis conditioned by provable feedback in relevant documentation. Snozelen therapist performs his/her practice under the permanent supervision." (Filatová, 2014, p. 87). Snoezelen can be considered a therapy when: we pursue therapeutic goals, it has a positive therapeutic effect, therapeutic value is at least in reorganization, or in another individual's development, changes in survival and behaviour of the individual occur (Janků - Filatová, 2010, p. 44). According to Ponechalová (2009, p. 9): "The goal of Snoezelen therapy is to provide wonderful unusual sensory stimuli and experiences provided by a wide range of technology products and devices that cause sensory responses and responses to clients."

"Snoezelen therapy serves as a measure to overcome and/or compensate disorders and to support the client's personality and competence. The goal of therapy may also be to reduce stress and stereotypical behaviour. Snoezelen as a therapeutically oriented approach is carried out through a specialist (expert with additional Snoezelen classification)." (Ponechalová - Lištiaková, 2010, p. 7). The goal of Snoezelen therapy is, according to Filatová (2014), to recognize and understand the feelings and stimuli based on the client's behaviour, to respond to them in such a way that it is beneficial for the client and therapist. The aim is to maintain quality of life and promote mutual understanding and sympathy.

Snoezelen as supporting educational method

The Snoezelen method is often used as a supportive pedagogical measure and the use of leisure time. The term "supportive pedagogical measure" in translation is rather a "supporting educational method". It is an activity that accompanies the educational process and also supports its goals and tasks. The educational aims of Snoezelen are directed to the following areas: relaxation and soothing of children in schools, reduction of sensory deprivation in children (by enhancing the tactile deprivation concerning mainly touch and massage therapies), reduction and management of hyperactivity, development of focus and attention (Janků - Filatová, 2010 , p.48). Karkošiaková (2014) states that the main reason for using the Snoezelen method in schools is the possibility of building mutual positive relationships between teachers and pupils (children) not

only with special educational needs. The atmosphere of Snoezelen is very suitable for individual conversations and solving personal problems of children and pupils. For individuals with special educational needs, the overall goal is the total relaxation, support self-realization, promotion of perception, cognition, communication and integration into social structures. Supporting educational method Snoezelen can be realized by a special pedagogue, school psychologist, teacher or educator.

Goals and principles of Snoezelen

As Karkošiaková (2014) states, a child with special educational needs requires a specifically tailored surrounding that allows it to stimulate all senses according to its possibilities and abilities. Orieščiková - Hrčová (2010) state that the basic principle of Snoezelen is: "Nothing is a must, everything is allowed". A child with disability can be there by itself. The main principle in Snoezelen room is individual approach. In order to create the right atmosphere, we have to put ourselves in the child's situation – "looking through its eyes". We can provide the atmosphere with dim light, the right choice of music, a quiet voice.

The child decides according to its possibilities in the Snoezelen room on its own and the initiative should be based on it. Therapist - the teacher respects the pace of the child, the pace of processing the stimuli, without rushing. The relationship between child and therapist - pedagogue is very important. In addition, we need to leave as much time and space as possible to an individual with a disability in order to choose the stimuli that are pleasing to it and it wants to pay attention to them (Švarcová, 2006).

Another principle is a non-directive approach. The guide should be adapted to the child's ideas and should allow it more than usual. From a pedagogical point of view, a teacher can lead a child and think about the course of activity in Snoezelen room ahead. This option does not contradict the original intention and principle of free choice, because many children and young people have difficulty staying in concentration for a long time without guidance. (Mertens, 2003). It is also important to have a good length of the meeting, which generally takes about 30-45 minutes, but it depends on the specific needs of the child. Individual meetings can take less than 15 - 30 minutes. The regularity of meetings is important.

Possible goals of Snoezelen therapy at children and pupils with different forms of disability

According to Filatová (2014, p. 90):

- Clients with **autistic spectrum disorder**, Snezelen therapy aims to assign meaning and intent to functioning parts of the system. It is therefore necessary to involve the client in the interaction of relationships, to connect its emotions with the emotions of others, while the therapist relies on the strongest aspects of the client.
- Clients with **cerebral palsy**, the goal of Snozelen therapy is to stimulate the client's motor functions, to use them meaningfully, with the use of sense and intention.
- Clients with **Down syndrome**, the goal of Snozelen therapy is based on the strengths of the client. The therapist focuses on developing of motor planning, problems in visual spatial and auditory analysis, on gymnastics of speech organs, and other goals that result from the client´s individuality.
- Clients with **mental disability**, Snoezelen therapy aims to stimulate the client's motor functions by using the sense and intention. The therapist tries to transform the specificity, limited ability of abstraction and generalization with the help of various themes, as well as the weak management ability of thinking. Another goal of therapy is to develop analysis, synthesis and memory.

It is important to realize how Filatová (2014) states that diagnosis itself is not the starting point for setting the Snozelen Therapeutic Plan and in all cases, individual client profiling is needed.

Case report

Brief anamnestic data

Name: Veronika, Age: 10 years old

Conclusions of psychological examination:

Pupil with special educational needs - healthy disabled – with multiple disability – F 78 – other mental retardation with undeveloped speech on the basis of organic CNS damage, behavioural disorder and socialization associated (F 91.1), CTP - hypotonic syndrome, hypothalamic atrophy, cognitive-communication disorder, asymmetry of ocular slits.

Conclusions of special pedagogical examination:

A special pedagogical examination has shown that the child is lagging behind in several areas. The most significant is the impaired communication ability - impaired speech development based on organic CNS damage, symptomatic speech disorder on the basis of mental disability. There has been a lag behind in general knowledge and cognitive skills. The level of gross motor skills, fine motor skills and graphomotorics is reduced. I also observe reduced performance in the area of visual perception, spatial orientation and orientation on the body schema, time imaginations are absenting.

Personal anamnesis:

Child from the 6th pregnancy, childbirth premature, in 34th weeks. AS 10/10, CTP with hypotonic syndrome, visual impairment with ventriculomegaly, CC atrophy and hypothalamic atrophy. Early psychomotor development impaired, repeated frequent hospitalizations. Currently in care of ophthalmologist, orthopedist and pedopsychiatrist

Family anamnesis:

The child grows up in an incomplete family - the father is not mentioned in the birth certificate. She has three older step siblings. The child's mother works outside the home - at that time the child is in the care of the grandmother.

School anamnesis:

She did not attend the kindergarten, she had postponement of compulsory school attendance. She was trained in school year 2016/2017. She attends the Combined boarding school, Československej armády 183/1 in Kremnica - variant C, where she is currently a pupil of the 2nd year. The child is placed in a school boarding house during the week, she is spending weekends with her family.

Reasons for applying Snozelen method as supportive educational activity:

We have started working with the pupil using the Snozelen method (once a week, 45 minutes) upon the request of a class teacher and a child's legal representative. This was mainly due to the auto-aggressive behaviour and overall development of the child's personality.

Course of sessions in Snoezelen room:

On the first two meetings, we introduced the Snozelen room, its components, tools and their function to the pupil. During these meetings, we filled out the Snozelen Diagnostics Form for stay in the Snezelen surrounding, which is mentioned by Filatová (2014) in her publication and which helped us to create plan of activities for a particular pupil. To achieve the set goals, we have developed the Snozelen lesson structure for each meeting, including the theme of the lesson. The time distribution of Snoezelen's lesson was as follows: the opening ritual, the positioning, the active part of the lesson and the conclusion. In total, we had 25 meetings with the pupil in Snozelen room.

The goal of the activities in the Snoezelen room was: to reduce aggression, the overall relaxation, development of gross and fine motor skills, orientation in space.

Demonstration of structured Snozelen lesson:

Topic: Relaxation and rest

Eyesight: use of water columns

Hearing: relaxing music

Smell: aroma lamp

Touch: massage balls

We have started the Snozelen lesson with the opening ritual, which in the case of this pupil was a common extinguishment of the lighting in the room (later the pupil extinguished by herself). Subsequently, the pupil was placed on a water bed, wrapped in a comfortable blanket to have a good view on the two water columns where she could see their colour changes. In this relaxation phase she remained for 15 minutes. After this phase of lesson, we moved the pupil to the water columns, positioned her in the seat bag and allowed her to touch the water columns to perceive not only the colour changes, but also their vibrations. Subsequently, we supported the tactile stimulation by the pupil with several colour and size differing massage balls, her task was to examine their surface with the palms of her hands and insert them into the prepared bag. After the completion of the task, we left the girl rested for 15 minutes with the sounds of relaxing music and the pleasant aroma of the aroma lamp in the positioning bag near the light water columns. On

the lessons with the pupil, we used turning off the relaxing record as the ritual to announce the end of the lesson.

Changes observed in pupil´s behaviour and experience of pupil:

The changes in behaviour and survival of the pupil were recorded by the method of free observation in the school environment and school campus and conversations with the class teacher, school board educator and the grandmother of the child. In the course of the school year, we observed positive changes in behaviour in terms of the complete disappearance of auto-aggressive behaviour, both at home and in the school. The pupil has gradually found her place in the class collective, she tried to play the role of "helper" of the class teacher, she learnt to express her needs in an appropriate way. However, it should be noted that many other factors, such as the change in medical treatment and the expert special pedagogical approach of the class teacher, have an impact on these changes in pupil behaviour during the school year. Regardless of these factors, the stay and activities in the Snoezelen surrounding supported the pupil's ability to relax, calm down, and cope their emotions more effectively.

Conclusion

Through the senses we can perceive the surrounding world and ourselves. This ability is given to us from birth. Our senses are a kind of a "link" between the brain and the tangible world, thanks to the senses our understanding is complex. In children and pupils with multiple disability a situation occurs where they do not fully control their senses, and some sensory experiences are absent from them, or children cannot adequately and properly evaluate them. The Snozelen surrounding is then a method that helps these children eliminate the negative consequences of any sensory deprivation and creates a surrounding in which they can progress and develop. We believe that more and more schools and facilities providing their services to children and pupils with multiple disability will use this method in their work and thus contribute to improving the quality of life of their pupils or clients.

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1.8 Education of children with multiple disability in special kindergarten.

A child with multiple disability is a child, who is simultaneously affected by two or more disabilities. It requires a special approach and cooperation of several experts. Our special kindergarten is mainly attended by children with mild multiple disability, it occurs only occasionally that a child with severe multiple disability is admitted to our facility. The most common disabilities are: mental, hearing disability, cerebral palsy, Down syndrome, impaired communication ability.

In the special kindergarten we work under the school education program "Node of Friendship", which is based on the State Educational Program for Children with Health Disadvantage. We meet specific goals with children with multiple disability, which are determined for children with hearing disability, for children with mental disability and for children with multiple disability. It depends on the child's dominant disability. We are also working under the Individual Educational Program, in case the relevant Special Educational Counselling Centre recommends to elaborate it, if there is a child with deferred compulsory school attendance in the classroom, if the child cannot meet specific objectives.

Specific goals of upbringing and education of children with multiple disability

- create conditions for smooth adaptation to the new environment,
- develop those abilities and skills in psychomotor, cognitive, emotional and social area, which lag behind from the development point of view;
- develop limited, or significantly inadequate, motor and self-service skills of children with multiple disability,
- develop a limited, or significantly inadequate, communication skills of the child, work with a school speech therapist who attends Special kindergarten twice a week,
- meet the need of social contact of child with peers, children spend time with children with impaired communication ability daily
- develop independence, confidence and self-esteem in children with multiple disability,

- prepare a child with multiple disability for a smooth transition to the educational program for pupils with multiple disability for primary education

Educational areas in the education of children with multiple disability:

Language and communication

Development of children with multiple disability is often significantly impaired, slow and limited. Their speech is characterized by a small, often no vocabulary. Most preschool-aged children with multiple disability have acquired very few words of particular importance, they have serious problems with articulation, but also with differentiation of the listened speech and understanding of its content. They often do not speak at all, they only make different sounds. The goal is to get the child from sounds in communication to the use of words and their understanding. We are developing phonemic awareness, articulation dexterity and pronunciation of children with existing communication skills and we are extending their vocabulary.

Mathematics and work with information

Children with multiple disability have significantly limited, slowed and impaired cognitive abilities, analytical-synthetic activity of the cerebral cortex, they have monotonous and inaccurate images and insufficient differentiation ability. During the work we use real objects manipulation, we sort objects according to certain criteria. We create spatial images and first visual images about the number.

Human and nature

The main source of recognition is the observation of nature, simple experiments and practical activities. We use sensory recognition. We lead children to the nature protection through various environmental activities and we create a positive relationship with nature with them by frequent stay in the nature.

Human and society

Children with multiple disability have a lack of active perception, lack of interest, significantly reduced length of concentration, short-term attention and little curiosity. We use motivation to arouse interest, attention and activity with children. We use elements of prosocial behavior. We visit municipal institutions and lead children to ethical behavior in the society.

Human and world of work

We develop motor and work skills of children. We develop gross and fine motor skills by manipulation with objects and materials. Practical skills are formed by gradual training, initially by directly guided movement, later with movement with help. This movement becomes more accurate and coordinated with repetition and exercise. We care for proper grip when holding working tools.

Art and culture

Through musical activities we develop hearing, motor skills of children with multiple disability. We teach them to perceive tempo, rhythm and dynamics. We rehearse rhyme songs, songs, music-movement games with children. Through art activities we gradually improve psycho motor skills, visual motor skills, fantasy and creativity.

Health and movement

We develop elementary motor skills and coordination of movements with the help of various tools and equipment. Children learn to perceive the direction in relation to the movement and orientation in space. It is important to establish basic hygiene habits and self-service skills.

Description of methods

Methods used during the work with multiple disabled children

The choice and application of methods is influenced by the special educational needs of children, the aim and content of education. Most often we use the following methods during work:

Motivational methods – narration, conversation, dramatization, and demonstration (finished product during working and art activities, image material, books and magazines)

- mediation of information by substitute communication systems

- intense motivation

Educational methods – praise and encouragement

Monological word methods – narration, description, explanation

Dialogical word methods – dialogue, talking about a picture, naming concepts on pictures, mediation of knowledge using information technologies

Fixation methods – repetition and exercise, multiple repetition of information, excessive highlighting of information, multisensory mediation of information, use of compensation techniques, involvement of alternative channels, positive psychic toning

Diagnostic methods – dialogue, questions and answers, drawing, elaboration of worksheets, execution of practical activities.

Practical demonstrations

Educational activity – VIA GREEN PATH

Educational area: Human and nature

Educational subarea: Perception of nature

Specific goal: Perceive beauties of nature, its charm and uniqueness through preserved senses.

Content of education: Beauties of nature

Educational tasks: Walk along marked hiking path, orientate according to tourist signs.

Detect and determine surface of natural products by means of touch.

Listening to sounds in the nature.

Tools: appropriate clothing and footwear, food and drink, camera, basic equipment from the first aid kit

Strategies of educational activity: storytelling, hiking, direct observation

Course of the activity:

Motivation

A kindergarten teacher is telling a story about a squirrel she met on her way to work. The squirrel told her that the teacher and her children are invited to the forest where it lives. It asked the teacher to show the children her home.

Course

Move to the forest. Before entering the forest, the teacher explains to the children according to what they will move in the forest.

We will follow the hiking path - Green Path. The trail is marked with a green tourist sign. The teacher will get the children acquainted with the rules they will follow in the forest.

1. We will walk quietly.
2. We do not throw trash on the ground, we will pack them in a backpack.
3. We do not destroy nature, we do not break branches, we do not throw rocks.

During the walk we are gradually fulfilling our set tasks. We are walking on the marked path, the children enjoy looking for tourist signs. We have found out the surface of rocks, moss and trees by means of touch. We listened to the singing of birds and the noise of the wind. On the way we also overcame the natural obstacles - fallen tree and narrow paths. On the way we read the information boards to the children, from which the children learned what plants are growing in the forest and what animals are living there. We took a break in the Cave, where we strengthened ourselves by our supplies from the house and we learned why the cave had been built long time ago.

Conclusion

Return to the kindergarten, discussion about impressions and experiences from hiking.

Educational activity – TRANSPORT MEANS

Educational area: Human and society

Educational subarea: Transport education

Specific goal: Know and distinguish transport means according to the place of movement

Content of education: Transport means

Educational tasks: Know the transport means according to their description.

Assign transport means to their place of movement.

By move and sound show any transport mean.

Tools: pictures, models of transport means, trumpet, bag

Strategies of educational activity: riddles, work with picture material, pantomime

Course of the activity:

Motivation

The teacher reads to the children the riddles which the children answer individually at first, then together. The difficulty of the riddles gradually increases.

Course

The teacher spreads the posters on the ground in the classroom, where the places of movement of the individual transport means are drawn (road, water and air). Then she chooses the children

individually, offers cards to the child on which the transport means are drawn. However, she does not show the picture to the child, so the child chooses the card and only after turning it the child finds out what the transport mean is. The child names it and then places it on a poster that it thinks is the right place of movement of the given transport mean. Other children follow it and evaluate if the child has placed the image correctly. Thus, the teacher will invite each child in turn. Finally, they will look at the result of their work together.

Conclusion

Children are sitting on the ground in a circle, they are handing a bag with transport means when the teacher blasts on a trumpet for a bicycle, the bag remains at the child holding it in its hand. The child chooses one transport mean from the bag, but it does it behind the doors so that other children do not know what the transport mean is. Then it tries to convey the transport mean by movement and sound. Other children are guessing the transport mean.

At the end, the teacher evaluates the activity and asks the children what they liked the most or what they would change.

Educational activity – Geometrical shapes

Educational area: Art and culture

Educational subarea: Art education

Specific goal: Compose planar geometric shapes and create a simple neoplasm.

Content of education: Art activities with shape on the surface

Educational tasks: Sorting out geometric shapes. Make up geometric shapes from small objects. Create figure from a geometric shape.

Tools: paper geometric shapes, drawn outlines of geometric shapes on cardboard, bottle caps, cut geometric shapes from coloured paper, drawings and glues

Strategies of educational activity: listening to a story, working in pairs, working alone, sorting out, creating patterns, sticking

Course of the activity:

Motivation

The teacher tells the children the story about a figure who got lost on the way to a kindergarten, she shows him to the children on the picture. In order that the figure can return home he needs help from you. Shapes were thrown in the classroom and he needs to sort them out. Will you help him?

Course

Each child gets a bowl with a geometric shape that it names at first and then looks for it on the ground in the classroom and collects it in a bowl. When the kids have finished this, teacher together with the figure check the content of the bowl and praise the children.

But then it is needed to help the figure to create the code by which his friends will find him. Children work in pairs, they attach small objects of bottle caps and crumpled crepe paper on the outlines of geometric shapes when they finish this, figure gets home.

In order to not forget the figure, we will make his picture. Children create a figure from colourful geometric shapes.

Conclusion

Praise children and talk about work. What they liked the most or what they didn't like.

References

http://www.statpedu.sk/files/sk/deti-ziaci-so-svvp/deti-ziaci-so-zdravotnym-znevyhodnenim-vseobecnym-intelektovym-nadanim/vzdelavacie-programy

2 Methods used in education of children with multiple disabilities in Základní škola a Mateřská škola pro sluchově postižené Plzeň (Czechia)

Erasmus+

2.1 WORD-BOOK for students with hearing impairment

Basic information about word-book

Word-book for pupils with hearing impairment (includes also two educational CDs) is a textbook that teaches via global method of reading. It is mainly aimed at impaired children, it is the reason why all words used in the word-book are depicted also as a picture of the notion in sign language. Notable amount of visual material is an important characteristics of this word-book, which consists of a printed book and 2 educational CDs. Teachers can print out chosen materials from these CDs.

The Spelling books contains variety of reading texts and wide range of materials for practicing. This enables a great variability of work and the possibility of adaptation the materials for individual needs of each child.

Each section of the Word-book contains 5 worksheets that can be printed out by the teacher. They are designed for practicing. The pupils can use them for colouring, cutting, connecting and attaching in various ways.

Each title plot picture is accompanied by a short coherent story. It can be used as a reading-book, and this story can be used as warm up and motivation for advanced readers.

Used methodical procedure

The Word-book is designed for the global method of reading. This method is traditionally considered to be the most suitable way of teaching for children with hearing impairment already from the first published word-books in our country. Children learn to recognize the word as a unit. With maximal support of illustrativeness the students are able to read words and even whole sentences. The get familiar with particular letters from the first lessons of the book, they try to read them both isolated and in simple combinations. At the same time the children are taught to realize the difference between graphically similar words. First lessons offer words that are articulatively simple phonemes, i.e.: m, t, p, v, s, a, o, u, e. Other phonemes are gradually added one by one in each of the lessons. This enables the teacher to lead the children gently from the global method of reading to the phonics method that analyses and synthetizes the phonemes. The

teachers can support and speed up the transition from global reading by introducing grammatical points, where children become aware of different view of the word. The length of the period of global reading is very individual.

The first condition for successful reading is sufficient preschool preparation. The length of the period of pre-word-book period depends very much on how well prepared for school education the children are. It is desirable to point out, that the Word-book is not for teaching of reading from the first school weeks.

The textbook of the Word-book consists of 31 lessons (15 lessons in Part I, 16 lessons in Part II. All are structured in the same way. The title story picture is on page 1. This picture can be used for deriving individual notions that are to be newly introduces in this lesson. The notions depicted are represented by a sign and mostly also by a picture, are also on page 1.

Method of deduction of newly introduced notions

Before starting to read the word, the students should know in sign language, they should definitely know its meaning. Reality should always be the basis- it means object, person etc., a picture should always remind the children of a notion they already know. Some of the notions are to be prepared well in advance, so that the child is sure about it meaning – e.g.: word homework is used by the teacher very often at school and the children can see it on the blackboard and in their notebooks. When the children see the word in the Word-book, they already know it. We can use all natural and coincidental situations to explain notions. The children remember things when they are in situation that is interesting for them or when they are emotionally involved.

Pictures, signs and words should attract attention of students in the classroom, they should be successively stuck to the vocabulary or given to the box.

Use of finger alphabet

There are several reasons, why it is important to introduce letters, though the kids are taught to read globally. It support especially the transition from global reading to phonics reading and practicing of pronunciation and writing.

The extend of use of finger alphabet by children, depends very much on decision of their teacher. Use of finger alphabet concurrently with speech shows following advantages: children will remember phonemic structure, despite the fact that they are not able to pronounce it yet. Children can very easily observe hand movements and unlike with sign language, they help children when lip-reading. Use of finger alphabet together with speech has had a long tradition in some of the schools and it is used till now. However it important to be aware of the possibility of building up a strong connection between speech and finger alphabet. In such case children wouldn't be able to pronounce the words without moving their hands.

During some part of lessons, e.g.: common reading from blackboard, it is more suitable to use sign language (children read words or sentences and prove their comprehension by interpretation to sign language) in other parts we can use finger-alphabet , in order to practice phonemic structure of words.

Transition from global reading

The experience suggests that it is not necessary to be in a hurry when transiting from global reading, when the children don´t have problems with recognition of words even when their vocabulary get wider. These children usually switch from global reading to phonic reading quite naturally, as soon as their cognitive functions are mature enough.

There are several reasons why some children persist in global reading. First of them is obvious – lower mental abilities a child. However the global method is the only possible way of introducing written form of the words to children with combined mental and hearing impairment. Other reasons are not very clear, they usually are connected with some of the 'dys' disorders, i.e.: dysgraphia, dyslexia, dysphasia, which is however very complicated to be diagnosed especially with children with hearing impairment and of that age.

Practice of phonemes articulations

Lessons of Czech language in the first grade essentially contain articulation preparatory exercises, practice of phonemes articulation and their fixation in words.

Children need certain time to fix proper pronunciation, it is not possible to practice more phonemes quickly one after another. Before we start with a now lesson, it is necessary to conduct articulation practice of the phoneme that will only appear in the new lesson.

To display new phonemes (letters) and words on the blackboard, e.g.: close to articulation mirror, proved to be a very helpful activity. We should note down all phonemes pronunciation of which was acquired by the child, possibly in a way that is attractive for the child. It is important as motivation for children and at the same time both parents and educators of the child are informed about acquired knowledge and they can require if from the child.

We are in a more complicated situation in case of children who have problem with articulation practice. These are usually children with traces of autism, with disabilities of speech organs, with mental disorder etc. Even in this case it is important to pay attention to practicing of articulation, although we cannot introduce new word only when articulation of the previous one is articulatorily mastered by the child.

The practice of articulation should always be connected with a picture and written form of the word.

Reading of sentences

When reading sentences, it is very important to monitor the child's reading comprehension. The easiest way of checking it is to ask the child to express the meaning in sign language.

Grammar in Word-book

The Word-book contains relatively large number of grammatical points. However, the children are not expected to actively acquire all of them. The teacher takes into account the maturity of each child and he or she can decide what forms of word will be introduced and taught and whether the children will have to learn them and use them actively.

Although the children are not always able to use certain word forms, it is important that they become familiar with them. Moreover the introduction of same words with different endings helps the children with transition from global reading to phonics reading.

Worksheets

The worksheets are designed for practicing and fixing of schoolwork that has been done in particular lesson of the Word-book. The first two sheets of each lesson introduce graphical form of the word, at the same time it is connected with its picture or sign. The following exercises are for

practicing of reading and forming sentences. Each of the lessons also repeats and practices words from previous lessons in new contexts.

The worksheets offer exercises of large scale of difficulty, starting on simple connecting of words up to individual forming of words from letter and forming of sentences.

The exercises in the worksheets can be characterized as manipulative- the students connect, colour and attach pictures, words and signs. These activities enable better remembering than mere reading. Children are able to pay attention to their work, and they develop their thinking and abilities of independent consideration.

Texts for reading

The texts for reading consist exclusively from introduced words and sentences that are similar to those in the Word-book. The sentences usually form a coherent unit which is connected with an attached picture.

Work in each of the lessons should be crowned by reading of this text. It is of high importance that students understand not only the meaning of individual words, but also of complex sentences and to read with comprehension. When finishing each sentence or paragraph the student can immediately show the picture it was about.

More advanced readers can use the texts as warm up and motivation for immediate practicing of new words according to pictures and signs.

Work with story pictures

Story pictures can be used in several ways.

The story pictures serve as introduction into a new lesson of the Word-book, their main function is motivational. We discuss the picture with children, we describe the story and we ask the children about their personal experience with similar situations.

When new words are introduced, children can insert small cards to pictures of larger size. It is possible to point at the pictures when reading the texts from blackboards.

Children can form same or similar sentences from the words, latter they try to write them themselves.

Work with cards

There are 3 cards for each notion – with word, picture and sign.

Work with cards is more attractive for children than reading of individual words from a book or a blackboard. Children can pass the classroom and the teacher can prepare various way of playful practicing, which supports motivation and subsequently also better results. The cards can be used for playing popular games like pairs, dominoes or lotto. The pupils can compete on remembering as long list of words as possible, then can choose pictures, that start with the same letter or that contain the same letter, the pupils can sort the words according to questions: Who? What? What is he doing?

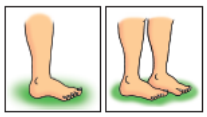
Each child has its own set of pictures, signs and words that he works with at school, in the dormitories or at home. As the child acquires new notions, the more notions the child acquires, the more cards the child has in the set and the set actually contains the current vocabulary of a child.

Examples of exercises

21 list 2

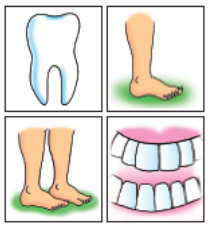
4. Spoj čárou obrázek se slovem.

noha
nohy
nohy
noha



noha
nohy
noha
nohy

5. Spoj čárou dvojici obrázků vyjadřující počet: jeden – více, pak spoj čárou dvojici slov.



noha	pusy
taška	lopaty
pusa	tašky
lopata	panenky
panenka	šály
šála	kozy
koza	nohy
bota	boty

6. Vystřižená slova lep do sloupce podle množství.

1			2, 3, 4		
noha	máma	taška	zub	koza	panenka
mámy	nohy	zuby	tašky	kozy	panenky

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23

Ve škole
Děti cvičí. Paní učitelka stojí.

Tam je Filip a Pepa.
Pepa má míč. Filip nemá míč.
Pepa hází míč. Filip nehází.

Tam je Dana a Eva.
Dana má .
Eva má .

Ota jde a nese míč.
Míč je veliký.
Ota volá:
„Já nesu veliký míč.“

Dana skáče. Eva skáče.

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2.2 Use of alternative and augmentative communication of education of children with multiple disabilities

COMMUNICATION:

Exchange and sharing of information with other people, possibility to share your own:

- ideas
- feelings
- questions
- needs

Alternative and Augmentative Communication:

- AAC are ways of communication which replace speech or replace and complement it either permanently or temporarily
- They attempt to compensate symptoms of defects of people with serious impairments of speech, language and writing, either temporarily or permanently.

AIM OF AAC:

To enable persons with serious communication impairments to communicate effectively and mutually react to such extend, that they are able to be part of our society

WHO IS AAC FOR?:

It is designed for children and adults who are not able to communicate orally due to their health disability.

- Cerebral palsy
- Mental disorder
- Serious developmental language disorder

- ASD
- Oncological disability of speech organs
- Multiple disorders
- Serious hearing impairment
- Aphasia

ADVANTAGES OF USE OF AAC:

- Meets wishes of pupils and clients.
- Prevention of crisis situations.
- Helps with education.
- Helps with working abilities.
- Helps in everyday life.

Current ways of communication of students/clients:

- Verbal
- Nonverbal
- Efficiency of current communication.
- Spontaneous use of current communication.
- Expressing of yes/no.

Sensual and physical disabilities:

- **Visual perception**

Examine eyesight and its function, and the way the client is able to differentiate colours, shapes, object, pictures and letters

- **Auditory perception**

Examination of hearing (indicative, examination of phonematic differentiation)

- **Physical disabilities**

Examine musculoskeletal system function.

AAC AIDS:

- **Non-technical aids**: communicatory tables. It is important to take into account that nothing like universal communicatory table exists. They are always formed according to needs of particular client, they are never final and they should be adopted in compliance with the client's needs.
- **There is an array of technical aids worldwide**. They can serve for direct communication (aids with vocal output), or operating computers for people with serious physical disabilities.
- The Augmentative and Alternative Communication Association borrow many of these aids for trial. **AAC METHODS:**

WITHOUT AIDS:

- Eye contact
- Facial expressions
- Body language
- Gesticulation

***Manual signs – systems*:**

- Sign language for deaf and people with hearing impairment
- Czech sign language
- Language programME Makaton
- Sign into speech

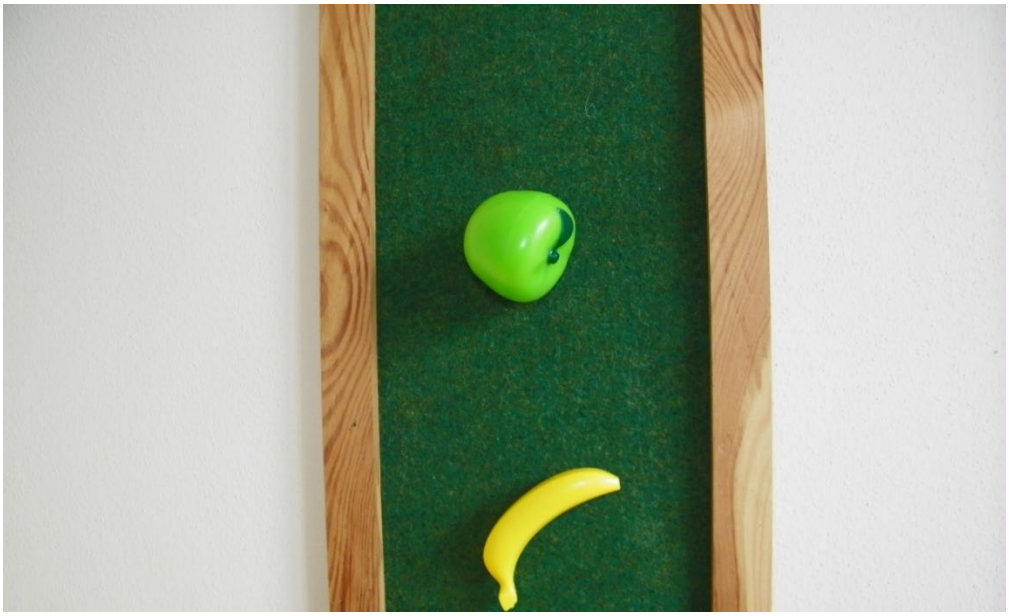
WITH AIDS:

- objects
- images
- pictograms
- symbols
- scripts
- I – pads

- communicators
- letter tables
- cell phones

AAC METHODS:

1. communication with objects



2. communication via images:

3. communication via pictograms

4. Communication dictionary

5. communicators

6. I-pad

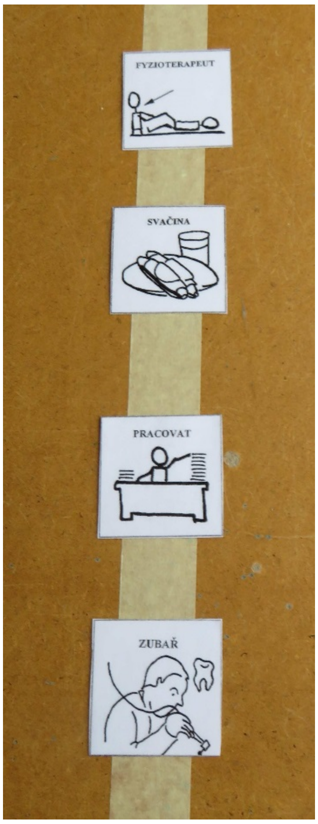
7. FOR HEARING IMPAIRMENT

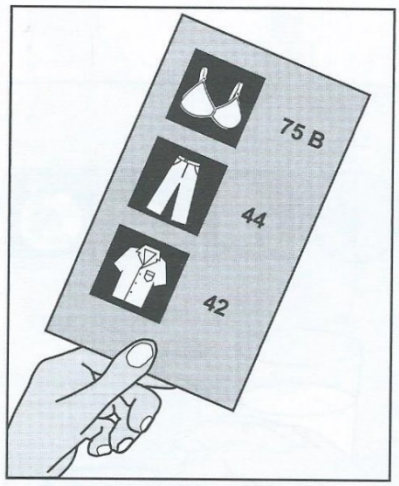
- Sign to speech
- Language programME Makaton
- Sign language

ADVANTAGES OF AAC FOR CLIENT:

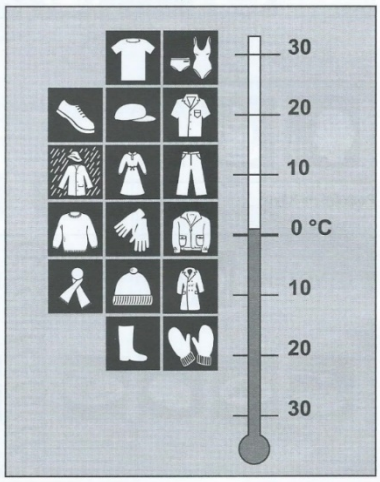
- The client feels secure and steady.
- The client feels more independent.
- The client is able to express what he or she needs.
- The client is content that they are understood by their.
- “They don’t forget to use their pills’

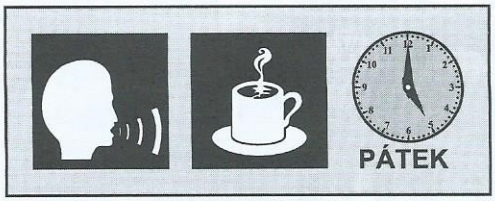
USE of AAK:
schedule of daily activities



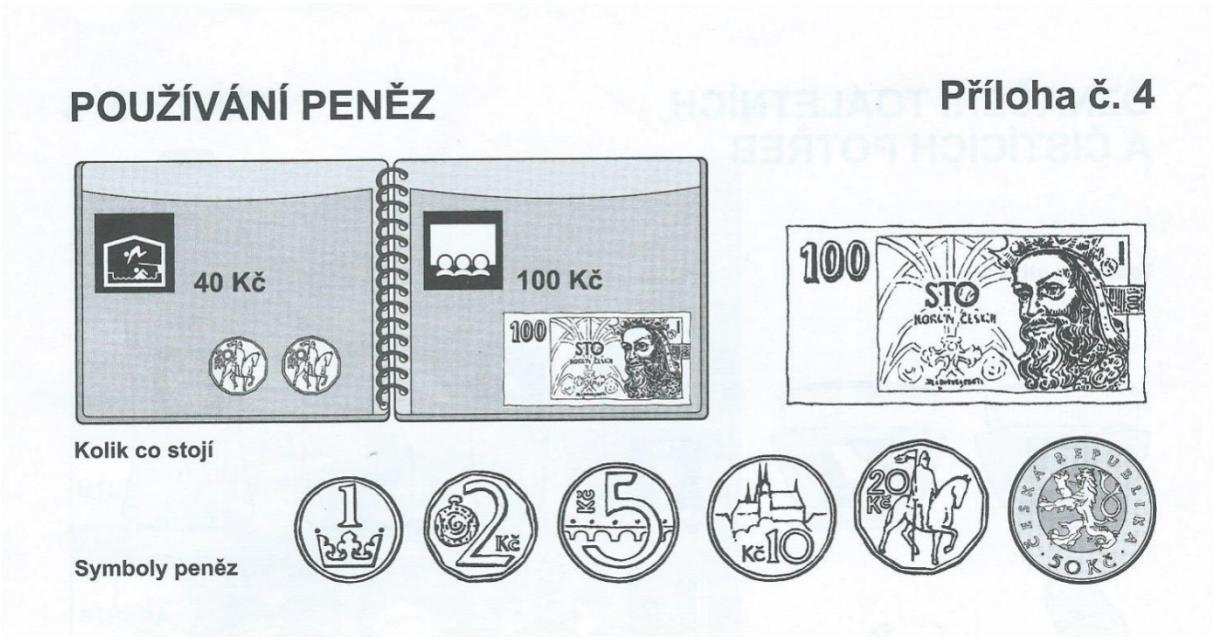


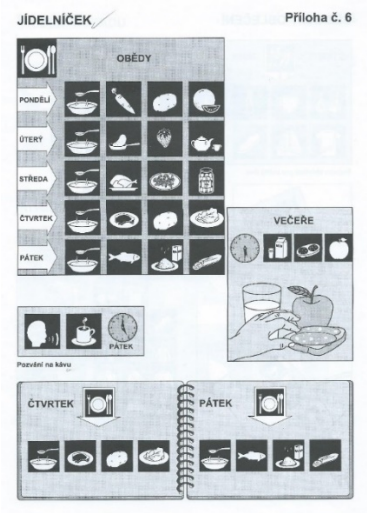
Seznam pro nákup oblečení

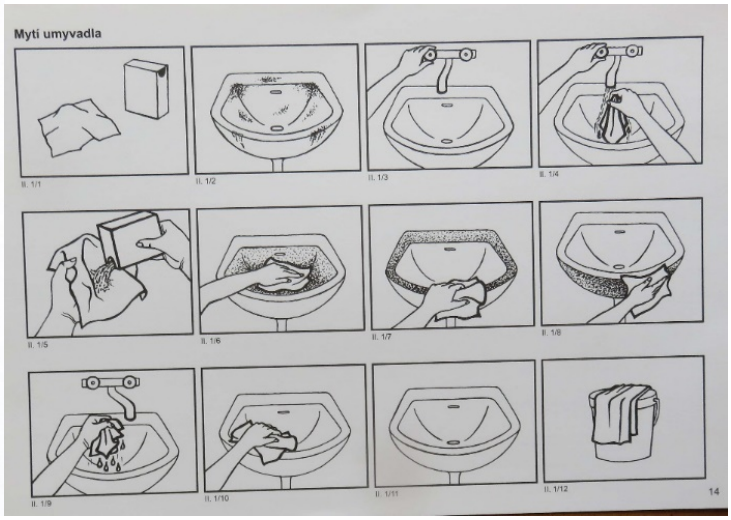




Pozvání na kávu







PRACTICE

- Choosing of favourite delicacies and objects.
- Replacing a picture or text by an object.
- Practice with a communication board, a book.
- Differentiation between two pictures, texts.
- Differentiation among 3 and more pictures.
- Differentiation among communication tables.
- Practice of sentences.

2.3 Structural Learning Teaching Method

There are no detailed procedures or instructions for teaching autistic children, however, the STRUCTURAL LEARNING definitely ranks among the most effective methods.

This method is based on the theory of learning and behaviour and its aim is to diminish weaknesses and to promote strength of the children with autism spectrum disorder (ASD).

The Structured method of learning is a strategy which was specially designed for educating children with autism. Basically it is the methodology of education. This system helps the children understand what they are expected to do. The learning is designed the way that should minimalize behaviour problems, by creating comprehensible environment where the children can succeed. The child should have a clear idea of the amount of work and of its finishing, otherwise the work is tiring and stressful. The structured learning emphasizes individual abilities, practise of independence and self-service, it uses alternative communicative methods and points out the need of cooperation with the family. This principle of education is used especially in classes for children with autism spectrum disorder, however it proves its importance also in educating students with mental disorder or communicative disorder.

The TEACCH **methodology** (Treatment and Education of Autistic and Communication Handicapped Children) is used in the Czech Republic and it is also named the Structural learning teaching method.

The structural learning is based on following principles: individual approach, structuring and visualization.

The method uses pictograms, pictures, images, table for structured tasks, box with structured tasks, clear and short instructions and well visible daily schedule

Advantages of structural learning are considered to be especially in following points:

- Respect to peculiarities and individual level of a child
- The method is based on personal characteristics and uses strongpoints of a child
- Reduces cognitive deficits that are caused by autism spectrum disorder
- The method increases flexibility of thinking and behaviour of a child
- It is possible to build up adequate behaviour and at the same time reduce inadequate behaviour by appropriate motivation

- Cooperation with families
- Optimistic view on effective education of children with autism spectrum disorder.

The individual need of each child are emphasized. The visualization and the structuring supported their development in various spheres like communication, socialization, and independence in self-service etc.

The system of work from left to right and from up down the same way as when reading a book or writing) is a crucial rule. Individualization is another important principle of the structural learning-individually chosen procedures, working aids, motivational aids communication. When the daily routine (change of program, environ etc.) is changed to an autistic child, a problem usually appears.

Unpredictability is very stressful for a child and it can cause fear and lower self- confidence that show up in the form of inappropriate behaviour (rage, negativeness or aggression)

Individualization

The students with the autistic spectrum disorder have very diverse symptoms, the variability of symptom is wide and consequently the individualization has to offer a detailed individually choice of method and procedures, as well as individually adopted environment, communication, motivation and visualization. Common curricula and procedures can be used with the ASD students, therefore it is necessary to design a special individual education program to each child. When designing it is important to respect special needs of these children that stem in their impairment and in their level of chronological and mental age, also other associated impairments have to be taken into account.

Structuring

Structuring is a process of designing clear rules, of visualization of activity sequence and arrangement of the environment. The ASD children can have serious problems with time and space orientation. The arrangement of environment, time and particular activities enables orientation of these children in space and time and also more flexible reaction to possible changes.

The so called daily schedules are an important structure for the children. The daily schedule is usually created from 3D objects, pictures, photographs, pictograms or images with texts. These

vicarious objects represent particular activity. The student can easily check where, how and why the activities should be done and how they should follow

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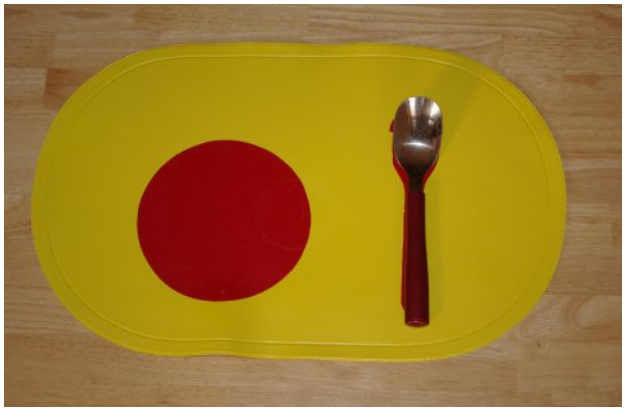
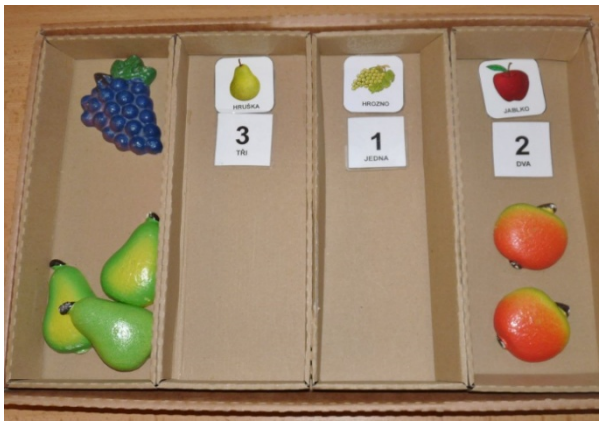


The daily schedule should become a supportive aid for independence and it should provide answers to 2 basic questions: WHERE shall I do the activity? And WHEN shall I do the activity? Active and independent use of such daily schedule consists in replacing object, pictures or photographs form the daily schedule to a particular place where the particular activity should be

conducted by the child. However we cannot expect the child to use it independently and effectively immediately when it is finished. It is necessary to teach the children to orient themselves in the structure of the daily schedule in individual practice to enable the children to start orienting themselves in the structure of the daily schedule.

Visualization

The forms of visual support helps the autistic children to be oriented in space, time and activities. Information that comes visualised is easier for understanding, it explains the verbal information and facilitates independence and tolerance for unexpected changes. In this case the visualization should be again set according to the individual needs of an autistic student, e.g.: in case of an autistic child with associated visual impairment can be used a special form of ‘visualization‘ which is called the haptic visualization.



Space visualization

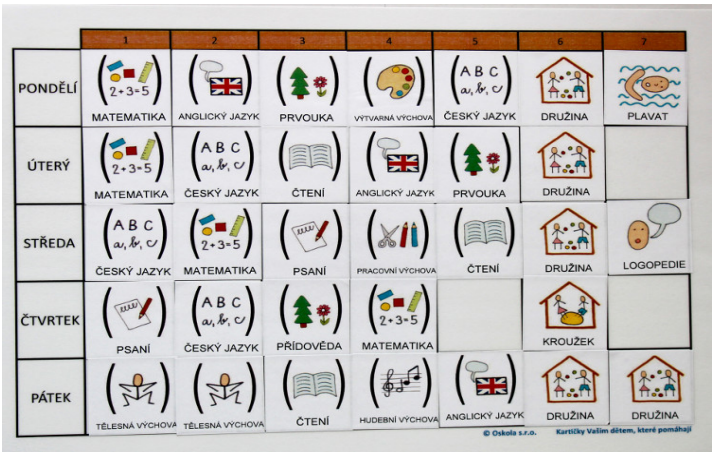
The structuring of space enables the autistic children to be oriented in the environment, where they stay. The arrangement of the space promotes independence and the child can connect particular activity with a particular place.

Time visualization

All forms of time visualization explain the daily activities sequence by displaying them on the daily schedule. The time visualization gives the child the predictability of particular activities throughout the day and the feeling of being secure. The lowest form of this time visualization is by symbolic 3D objects (e.g.: brushing of teeth is symbolized by a symbol of a toothbrush etc.) or in the form of photographs, pictures or pictograms.

The boards of daily or weekly schedule can be an effective way of time visualization. It is possible

to attached pictograms of activities to the board with Velcro. It gives the child the valuable knowledge of what should be done now and what should follow. Clear and transparent space arrangement enables an autistic child to predict, where particular activities take pace. In case of an unexpected change the space structure can contribute to better adapt to a new environment

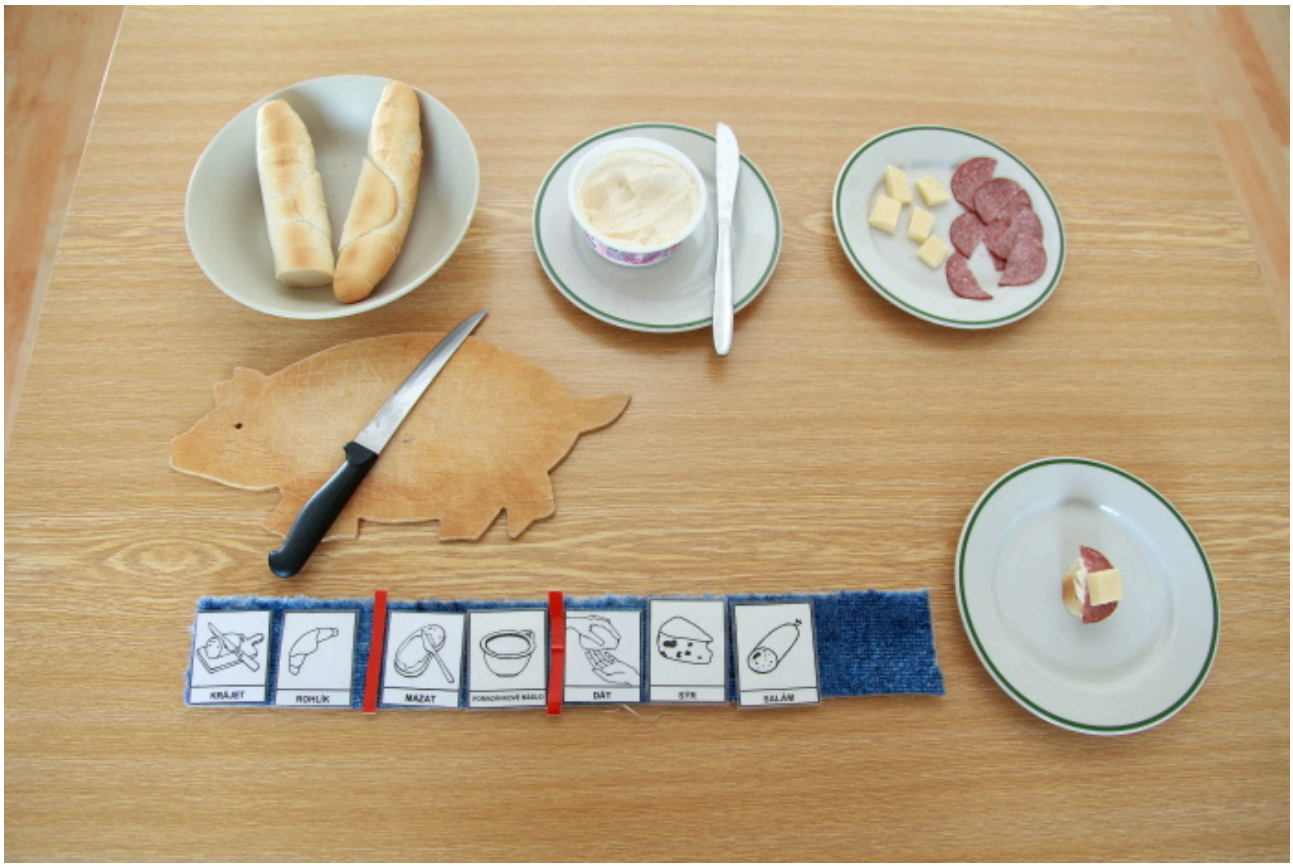


A very common problem proved to be the end of the activity. In many cases it is possible to describe the time by number of tasks or finishing the activity. Ringing the kitchen timer or using the transit card can by another way of indicating the end.

Process schemes

When practicing structural learning, many activities are often doubled. The autistic students attempt to understand activities being done and for that they need physical and verbal support. When the child becomes more independent, or when he or she doesn't understand the activities completely, here comes the supportive form of the so called process schemes. IT means that

particular problems and demanding steps are visualised and made more understandable. The process schemes are mostly used when practicing self-service abilities, then the activities are divided into partial steps.



2.4 The Sfumato Method in education of children with multiple disabilities

The first grade students currently fail in reading which shows up as a problem. It is important to name possible disorders and to capture reasons of poor reading and to prevent these problems. The journey towards good reading is long and we have walk through many fluent transitions to complex reading ability. Only combination of individual functions enables to acquire a complex reading ability. The Sfumato Method solves useless school failures. The Sfumato and its special method of reading solves transfer of sensory information and its processing.

- Particular organs, that take part in the process of learning, they pass in exact succession EYESIGHT- VOICE- HEARING.

- Considering physiology of the central nervous system and sensory perception the organs work on the basis of feedback this method ensures sufficient space-time and conscious processing takes place and creates perfect dynamic stereotype.

- We work from simple to complex. The method is based on singularity of submitted material (rule of contrast) considering not only eyesight and hearing but also vocal apparatus that should be treated with special importance and attention (see choice of letters).

- We abide correct physiological forming of phonemes with long exposition and proper intonation (see image 1) on experiential learning in order to enable better remembering. We work step-by-step, following step can be started only when current step is mastered.

- Within the inter subject relations we work with the repeated element to that we are able to create perfect visual and auditory images. We work with images recalling, finishing unfinished images because we want to ensure that the knowledge of presented material is not only global but also detailed. The last step is a perfect image.

- Intonation development (see image 1) has its regularities stemming from intonation of human speech and genetic development. Physiological forming of phonemes and their connection takes

place only when regarding respect with changes and slowdown of the process, i.e.: to preserve laud reading.

- Use of O, S, B, U, A letters is a reasonable choice, to enable proper visual and auditory analysis, the succession should be preserved. It helps the vocal apparatus be prepared for perfect fluent reading technique, regarding the breathing capacity (the breathing phrase is gradually prolonged)

Image 1: Intonation development

- Letter
- syllable
- onesyllable word
- twosyllable word
- word in a sentence
- more words in a sentence
- Preconditions of the use of the Sfumato method:
- the teacher must be attracted by the content
- nothing is considered to be loss of time
- see the connection among physical, mental and rhythmical regularities of development.

Image 1: **Intonation development**

- Preconditions of successful use of the Sfumato method:
- the teacher must be attracted by the content
- nothing is considered to be loss of time
- to see the connection among physical, mental and rhythmical regularities of development (empathy skills).

The Sfumato reading technique

Part 1: Phoneme exposition. Preparation of visual, vocal and hearing apparatus. Derivation of the letter with help of cross-curricular relations. We can use motion, music, dramatic, art education (we try to employ sense of touch, fine motor skills)

EYE – observes the letter for a sufficiently long time;

VOICE – exposes the phoneme in a physiologically correct form, it tries to 'çall' in its natural spoken key (keeping the voice hygiene);

HEARING – learns the phonetic form of a letter exposed by the voice. The auditory connections are far more complicated than other sensor connections. Sufficient time for listening is of high importance. We try to present contrast phonemes in order to enable best possible differentiation.

The technique is based on the contrast principle. The learning sequence starts with O, S, B, U, A. The students learn to pronounce these phonemes in a correct way due to substantial differences in articulation and work with breath.

- "O" is a tone, represents the strength of the voice, is a basis for calling, it doesn't overstrain vocal cords.
- "S" is a sound, long lasting, teaches to save the breath.
- "B" is a pressed exposition, it helps to auditory preparation of a syllable
- "U" is a ton, is an appropriate contrast to "O" when we talk about the way of forming the phoneme.
- "A" is a tone, is basic for diphthongs.

Practice of particular phonemes in coordination of eyesight, hearing and voice. When mastering the O, S, B, U and a phonemes we can approach to the first stage of synthesis.

Part 2: FIRST STAGE OF SYNTHESIS (synthesis of 2 phonemes). In phase of the 1st level of synthesis we teach reading with substitution of letter and we emphasize the auditory training. At first we substituted vocals, later consonants

EYE – after fixing the movement the sacadic movement from one letter to another can follow in strict sequence still in the time of vocal exposition of the first phoneme => the eye works in advance in the way that all feedbacks are processed in the central nervous system. I tis conscious controlled processing;

VOICE – through the muscle innervation of the vocal apparatus it exposes the second phoneme(with no interruption). We try to pronounce in the legato way (see intonation graph);

HEARING – thanks to a perfect auditory analysis we can continue from bigger contrasts to smaller ones: SOUND - TONE, TONE - TONE.

The synthesis of 2 phonemes should be in coordination of all organs of sense being involved, it means in perfect sequence EYESIGHT – VOICE – HEARING but very slowly, so that it enables to form a perfect dynamic stereotype which is crucial for forming a good reading technique.

The central nervous system has enough time to feedback and the pace is chosen according to speed of processing of an individual

During legato reading (linking of two phonemes) we pay attention to correct physiological forming and laud reading, which is well visible in correct intonation (see the diagram of intonation development)

Very often we use the rule of contrast. The first and the second phoneme is being created as long as our breathing capacity allows. This moment again support breathing and vocal training.

Firstly the connection of sound and tone without interruption. The student learns to master differentiation the O and U vowels and next to the consonant (SO, SU, SA).

- More complicated connection of 2 tones (LO, LU, LA; MO, MU, MA).
- Gradually we add other vowels: E, I.
- We substitute vowels to enable a perfect hearing analysis of a vowel in position next to a consonant (SO – SE; LO – LE etc.)

We can use letter alphabet to enable better fixation. The children place their letter on the board according to the teacher's instructions

Part 3 : 2nd stage of synthesis (synthesis of 3 phonemes – principle of monosyllables). The reading habit of the students is being formed. We try to direct the student to the content of the text, because only technical processing of signs is not desirable. The first step of the 2nd stage of the synthesis we use only long-exposed phoneme. The process is still slow and exposition of every phoneme is long. We pay attention to exaggerating of the length of the first phoneme, to focus on the first letter. We prefer the fixation movement to the saccadic movement. The 3rd phoneme is loudly exposed as long as possible. Hearing has enough time to listen and to differentiate the 3 phonemes. We try to prolong the breathing phrase for exposition of other phonemes. We analyse SOUND-TONE-SUND, TONE-TONE-SOUND, TONE- TONE – TONE. Regarding intonation we try to

keep the tune line according to the graph of intonation development, which is based on physiological phoneme forming and their linking.

In the second stage we us the so called explosive letters – pressed, voiceless consonants as the first ones. These consonants helps naturally shorten the vowels. Repetition is of high importance.

Sound – tone – sound (SOS, SUS, SAS, SES, SIS)

- Tone – tone – sound (LOS, LUS, LAS, LES, LIS; MOS, MUS, MAS, MES, MIS)
- Sound – tone – tone (SOL, SUL, SAL, SEL, SIL; SOM, SUM,..)
- Tone – tone – tone (LOL, MOL, LOM, MOM)

The visual and auditory analysis is controlled with help of letter substitution. The students get ready for mastering the analysis of 3 letters, they form the habit of reading from one letter to another.:

- Substitution of the first letter (LOS – MOS),
- Substitution of the third letter (LOS – LOM),
- Substitution of middle letter (LOS – LUS).

Part 4: 3. Stage of synthesis (reading of words and reading from word-book)

a) Synthesis of 4 phonemes

We move the stress in the word and we change the intonation according to intonation graph. As the first step, we read four-letters words with short vowels e.g.: MASO, MELE? NESE, SELA, LANO. In the second step we continue with distinct reading of words containing long vowels. The dynamic stereotype is created. The student is made think about the text: What have you just read? What does it mean? But also by the reading technique itself (the eye is before the exposed phoneme). It creates sufficient time to process the text being read.

b) Reading in word-book

Stage 1: collective reading

At first we read exclusively collectively, which keeps the reading process in lower pace. We strengthen the reading habit. We observe intonation rules within the word and within the sentence (see image 1).

Stage 2: combination of collective and individual reading

Gradually we pass from collective reading to individual reading. The pace of individual reading is determined by central nervous system according to processing speed of an individual. Individual approach should be maintained.

Stage 3: dramatization, oral presentation of a text

Dramatic education is condition of good presentation of the text. The body becomes an important source of creative impulses and kind of material that enables us to express for theatrical presentation of a text. The student who undergoes experiential learning is far from mere reproduction of definitive text, on the other hand he or she get involved in the text and they develop their imagination.

Such experiential learning is reflected in the reading performance and allows to express feeling in the interpretation of the text. The student is able to draw closer to correct phrasing and pace of the text. We teach them to distinguish subjective and objective message and objectives of communication.

The modified reproduction promotes creation of the student's own positive attitude to literature and other arts based on text. It develops emotional and aesthetic feeling.

Advantages of the Stumato reading

- This technique is based of laud reading and correct placing of the tone in oral cavity, keeping the voice hygiene on mind.
- The flowing linking of phonemes ensures fluent reading.
- Correct technique prevents from double reading and controlled eye movement form one letter to another prevents from mixing up letters.
- The reading with comprehension is a crucial point of this method.
- Long phoneme exposition provides longer time for the central nervous system to process it. The eyes move forward when the preceding phoneme is being exposed

and the movement is controlled from on letter to one that follows. This technique ensures individual reading pace for the students.

After automation and use of pressed consonants allows shortening and correct differentiation of long and short vowels (Navrátilová

2.5 Equine-assisted therapy (EAT)

Equine-assisted therapy (**EAT**) *is a special physiotherapeutic method which uses a specially trained horse in* four-beat walk as a medical instrument.

This method uses horse movement which is characterized by so called three dimensional movement (forward and backwards, side to side and up and down). This typical equine movement is variable in 16 possible combinations depending on what leg of the horse steps forward as the first one – the movement of the horse stimulates central nervous system. The rider has to keep balance and adjust his or her movements which promotes improvement of motor coordination, stability, movability, rehabilitation and disruption of pathological movements.

The temperature of the horse proves to be another advantage of the EAT. It supports relaxation of stiff muscles (e.g.: in case of disabled people). As soon as the clients feel physically relaxed, their mental relax follows.

Riding a horse stimulates muscles of respiratory system, which is very helpful for clients with asthma.

The EAT can be used also as a part of psychotherapy. The clients learn how to make contact, haw to communicate effectively (both with the horse and other clients). It promotes motivation of the client as well as the attention, where the client learns how to pay attention, concentration and also how to distract attention e.g. from pain.

Sections of EAT

- HIPPOTHERAPY – is designed for all motor impairments – e.g.: orthopaedic disorders (scoliosis), neurological disorders (cerebral palsy, multiple sclerosis), cardiovascular diseases, asthma and obesity.
- EQUINE ASSISTED PSYCHOTHERAPY- psychological characteristics of the horse is used, to form a binding between the therapist and the horse or with other clients from the group e.g.: psychiatric disorders, mentally impaired clients, behaviour disorder, cerebral disorder, hyperactivity of children, speech disorders and learning disorders. This therapy promotes self-confidence, dexterity and courage.

- THERAPEUTIC HORSEBACK RIDING – is used by disabled individuals.
- RECONDITIONING HORSEBACK RIDING – is suitable for posttraumatic states or chronic diseases.
- EAT can be used as prevention in cases of degenerative diseases of nerves or diseases that cause interruption of nerve pathways that operate human movements. The more we remind the organism its proper function the longer we are able to postpone the negative influence of degenerative diseases or consequences of injury.

- **Rules of EAT**

- EAT should always be conducted without a saddle (it is possible to use soft mat, that includes handles for the rider to feel secure), the saddle in this case would obstruct the horse heat to affect the rider.
- The rider should leave the horse movements to influence him or her.
- An experienced physiotherapist should always be present in this therapy.
- The horse itself, the pace and the terrain should be chosen according to the way of therapy and taking into account the needs of the rider.
- EAT can be applied with children from 2 months of age (in this case it is crucial that the therapy is run by a specialist) there is no maximal age limit for this therapy.

Contraindication

Fear from horses, horse allergies, hip dislocation and current health status rank among the main contradictions. Therefore, the initial examination the client should be examined from many views.¨

Safety

A well-trained horse is a crucial thing for a safe EAT session. The horse has to be licenced with the Special exam for horses and ponies classified for EAT. The horse has to be accompanies by a team of experienced specialists.

Another important point is a safe high quality facility, i.e.: wheelchair accessible facility, mounting platform, harness for horses and positioning aids. The clients should use exclusively certified safety helmets, safety belt and should be vaccinated against tetanus (when his current condition enables it).

Team for EAT

- Doctor – indicates and recommends EAT.
- Assistant – is a trained person, who helps the therapist to meet the aims of a therapeutic session.
- EAS horse trainer – is a person, who trains the horse for the therapeutic purposes.
- Riding instructor – a trained person older than 18, who leads the horse during the EAT.

- Therapeutic horse – specially chosen and trained horse for therapeutic purposes. It has to be certified with the Special exam for therapeutic horse and ponies.
- The client can be accepted to the EAT only with consent of the doctor and after an initial examination by physio/ergotherapist.
- The horse is allotted to the client individually, according to horseback movements, horseback width and horse height, to meet the demands of the therapist and to be able to gain the rehabilitation goal.
- The EAT takes place on an unsaddled horse, which is covered by a blanket, or handles, depending on the client's abilities and on therapeutic goal.
- The therapist decides about the position taking into account kinesiological analysis of client's physical abilities and regarding the therapeutic goals. The therapist can use various positioning aids- balls, cylinders, cushions, rests etc.

In case of assisted sitting position, the therapist should be an excellent rider.

The therapeutic session is of individual length, regarding the needs of each client (usually 10-20minutes), contact with the horse is part of the therapy in some of the EAT facilities.

Minimal frequency of ambulant care is 1-2 therapeutic sessions per week, depending on health state of the client and therapeutic goal. Regularity is of great importance as well as being independent from weather conditions.

Intensive application of the EAT should take place at least for 5 following days, with 1-2 therapeutic sessions a day. It can have form of ambulant visits or longer stay where complex care is included.

Total time of the EAT ambulant care should be minimally 3 months. It is possible to apply the therapy long- term (even several years) in case of same diseases like cerebral palsy. The facility has to be equipped with a mounting platform.

The horse should be lead by an experienced adult person, ideally with someone who trains the horse and who knows it perfectly, this helps avoid dangerous situation.

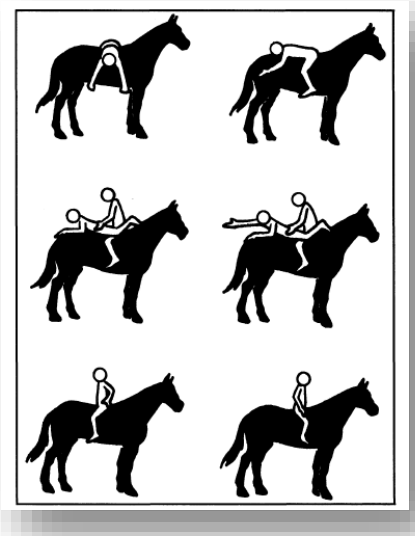
Process of therapy: welcome, mounting the horse, the therapy itself (the horse walks only), the pace and direction are chosen by the therapist. End of therapy: relaxation, dismounting the horse, contact with the horse and parting.

Horseback positions

The therapist decides what position is suitable and helpful for the client according to kinesiological analysis of physical abilities of the client, regarding the therapy goals. The therapist can use a variety of aids- cushions, balls, backrests, etc. for clients positioning.

Most commonly used positions:

- Primarily upright position- lying on the belly facing rear with support of forearms.
- Rear facing sitting position – rear facing sitting position with support of palms.
- Independent sitting position – sitting facing the front with holding handles, overball, with support of pads or without support.
- Assisted sitting position where the therapist is sitting behind the client and actively influences client's coordination mechanisms.



2.6 The training of language abilities according to D.B. Elkonin

The aim of the course is prevention of failure in the part of reading and writing in first grade, improvement of the sense of language. The course develops the sense of rhythm and also dividing words into speech sounds and syllables.

The course is suitable for children from 5 years.

It´s for:

- all pre-school children before entering the school attendance as a stimulus programme
- children with postponement of school attendance
- children with difficulties in speech development
- children in the care of a speech therapist
- children whose parents are dyslexic
- children with developmental disorders
- children from different language background (reinforcing the sense of language in the language in which a child will be educated)
- schoolchildren who are weak in reading skills in the early years of school attendance

THE TRAINING OF LANUAGE ABILITIES ACCORDING TO D.B.ELKONIN

or

How to prepare a pre-schooler for reading

Is reading important?

Every parent wishes his child to be skilful and satisfied at school. The most important thing for a first grader is to read well. Nowadays, many children prefer a television or a computer to a book.

However, reading opens the world that is richer in knowledge and also experience. Good readers become well educated and successful people.

Which skills create the basics of future reading?

Psychologists consider the language abilities to be the basis of reading. At the very beginning a child has to understand how the words are made: for example why the word HAD is shorter than the word ŽÍŽALA. The purpose of reading is to understand what we read and to be able to use it. Therefore memory is also important so that we are able to remember what we´ve read and to easily recall it later on.

Will all children read easily at school?

No, they won´t. There are many children considered to be immature and insufficiently prepared for school attendance. For many of them compulsory school attendance is postponed. The risk groups include children with speech impairments, hearing impairment, mental backwardness and also children who are clumsy, hyperactive and distracted. There is a category standing on its own which includes children from disadvantaged backgrounds, children of foreigners who can´t speak Czech and also children of parents who were dyslexic during their childhood.

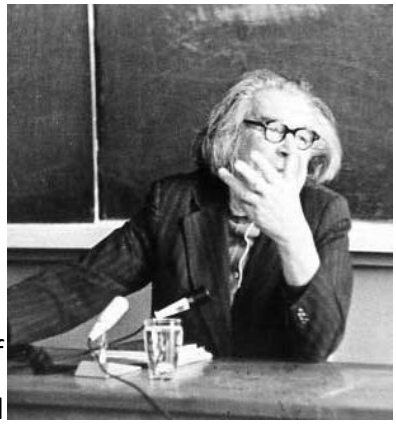
Can we prevent problems at preschool age?

There are many scientific proves that we can. The development of language skills, games with sounds and letters in words, „letter poems“ and tasks developing memory are very effective and they prevent the difficulties with reading and dyslexia.

What is The Training of Language Skills according to D.B Elkonin about?

Our methodology is based on psychological theory which considers development of language skills to be the basis of reading literacy. The author of the theory is Russian professor D.B.Elkonin and it is still being developed by many specialists in many countries of Europe and the USA. The entire training programme takes place in one school year. Children are lead by specialists who were educated in this method at The Faculty of Education of the Charles University and they obtained a certificate for it. The lecturers are the authors of Czech edition of the methodology

Parents who are interested in The Training of Language Skills according to Elkonin can find all information at the website www.elkonin.cz.



Daniil Borissowitsch Elkonin

– The author of the methodology

- Professor of psychology Daniil B. Elkonin (1904 - 1984) is one of the founders of the Russian psychological school. He focused on developmental psychology issues such as periodization of psychical development and the game psychology.
- A special place in his work belongs to the methodological and theoretical foundations of the psychology of learning and education. Elkonin applied this approach in his long-lasting work on developing literacy. Together with his associates G. A. Cukerman and E. A. Bugrimenko, he created a spelling book based on linking speech development with the development of reading and writing (first edition after the author's death in 1992, sixth edition 2010). This method currently belongs among one of the most sophisticated methods we can use to teach children to read. It has received great international acclaim.
- This work by D. B. Elkonin is considered to be unique and at most theoretically and practically topical. Today it belongs to the field of cognitive psycholinguistics, which deals with the development of literacy and the role of phonemic awareness in reading and writing.
- **The method developed by Professor Elkonin inspired Czech and Slovak experts to develop it creatively in Slovak and Czech language to serve our pre-schoolers before entering school and all children who may have or who already have learning difficulties at school.**

Prof. PhDr. Marína Mikulajová, PhD.

She is a psychologist with a focus on developmental psycholinguistics. She dedicates herself to the development of language skills and their relation to literacy in norm and pathology. She teaches courses on speech development, developmental disorders and specific learning disabilities.

She also worked (1991-2007) at the Highly Specialized Institute for Children with Speech and Learning Disabilities Dialóg, Ltd. Here she initiated and together with the speech therapists O. Dujčíková Tokárová and Z. Sümegiová developed work on the Elkonin method and its use in various groups of children (normal, children with impaired speech development, dyslexia, etc.).

She is currently the Director of the Institute of Clinical Psychology at the Faculty of Psychology of the Pan-European University in Bratislava.

She is the co-author of the first and second editions of Slovak methodology (2001, 2014) and Czech methodology (2004, 2016).

PhDr. Miroslava Nováková Schöffelová, PhD.

She is a graduate of psychology - special education and special education - teaching at special schools at the Faculty of Education, Charles University in Prague. In 2013 she completed her doctoral studies in psychology - speech therapy. Together with prof. Mikulajová, she is the co-author of several scientific studies published at home and abroad. In 2011, she completed an accredited Training of Phonemic Awareness according to Elkonin. She is currently working with groups of children in the last year of kindergarten who have postponed school attendance, autistic children and children of foreigners using the method of language skills training according to Elkonin.

She is the co-author of the second edition of the methodology in Czech language (2016).

Mgr. Anna Dostálová

She graduated from the Faculty of Education in Olomouc – pre-school pedagogy (1974) and the special pedagogy focused on speech therapy and surdopedy (1984). She has a very rich experience in work with children with special needs.

She is the co-author of the first (2004) and second (2016) edition of the methodology in Czech language.

For several years she dedicated to educating teachers in this method. She lectured courses for the Association of Speech Therapists in Education (2011-2015) and other organizations in education.

Mgr. Oľga Tokárová, PhD.

She graduated from the Faculty of Education, Comenius University in Bratislava, field of study - school speech therapy and teaching for primary schools. After graduation, she worked at the Highly Specialized Institute for Children with Speech and Learning Disabilities Dialóg, Ltd. in Bratislava and since 2008 she has been working in the private centre called the Special Educational Counselling Institute of Children Speech in Bratislava.

She is the co-author of the first edition of the methodology in Slovak language (2001) and the second edition of the methodology in Slovak (2014) and Czech language (2016). She participates in the realization of phonemic awareness courses for preschool children and also vocational courses for speech therapists and teachers.

In 2015, she defended her dissertation in which she studied the effectiveness of phonemic awareness training according to Elkonin compared to another type of intervention in children with specific speech development impairment (2015).

PaedDr. Zita Sümegiová

She graduated from the Faculty of Education of Comenius University in Trnava in 1982. During her studies the specialization was speech therapy - surdopedy. After graduation she worked as a clinical speech therapist at the NsP Galanta. She is a co-founder of the Highly Specialized Institute for Children with Speech and Learning Disabilities Dialóg, Ltd. in Bratislava, where she is presently working as a director.

She has been actively working with Elkonin's methodology since its formation and first edition in 2001. **She has been training mainly children with speech development impairment. As a lecturer, she carries out the education of specialists to work with this methodology. She is the co-author of the second edition of the Slovak methodology (2014).**

Mgr. Art. Daniela Olejníková

is a young Slovak painter, illustrator and graphic artist. In 2011 she finished her studies at the Academy of Fine Arts and Design in Bratislava. She is the author of graphic design and illustrations in the methodology.

Brief characteristics of the method

The Elkonin method differs from the common methods used in teaching reading. Its principles and peculiarities can be summarized as follows:

· First, children learn to speak, then to read. Reading is a developmental extension over spoken language. Not all children in the world can read. Reading needs learning.

· Reading is a developmental task at the age of about 6 years. In contrast with spoken language, a child must make an effort to learn to read. A motivated child learns to read more easily. Therefore, reading should be a task, but also a fun activity, a game.

· The basis of reading is solving the code, revealing the relationship between letters and speech sounds in words. Although it might seem to be a visual task, it is in fact "giving sound" to the words that children read. Only words that children make to "sound" carry the meaning. A series of letters (P-E-S) is not yet a word that carries some meaning.

· Reading is considered to be a language task. The word we read is processed in language units. This is the only way to understand what we read.

· This method, in contrast with other classical methods, proceeds from the spoken word to the word that is read. First, children learn to understand the sound structure of spoken words (we say that they learn to hear the speech sounds in words) and than they learn how to label these speech sounds with letters. For example, only when children understand that the word *pes* has three sounds p-e-s, they will learn that the word *pes* can be labelled by the letters P-E-S.

· It is difficult for young children to understand that the word HAD is shorter than the word ŽÍŽALA. To help children know what the sounds that make words are, we use visual modelling: sounds are labelled by coloured tokens, and children make words of tokens. They gradually learn to hear the sounds in words even without the help of tokens.

· The whole methodology is presented in an attractive form of the story, children get to know **Country of Words and Speech Sounds** and they meet its inhabitants. For example, **Master Length** extends the speech sounds in words, **Master Syllable** divides words into syllables, etc.

· The main difference in the Elkonin method is that children do not learn by trial and error, nor mechanically by heart. They learn to understand the principles and rules of how speech sounds

form words and how spoken words can be written in letters. When they learn these general rules, they can read any word. We make the bridge between the development of spoken language and reading / writing and strengthen the understanding of words. The method develops thinking and cognitive abilities of children.

Why Elkonin methodology?

If a child of pre-school age (older than 5 years) has difficulties with the development of speech, started to speak late, had and has significant pronunciation problems or has deeper speech problems (eg poorly composed sentences and difficulties with understanding), dyslexia or other specific learning disabilities occurs in the family, or he/she is growing up in a multilingual environment, it may happen that the child is not able to practice reading in first grade. The child might lag behind his classmates, and in following years may have difficulties understanding the text (ie, he/she will only read mechanically without understanding the text).

We can prevent these difficulties and the first school failure by early intervention.

Children who will complete the linguistic abilities development methodology according to Elkonin will be well prepared for reading practice and they will not have difficulty learning reading.

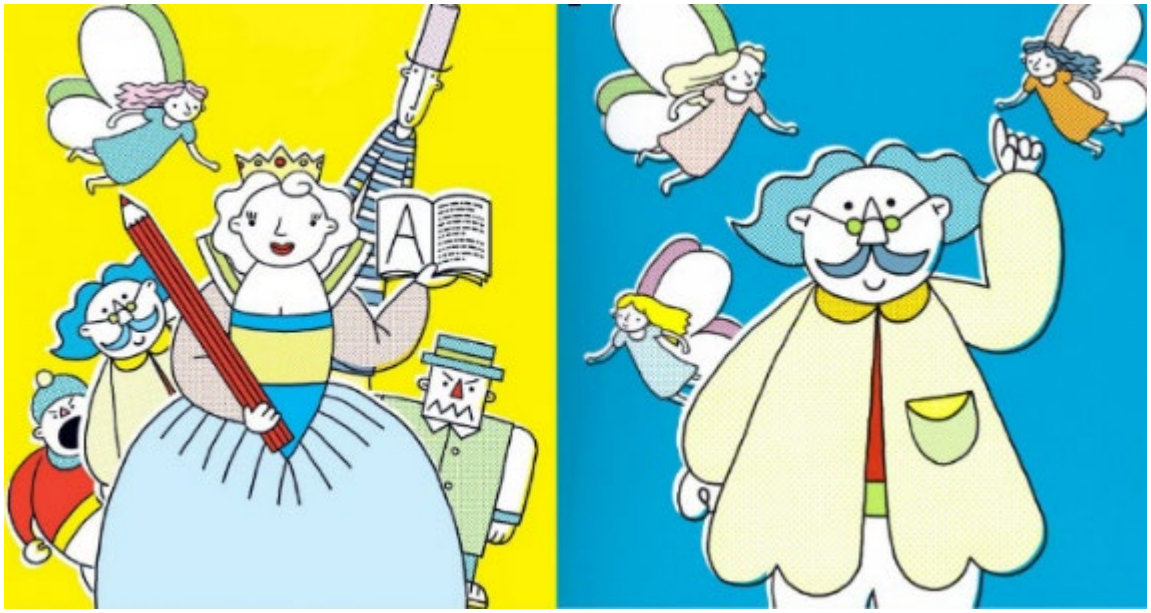
The methodology is divided into two parts - pre-grapheme part and grapheme part.

An assumption for trouble-free reading comprehension is a well-developed auditory perception (phonemic / phonological awareness). The child must be well oriented in the word and be able to identify the number of syllables, the length of vowels, first speech sound of the word, last speech sound of the word and he /she must manage to break the word into individual sounds (analysis) and also make the word from the speech sounds (synthesis).

The child learns all this during one school year, when he / she goes through the textbook (the so-

called “Hláskář”) lesson after lesson.

The whole Hláskář is compiled as a fairy tale where children get to know **Magic Country of Words and Sounds** and gradually meet its inhabitants.



Every inhabitant has to teach children something (to introduce him/her to some grammar in a playful way). The inhabitants of the magic country of words and sounds are for example:

- Master Syllable decomposes the words into the syllables.

- Master Length makes vowels longer.

- Hlásulka identifies the speech sounds in the words (first, last, etc.)

- Bacillus Mistake makes mistakes on purpose and children have to find and correct the mistakes

- Ham represents vowels.

- Mlk represents consonants.

During the pre-grapheme part children don´t work with the graphic form of sounds (letters), but they use coloured tokens for schematic visualisation or symbols (crosses, circles).

The pre-grapheme part is not about reading practice, but about preparing a quality basis for future reading practice in first grade.

After completing this training, the child should be sufficiently prepared to practice reading by any method (analytical-synthetic or genetic). If the child fails to practice reading even after completing the pre-grapheme part, it is possible to follow **the grapheme part**, where he/she meets graphic form of the sounds (with letters).

Pre-grapheme and grapheme stage

Pre-grapheme stage

The whole course consists of 33 lessons that take part once a week (45 minutes) with or without the participation of parents. No homework is needed. There are 4-6 children in each group.

- topic (lesson 1 - 4): The syllable structure of the word
- topic (lesson 5 - 16): The sound structure of the word
- topic (lesson 17 - 25): Vowels, consonants and diphthongs
- topic (lesson 26 - 28): Distinguishing hard and soft consonants
- topic (lesson 29 - 33): Consolidation of the knowledge

Grapheme stage

There are new characters such as Knight Ypsilon, Fairy Ivana and others.

This course consists of 42 lessons (45minutes), parents don´t take part in it. No homework is needed. There are 4-6 children in a group.

- topic (1. - 6. hodina): Vowels
- topic (lesson 7 - 9): Diphthongs
- topic (lesson 10 - 17): Hard consonants
- topic (lesson 18 - 25): Soft consonants
- topic (lesson 26 - 34): Ambiguous consonants
- topic (lesson 35 - 37): Other consonants, consonant assimilation
- topic (lesson 38 - 42): Reading

Each stage has its own workbook called Hláskář which children together with the lecturer gradually fill in. Lessons include group work, individual work, work at the table, movement gam

2.7 Canine-assisted therapy

Canine-assisted therapy is name for a method of positive psychosocial a rehabilitational interaction of a therapy dog and a client.

Free translation of the canine-assisted therapy means treatment by a dog. The dog effect on human health is irreplaceable.

How the dog effects a man

Things that give us energy have positive effect on us. Some dogs have the ability to empathize with a man and to pass their energy. These dogs can be distinguished from other by mere looking into their eyes, and they differ also by the ability to contact a person who really needs them. They are perfect for positioning, very often they find convenient places where they should lye down by the client. They are good companions for relaxation, for communication and for sensual stimulation of the clients. The dogs with these characteristics are very sensitive. They are able to release more energy, than would be their safe limit for them. Therefore the period of time that they spend with the client should be watched very carefully. The dog should have recharging opportunities in free movement in countryside, swimming, relaxation with the owner and being in a peaceful rest place.

This method can bring improvement for following disabilities:

1. ***Mental***

- Promotes attention
- Disabled client realizes that the dog is not a toy, that it needs to be cared by someone
- The dog does not judge people according to their appearance, it does’t care, it behave in the same way to everyone
- It can be used to self-service practice of the client
- It is very helpful in rehabilitation exercise (practice and development of gross and fine motor skills, spasm relief)

- It supports communication and becoming closer with other people
- Develops vocabulary and practice of correct pronunciation in speech therapy
- Brings the feeling of being secure and confident
- Enables relaxation after a playing and exercising
- The disabled client respects the dog's need (sleeping, rest, feeding)
- Increases self-confidence

2. Physical

- It is a confidant, friend and companion
- It is source of life enrichment and revival
- It is source for better communication with the environment
- The disabled is less dependent on help of others
- Promoting of the feeling of being safe
- The disabled forgets about his problems when being under the dog's care
- It disturbs loneliness

3. Sensual

a) The blind

- observation that not one and only dog breed exists (size, hairs, breed...)

- prevents from the feeling of being useless
- decreases level of fear and stress in an unknown environment

b) The deaf

- promotes independence
- improves self-service and self-confidence

c) Clients with olfactory damage

- upozorní a únik plynu nebo zápach kouře
- insures the feeling of being secure
- he is a good companion and a good friend

d) Clients with voice damage

- the dog understands commands expressed with gestures or gestures connected with some sound signal
- improves communication with the environment

4. Autism

- the dog serves as a mediator between the clients and the surrounding world
- improves mental balance
- decreases the feeling of loneliness
- provides of necessary love, when needed by
- pleasure of touching the animal
- can alleviate autism symptoms

5. Epilepsy

- friend and companion
- can assist in rehabilitation
- companion for games
- factor that calms down a seizure

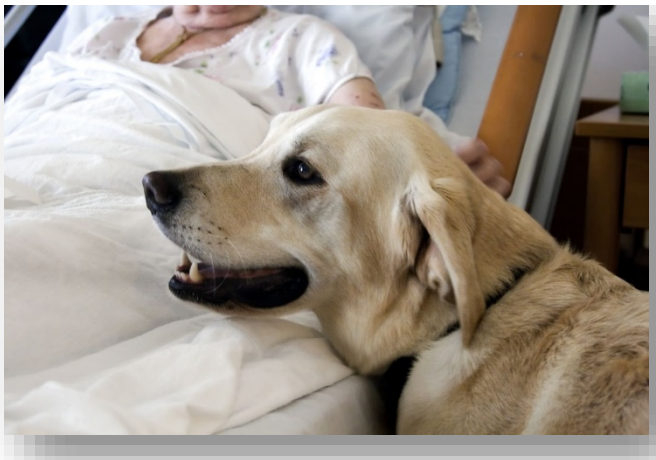
- feeling secure and free
- some of the dogs are able to identify seizure a whey warn about it

6. Psychological or psychiatrical disorder

- leads to improvement of communication between patients and personnel
- the dog as a subject of care turns attention away from the client's problems
- decreases passivity, apathy and indifference
- auxiliary treatment for drug addictions
- auxiliary treatment for abused children

7. Geriatrics

- the clients bear the responsibility for the dogs care
- the clients have to follow the daily schedule (feeding, walking the dog, etc..)
- companion who is always willing to cuddle, play, replaces lack of physical contact among people
- relieves feeling of loneliness, sorrow and pain in case of loss of life partner
- there is someone, who is worth living for
- alarming the clients from nostalgia and depression
- enables to replace feeling of tenderness and being with someone
- the dog has positive influence on calming the clients and that helps reduce the use of antidepressants, sedatives, and hypnotics

- 

Therapy dog training

The assistance dog is put to pre-trainer to learn basic orders and to get used to more people.

By this trainer, the dog should enjoy the puppy time as any other dog. The dog should get familiar with going by car, train, bus or underground. He should be socialized. He should react calmly to other dogs and people. The trainer teaches him basic habits like not to sleep in

bed, not to beg for food, hygiene, this is why the dog should stay in the house of the trainer not in an outdoor kennel. Calling the dog to the master is of high importance.

Any person older than 18 with good relation to dogs can become trainer in this stage.

When the dog is ready, some organization that provides special training for assistant dogs takes up the dog. The dog has to be examined thoroughly to exclude dysplasia or genetic defects and it is necessary to check character of the dog, whether he or she is suitable for the training.

Every assistant dog has to master basic commands sit, down, stay, wait and especially come.

Only now the trainers can start teaching special assistance commands for handing in things, opining doors, turning lights on and off, the guide dog should also indicate obstacles and he

should be able to lead the clients around them. These dog learn commands like crossing, bus stop, door, etc. When the level of terrain changes (kerbstone, steps, escalators, etc.) the dog stops and indicates the change to the master, the master should use his or her white cane to check the terrain. Every dog undergoes 2-3 hours training session daily.

The length of the training depends on many circumstances, especially the dog's working intelligence, every breed and every individual is different and also the number of skills that have to be mastered and the character of the client, who is the dog for. It is more natural to follow commands of an adult man than a small child, this is connected with assessment of hierarchy of people in his "pack". The dog training usually takes 5-9 months and only then the

dog undergoes final exams. These exams are followed by joint training of the dog and the client, where the clients has to learn how to use the dog usefully.

Kinds of therapy dogs

Assistance dog for disabled clients

The dog is trained according to the physical disability of the client. The main purpose of the training is to help the client in self-service and enable independent motion away from home etc.

Signal dog for a deaf

The dog is trained to warn the deaf master about sounds in his or her surroundings- e.g.: crying baby, alarm clock, doorbell.

Signal dog for persons with seizure diseases

The dogs are taught to feel possible epileptic or other seizure and to warn the client about it.

In case of seizure, the dog is able to call for help.

Balance dog

Thanks to his special harness and training, the dog is able to help to a person with balance problems.

Handy companion

This assistance dog is not for a disabled person himself, but for an assistant of such person.

These handy companions are placed in a household with seriously disabled person, who are not able command a dog. The god is able to open the door for a mother who bears a disabled child. Home canistherapy is a substantial part of the dogs work.

Signal dog for allergic individuals

The dog is trained to identify smells that can cause an asthma attack to his master.

Guide dog for clients with memory losses

The dog is perfectly trained in orientation in home surroundings of the client so that he is able

to guide the client safely home in case he is not able to orient himself.

The dog as emotional support

These dogs are intended to clients with psychological disorders, that prevent them from

leaving their houses and from taking part in everyday life. The dog reduces disorientation and

establishes feeling of security on an unknown environment etc.

Guide dog for the blind

They replace the most important human sense., the sight. Their work is symbol of devotion and utility.

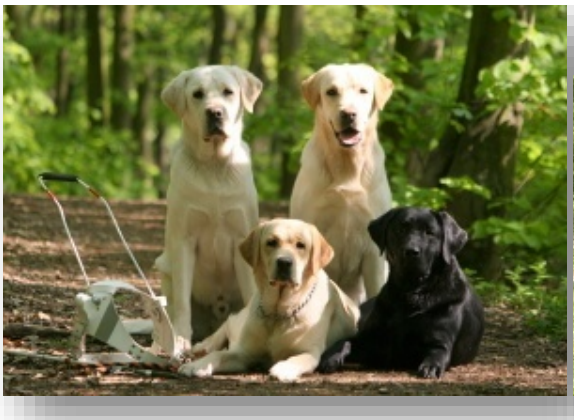
The guide dog is a compensatory aid for the blind. He is an everyday guide, but first of all partner and friend, who is ready to serve 24 hours a day.The dog helps his owner become member of the world of so called healthy people. The dogs accompanies the owner on busy streets of a city, in the roads, in interiors, in public transport, but it is possible to walk with him also in nature. The dog has to be able to assess any situation, and in case of danger not to follow owners order in case of danger, on the contrary to lead the blind to a safe place (e.g. when the blind is about to fall in the railway). During the dogs training, the dogs are exposed to tough demands on allegiance orders like summoning. It is not possible that the do disappears to chase the deer, or to be walked only long leash or flexi leash. because a blind person is not able to solve such situations. Mission of such dogs is in guiding the blind master through all obstacles and help in orientation.

We got used to seeing guide dogs for blind on streets, because to dog became essential companions. The first seeing eye dog was trained in 1928, but various cases of assistance dogs were seen even sooner.

- Leading the blind owner is not the only task of the guide dog.
- The dogs should have following abilities:
- To find an empty place in public transport and to indicate the blind where to sit down
- to find a phone box, ATM
- to find a bench
- to cross the street safely with the blind
- to lead the blind out from a place full of obstacles
- to go through the station to the platform and to prevent the client from falling in the
- railway
- to find a counter at the post-office or in the railway station, where someone can help to
- the blind
- not to follow the command of the master, when the dog regards the situation as
- dangerous

Breeds suitable for therapy training

There is no special breed for the CAT, there are only suitable individuals. It is more common to find suitable individual within dogs who were bred for cooperation with people, i.e.: the herding and hunting dogs. Most commonly used breeds are: golden retrievers, Labrador retriever, flat coated retrievers and border collies.



Summary

The dog impersonates an important support to a disabled individual, especially psychological support, because it enables the client to form social bounds and therefore to be integrated in society in a better way. In case of guiding dogs, it helps speed up the moving of a disabled and it evokes the feeling of being secure and serves also as prevention of injuries.

3 Methods used in education of children with multiple disabilities in Specjalny Ośrodek Szkolno – Wychowawczy dla Niesłyszących, Kraków (Poland)

Erasmus+

3.1 Active teaching/learning methods in working with the Deaf and Hearing Impaired Students

Active methods in teaching and learning are linked to the student-centred approach, which moves the focus away from the teacher viewed as the expert in a given field and onto the students and their needs concerning the process of learning.

The teacher becomes more of a guide and mentor rather than an expert. They monitor and support the students on their way of reaching a given goal rather than provide them with a clear cut way of achieving the correct answer.

Active methods move the focus towards getting students more active and involved in their learning process, letting them experience and discover rather than simply sit still, listen and be a passive recipient of the knowledge passed on by their teachers. These methods increase students' involvement, motivation and attention. They provide students with hands-on activities, promote problem-solving and creativity. Moreover, they allow students to practice and develop social skills like collaboration and empathy.

Numerous research studies indicate that the result of active methods on learning is nothing short of beneficial as it improves students' engagement, understanding and overall attitude towards a given subject of study.

To successfully implement a given active teaching method teachers should follow the following steps:

1. Divide the students into a few groups.
2. Provide the groups with a goal to achieve, a problem to solve or a question to answer.
3. Give clear instructions (the key to achieving positive results).
4. State the time allotted to completing the goal. 5. Monitor the time.
6. Monitor the students during the exercise, support them, and provide supervision.
7. Discuss the results with the students, sum up and give feedback.

In the words of Confucius: "Tell me and I will forget; show me and I may remember; involve me and I will understand."

3.2 Cylinomuz - innovative method used at Special school for Young People with Learning Difficulties

No 2. in Krakow

Introduction

MUSIC AND ITS VALUES

Music has accompanied mankind since the dawn of time. It exists in every culture we know. It evokes the whole spectrum of feelings and therefore has a great power of influence.

Music plays a huge role in a child's development. It enriches him/her emotionally, morally and aesthetically. Music allows to escape from reality, stimulates expression, shapes attitudes and views, provides aesthetic impressions and teaches how to deal with art. Music stimulates a child's psychophysical development by evoking various emotions: from joy and satisfaction to anger and frustration. On the one hand, it allows a child to get rid of negative energy, and on the other hand, it can trigger its creativity. Systematic music exercises support attention and concentration training processes. They play an important role in the development of perceptiveness and memory, as well as improve reading, mathematics and language learning skills.

Moreover, music has therapeutic properties, which can be used while working not only with people with hearing and speech impairments but also with the ones with intellectual and physical disabilities. Applying sounds of different dynamics, height and timbre to children with hearing impairments stimulates their ear canals. Vocal exercises and singing help reduce speech impediment and other speech disorders. The joy of listening to music and involvement in musical activities have a positive impact on children's mental development. Studies show that music can also support the rehabilitation of movement disorders.

TEACHING MUSIC TO CHILDREN WITH DISABILITIES

A child's contact with music can take many forms: playing instruments, singing and

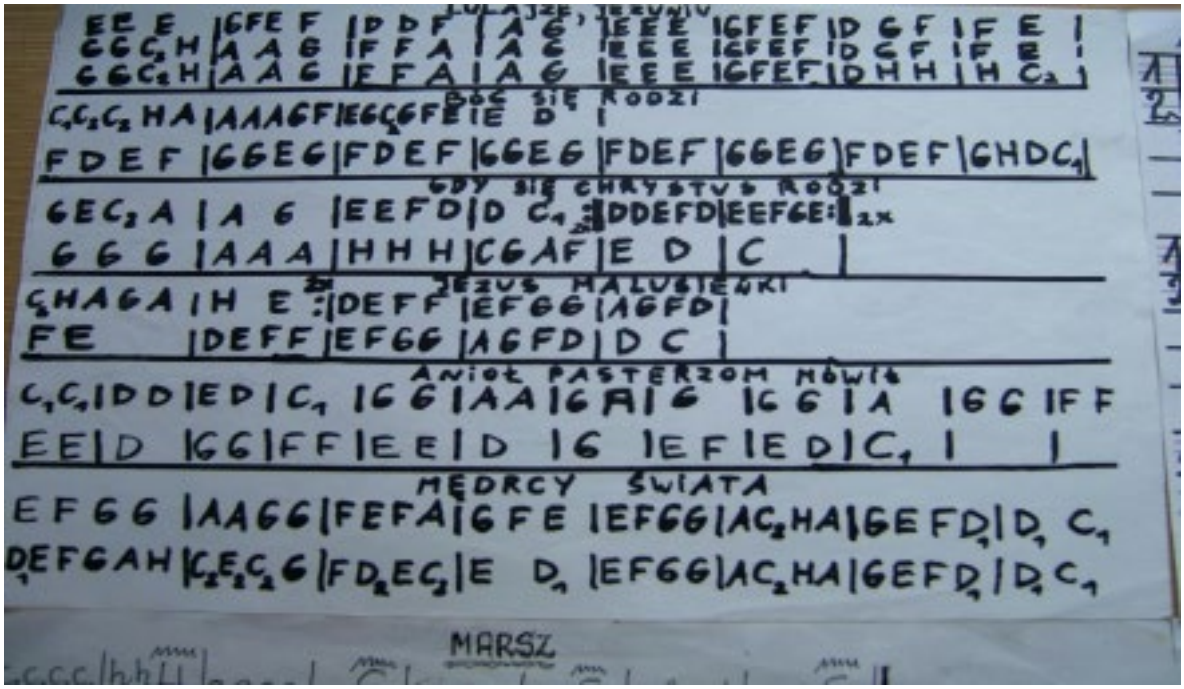
listening. Playing musical instruments is of special cognitive and reproductive significance. In order to play, one needs to know the notes and be able to read and write them. However, for children with intellectual disabilities and the ones with hearing impairments, learning notes is too difficult. The method of introducing notes and observing the melodic line of the song is therefore not very effective.

Tadeusz Wolak, a music teacher at Special School for Young People with Learning Difficulties No. 2 in Kraków, was aware of these problems. He understood that in musical work with disabled children, the teacher must find effective methods and have a clear concept of work. He wanted to play music with his students, so he developed alternative teaching methods. He is the author of the innovative number and letter method called CYLINOMUZ.

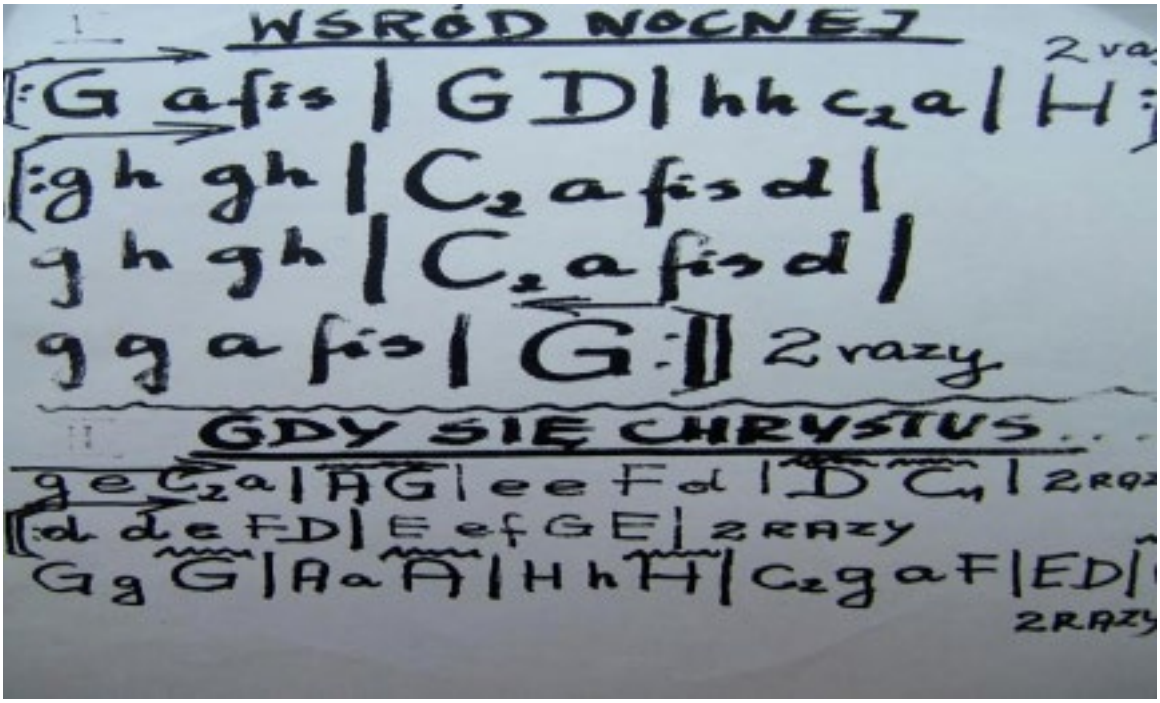
Józef Pacuła – the current director of Special School for Young People with Learning Difficulties No. 2 in Kraków, has developed a computer program **emuzykowanie.pl**. Thanks to this program, the Cylinomuz method is available to the public on the Internet.

THE BEGINNING OF CYLINOMUZ METHOD

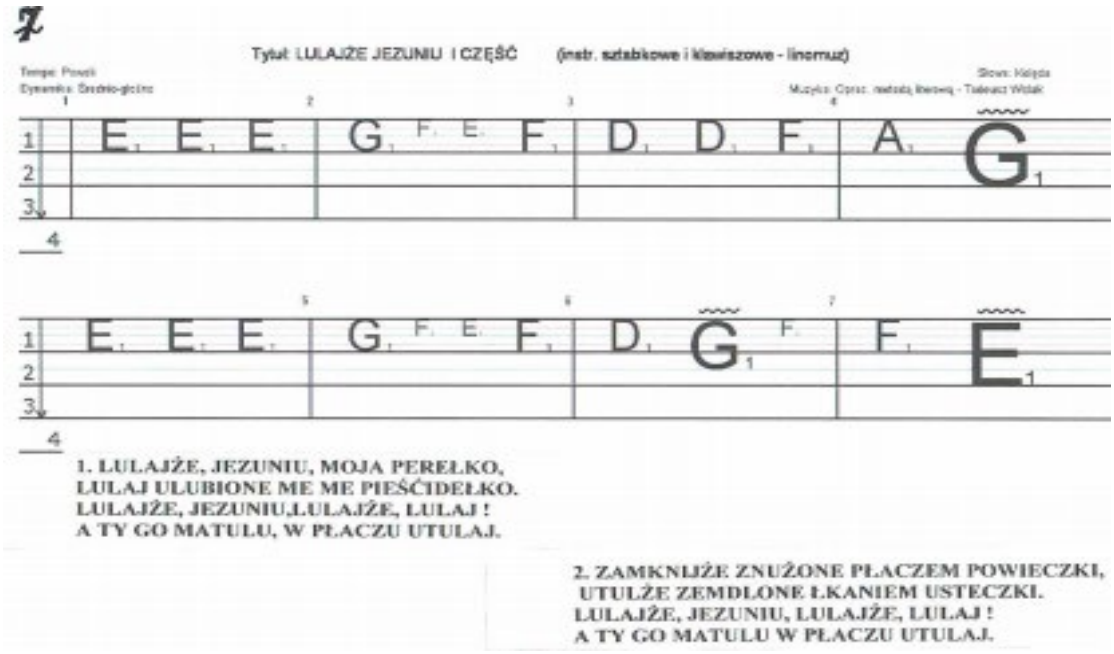
Initially, instrument playing was taught using one size letter symbols of notes and numbers. It was then possible to read the pitch, but no note values and rhythm.



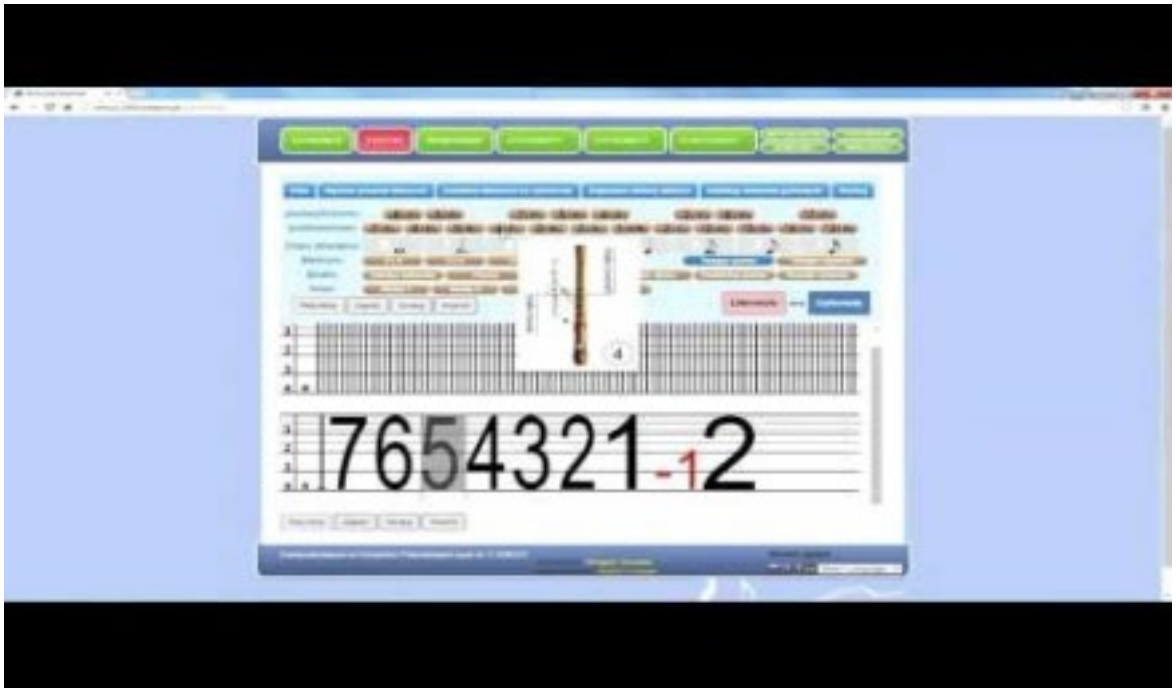
Then, the notation has been amended – the new one made it possible to play melodies which consisted of two different note values, e.g. half notes and quarter notes or quarter notes and eighth notes. However, this required the appropriate choice of melody repertoire.



The teacher's everyday work experience contributed to notation improvement.



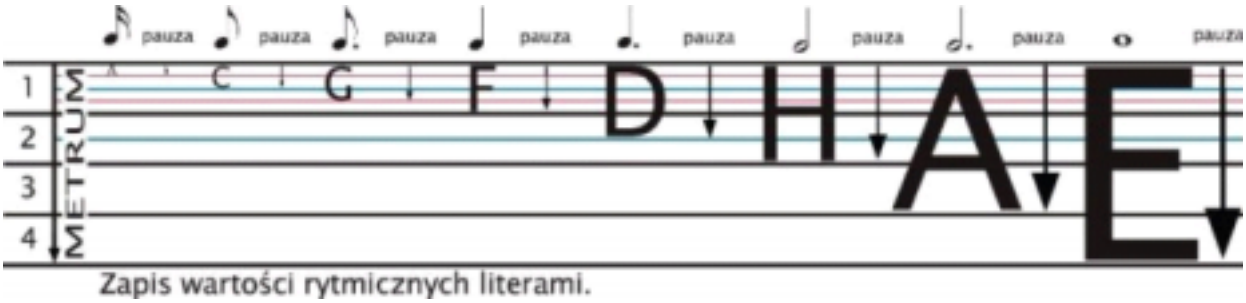
Currently, it is possible to automatically scan and convert notes to number-notes and letter-notes with the use of the interactive editor available at www.emuzykowanie.pl.



CYLINOMUZ

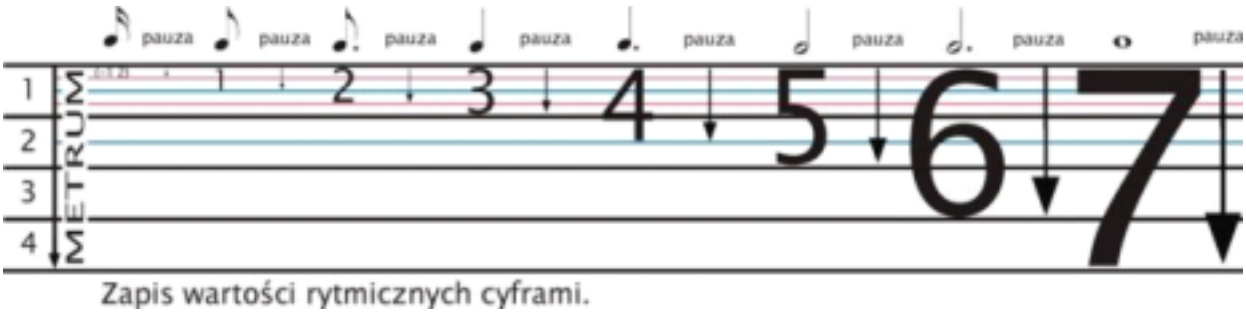
Cylinomuz is a number and letter music notation. It is a simplified form of standard music notation that allows people with multiple disabilities to play instruments. This method replaces the notes with letters and numbers of different sizes, which are placed between nine horizontal lines. The letters
and numbers are symbols of musical rhythm and pitch. Thanks to this method, people with intellectual and physical disabilities, who do not know notes and standard music notation, can play keyboards, bar instruments and recorders (flutes). This method is based on key elements of playing instruments: sound, rhythm (sound duration) and their transcription.

In the notation for keyboards and bar instruments instead of notes, there are letters: C, D, E, F, G, A, H - as sounds, while their different sizes represent note values.



Zapis wartości rytmicznych literami.

In the notation for recorders (flutes), instead of notes, there are numbers that determine the number of flute holes covered - as sounds, while their sizes represent note values.



Zapis wartości rytmicznych cyframi.

Disabled children have a serious problem understanding abstract concepts. Therefore, the use of numbers and letters commonly known by children allows them to play musical instruments. Learning to play instruments and using the cylinomuz method can be very helpful in developing the ability to read and write notes.

E-MUSICATION PROGRAM

It is a computer program, available on the Internet free of charge, that allows you to scan or edit notes manually and convert them into number-notes and letter-notes. It opens in the available web browsers and is available at http://www.emuzykowanie.pl/node/586. The program content can be automatically translated into foreign languages. It includes 6 videos which explain the most important functions of the basic menu bars.

You can use a DEMO version of the editor to convert notes into letter-notes or number-notes manually. Furthermore, you can get full access to all program functions after logging

in (after contacting the administrator, you can use already transformed melodies, create your own ones, or scan selected note transcriptions and save them in your private bookmark). Clicking the "LITERONUTY" (letter-notes) and "CYFRONUTY" (number-notes) buttons in the editor menu converts
letter-notes to number-notes and vice versa. You can play the saved melody slowly or fast. When you listen to sounds saved as letter-notes, the letter-note to which you are listening, and the corresponding key on the virtual keyboard are highlighted.

In addition to the CYLINOMUZ method description and editor, the program's website includes:

· practical information on how to prepare musical instruments,

· examples of exercises which can be performed with disabled children before playing, · information on how to transcribe melodies with letter-notes and number-notes, · note, number-note and letter-note transcriptions of famous songs,

· description of educational projects regarding the creation of number-note and letter-note scores for playing instruments and the KLAWIGRAJ overlay for keyboard playing by children with large physical deficits,

· scientific opinion on the usefulness of the cylinomuz method when working with disabled children.

References:

1. T. Wolak, Muzykowanie metodą cyfrowo – literową z uczniami niepełnosprawnymi intelektualnie w stopniu lekkim, Kraków 2010.
2. http://www.emuzykowanie.pl/

3.3 Digital methods in teaching English to teenage Deaf Students

Whilst teaching Deaf and Hearing Impaired students it is vitally important that the teacher puts a lot of emphasis on their students' autonomy and intrinsic motivation, helps them build confidence in their own knowledge and ability to understand language concepts and develop language skills.

Deaf and Hearing Impaired students are more often than not apprehensive about their abilities to comprehend language, be it their native or foreign. Convincing them that learning a language successfully lies within their abilities should become the central aim of their teacher.

Starting small, giving plenty of positive reinforcement and using engaging, interesting methods should be the cornerstone of such approach. One of the most engaging method of the 21st century teacher is new technology. Not only is it interesting for the students it is also very well liked and considered fun by them.

Our students grew up in a world surrounded with technology, as a matter of fact their generation has already been described as 'digital natives'. Most of them are not only competent in
using new technology but are accustomed to spending quite a lot of their time online. It seems only natural that the teachers should take advantage of this phenomenon and use it to the benefit of their students.

Some benefits of using digital methods in teaching English to the Deaf and Hearing Impaired teenage students include:

1. promoting learner's autonomy
2. providing students with a vast range of subjects and ways of accessing information
3. teaching communication in writing (e.g. instant messaging, chatting) - a way of communication that is both natural in the online world and an essential everyday skill

4. giving students access to an infinite number of language exercises than can be self-checked and topics that can be self-taught
5. developing their self-confidence
6. teaching students online collaboration
7. improving their digital skills.

Amongst the numerous digital teaching methods and tools accessible online for free for English language learners and teachers there are a few I would recommend as a good way of starting the digital teaching adventure. These are as follows:

1. gmail, google.docs and google drive – as every gmail address is supplemented with a free online storage called google drive it is the perfect place for the students to create and store their learning materials. Moreover, language learners seem to enjoy writing in google.docs much more than they do on paper, especially when they can supplement their writing assignments with photos and pictures. Developing writing proved to be much more enjoyable and much easier since my students started to use google.docs to do so. They also seem significantly more motivated and engaged in writing with google.docs.
2. www.learnenglish.britishcouncil.org/skills - a great site to develop language skills, be it reading, writing or other. Within every language skill there is a clear language level distinction from A1 to B2.
3. www.thewordsearch.com – to practice and extend vocabulary, a huge source of every imaginable topic there is.
4. www.mes-english.com – flashcards, language games, crosswords and word searches plus easy-to-use crossword and wordsearch-makers.
5. www.learnenglish.britishcouncil.org/vocabulary - a great site to learn vocabulary connected to a given topic and practice it in context.

3.4 THREE TRIANGLES - a work model used at Special Education Centre for Autism and Holistic Developmental Disorders in Krakow

Introduction

Special Education Centre for Autism and Holistic Developmental Disorders in Kraków is a facility that offers holistic therapy and education of students who suffer from autism and related disabilities. Thanks to the proper organization of work and the use of individualized teaching and therapeutic methods, the Centre provides the pupils with the opportunity to acquire knowledge and skills necessary for their development.

Autism Centre students are children and adolescents, between 3 and 25 years old, who suffer from various autism spectrum disorders, within the intellectual norm or with multiple disabilities, including moderate and severe intellectual disabilities. All classes follow the curriculum for mainstream education along with the individualized education and therapy programs. The students are divided into class teams according to their functioning level and their educational and therapeutic needs. In addition to regular classes, compensation and specialist classes are carried out, which take into account individual predispositions and capabilities of the students.

Three Triangles

Three Triangles is a work model addressed to people who show great behaviour problems, such as aggression, auto-aggression, violent object destruction, or public sexual expression. The following work model has been developed and described at CAiCZR (Autism Centre) as a result of many years of the teachers' and therapists' experience. We want to share with you what we have learned all these years.

Triangle 1 – is the external behaviour control.

In this area, you will find all activities that increase safety level and concern the environment in which an aggressive or destructive student stays. We mean the activities that lead to the

change of the environment to the one in which there are fewer opportunities for incorrect behaviours. This means meeting all the basic and some more complex needs of the student, controlling his/her area of attention, and redirecting him/her, at the right time, to learn new skills. Here you can also find activities that eliminate the effectiveness of the student abnormal behaviours (extinction), and those that are expected to affect the likelihood of their future appearance (rewarding and punishing).

Activities :

· recognition and elimination of stimuli that cause difficult behaviour,

· attracting attention and triggering competitive behaviour,

· physical behaviour control increasing the level of safety,

· external control of the behaviour consequences.

Triangle 2 – is teaching self-control.

The three main strategies that we use to teach self-control are:

· r u l e s introduction,

· activities i n t e r r u p t i o n ,

· i m m e r s i o n.

We achieve self-control by adapting to stimuli that cause difficult behaviour and by increasing tolerance to discomfort. Methods that are usually used include exposure to a stimulus that causes difficult behaviour.

I n t e r r u p t i o n means short-lasting stopping of various student activities. The stop causes him/her some discomfort. This is done repeatedly throughout the day and is continued for several weeks until adaptation is achieved, i.e. until the student gets used to interrupting any activity at the teacher's signal. It is checked occasionally if the reaction is still correct.

It is best to start introducing this technique when the student is in a good mood and the activity in which he/she is involved in is NOT routine, compulsive or very pleasant. If it succeeds, we quickly introduce temporary stopping of activities, also to other, more

troublesome areas.

The objective of these activities is to achieve almost **reflex and immediate stop of the student activity**. It is useful when the student attacks or is close to harming someone. This is also helpful in other situations. Some people who suffer from autism do not understand that some actions may end unfavourably for them and are not aware of the risks to which they are exposed. They can, for example, run straight under the oncoming car.

The main objective of this strategy is to increase the tolerance threshold for discomfort.

I m m e r s i o n is a strategy which is based on the statement that there is no other way to reduce the fear of unpleasant activity than experience. Of course, we mean the activities that are tolerated by most people in a given population. This repeated immersion in an unpleasant situation activates natural adaptation processes. Such immersion is not pleasant for anyone. Fear and all activities that are associated with it often cost us more than participation in an intolerable activity. Sometimes it turns out that, as a Polish proverb says, "fear has big eyes" and the activity which we avoided is... pleasant. Motivation matters. Without social support (and sometimes without social pressure) we would not overcome many of our fears. Overcoming fear liberates. Consequently, we regain control over it.

Within this strategy, we use several techniques:

· immersion c o n t r o l l e d by a sign,

· immersion u n d e r s o c i a l p r e s s u r e,

· immersion with attention d i v e r s i o n – additional techniques:

  o simple refusal ("no"),

  o enhancement postponement ("not now"),

  o enhancement control – i.e. "no", and in a moment, if the student's reaction is correct, "ok, now you can",

  o active opposition to compulsive behaviours – i.e. taking control. (e.g. If a student closes the door compulsively, we intentionally leave the door open and make sure it stays open. We close it only when the student stops trying to close it.)

Triangle 3 – is spending time in a meaningful and satisfying way. It includes various types of activities. Without this area of impact, the previous two proved to be insufficient.

Here we focus on:

1. teaching new behaviours - especially the ones that functionally replace difficult behaviours (they have the same function),
2. teaching behaviours that increase self-reliance and resourcefulness,
3. development of the activities that give satisfaction (what the student likes to do) by modifying and socializing his/her favourite ways of spending time.

Work in this field does not quickly reduce the level of difficult behaviours. It can even temporarily escalate them. However, it gives new perspectives for the development of a person, thus improving their functioning level. In the whole process, this area of therapeutic interactions is a crucial element for the final success.

Autism-specific disorders, problems with establishing correct social interactions, are a big issue for proper functioning in a family and school environment. That is why it is extremely important for our students to learn social norms regarding everyday activities and to study patterns of behaviour that function in society. Therefore, we spend time together in cultural institutions, cafés, theme parks
(e.g. multiplex cinema, water park), participate in art and theatre competitions, use public transport and do shopping in general stores. Our students learn and have fun during trips and picnics. We often celebrate school/class events and important anniversaries.

3.5 Tomatis Method - a kind of therapy used at Special School for Young People with Learning Difficulties No. 2 in Krakow

"Hearing is not the same as listening.
You can hear well, but listen poorly."

Everyone who has contact with disabled children knows how important it is to equalize the educational opportunities of all pupils attending various types of educational institutions. That is why new therapies and work methods are constantly being explored – the ones that would allow each student to achieve success, regardless of what learning difficulties, deficits and psychophysical capabilities he/she has.

Audio-Psycho-Phonology (APP), also called Tomatis Method, is one of the methods that has been already recognized in the world for fifty years.

Alfred Tomatis was a French otolaryngologist. He conducted research on the relationship between ear, voice, speech and language. He consulted and treated singers who had voice problems. Thanks to his research, he noticed that voice strain was associated with hearing damage. Based on these observations, he discovered the existence of an audio-vocal loop, in which "the voice can only hold as much as the ear can hear." Alfred Tomatis formulated several laws that were reported to the Academy of Sciences in Paris and described the relationship between hearing and speech, and further, between hearing and communication. These discoveries allowed him to create an excellent method of treating singers' and other people's vocal deficits.

The method was based on an electronic system, called the Electronic Ear, which involved sound switching to stimulate the ear. The first Electronic Ear was presented at the Brussels World Exhibition (Expo) in 1958. Over time, the scope of the therapy expanded to include emotional disorders, learning difficulties and language problems.

Prof. Tomatis' main interest was research on hearing disorders. He formulated three

statements based on the results:

· The voice can produce only the frequencies which the ear can hear.

· If your hearing changes, your voice changes, too.

· If the frequencies are restored to the ear, there will also occur a permanent change in the voice.

These statements are an attempt to describe the effect of the hearing process dynamics. They include the larynx and Eustachian tube as necessary parts of the hearing mechanism.

Alfred Tomatis found a clear relationship between the range of audible sounds and the range of neurological functions within the body. He created a method that requires a patient to listen to music, which is intentionally disturbed by random amplification of high or low frequencies. This
"musical gymnastics" forces the mind to focus on the process of listening to music and enables the patient to regain the ability to hear the frequencies of sounds that he/she has missed or has never been able to hear. Tomatis discovered that many of our daily functions were based on the ability to hear the full frequency range, i.e. from the lowest to the highest, throughout the entire period of human body growth, especially during fetal development within the womb.

Hearing and listening are not the same. Hearing is a passive activity and it is related to the physiology of the ear, while listening requires a certain level of concentration, memory and awareness. A combination of these three factors is necessary for the proper functioning of the hearing mechanism.

Tomatis Method

Prof. Alfred Tomatis' therapy involves participation in a non-invasive program, including audio-vocal training and sound stimulation. Currently, the equipment used in the therapy is a digital device (formerly analogue), designed for passive auditory training, thanks to which it is possible to perform auditory stimulation based on the bone and air conduction. It is the Electronic Ear that enables filtered, gated and synchronized sound stimulation by air and bone conduction, that reaches the patient thanks to the specially constructed headphones. The actual effect of the therapy varies from person to person. It depends, for example, on

the middle ear tension as well as the individual ability to hear music sounds.

It starts with:

1. Auditory attention tests needed to identify patient's listening skills.
2. A diagnosis based on the auditory attention tests – the ability to hear sounds from 125Hz to 8000Hz.

The diagnosis includes examinations of:

· external auditory attention,

· internal auditory attention,

· frequency discrimination,

· auditory lateralization.

3. The therapy - listening to properly prepared auditory material, i.e. Mozart compositions, Gregorian chant, Strauss waltzes and mother's recorded voice.

The first stage of the training includes 30 hours of passive listening to the auditory material, followed by a six-week break. Before the second stage, internal and external auditory attention tests are being performed again. It is then when a significant change in the neurological condition should occur and it should be decided whether to continue the therapy or not.

The therapy based on Tomatis Method is carried out at Special School for Young People with Learning Difficulties No. 1 in Kraków.

The "Auditory Attention" set which we use consists of a stationary part that the therapist uses in the therapy room, i.e. the Electronic Ear connected to a laptop with the therapist's application and
special music tracks. The Electronic Ear processes sounds in real-time for proper middle ear muscle stimulation. This helps the hearing organ "open" to certain frequencies that have previously been unreachable, improves middle ear muscle tone and auditory processing.

The Audio-Psycho-Phonology helps children with various disorders, i.e.: learning difficulties, Down syndrome, autism, Asperger's syndrome, cerebral palsy, specific language disorders,

speech delays, hearing impairments, speech and language disorders, speech fluency disorders, intellectual disabilities, dyslexia and ADHD.

Tomatis Method can function as supportive therapy for the traditional one. It can accelerate the progress of the therapy, shorten its duration or significantly affect such areas of functioning as:

· motor coordination, sense of rhythm,

· body schema,

· graphomotor efficiency,

· openness to social contacts,

· phonemic analysis and synthesis processes,

· verbal memory,

· receiving and giving verbal messages,

· concentration and ability to remember.

In the years 2005–2007, the Ministry of Education in Poland provided equipment for diagnosis and therapy by Tomatis Method to 300 schools.

The continuator of Alfred Tomatis's scientific heritage is Belgian Jozef Vervoort, who is vested with all the books and research documents of prof. Tomatis, so he can continue his work. Jozef Vervoort works at the Atlantis VZW Institute in Sint-Truiden, Belgium.

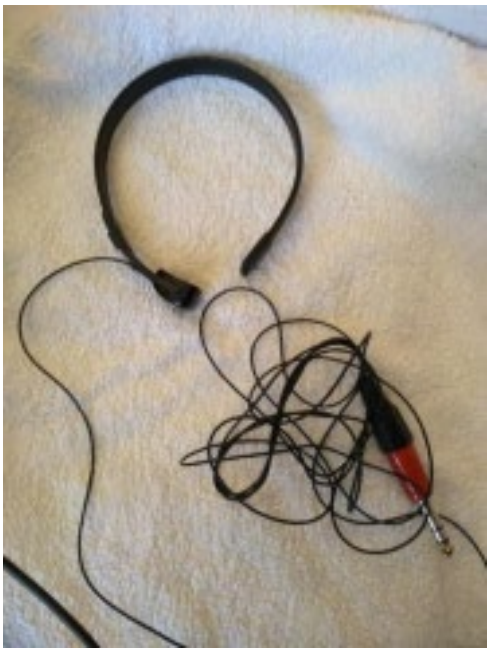


Figure 1. Headphones for bone conduction testing.

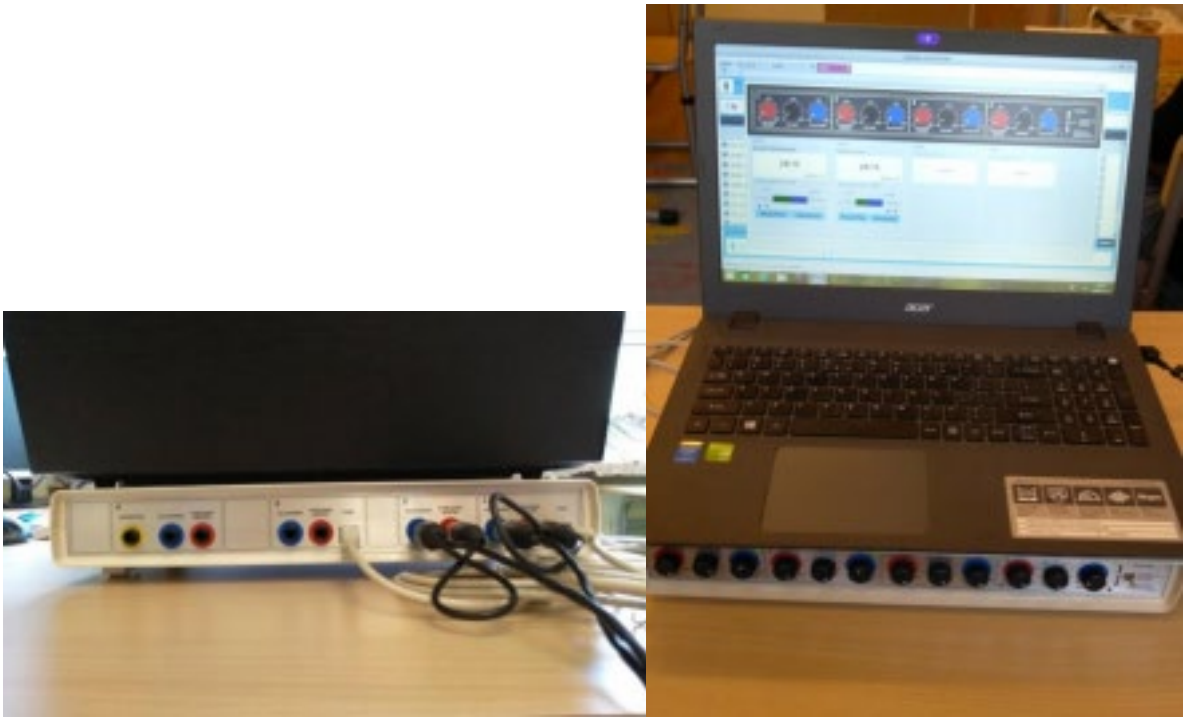


Figure 2. A Laptop with the "Auditory Attention" application installed.

This equipment is used to diagnose auditory attention.

Figure 3. Headphones for listening to specially processed music.

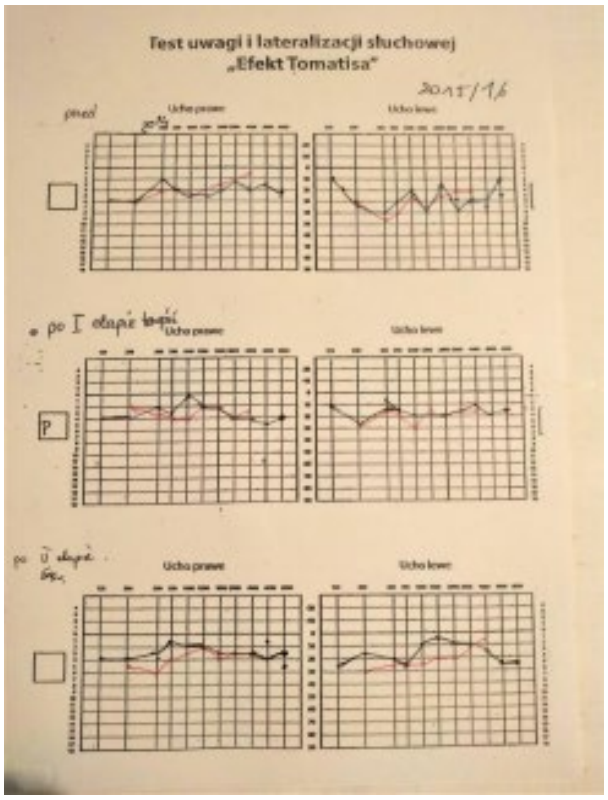


Figure 4. A test of auditory attention and lateralization – the "Tomatis Effect".

The auditory attention and lateralisation test, known as the "Tomatis Effect", is performed to show in which areas the difficulties of auditory analysis and synthesis are evident in the child.

The curves are:

- air conduction (black),
- bone conduction (red).

The disorders can be evident:

In the motor range (0-10000 Hz) on the left and right side – this area is crucial in the development of visual-motor-auditory coordination. The graphs may indicate an imbalance between the hemispheres.

In the speech and communication range (1000 - 8000 Hz) on the right and left side – this area is responsible for efficient speech control, the process of focusing attention, speech correctness, understanding of instructions, and language acquisition. The graphs indicate difficulties in auditory information processing and may point to the immaturity of auditory attention.

In the high frequencies range (3000 - 8000 Hz and above) – this area is responsible for emotional development, the efficiency of remembering and associating and cortical boost. The graphs indicate difficulties in dealing with one's own emotions, frequent withdrawing and accumulation of negative emotions.

The air and bone conduction graphs in the right and left ear should be as close and correlated as possible because they visualize the cooperation of the hemispheres.

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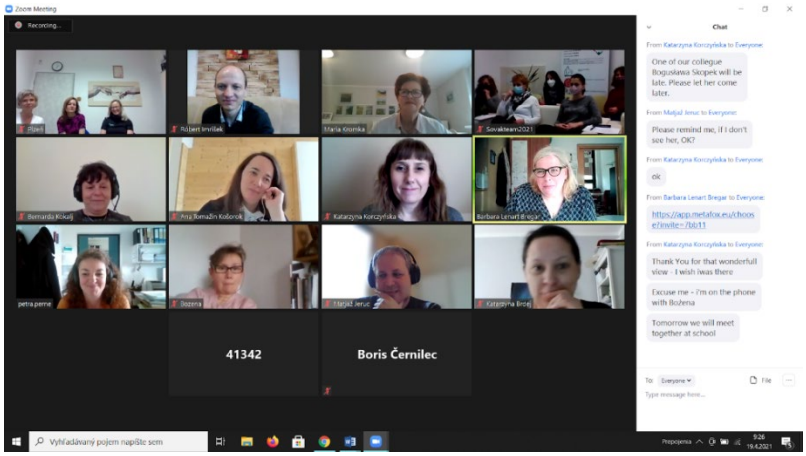
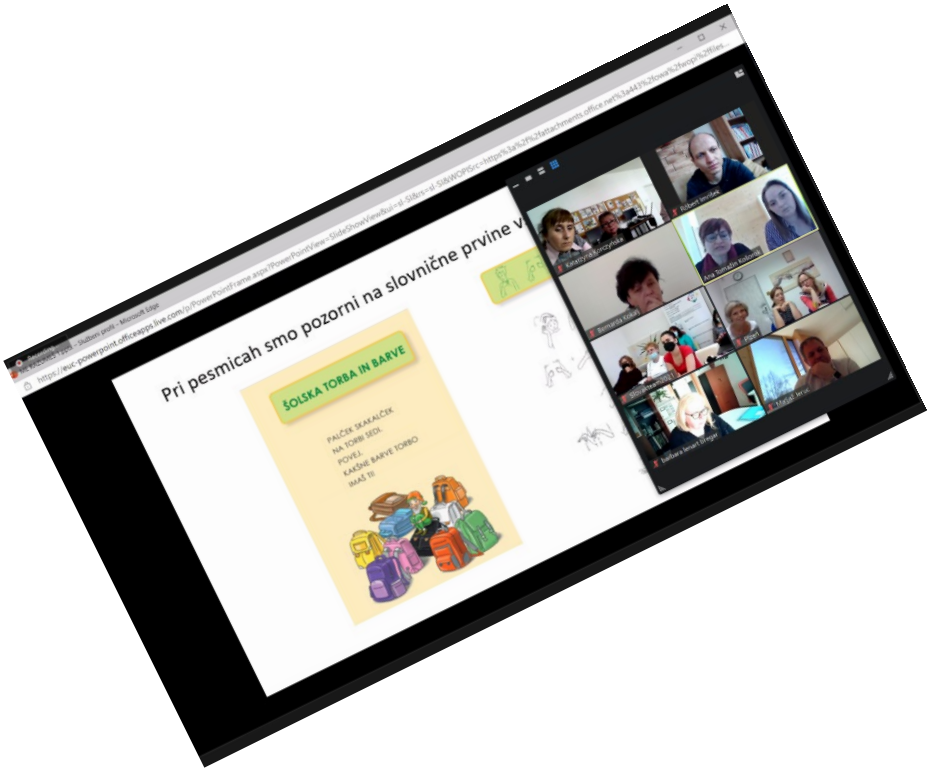
4. http://www.tomatis-swidnica.pl/metoda-tomatisa

4 Method used in education of children with multiple disabilities in Zavod za gluhe in naglušne, Ljubljana





Erasmus+

4.1 Strategies for de-escalation: TEAM-TEACH

Today, teachers have the most difficulty regulating the behavior of their students. In 2013, 4,100 children were expelled from school for a few days each week in the UK (Brown, 2015) for their behavior. This is even more true for children and adolescents with special needs, as they are suspended from school ten to eleven times more often. This is even more true for the rapidly growing population of children and adolescents with autism who cause their educators headaches, frustration, confusion and disability. If we only look at the growing number of children with autism, who used to be exotic, today the prevalence is already one child per 60 births.

The Crime and Punishment Indicators in the US report (Brown, 2015) states that in 2011 and 2012, 10% of teachers in public schools experienced a threat and 6% (8% in primary school) were physically assaulted. I find it important that professionals feel safe when dealing with children's provocative behavior. What matters is their feelings, their emotions. They need to know when they are legally protected. There is resistance to provocative behavior among many professionals.

We need strategies to prevent disruptive behavior - de-escalation of conflicts. De-escalation can be compared to a game of golf. For different terrain you need different thumbs to hit the balls, in de-escalation you have different strategies. One of these bars is also a safe technique of physical restraint. Most strategies (95%) are preventative (e.g., diversion, praise, positive approach, assertiveness, environmental regulation, visual support, language strategies, teacher calmness, enabling space, non-aggressive approach, etc.), and physical restraint strategies are also required (Allen&Matthews, 2015).

Can we teach and raise children without physical contact? (handshake, congratulations, give me a Friday, a pat on the back, a hug, etc.). However, if our child jumps on the window, won't we grab and hold him? What would you do if this was my child? Professionals have a duty to ensure the safety of children. Of course, we would restrain him!!! That is to say, there are exceptional, extreme situations where physical intervention is required. If we estimate that a child can harm themselves or others, and estimate that it is safer to physically restrain them, then we are obligated to do so in my opinion. Therefore, we need a

legal basis for such interventions, for the use of appropriate physical force if necessary and proportionate. Numerous studies speak in favor of physical touch, as they have shown that teachers who do not fully refrain from physical contact have better relationships with students and better learning outcomes (Allen & Matthews, 2015). Of course, touches should not be sexual and in intimate places.

Research also shows how successful de-escalation methods are, for example:

• In 2004, Portsmouth University (Hayden and Pyke, 2004) evaluated the effectiveness of de-escalation training (Cotton 2010). About 500 trainings were evaluated in the years from 2000 to 2003. The results show great positive effects of the training.

In some countries of the world, this area is regulated differently. The British Institute for Learning Disabilities stated in 2010 (Brown, 2015) that professionals can use positive physical interventions if it is necessary and justified to ensure the safety of children. The UK Special Education Needs and Disability Code of Practice highlights the need for specific de-escalation training and positive handling to prevent injury and damage. They emphasize the importance of a written plan or protocol (in our country, an individual educational plan) signed by parents and children. In the U.S., only 19 of the 50 countries do not have physical restraint laws.

The fact is that extreme situations occur and we deal with them as we know, often at the expense of children and ourselves. We need safe strategies that do not cause pain and injury. Our experience from similar schools in the UK is such that all school staff have completed verified and certified child behavior management courses, and some people are educated to disseminate this knowledge within the institution (tutors). Certificates are renewed every 18 months. Schools find it important that in addition to non-physical de-escalation strategies, professionals also know how to safely physically restrain themselves and what is legally allowed.

The de-escalation program is based on a positive approach (positive behavior) that is appropriate for individuals who have challenging behaviors. De-escalation is basically good management of the child. A big part of de-escalation is playing or pretending. When a child behaves defiantly, we need to pretend and communicate positively, calmly, and assertively, even if we don’t feel that way. Self-confidence, calmness and an assertive approach are

important. Of course, we need to use the approach for quite some time before we see results (2-4 weeks).

Physical restraint in schools was and still is a contentious area. In this approach, physical restraint is an extreme option, most strategies are preventative and not physical. The approach teaches educators to assess risk and ensure the safety of children and others as much as possible. These are safe physical strategies that do not cause pain or injury. We must always ask ourselves: is physical intervention necessary, appropriate, proportionate and in the best interests of the child. Of course, physical intervention is not a black and white, but largely a gray area. Experience from the UK shows that professionals who manage de-escalation are much more interested in preventing than using physical interventions.

We have encountered several certified and verified de-escalation programs in schools in the UK. One of these programs is NAPPI (Non-abusive Psychological and Physical Intervention). The best known, however, is the Team Teach approach (Allen & Matthews, 2015), which is an integrated approach that trains professionals in three directions:

• Strategies for de-escalating conflict and communication

• Physical restraint interventions (based on biomechanics)

• Legal rules

The Team Teach de-escalation program is also present in Slovenia. The CUDV Draga and ZGNL institutions have trained some experts (tutors) who teach this approach within their institutions, and will later spread it in Slovenia as well.

4.2 Structured Teaching in education of children with multiple disabilities

Structured teaching is a way of organizing learning space and teaching process, which also includes schedules. It is a strategy which takes into consideration individualisation, which is determined by law, and special needs of some children. As a structured system it enables a teacher clearer planning, execution, and evaluation.

The structured elements are:

- space,
- schedule,
- work system,
- visual support.

SPACE

The classroom/playroom should be clearly structured; spaces for different activities are marked: learning, playing, eating, music, art, individual work. A special space is dedicated to the schedule, where the students can at any time check what has already happened and what follows.

The space for individual work can have shelfs with tasks on the left, the desk is in the middle and a box to store finished tasks is on the right.

SCHEDULE

The schedule guides each student through the activities of the whole day. It clearly shows what is to follow. We can make different schedules: half-daily, daily, weekly, depending on the student´s current needs. Depending on the student´s abilities we use pictures or words. Each schedule is unique and adapted to the student who uses it.

WORK SYSTEM

The work system should be adapted to each individual student. We design it first and then test it in a real situation with the student. The system lets the student know, what and how

much should be done within a certain task. It is clearly marked what will happen once the task is finished. Student working independently is the goal. The system is executed in the space for individual work, from left to right. The student takes the task from the shelf, does the task in the middle (in a specifically marked space) and puts it in the box on the right.

All tasks are in folders or boxes. They are adapted to the current topic. I test each task individually with a student. After testing I evaluate it and check if the student understood it. If needed, the exercise is upgraded or changed. It is then, again, individually tested with the student.

Work system always follows the same pattern, only the order of the tasks changes. Consequently, the students develop a routine which helps them in everyday activities.

In the case of unpredicted activities, I guide the student with visual supports (cards with agreed upon symbols) and thus prevent aggression and misunderstanding the situation.

INTRODUCING TEACHING MATERIALS INTO THE TEACHING PROCESS

I gradually started to introduce boxes with various teaching materials into my teaching process. The purpose was to introduce the topic to the students through play. I made different teaching materials, which were adapted to the teaching topic. At the same time the needs and abilities of the students were taken into consideration.

To make the boxes more interesting for the students, I named them “magic boxes”. Each of the students was thus able to get help “one-on-one”, because part of structured teaching is also individual work, which enables the teacher to focus on an individual student. At the same time, the students were able to individually practice and revise the topics they have already learnt.

The basis of the system of structured teaching is offering the topics that were not understood or are more difficult to understand in form of teaching materials.

To make individual material I used:

- an empty shoe box, bags, folders (for storing materials),
- wrapping paper (for decorating the box),

- different materials (wooden clips, bottle caps, fuzzy wires, buttons, straws, wooden beads, grits, shoelaces, Legos, pictures, small figurines…),
- laminator, laminating pouches,
- scissors, glue, hot glue gun…

Firstly, I defined the topic (goal) the students will revise.

An example of a goal (Maths, Class 1, minimum learning standards): The student counts, reads and writes numbers to 10.

I produced 3 different materials. With the first one I used paper plates and wrote numbers 1 to 10 on them. I put beans next to them. The student had to put a matching number of beans on matching plates. Because the student had problems with counting and recognising numbers, I adapted the materials to him. Each number was written with a different colour. Next to each number I put a card with a matching number of dots in the same colour as the written number. The student put a matching number of beads on the plate. After some time, when the student was able to recognise the numbers, I switched the coloured beads with wooden ones, so the student could not rely on colour to help him. In the end, I also removed the cards with dots.

The second material were fuzzy wires. At the end of each wire I glued flags with numbers. The student had to bead a matching number of beads on the wire. For a student, who was already able to recognise numbers, I glued beads together and he had to find the matching number of glued beads and put them on the wire. The student himself suggested to make columns with Legos and put them next to the correct wires.

The third material were laminated cards and wooden clips. On each card there was a bus with dots and 3 numbers. The student had to clip the wooden clip next to the number that matched the number of dots on the bus windows. This material was not modified for any student.

The work system with a magic box was introduced in class in three parts:

- introducing teaching materials, exploring in group, conversation;
- working “one-on-one”, adjustments, rules;
- individual work with the student.

Firstly, I introduced the teaching materials, which were stored in the magic box, to the students. The presentation was in form of a story. I told it with the help of the class puppet, which was named Zofka by the students.

The conversation took place in a circle on the floor. The students could freely look at the materials, ask about their use and content, and test them. They were active and motivated for work.

We talked about the purpose of use and what they will develop by using the teaching materials. We created a mind map, so that it was easier for them to picture what they will gain from the magic boxes.

Together we created a picture that marked work with the magic box.

Then we set a space in the classroom, where the magic box was stored, and space, where it was used. Then I taught the students how to use the box. We also created a visual schedule, so they knew when it is time for individual work. All the teaching materials, that were in the magic box, had its own picture, which was a part of the visual schedule. This way the students could follow what they have already done and what needs to be done.

4.3 Project "INCREDIBLE YEARS"

The beginner of the program "Incredible years" is dr. Carolyn Webster-Stratton. She started to develop the program 33 years ago. Incredible years is a series of interlocking, evidence-based programs for parents, children, and teachers. The goal of the program is to prevent and treat young children's behaviour problems and promote their social, emotional, and academic competence. Most of our students with autism have problems in these areas, so it seemed only logical to use some element of this program in our social skill lessons. Because we are performing only lessons for children, and because we wanted that our social skill lessons are appropriate for children with autism, we have adjusted the curriculum and activities, so they are really appropriate for our students.

We named our social skills lessons "Dinosaur school", in it, students are learning some important social and emotional skills, such as understanding and communicating feelings, using effective problem-solving strategies, managing anger, practicing friendship and conversational skills, and behaving appropriately in the classroom.

During those lessons we are discussing, watching videos, using puppets, reading social stories and role playing.

How do we do it? How do we teach social skills? During our social skill lessons we are using puppets, and we could not do that without a puppet named Valter. This puppet looks like a boy. Valter is one of the students who already finished Dinosaur school. He is a real detective for recognising feelings and solving problems. Sometimes he has a problem, and he asks students to help him find solution.

Sometimes we get an important visit from our principal Dina. Puppet Dina in a dinosaur, actually she is the only dinosaur that survived because she was the only one who obeyed all the important rules. She visits us to check if we behave appropriately. Most of the times she visits us just to praise us and to teach us some new rules.

When we are learning how to manage anger turtle Tinka joins our lessons. She is a turtle puppet and she teaches us how to stay calm, how to hide in our shell where we can count to ten, breath deeply and calm ourselves down.
Social skills are on schedule weekly in 1 or 2-hour lessons, it depends of how old are the students.
At the beginning of each lesson, students engage in 10 – 15 minutes of coached playtime. During this time teacher teaches positive social interactions and may also look at each students homework individually, giving a sticker and praise. We are also trying to give students as much playtime as it is possible during the whole day, because during coached playtime they can practise social skills that they are learning during social skills lessons.

Each lesson than starts with a welcome song. Usually Valter is the one who starts to sing, and students immediately know that our Dinosaur school is going to begin. So students join Valter in the circle.

Then we sit in a circle and talk about things from the past week, what important things have happened, lessons that we learned, problems that have appeared and so one. Students often tell more to Valter than they would tell to the teacher, because they think of him as one of the students and a friend. Often students also share secrets with him.

Following is the discussion about previous lessons of our Dinosaur school and then we learn something new. Each lesson we are trying to learn something new.

Each lesson we also repeat the rules in our Dinosaur school. We named all of the rules »Show me 5.« so if students forget the rules teacher just says »Show me 5.« and students immediately know what they should do. We are using this also during other lessons through the day. So we have just 5 rules, each for every finger. The most important rules are:

- Eyes on the one who is talking.
- Ears listening.
- Quite hand up.
- Hands to yourself.
- Sitting in your place.

For appropriate behaviour student earn green dots. At the end of the lesson each student counts his dots and exchange them for stickers. For 10 dots they get one sticker, for 20 dots they get 2 stickers and so on. At the end of the school year they can exchange stickers for the invitations to our farewell party.

During our social skill lessons we are focusing on positive behaviour. We are trying to praise students who are behaving appropriately and not criticizing students who are behaving inappropriately.

The topics in our Dinosaur school are:

1. MAKING NEW FRIENDS AND LEARNING SCHOOL RULES
2. HOW TO DO YOUR BEST IN SCHOOL – Listening, Waiting an Quiet Hands Up
3. HOW TO DO YOUR BEST IN SCHOOL – Concentrating, Checking and Cooperating
4. DETECTING AND UNDERSTANDING FEELINGS – Clues to Detecting Feelings
5. PROBLEM SOLVING – Identifying Problems, Introducing the problem-solving steps, and thinking of Solutions
6. PROBLEM SOLVING – Finding More Solutions
7. PROBLEM SOLVING – Thinking of Consequences
8. ANGER MANAGEMENT – Controlling Anger
9. HOW TO BE FRIENDLY – Helping, Sharing, Teamwork at School, Teamwork at Home, Tell, Listen, Ask, Problem Sharing

Social skills lessons are as important as learning math, or other subjects in school. The only thing is that during social skill lessons students often do not know that they are learning, because they are playing a lot. But actually they are learning even more than during other lessons.

For me the most important things that I learned by teaching social skills is that we have to give every student an opportunity to be successful, we have to praise a lot, we have to be a good example, an we have to cooperate with students parents. But most of all we can not anticipate that social skills are learned easily. For some student learning social skills is harder than learning some other school subjects.

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4.4 Sign Language Interpreting at ZGNL

At ZGNL we interpret sign language all the way from kindergarten, primary school, and through secondary school.

In the secondary school next to interpreting theoretical subjects, interpretation is also available at practical lessons – usually just for the first lesson. During this first lesson, the teacher provides all necessary instructions, explains the work method, and clarifies any potential misunderstandings. The students then proceed to work independently.
In addition to interpreting school subjects, we also interpret extraordinary meetings for deaf parents, as well as hearing parents whose class is a deaf teacher, parenting appointments, speaking hours, hours of additional professional assistance, interviews with counsellors, days of activity, information days, technical days, etc. In addition to the above, interpreters respond to requests from students for help in interpreting or learning in the afternoon.

Deaf interpreters

Here at ZGNL we have deaf interpreters that provide support with an additional interpreter. This means that there are two interpreters in the class - one is in the back and translates the teacher's speech into sing language, and the deaf interpreter presents this to the deaf students.

During the Coronavirus pandemic, interpreting can be accessed online, which enables us to better redistribute work and organize their schedules that can be adapted to the teacher’s needs and student’s availability.

Among other things, interpreters also create posters and presentations in Slovene sign language as well as integration, provide transcription of audio recordings and insert subtitles into YouTube videos on the official ZGNL channel.
They also interpret video materials equipped with subtitles and PowerPoint presentations used during the lessons. In addition to interpreting classes, they interpret meetings for deaf parents and those hearing parents whose children are taught by deaf professors. They also

interpret meetings, additional professional support lessons, meetings with the school support service staff, various school activities, open days, etc.

If the students need extra assistance with classes and studying, they can turn to the interpreters during the afternoons as well.

The interpreters provide interpretations and subtitles for various video materials that are in majority interpreted, filmed, and edited by our deaf interpreter. She is currently in the process of interpreting materials for our student for the subject of mechanical engineering and is also filming materials for the end of secondary school final examination.
Among other things, they filmed Slovene movies.

On our website www.zgnl.si we offer content that has been interpreted and translated into Slovene sign language and since September 2020, we also provide subtitles in different languages.

During the past years, they were providing interpretation at several events and competitions that hosted our students (fashion shows, woodwork competitions…) and another school activity.

They attended a music concert of a Slovene singer Tanja Žagar entitled 'Together we can push the limits,' which was entirely adapted to our hearing-impaired students. Our students did not just attend the concert, but were active participants – they presented a song in sign language together with the singer Tanja Žagar and the basketball player Miha Zupan. Dance and music are universal. They connect people. All the people. The moment Tanja truly realized it, she decided that this could be an opportunity for the people with hearing loss. First time in the history of Slovene concerts the people with hearing loss were able to enjoy the show due to the use of audio induction loops and two sing language interpreters who were interpreting songs simultaneously in Slovene sign language.

We have a YouTube channel named ZGNLjubljana, where you can go and watch videos of interpreters at work.

CONCLUSION

Impairments occur in cognition, motor, and sensory functions and occur in combination with each other as the additional disabilities. There are many various cases in the school nowadays. On the one hand teachers are qualified in special pedagogy but on the other hand because of the variety of combined disabilities they need to constantly improve their knowledge and skills on how to implement the method that fits best for individual's needs.

The project was prepared so that teachers could use the acquired competencies in their pedagogical work in the short term. Our schools are perceived as an institution that provides children with quality special education in a friendly environment. The project increased the competencies of teachers in the national and international context. All planned activities were fulfilled. The whole improvement project does not end with a project, but the participants in the mobility will continue to improve professionally and also spread a positive influence on colleagues and their activities within the school development plan.

We hope for long-term benefits such as development of methods in the school curriculum.

The school counseling staff in the Institution for the deaf and hard of hearing Ljubljana, will continue to work on developing and implementing new methods, that are described in this manual. We also expect to implement CYLINOMUZ method in our kindergarten and finish the renovation of our Snoezelen room.

At the school of hearing impaired of Pilsen we use selected elements of the Elkonin and SFUMATO methods presented in the Czech Republic in speech therapy classes and in preparation for reading by younger pupils. As part of music therapy, we began to use elements of the innovative CYLINOMUZ method presented in Poland. In Slovakia, we were approached by methods of using the concept of basal stimulation and Snoezelen's method. We hope that in the future our psychologist will have the opportunity to use the method of dog therapy.

The school counceling staff in the Specjalny Ośrodek Szkolno - Wychowawczy dla Niesłyszących of Kraków, will continue the work on developing and implementing new methods like: phototerapthy and artefileticus. We also would like to develop motion programs focused on regenerative exercises.

We found those methods to be based on the similar approach. The teaching methods used in the partnership centers for the given disability are quite similar. The main differences we observed during the project regard to didactic resources and the naming of the methods. We hope that you will find this brochure as helpful as the project proved helpful to us.

At the school in Kremnica, we use various methods that we have presented in this manual and we believe that they will be an inspiration for our partners as well as those who will read this manual.

Project meetings inspired and motivated us to introduce and expand new approaches in the education of children with multiple disabilities. Some colleagues completed Snoezelen and Senzory Integration training. The result was the establishment of a room for sensory integration. Thanks to the project, we also got to know the work of colleagues working in our school better.

We were inspired and we would like to use also the methods: Sfumato method, Canistherapy, Hippotherapy, Cylinomuz, Tomatis and Teach program.

Last but not least, thanks to the cooperation with our partners, we gained new inspiration and enthusiasm for further work with our children.

This manual is not only a set of professional information on the issue of education children with multiple disabilities, but it contains a piece of our heart and our desire to improve the quality of life for children with multiple disabilities.