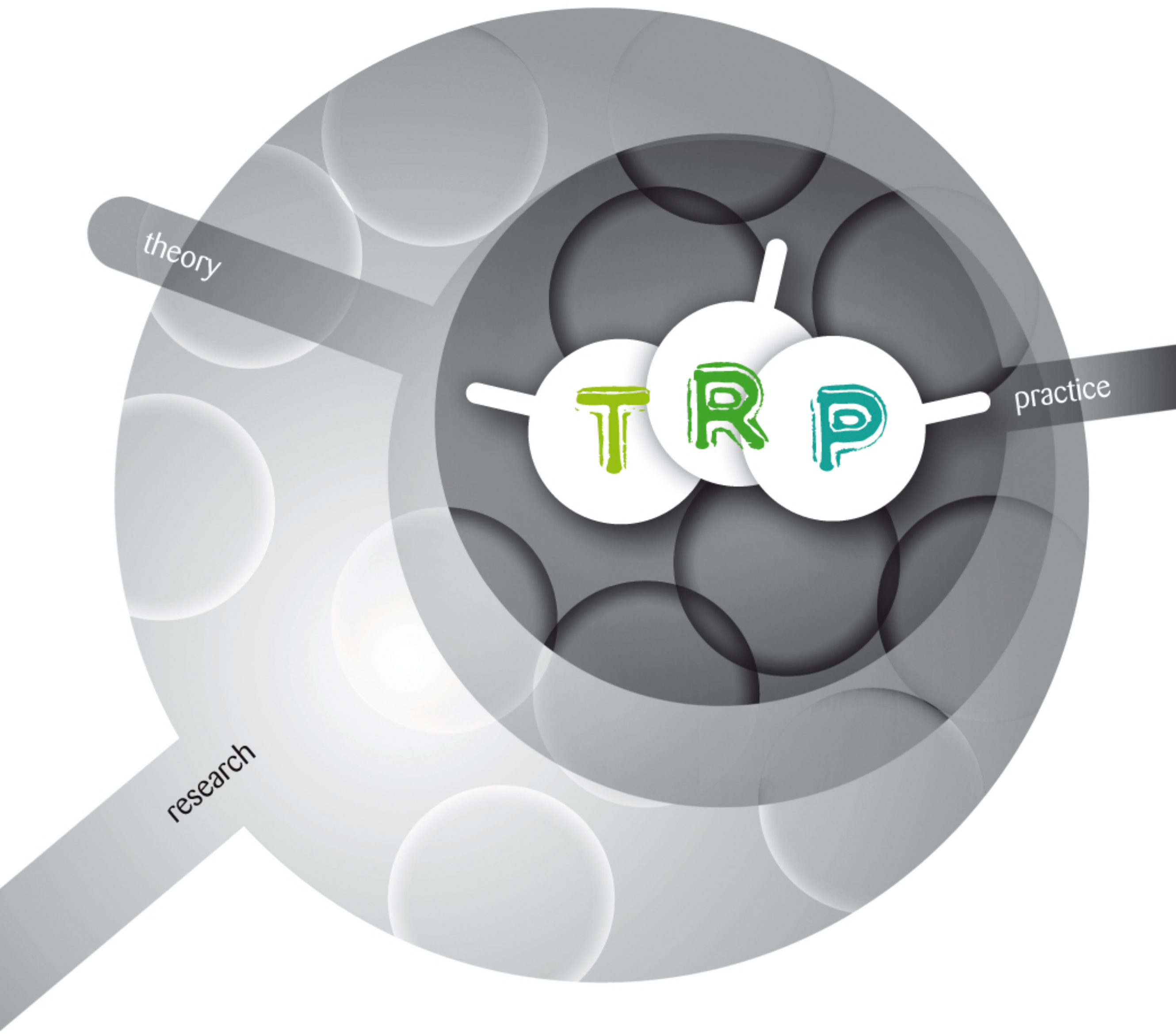

Martin Vrubel, Petra Röderová, Nora Jágerová

Education, Support and Rehabilitation for People with Visual Impairments

Masaryk University | Brno 2017

EDUCATION, SUPPORT AND REHABILITATION FOR PEOPLE WITH VISUAL IMPAIRMENTS

Martin Vrubel
Petra Röderová
Nora Jágerová

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Prof. PhDr. Marie Vítková, CSc.

Assistant reviewer: PhDr. Lea Květoňová, Ph.D.

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INTRODUCTION

Education, Support and Rehabilitation of People with Visual Impairments, a collective work by Mgr. Martin Vrubel, Ph.D., PhDr. Petra Röderová, Ph.D. and PhDr. Mgr. et Mgr. Nora Jágerová acquaints foreign readers with the current system of education and rehabilitation of people with visual impairments in Czech Republic. The paper will provide the readers with a comprehensive overview of school and social inclusion of children and students with visual impairments.

The publication focuses on the description of education and training for future careers, including retraining throughout life for individuals with visual impairments from birth to old age. Rehabilitation approaches for people with congenital and acquired visual impairment are also described, including the system assisting in their integration into society. The publication also includes a research section dealing with the role of an important factor in supporting successful education – the family of a child with disabilities.

The first chapter of the publication is devoted to the definition of visual impairment in special education and medical terms. It also describes different definitions of visual impairment and occurrence of visual impairment in population – definition of the target group. The second chapter describes the system of early care, including organizations that provide early intervention in the Czech Republic. The third chapter is devoted to pre-school education for children with visual impairments. The fourth chapter focuses on issues of education and training of students with visual impairments. The fifth chapter introduces the reader to the system of visual rehabilitation, including medical, educational, social and work rehabilitation. It deals with school environment and public space for persons with visual impairments in the Czech Republic. It defines barriers that hinder opening of the environment and facilitators who help to open it. The sixth chapter contains the results of a survey that deals with the role of the family in education of children with visual and multiple disabilities.

The issue of education of children with visual and multiple disabilities is acquiring new dimension due to recent legislative changes and it requires professional but also partnership–based approach of experts in order to reflect specific needs of individual families. Since children and students with visual and multiple disabilities generally require more intensive care, often meaning a daylong need for intervention by parents and professionals, family approach and support to education of these children becomes increasingly important.

The study published in this book provides an analysis of the assessment of this issue by five Czech mothers of children with visual and multiple disabilities. The survey was conducted as a 'focus group' and endeavored to determine real attitudes and opinions of the mothers to factors affecting the level of support provided by families in the education of their children. The results show in particular the importance of the factor of the child acceptance by the parents, coping with the disability and loss of life optimism. As part of the research we concluded that the family plays an irreplaceable role in the process of education and that the issue is linked to numerous aspects of upbringing and education.

Mgr. Martin Vrubel, Ph.D.

Brno, January 2017

1 VISUAL IMPAIRMENT

1.1 APPROACHES TO VISUAL IMPAIRMENT

Visual impairment in the Czech Republic is assessed using three models – medical, functional and social. Although current global trends put pressure on joining and cooperation of these models, these changes take root very slowly in the Czech conservative environment. The medical model perceives visual disability as a disease, or at least as a direct result of a disease, which needs to be treated. Given that this model has a historical overlap in special education, it is very difficult to change the ingrained attitude of experts who advocate for this model of interdisciplinary conceptualization of disability (Pančocha, 2013). In practice, the medical model manifests itself by focusing attention on achieving the best available visual perception and the highest possible degree of visual functioning. Assessment focuses solely on the functional structure of visual organs, excluding the variable individual personalities per se, their perceptions and feelings.

The functional model is on the borderline of medical and social models. It is an approach under which disability is not part of the pathology nor its consequence, but exists due to contact with unmatched environment. The individual is perceived as a functional unit, as a creature having needs and feelings (Pančocha, 2013). Functional ability is assessed rather than pathology. The model aims to provide support, services and appropriate therapeutic approaches. The functional model is close to the modern understanding of the role of medicine in society (see International Classification of Functioning, Disability and Health – ICF), but also to understanding of the role of social services. It results in collaboration between health and social services (Pančocha, 2013).

The social model of disability focuses on removal of barriers, changing of negative attitudes and inclusion of people with disabilities into society. This model focuses on evaluation of the ability to participate in social activities, participate in the workforce and become a full member of society (Pančocha, 2013). The goal of the model is the situation in which no person with disabilities is assessed based on his/her disability, but rather, like other people, based on his/her abilities.

In the Czech environment, we are trending towards medical-functional model, which corresponds to the current focus of medical fields and their perception of disability. Special education has closer ties to the social-functional model, which assesses visual impairments based on different criteria than medical disciplines.

The medical approach is affected by two approaches. Traditional – International Classification of Diseases, and the modern functional approach – International Classification of Functioning, Disability and Health (ICF).

1.1.1 INTERNATIONAL CLASSIFICATION OF DISEASES (ICD)

International Classification of Diseases is a summary list in which all diseases have been assigned a code. It is a means of communication between healthcare professionals informing each other about the specific diagnosis of the patient. The international classification of diseases does not address functional capacity, quality of life and participation of the assessed individuals. This classification focuses strictly on the diagnosis.

Diseases of the eye and adnexa have been assigned codes H00 to H59. Each code stands for an umbrella diagnosis, further divided into subgroups. An example might be the umbrella diagnosis H53 Visual disturbances – subgroup 1. Subjective visual disturbances. The subgroup subjective visual disturbances includes Subjective visual disturbances (ICD code: H53. 1).

Groups of Disorders (ICD – 10th Revision, 2014):

H00–H06	Disorders of eyelid, lacrimal system and orbit
H10–H13	Disorders of conjunctiva
H15–H22	Disorders of sclera, cornea, iris and ciliary body
H25–H28	Disorders of lens
H30–H36	Disorders of choroid and retina

H40–H42	Glaucoma
H43–H45	Disorders of vitreous body and globe
H46–H48	Disorders of optic nerve and visual pathways
H49–H52	Disorders of ocular muscles, binocular movement, accommodation and refraction
H53–H54	Visual disturbances and blindness
H55–H59	Other disorders of eye and adnexa

1.1.2 INTERNATIONAL CLASSIFICATION OF FUNCTIONING, DISABILITY AND HEALTH (ICF)

The modern classification of the World Health Organization, the International Classification of Diseases is not oriented on disease, but on health (Pančocha, 2013). It is therefore a holistic, positivist, humanist-oriented approach to assessing abilities, health and disability.

The ICF evaluates disability (according to the Ministry of Health: fitness for work capacity, according to the ICF: a reduction in functional abilities at the level of the body of an individual or society that arose when the individual encountered barriers in the environment (WHO, 2009), follows the needs of education and the need to use special aids. The ICF is used for monitoring the functional ability, independence and autonomy of the individual. It is used in assessments of individuals for the purpose of payment of social benefits and collecting data on population morbidity (Czech Ministry of Health, 2010).

The ICF assesses abilities, not people. The ICF is an important international communication tool for evaluating the abilities of people. It is an important addition to the ICF, which says far more about the real condition of concrete individuals. The ICF may serve as a means of communication within interdisciplinary teams emphasized in recent years and dedicated to diagnosis, treatment, rehabilitation, intervention and integration.

1.2 GENERAL AND SPECIAL EDUCATIONAL DEFINITIONS OF VISUAL IMPAIRMENT

Visual impairment is to be understood as a conflict between a condition based on the limitations of visual function and the real environment perceived through visual information. Visual impairments arise as a consequence of diseases (pathologies), injuries, incomplete development and major visual defects that cannot be compensated by aids or rehabilitation. Visual impairment, however, cannot be labeled and approached as a disease.

In this context, we need to clearly define the difference between the visual pathologies and visual impairment. The term pathology means conditions formed as a consequence of external factors. Pathology is a condition that can be changed by remedies. Pathologies are defined by the International Classification of Diseases.

In contrast, impairment is viewed as a deviation from the norm (often physiological), which cannot be cured (such as refractive errors). Impairment is not synonymous with pathology (disease). Impairment can be characterized as underdeveloped structures (e.g. microphthalmos). However, congenital diseases which arose due to the presence of disease cannot be described as impairments (Kuchynka, 2007). In this case, it is preferable to use the term congenital disease.

DEFINITION OF VISUAL IMPAIRMENT ACCORDING TO WHO

Medicine defines visual impairment based on the reduction of two essential visual functions – vision and visual acuity. Visual acuity is evaluated with the best possible correction of refractive error using standard optical aids (spectacle lenses, contact lenses). It is interesting that medical disciplines inherently perceive some visual functions as superior over others. The most important functions of eyesight according to medicine are visual acuity and visual field, regardless of the quality of other visual functions (contrast vision, colour vision, ability to adapt, ability to accommodate and ability of simple binocular vision). Other visual functions are hardly taken into account in the evaluation of the degree of visual impairment.

According to WHO, low vision and blindness fall under the category of visual impairment (World Health Organization, 2014).

Table 1
Categories of visual impairment

Categories of visual impairment	
Healthy sight	— Visual acuity better than 6/18
Moderate low vision (falls into the international category known as low vision)	— Visual acuity 6/18 and worse, to 6/60
Severe low vision (falls into the international category known as low vision)	— Visual acuity 6/60 to 3/60
Severely poor eyesight (falls into the international category known as low vision)	— Visual acuity 3/60 to 1/60 — Concentric constriction of the visual field of less than 20° for both eyes or below 45° in one eye (without the emphasis on visual acuity)
Practical blindness	— Visual acuity worse than 1/60 — Visual field 5° (without the emphasis on visual acuity)
Absolute blindness	— From retained light perception without being able to determine light projection, to a complete loss of light perception

Note: (cf. SONS Czech Republic, 2014; World Health Organization, 2014; Autrata & Vančurová, 2002; Rozsíval, 2006; Kuchynka, 2007; Hamadová, Květoňová, & Nováková, 2007)

DEFINITION OF VISUAL IMPAIRMENT USED IN SPECIAL EDUCATION

Given that 80% of our perception is obtained by sight and that the eye plays a particularly important role in childhood learning, qualitative visual function disturbance is accompanied by increased difficulties throughout the entire education process. Reduced quality of visual function can be manifested by shortcomings in spatial vision, localization, eye coordination and motor skills, identification of objects or by reduced ability of social interaction, which is ultimately reflected by a slower pace of work. All of these areas are taken into account by special education.

Education of people with visual impairments was for many years the domain of special schools. However, the current emphasis is on inclusive approaches in education in mainstream schools. An important positive aspect of inclusive education is the fact that the person with visual impairment being educated is in contact and learns to communicate and establish contact with the intact majority. It is equally important that students without visual impairment come into contact with students with visual impairment and learn tolerance, communication and contact with otherness in the interaction (Vrubel, 2014).

In contacts with individuals with visual impairments, students learn that positive attitudes to otherness are normal, which is something they are likely to remember for the rest of their lives.

Given the above findings, it is crucial for the process of inclusion in a mainstream school to proceed without major difficulties. To do this, it is necessary to choose appropriate teaching strategies. Choosing of appropriate teaching strategies is entirely dependent on the correct assessment of the nature and measure of the reduced visual function. Impairment of any visual function, be it visual acuity, simple binocular vision, spatial vision, correct field of vision, accommodation and convergence ability, colour vision, contrast vision, the ability to adapt and flawless processing of visual information all affect functional capabilities of individuals. Deterioration of functional vision is not always limited to one visual function. This often leads to the simultaneous occurrence of multiple limitations of visual functions. Reduced quality of visual function has a particular impact on the educational process of the persons concerned, throughout life, because it can directly affect the work of students in primary and secondary schools, colleges and of adults working in retraining courses or adult education courses.

The issue of education for people with impaired visual functions resulting in visual disability that significantly affect educational opportunities is studied by the special education field known as opthalmopaedia. The concept of Olomouc special education school refers to it as typhlopedia.

DEFINITION IN SPECIAL EDUCATION

Definition of visual impairment used in special education, compared to the medical definition, is not limited to classification according to the degree of visual acuity and visual field, but classifies visual impairment according to reduced visual functions.

Květoňová L. (2000) classifies visual disability to groups according to functional impairment as follows:

- loss of visual acuity;
- visual field width deficiency;
- oculomotor problems;
- difficulties with the processing of visual information;
- colour vision deficiency.

Moravcová D. (2004) adds two more categories are beyond the scope of this definition:

- disorders of adaptation to darkness and glare;
- disorders of contrast sensitivity.

However, we also encounter generalized categorizations focusing on the outcome of reduced visual functions. Within this categorization occurring in many special education publications (cf. Keblová, 1998; Neméth, 1999; Finková, Ludíková, & Růžičková, 2007), visually impaired persons are classified into four groups:

- blind persons;
- persons with eyesight residues;
- visually impaired persons;
- persons with impaired binocular vision.

Blind persons have functional visual acuity lower than 1/60. Within blindness, we distinguish, similarly to the medical classification, between practical blindness defined by the range of preserved visual acuity from 1/60 to preserved light perception, and total blindness defined from the state of preserved light perception to complete loss of visual function. The main problem for the blind people in terms of education is difficult access to information and the emergence of the so-called information barrier. Removing of the information barrier is closely associated with the chance to participate in the process of education.

Information barrier caused by visual impairment can be removed using a wide range of special aids that make information available, and by mastering the special alphabet for blind people. The most widely used alphabet for the blind is Braille. Learning Braille requires feeling in fingertips and good fine motor skills. Both mentioned criteria often mean that a relatively large group of people with acquired visual impairment is not able to learn to use Braille. This applies mostly to adults and seniors with reduced fingertip sensitivity caused by a lifetime of manual labour and systemic diseases (such as hypertension or diabetes mellitus). Another frequent complication for seniors is impaired fine motor skills. Blind adults and seniors therefore mostly use special tools to get rid of the information barrier. Apart from removing the information barriers, mastering the ability to navigate and move around in space is essential in terms of learning opportunities and social inclusion (cf. Vrubel, 2012; Bartoňová, Vítková, & Vrubel, 2014; Nováková, 2004).

Persons with eyesight residues have their functional visual acuity preserved with best possible correction provided by conventional optical aids in the range from 3/60 to 1/60, or reduced field of vision in both eyes under 20°. In medical classification, the equivalent to that category is referred to as eyesight residues or heavily reduced eyesight (Nováková, 2010). The main difficulty in terms of education needs is impaired orientation in space, reduced ability of observation, reduced ability to read normal text, orientation in maps, etc. Persons with eyesight residues, due to their poor visual function and difficulties in using it, need to devote more time to their work. Organized physical activity can also be problematic, with regard to the need for adequate security of individuals taking into account their navigational skills and potential health problems. Given that students with eyesight residues are on the border between low vision and blindness, they often use aids used by both groups, i.e. Braille and special assistive devices, as well as magnified black proofs and special optical aids. Depending on the degree of visual impairment caused by bad functional vision, persons with eyesight residues visit courses for spatial orientation and independent movement, like the blind people.

Visually impaired persons posses preserved visual acuity in the better eye with best possible correction by conventional optical aids in the range of 6/18 to 3/60. As part of the educational process, visually impaired persons, depending on the degree visual impairment, suffer from similar functional limitations as people with eyesight residues. Their functional abilities, however, are much higher, because they are provided with teaching strategies that are closer to intact population. Due to the disruption of their visual functions, it is difficult for them to access information. Information is made available using traditional black proofs in magnified form. Magnification depends on the degree of visual impairment. People with eyesight residues also use special magnifying optical devices and electronic magnification aids. When working with text we need to take into account specific functional capabilities of individuals, as well as time demands of working with tools for people with a small field of view (e.g. magnifying glasses, telescope systems, etc.).

Persons with impaired binocular vision most often suffer from induced amblyopia, or they are affected by a disorder of the equilibrium position of the eyes – strabismus. The consequence of the aforementioned disorders is the reduction of visual functions in the field of fusion (blending of individual eye images into one) and stereopsis (depth perception). Practically, this reduction of visual functions manifests itself in wrong distance recognition, especially of moving objects, problems in geometric imagination, clumsiness and mobility issues. An individual with impaired binocular vision may have difficulty in physical education, mathematics, arts and other subjects working with plasticity and depth of field (Vrubel, 2013). According to L. Požár (1996) individuals with impaired binocular vision also suffer from overall developmental delays compared to peers with normal binocular vision. Proper medical-rehabilitation processes are able to correct the reduced visual function.

1.3 PERCENTAGE OF PEOPLE WITH VISUAL IMPAIRMENTS IN THE POPULATION

According to recent data from the World Health Organization (WHO) there are 39 million blind people and 246 million low vision people worldwide, while 90% of visually impaired people live in developing countries. We live in the era of significant growth in the number of people with visual impairments. Proof of this is the situation in 2007, when the WHO estimated, according to P. Kuchynka (2007), the number of blind persons at 37 million (2 million less than now) and 124 million people were estimated to be visually impaired (nearly 50% fewer than now). Of the total number of blind people, 82% are older than 50 years. The issue of visual impairment is therefore currently very topical since many countries must deal with aging populations, which brings about a number of secondary issues.

In Eastern Europe, blind persons constitute 0.49% of the population. In Western Europe it is 0.2% of the population (in the case of population aged over 50, it is 0.47 to 0.6%), in North America it is 0.5% of the population, in Australia 0.66% of the population (in case Aborigines, the original inhabitants, 1.4% of the population), in Latin America from 1.3 to 2.6% of the population (most in Peru and Paraguay, with Guatemala on top at 3.5%), in North Africa and the Middle East the average is 0.66% of the population (mainly Morocco – 0.76%, Tunisia 0.8% and Oman 1.1%). In Africa, percentage of blind population varies depending on the region from 0.6% to 3.69%. The largest percentage of blind people is in Botswana (3.69%) (Murthy & Gordon, 2014).

According to the WHO, 80% of causes of visual impairment are treatable or correctable (World Health Organization, 2014). P. Kuchynka (2007) states that according to estimates, refractive errors cause an additional increase of 15–50% in blindness among the visually impaired. The most common cause of visual impairment in the world is uncorrected refractive errors.

The most frequent pathology causing vision loss worldwide is the cataracts (47%). Others include glaucoma (12%), age-related macular degeneration (9%) and Diabetic Retinopathy (5%) (cf. World Health Organization, 2014; Murthy & Gordon, 2014).

Groups at risk of developing visual impairment, according to WHO (World Health Organization, 2014):

The World Health Organization highlights the issue of visual impairment in many ways. One of them is the definition of groups of people who are at risk of developing a visual impairment:

- According to WHO, one of the risk factors is life in developing countries, specifically since nearly 90% of people with visual impairments live there.
- Another risk factor is age. The risk group consists of persons older than 50 years (this group accounts for 65% of all people with visual impairment in the world), i.e. 20% of the world population. Currently, however, in many countries the population is aging, which is related to the gradual increase in the representation of this high-risk group.
- Children younger than 15 years are also a risk group (19 million children with visual impairments live worldwide, of which 12 million suffer from uncorrected visual impairments resulting from refractive error or other similarly easily identifiable and preventable causes). There are 1.4 million blind children as a result of serious causes in the world.

Visual impairment significantly affects the economic activity of people and the economy of the affected countries. Publication of groups at risk of visual impairment may contribute to higher levels of attention, leading to improved diagnosis and prevention of visual impairment, which may result in an increase in the quality of life of the population of many countries.

1.4 KEY REASONS FOR THE DEVELOPMENT OF VISUAL IMPAIRMENT

Given that the definition of visual impairment is directly related to deviation from standard visual functions, it is appropriate at this point to specify individual visual functions both in terms of standards and in terms of possible deviations. Variations in the quality of visual function may be partial or total. They relate to the visual functions – *visual acuity, field of vision, colour vision, contrast sensitivity, adaptation, accommodation, binocular vision.* Variations in the quality of visual function can also be combined, and may affect several visual functions at once.

Emergence of visual impairments is also affected by congenital eye defects and diseases. Most frequent congenital eye defects include *congenital glaucoma, albinism, aniridia, microphthalmia, congenital cataracts, pigmentary retinal degeneration, retinopathy of premature children, retinoblastoma* or *hypoplasia of the optic nerve.* Other causes of visual impairment are: *Age-related macular degeneration, glaucoma, cataract, diabetic retinopathy, central retinal artery closure* and *visual organ injury.*

2 EARLY CARE (EARLY INTERVENTION)

2.1 GENERAL DEFINITIONS OF EARLY CARE

Early care system as an integrated multidisciplinary system of services aimed at the family and child with disabilities points to the current global trends in care for individuals with disabilities. The complexity and sensitive approach to child and family become the main features of the whole process of early care. Formation, implementation and support for such a system of services is based on an excellent experience from several developed states and empirical knowledge of experts in practical assistance to families with a disabled child.

The importance of support for comprehensive services for family and child with a disability at the early age is supported by theory and the results of investigations in developmental psychology, neuropsychology and education of children at an early age. These studies uniformly point to the importance of the first three to six/seven years of life on its overall personal development. Parents or persons immediately caring for the child in this developmental period play a key role in promoting its progressive growth in different directions of evolution (Tichá, 2008).

Current situation in early care in the Czech Republic has its historical context. Its individual components are social and educational, psychological and therapy-related in nature. The purpose of these early care activities and services is typical of social services: social integration of families (Hradilková, 2006). Early care can be characterized collectively as a set of services and programs that are provided to children who are highly vulnerable in the social, biological and psychological development, to children with disabilities and their families in order to prevent damage, eliminate or mitigate consequences and to provide good conditions for successful social integration for the family, child and society (Hradilková, 1998).

Early care is defined in the Act no. 108/2006 Coll. on Social Services, as amended by other provisions in Section 54, paragraph 1, as outpatient or inpatient services provided to the child and its parents aged up to seven years with health issues or whose development is at risk due to unfavorable social situation. The service is aimed at supporting the family and development of the child with respect to its specific needs. Early care under Section 53 falls under social prevention services. Legislative anchoring of early care in the system of social services is the basis for further development of this social prevention service not just in relation to the client, community or society, but also for the field of early care. The law defines the rules for registration of providers, target client group, required qualifications and funding certainty to providers through state subsidies. Quality evaluation is carried out by social services inspection according to personal, procedural and operational quality standards (Brandová et al., 2008).

In general, the system of early care services in the Czech Republic has been developing since the early 1990s. One of the first initiators was a civic association currently operating under the name *Society for Early Care*, a nation-wide umbrella network of early care centers for families with children with visual and multiple impairments. The organization uses the experience of foreign experts and they have formulated general principles defining care as a field, which have been incorporated into accreditation standards of early care, often referred to as *General standards of care.* These documents were gradually adopted by other providers focusing on different target groups of users of services, currently constituting mandatory standards for the providers. The *Association of Early Care Workers* was founded later, as a nationwide professional body whose mission is to promote professional early care as an outpatient social service provided to families of young children with disabilities or exposed due to the influence of social environment (*Concept of early care in the Moravskoslezký Region*, 2005).

Since the mid-80s, within practical work of counselors for families with children with disabilities, the Czech model of early care named *Accompaniment* was formed. It is based on international experience and domestic authors (Matějček, Langmeier, Damborský, Čálek). During the drafting of this model, practice in early care was influenced by new directions in working with clients, such as non-directive approach, systemic approach and non-expert approach. The early care model consists of three programs: child development support, family support and the effects on society. Since 1994, this model has been put into practice by the network of *Early care centers* (Hradilková, 2006).

Early care services are currently provided by governmental and non-governmental organizations, professional and volunteer. In addition to Early care centers, special-education centers and EDA early care centers also play an important role.

Worldwide, there are various programs and models of early care services, provided by governmental and non-governmental, professional and voluntary bodies, and similar to the Czech situation, are provided as outpatient services in the natural environment of the child in the greatest possible extent. These programs and models follow three directions (Lopúchová, 2011):

- *Family support,* which integrates screening, crisis intervention, counseling, community work and therapy, providing such a wealth of information to the parents that it allows them to become equal partners for professionals and be able to formulate their own needs. It begins by offering timely help, assists in the child acceptance and in establishing relationships in the community. It includes elements of crisis intervention, family therapy, social and legal consultancy, exchanging of experience and facilitation of mutual support among families and groups of parents.
- *Support for the child* in the form of stimulation, compensation or therapy aimed to detect, prevent or minimize consequences of the disability.
- *Effect on society,* enlightenment comprising interdisciplinary cooperation, staff training, seminars and lectures, publishing, media, educational programs, legislative initiatives and the like.

The European Agency for Special Needs and Inclusive Education is an independent organization that acts as a platform for cooperation of its 29 member countries in the field of inclusion and special education. The aim is to improve policy and practice in education of students with disabilities and with special educational needs. The organization conducts long empirical investigations, surveys the situation and provides methodological and theoretical management of the early care process. The agency has published a summary report entitled *Early Childhood Intervention: Analysis of Situations in Europe – Key Aspects and Recommendations*, published in 2005 as a summary report. Another three-year 2015–2017, Early Childhood Education Project will focus on the fact that educational experience gained in the early infancy have a significant impact on human life. Provision of quality education in the early childhood has a positive impact on achievements and social adaptation of children. It also forms the basis for lifelong learning, preventing early dropping out and promoting equal access. The project experts work with the main findings of previous projects of the Agency that investigated early care in 2004–2010. The project aims to identify and analyze the factors (facilitators – challenges/barriers) that enable high-quality and fair education at an early age for all children, including those that are 'most vulnerable' in the inclusive concept. A key issue for the project is the question: "What are the key characteristics of quality inclusive education in early childhood for all children?". The Czech Republic is also involved in this international project.

After the diagnosis, interdisciplinary services of early care need to be provided to a child with visual and multiple impairments as soon as possible. Collaboration with parents becomes essential. As stated by the collective of authors S. Trauzettel–Klosinski, B. Clauss, E. Zrenner, (1993), for a child, it is necessary to start working on the total stimulation of its development, stimulation of functional vision and the remaining visual functions and options, stimulation of other sensory organs and functions, cognitive skills, stimulation of game activities, mobility and movement practice, stimulation of coarse and fine motor skills, practicing of social behaviour and encouraging the greatest possible autonomy as a child. In addition to the child support proper, I. Kudelová (2006) also mentions the need to help in solving relations issues within the narrower and wider family and community, the need to help in negotiating, the need to help in understanding problems, mediating of contacts with other families, etc.

2.2 ACCEPTANCE OF A CHILD WITH IMPAIRMENTS BY THE FAMILY

Birth of a child is a tough situation in the life of any family. Coping with this crisis situation depends on several factors, including atmosphere during the first three years of life of the family with a child with disabilities. In this period, relations are formed which, in the first years of life shall take the character of a bond and thus become a model for all future relations of the child throughout life. Just as every child is a unique personality, with its rights, strengths and weaknesses, each family is a system in which its strengths can be leaned on and weaknesses must be respected and accepted. The essence of family guides is to help the family and the child to fulfill and reconcile their needs (Tichá in Lopúchová, 2009).

The child's personality and its upbringing as a result of a disability may require many non-standard demands and procedures exceeding the possibilities of parents, while the resulting situation is reflected in the dynamics of relations within the entire family. Family adaptability derives from the flexibility of the family system and its ability to alter the structure depending on the developmental and situation stress. The actual stabilization of emotions and transformation of the family system proceed in different periods of time, within which the individuals adapt to new tasks (Habalová in Horňáková, 2010). Parents of a child with disabilities go through the phases of shock and denial, of the gradual acceptance of reality, coping with the problem and the stage of achieving a realistic attitude, when they accept the child with disabilities as it is, and are willing to develop it within its capabilities (Vágnerová, 1995).

While adapting a challenging life situation of parents, individual will plays an important role, as well as the ability to overcome obstacles and the ability to focus on the positive in a difficult life situation. Good relations with the closest social environment also play a major role, including the community where the family lives, experience of the parents with child upbringing, stable family value system, trust in medical experts and in all experts with whom the family comes into contact during the adaptation stage (Prevendárová, 1998). The phase of adaptation to a child with disability can be characterized as follows (Vágnerová, 2004):

- *Shock and denial.* The first reaction of parents when they receive information that something is not okay. This is a defense mechanism when the parents are not reconciled with the child's disability and fail to accept more specific details about the condition of the child, because it is unacceptable at the time. Denial becomes a defensive reaction to preserve mental equilibrium.
- *Helplessness*. This phase is manifested by not knowing how to react to the new situation, by confusion. There may be feelings of guilt and fear of how the immediate family, friends, other people and the public would react to this new circumstance.
- *Gradual adaptation and coping*. This is the time when parents take interest in specific details, looking for solutions or options with experts. Negative reactions in this period may include sadness, anxiety and fear of the future.
- *Reorganization and realistic approach*. Realistic coming to terms with the child's disability. Typically, this is a long-lasting phase. During this period, however, there is a frequent conflict between two needs, the need to obtain certainty and the need to maintain an illusion of positive hope. M. Bartoňová (2005) states that this stage is not reached by all parents. For many parents, negative emotional condition and feeling of guilt remain, which can result in an ambivalent attitude to the child, or even in rejection.

2.3 SOURCES OF RESILIENCE TO ACCEPTANCE OF A CHILD WITH DISABILITIES

For the family to better cope with the situation that arises with the birth of a child with a disability, conditions and assumptions referred to as the **sources of resilience** are created. *Internal* sources of family resilience emerge from the family environment, family dynamics and communication between individual members. It is important how the family reacts to negative factors and the extent to which it is capable of constructive approach to solving the resulting problems and assuming of responsibility in meeting the needs of the family. Internal sources of resilience of families with a child with disabilities include functional communication, flexibility, family system, division of roles and responsibilities, spending time together and family rituals, family values and spirituality, coherence, family openness and life perspective. *External* sources, whose task is to provide families with affordable, meaningful, practical assistance and support, responsive to their needs and the needs of the child, include the availability of high-quality professional help, services, relationships outside the family, social justice, positive cultural image and social attitudes to disability (Habalová in Horňáková, 2010).

Based on the assumption that the family and the family environment play a key role in child development, promoting relations and cooperative interactions between the parents and the child with the disability are the true subjects of early care. The effectiveness of early care services is much higher if it is based on a family-oriented approach. This value of a family environment is the elementary credo of the so-called *transaction-based development model* (Tichá, 2008). The transaction-based development model is a basic conceptual framework for early care. Through this model, the development of the child is perceived as an outcome of the dynamic and reciprocal relationship between the child and the family environment. Optimum family environment is perceived with regard to the needs of the child, providing it with loving and stable care, allowing it to achieve personal well-being. Perceived parental approach to the child supports the child's understanding that its behaviour has an effect. Such awareness is furthermore an important motivating factor promoting its interactive behaviour to the environment and its learning (Tichá, 2007).

According to practical experience of experts in early care and as reported by the parents, parent support groups are a proven way to help and the source of information. As shown by J. Špániková (in Horňáková, 2010), these groups are largely self-organizing within the local community, and are part of selective prevention. There is a variety of global programs for subsequent support and education for parents.

2.4 EARLY CARE IN RESEARCH

Key theories addressing child development, learning process, maturation, psychological development, the role of parents and particularly mothers in early stimulation or formation of bonds had a significant impact on early care and its systematic formation. According to J. Lopúchová (2011), key theories are Gessel's developmental approach, Skinner's 'operant conditioning' and Piaget's genetic epistemology. As the author further states, a common denominator of these theories in relation to teaching concepts and capabilities of children with early age disabilities consists in emphasis on the child and its limits, perceived independently of the environment in which it lives.

After the contribution of the psychoanalytic movement in the early 20th century, Margaret Mahler's work undoubtedly brings an added benefit and it has become one of the essential pillars in building a new perspective on the evolution of man, elaborating in detail the evolution of reciprocal mother – child relationship in early development of the child and the interaction of environmental influences and congenital dispositions of the child. Also, she worked with the fundamental concept of mother – child separation, which has its foundations in the child development period under 3 years of age, until the so-called object constancy is formed (Bergman, Mahler, & Pine, 2006).

Classification of evolution into stages by E. Erikson, who put particular emphasis on lifelong identity formation, with stress on the early stages, in which the child acquires a basic sense of confidence in the world owing to the care of the mother, is a major contribution as well (Ericson, 2002).

Another important contribution to the conceptual framework of early care is the work of John Bowlby, who developed the theory of primary bonds, 'attachment'. His work was affected by psychoanalysis and ethology, especially imprinting theories of K. Lorenz. Bowlby considered establishing a relationship between humans key to the development of mental health, the ability to seek and provide care. Due to its primal basis, a relationship must originate quite naturally between the weak (demanding care) and more powerful (providing care), a bond, an attachment. Observing the children with M. Ainsworth he formed a hypothesis that various types of bonds are formed between mother and child in the first years of life, either a safe bond or an unsafe bond that he further classified as anxiously avoidant and anxiously ambivalent. M. Ainsworth later added a fourth type of bond – disorganized. She also participated in creating a method for observing the attachment between mother and child, known as *Strange situation test*. Under structured conditions, she observed behaviour of the child in the presence of the mother, in the presence of another person and mothers, and only in the presence of another person. It was not only the behaviour of the child in the presence or absence of these individuals (in stress situation) that was important for the observation, but also its response to the return of the mother after being left alone. After the publication of this paper, a lot of research mapping the causes and impact of the primary attachment on further development was undertaken (Ainsworth & Bowlby, 1965).

3 LEGISLATIVE FRAMEWORK FOR EDUCATION

3.1 LEGISLATIVE FRAMEWORK FOR EDUCATION OF CHILDREN AND STUDENTS WITH SPECIAL EDUCATIONAL NEEDS IN THE CZECH REPUBLIC

Applying of social impact on education and training integrates the basic educational framework defining its valid objectives, methods, procedures, and ultimately its formal provision in a legislative framework. Direction of education is thus affected by the standards at the state level and at the level of the institution which provides the education and training. Global trends and the evolution of legislative standards are reflected in shaping of social attitudes to education and with increasing emphasis on quality, diversity, decentralization and openness for all members of society. In this sense, the current phenomenon of professional and lay public in the education of children and students with special educational needs in the form of inclusive education hardly stands out. All types, forms and levels of education at the national level constitute educational policy of every state, and are monitored at the international level, too.

To achieve full social integration, they key legislative document is the *Constitution of the Czech Republic.* The Constitution and the *Charter* of *fundamental rights and freedoms* constitute the highest law and are part of the constitutional order of the Czech Republic. In accordance with Article 33 of the Charter of Fundamental Rights and Freedoms, they also guarantee the right to education for each individual. *"Everyone has the right to education. School attendance is compulsory for a period to be determined by law. Citizens have the right to free education in primary and secondary schools, and according to their capabilities and abilities also at universities."* The legislative framework for compulsory education in the Czech Republic is provided in the Act no. 82/2015 Coll., On pre-school, basic, middle, higher vocational and other education (the Education Act), whose amendments replaced the Act no. 561/2004 Coll. as amended, and certain other laws.

The main reason for the amendment to the Education Act are decrees on support for the education of children and students with special educational needs with a deferred period of effect that are also listed in the key Section 16, which defines support for education of this target group. Section 16 defines children and students with special educational needs, defines and specifies support measures, conditions for their provision, outlines educational opportunities for children and students with mental, physical, visual or hearing impairments, severe speech disorders, severe developmental learning difficulties, severe developmental behavioural disorders, with multiple disabilities or with autism. §16a also provides a precise legal definition of advisory assistance provided by school counseling facilities and §16b mentions revisions relating to the activities of school counseling facilities and education of children and students with special educational needs.

At present, the most important and pressing is the amendment to decrees of the Ministry of Education, Youth and Sports of the Czech Republic, which are directly related to the issue of education of children and students with special educational needs in the Czech schools and which have a high legal force. Legislation-wise, this is the Decree no. 27/2016 Coll. on education of students with special educational needs and gifted students, which was adopted on January 21, 2016 and came into force on September 1, 2016. The decree cancels the Decree no. 73/2005 Coll. on education of children, students with special educational needs and children, and exceptionally gifted students. The Decree no. 27/2016 Coll. precisely defines and categorizes support measures for first to fifth grade, outlines the elements of an individualized education program of a student with special educational needs, defines main activities of the teaching assistant, stipulates the provision of support measures for students using communication systems other than spoken language, allows using of Czech sign language interpreters in the education process, transcriber for the hearing-impaired, and possibly other persons providing support and assistance in education. Title III of the Decree accurately defines and describes procedures in connection with the provision of support measures. This relates to organization of education for students with support measures referred to in Title IV.

The Decree no. 27/2016 Coll. regulates the possibilities and range of psychological or special-education counseling for children and students, their legal representatives, schools and school facilities. The main object and purpose of providing advisory services according to Section 2 of this Decree is the creation of appropriate conditions for healthy physical and mental development of students, for their social development, for the development of their personality before commencing and during the training. It also aims to meet their educational needs and develop their abilities, skills and interests before and during the training.

3.1.1 INCLUSIVE EDUCATION

Czech Republic, with its current education system, fully integrates among other European countries within the framework of education of students with special educational needs. It emphasizes the needs of children and students, provides support measures for optimizing of the education status supports inclusive education as a current trend through its legislative standards.

Politically, the *Action Plan for Inclusive Education for the Years 2016 – 2018* plays an important role. It is a follow-up to the *Strategy of Education Policy of the Czech Republic* up to the year 2020 and to the *Long–term Plan for Education and Development of the Educational System in the Czech Republic for 2015–2020.* The Action Plan also forms the basis for the focusing of the calls of the Research, Development and Education Operational Programme.

The Ministry of Education, Youth and Sports lays out the basic features of the Action Plan and develops methodology for its implementation. This relates to amendments of decrees and laws in the spirit of equal opportunities for education for each member of society. The Action plan includes measures to promote equal opportunities and equitable access to quality education. The document reflects proposed legislative changes in the amendment to the Education Act. For the years 2016–2018, this means introducing support measures for children and students with special educational needs, introducing accurate record keeping and statistics for students educated in inclusive environment, refinement and unification of diagnostics so as to offer an adequate support to students with handicaps or disabilities within the education system, and establishing a new inspection system in the diagnostics provided by counseling facilities.

The National plan to promote equal opportunities for persons with disabilities for 2015–2020 is an important part of the legislative framework. The plan refers to the right to education without discrimination based on equal opportunities. The underlying objective for the period of validity of the National Plan is to increase the ability of the education system to create conditions and implement effective practices for effective prevention of and compensation for health, social, cultural and other personal handicaps so that inequalities in achieved results are predestined by factors that cannot be influenced by the individual as little as possible. Implementation of inclusive education remains the basic principle. In elementary and middle education, each child has the right to education in a mainstream elementary school near the place of residence. Directors and teachers in mainstream schools need to be offered professional and methodical assistance, but also financial support for the education of children with disabilities. Sufficient support should be ensured by legislative environment, in particular the amendment to the Education Act and the follow-up legislation. Availability of support measures classified into five stages should be enhanced, including services for teacher assistants. Uniform policy for allocation of funding for assistance services should be implemented. The existing system of separate schools for children and students with disabilities should be gradually transformed and expanded towards mainstream schools, which should provide technical, methodological, educational and technological background. Support for children, students, their legal representatives and teachers should be provided by school counseling facilities. Their activities should be standardized in order to ensure uniform approach across all regions and districts and improved quality of services provided. We expect to use modern diagnostic tools and methods, transition from diagnostics primarily aimed at detecting specific diagnosis to diagnostics aimed at detecting the degree of support. We also expect greater cooperation and communication among early care facilities, schools and other institutions. A dedicated inspection institute will also be established.

In this context of formation of legislative policy at national and supranational level, it is important to point out the authors Booth, T. and Ainscow, M., who in 2002 formulated the **inclusion index** in the Centre for Studies on Inclusive Education (CSIE). The inclusion index supports positive growth of schools, looking for the directions of further development for the organizations and school environment, attempts to modify barriers in the education process and examines the degree of inclusion and exclusion based on three mutually significantly interconnected areas, which are part of the development of the school – building of inclusive culture, creation of inclusive policy and development of inclusive practice (Vrubel, 2015).

Inclusive education policy in the Czech Republic has been studied by leading authors at universities and in specialized institutions. Numerous papers have been devoted to integration and inclusion in this country and abroad (Jesenský, 1993, 1995, 1998; Vítková, 2004, 2013, 2014; Bartoňová, 2005, 2013; Pipeková, 2014).

From Czech Projects dealing with school inclusion we should mention the Fair School (Férová škola) implemented by the League of Human Rights since 2008 (www. ferovaskola.cz). The objective of the project is to highlight the problems of access to equal education in the Czech Republic, but not in the form of criticism, but through positive motivation and media coverage of schools which meet the conditions of equitable and fair approach to each child (Tannenbergerová & Krahulová in Květoňová & Prouzová, 2010).

3.2 CURRICULAR DOCUMENTS

The Czech Republic responded to the latest curriculum policy by reforming the educational system by creating the **National program for development of education** in the Czech Republic, also known as the *White Paper,* which forms the government strategy in the field of education. It reflects interests of the whole society and provides specific suggestions to schools.

The introduction of this reform divides curricular documents to two primary levels. The **state** and **school** level, with the **White Paper** and **Framework Education Programs** for various fields of education being at the state level. **School education programs** defining the profile of the educational institution are at school level.

According to the National Institute for Education, Framework Education Programs as program documents specify general objectives of education, core competencies essential for personality development of students, define substantive areas of education and their contents, characterize expected results and provide framework and rules for the creation of school education programs, including curricular plans. To date, we have a Framework education program for pre-school education, elementary education, special primary schools, elementary art education, for grammar schools, for middle vocational training and for language schools (with the right to organize state language exams).

This system also underwent a reform and develops as the laws and decrees associated with educational system in the Czech Republic are being amended. The figure below shows flexibility of the changes and the current status of state and the school level of curricular documents that are consistent with the Education Act no. 82/2015 Coll.

3.2.1 FRAMEWORK EDUCATION PROGRAM FOR PRE-SCHOOL EDUCATION

Institutional pre-school education, its mandatory/voluntary nature, methods and conditions are a long-debated topic in the field of education policy. The National program for development of education in the Czech Republic includes, in the context of pre-school education, recommendations for the future, which the Czech Republic gradually implements. One of the gradually implemented goals is drafting of a framework program for pre-school education including newly formulated general objectives, contents and expected results (competence of the child). Ensuring implementation of the framework program according to the specific conditions of schools and children – school curriculum is a prerequisite. Another curricular document involved in the complexity of pre-school education is the Decree no. 158/2001 Coll.

Framework educational program for pre-school education (FEP) continuously translates into classroom practice. It is the primary document for education of children, preparing them for compulsory school attendance through an education plan for the school and it is also a framework document for the implementation of the empirical part of this paper as determining the direction of case data with diagnostic elements oriented according to educational areas of the FEP.

General objectives of education are expressed in the FEP by framework objectives, with outputs in the form of key competencies. General objectives are reflected in the five educational areas and acquire the form of partial objectives. Their implementation is directed towards attainment of partial outcomes. Educational objectives reflect universal intentions of pre-school education.

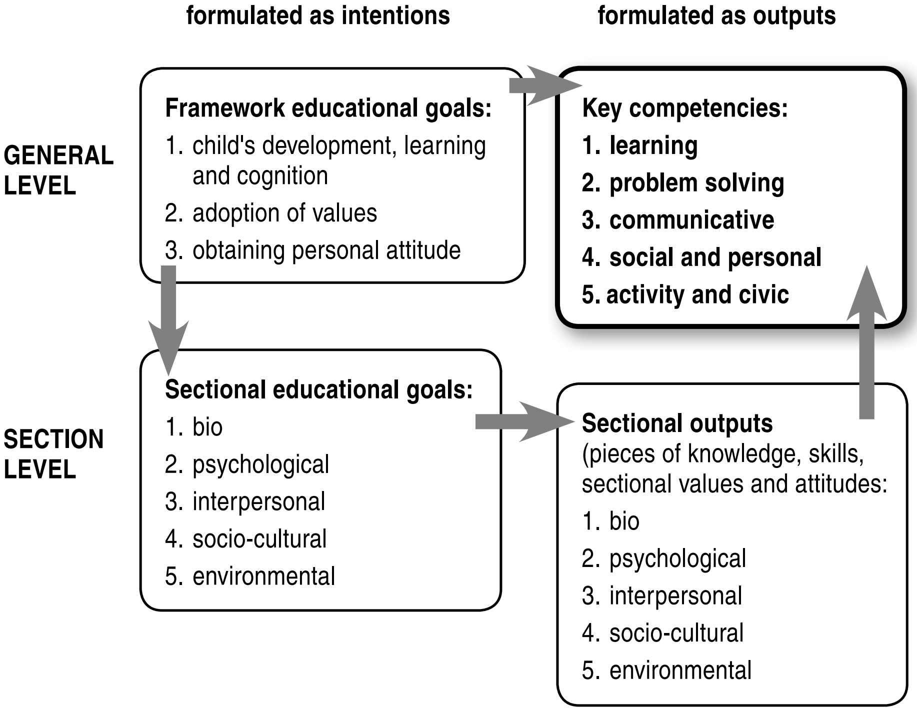

Figure 1. Education objectives of FEP (FEP, 2004)

The contents of pre-school education are defined to implement educational objectives and to achieve educational goals. It is organized into five educational areas: The child and its body, the child and its psyche, the child and the other, the child and society, the child and the world.

The FEP is complemented by Specified expected outcomes (2012), also published by the National Institute for Education. The specific outputs define the requirements for each expected outcome in the form of specific activities and opportunities so that it is completely clear what the child should master at the end of pre-school education, thus assisting the teachers in pursuing the objectives of pre-school education.

For education of children with special educational needs, appropriate conditions for optimizing their development in the context of pre-school education are provided according to their type of disability or handicap.

In addition to legal standards and mandatory curricular documents, there recently appeared a number of academic publications and pre-school education of children with special educational has been gaining in importance. For example, the publication *"Pre-school education of children with special educational needs"* is dedicated to such early support for pre-school children (Bartoňová, Bytešíková, & Vítková et al., 2012).

3.3 SPECIAL EDUCATION SUPPORT FOR CHILDREN WITH SPECIAL EDUCATION NEEDS AT PRE-SCHOOL AGE

Early support services are to be provided since the diagnosis so as to improve the child's development level in areas which are at risk of disability until the child is included into some type of educational facility or school. Opatřilová D. (2013) aptly defines early child support as any measures (intervention, activities, special education) that serve to improve organic functions, develop adequate ways of behaviour and personality. They are referred to differently depending on which field deals with them and wherein generally lies their center of gravity. Early support is inextricably tied to timely intervention and its effectiveness depends on the work of experts and cooperation with the family of the disabled child of early or pre-school age.

3.3.1 SUPPORT MEASURES

Flexibility of the school education system in the Czech Republic reflects inclusive policies of the state and in educational reforms and amendments to curricular documents it outlines a new kind of special education support in the form of **support measures.** Schools, in cooperation with school guidance facilities, receive the type and degree of support measures that are necessary for the education of a specific child or student to be able to successfully cope with any demands. According to Act no. 82/2015 Coll., these measures may be combined. Support measures are methodically elaborated in detail in 2015 Catalogs of support and compensatory measures for disabled students. For practical use, within the framework of the *System support for inclusive* *education* project, *the Catalogue of support measures for students in need of support in education because of health or social disadvantages* was compiled by J. Michalik, P. Baslerová and L. Felcmanová (2015). Sub-sections of the catalog of support measures for students in need of support in education were created, for the following reasons:

- mental disability or attenuation of cognitive performance;
- physical disability and serious disease;
- visual disability or weakening of visual perception;
- auditory disability or weakening of auditory perception;
- autism spectrum disorders or selected mental diseases;
- impaired communication abilities.

The general section defines legislative and regulatory framework, namely implementation in schools and methodology for working with the Catalogue for specific target groups of students. Said sub-sections of the Catalog of support measures specify individual areas of support. It is a visual and practical material with which teachers can safely and under supervision carry out their teaching and support overall personality development of children and students with special educational needs.

Support measures have become part of numerous investigations in the academic world. The Innovation of activities project provided by special education centers in assessing educational needs of children and students with disabilities investigated by the Palacký University in Olomouc has formed a general methodological framework for activities of counseling and diagnostic staff in school counseling facilities in the Czech Republic. Creation of said Catalogs for assessment of special educational needs is part of this project.

3.4 EDUCATIONAL AND PSYCHOLOGICAL COUNSELING SERVICES

In connection with social developments in recent years in the Czech Republic, requirements placed on educational and psychological counseling services have been changing. The content of counseling activities and the system of advisory institutions are changing and the importance of advisory services increases. According to expert opinion of

M. Vítková (Bartoňová & Bytešníková et al., 2012), the aim of educational and psychological counseling services is to provide support and assistance in solving personal problems of children and students, provide consultancy in the education process, while professional assistance is carried out in the form of diagnosis, intervention, consultation or informing. In this context, O. Németh (2010) pointed out that special education consulting began as a response to imminent and practically declared humanization of education in relation to children and students with special educational needs.

Educational and psychological counseling is the responsibility of the Ministry of Education, Youth and Sports. It consists in counseling for children and adolescents and its range is very diverse (Pešová & Šamalík, 2006). In 2011, the National Institute of Vocational Training merged with the Education Research Institute forming the National Institute for Education (Knotová et al., 2014). In the Czech Republic, educational and psychological counseling services for children with special educational needs of pre-school age are provided by educational and psychological counseling centers and special education centers.

3.4.1 SCHOOL COUNSELING FACILITIES

Specialized school counseling facilities focusing on children with special education needs of pre-school age include education and psychological counseling centers and special education centers.

Educational and psychological counseling center (EPCC) is a facility that participates in education by providing counseling. According to the National Institute for Education, the major part of its activities consists in direct work with children and students from three years of age until completion of middle and high vocational education. EPCC serves as the basis for choosing educational journey of the child. In preschool age, EPCCs provide comprehensive special education services or psychological diagnosis in terms of diagnosing readiness for school attendance, maturity, individual special education and psychological diagnosis of pre-school age children with regard to their uneven development. In addition to the above, EPCCs provide information and methodological counseling, they prepare documents for educational measures and they keep records.

Special education center (SEC) in accordance with the Decree no. 197/2016 Coll., on the provision of consulting services in schools and school guidance establishments, which replaces the Decree no. 72/2016 Coll., provides special education, psychological and another needed care to clients with disabilities and provides them with professional assistance for educational and social integration in collaboration with families, schools, school guidance facilities and experts. SECs differ by disabilities and the corresponding special educational needs. Among general activities for children with visual impairments of preschool age, the SECs provide screening, comprehensive diagnostics, make care plans in terms of comprehensive support strategies, early intervention, complex rehabilitation with the use of educational and psychological tools, consultation and social-legal counseling for legal guardians, crisis intervention, lending of specialized literature and compensating aids, help with integrating children into nursery schools, instructing and modifications of the environment, processing of application for inclusion in education of children and students with special educational needs, processing of proposals for individual educational plans and finally comprehensive support for optimum psychomotor and social development of the child in terms of comprehensive rehabilitation (Hanák & Michalík et al., 2011).

4 EDUCATION AND VOCATIONAL TRAINING FOR STUDENTS WITH VISUAL IMPAIRMENTS IN THE CZECH REPUBLIC

4.1 EDUCATION OF STUDENTS WITH VISUAL IMPAIRMENTS AT ELEMENTARY SCHOOL

Pre-school education prepares students with impaired vision for life by developing it, inter alia, in personality skills, knowledge and competencies. For visually impaired children pre-vocational and vocational training are also very important, because as a result of their deficit in visual perception the students have no notion of available professions and they show deficiencies in social skills and overall personal maturity (cf. Svoboda, Krejčířová, & Vágnerová, 2001; Lang et al., 2008).

Vocational training should be a thread in the education of students with special educational needs stretching throughout their attendance at pre-school, elementary, secondary and college education, completed by successful inclusion of a disabled individual in society and the labour market. For people with visual impairments, this is very closely related to the development of key competencies and life skills that are specific to them and enable them to cope with everyday life situations.

Legislatively, education of students with special educational needs in the Czech Republic is enshrined in the Act no. 561/2004 Coll., *on pre-school, primary, secondary, higher professional and other education* (Education Act), as amended, and in the Decree no. 27/2016 Coll., *on education of students with special educational needs and gifted students,* which among other things defines support measures which the education of these students uses.

The curricular document that governs education at all types of schools is the **framework education program,** which exists for every level of education. This document describes the education, its objectives, defines core competencies, educational areas and key topics (more on www.rvp.cz). The goal of education is to obtain adequate knowledge, understanding and skills, as well as support for competencies for independent living.

In the case of education for students with visual impairments, autonomy, self-care, self-esteem and self-determination should be areas to be emphasized in both special education and regular education in school (cf. Wagner, 2003; Strittmater, 1999; Krug, 2001; Lang et al., 2008).

In the Czech Republic, students with visual impairments have the opportunity to be educated in mainstream schools at all levels, unless they suffer from a severe combined disability making inclusive classes impossible. In Czech special education, there are schools for the visually impaired at preschool, elementary and secondary levels, their supply responds to demand for both common and specific fields for the visually impaired in accordance with the options on the labour market (e.g. secondary schools offer massage classes for the visually impaired).

Before sending a child with severe visual impairment to school, many parents deal with the question of the right school choice and proper 'timing' of eventual integration of their child in a mainstream school. For children who are educated in mainstream schools, many parents prefer integrating their child among peers already at preschool stage and during compulsory schooling, but many perceive it as risky. Younger children accept disabled friends more easily. Therefore, in terms of inclusive schooling, pre-school age is the period where the joint schooling may start successfully, while it is not burdened with as many barriers as at an older age (Venclová, 2002; Koch & Schaefer, 2015).

The actual beginning of school is a stressful situation for the child. Especially in the first years of elementary school, it needs to master the skills of correct and quick reading and writing, which is very challenging for a child with visual impairment (cf. Keblová, 1996; Vágnerová, 1995). These demands can be handled better if the student at the elementary school has a teacher's assistant – the education process is further streamlined by supportive measures (Michalík et al., 2015; Janková et al., 2015; Baslerová et al., 2012). Catalog of support measures provided to the target group of students with visual impairments defines, inter alia, recommendations and measures for teaching these students. These relate for example to organization of teaching, modifications of teaching methods and forms of work, tools and interventions, curriculum modifications, assessment and preparation of teaching. All teachers who educate these students in special schools and mainstream schools should be aware of the specifics of education of students with visual impairments (cf. Janková et al., 2015).

Some parents and experts advocate including the students in mainstream schools from the first grade of elementary school, others prefer inclusion from the second grade. An important consideration in making this decision is school readiness (intellectual, physical, social), personality traits of the child (flexibility, dependence on parents, ability to communicate and establish relationships etc.), school equipment (material and personnel), school location (in case of special schools, the child's ability to cope with a possible placement in boarding school must be considered), type and degree of visual impairment (in case of a progressive defect, early training of working with assistive devices, independent movement and spatial orientation, etc., are recommended), and coping of the child with the visual handicap (cf. Vágnerová, 1995, 2000; Michalík, 1999). For parents, acceptance of the visual impairment by them and by the environment in which they live is also an important aspect, placing a child in a special school could be seen as further stigmatizing of the child and the whole family (cf. Svoboda, Krejčířová, & Vágnerová, 2001; Milian & Erin et al., 2001).

In education of students with visual impairment it is possible to choose and provide special education care classes – such as spatial orientation and independent movement for the visually impaired, working with optical aids, Braille (cf. Lang et al., 2011; *Decree 27/2016 Coll.*). One of the positive aspects of schools for the visually impaired is that the schools are well equipped for the purpose (didactic aids, optical and assistive devices), the environment is modified for the movement of persons with visual impairments (contrasting colours, labels in Braille on the doors, no obstacles to the movement with the white cane), awareness and competence of teachers and staff. These schools are often complex facilities providing special education centers and ophthalmologists for the students, their parents and teachers (cf. Vojtová, Bloemers & Johnston, 2006; Walthes, 2003).

In joint education of students with disabilities in mainstream primary schools, the headmaster, who decides on the admission with the consent of the legal guardian of the child, is governed by the Decree of the

Ministry of Education 27/2016 Coll. and an individualized education program is developed for the student, which is constantly reviewed. During education in mainstream schools, special education center experts supervise optimal progress of the educational process. Advice, recommendations and instructions for adjusting the environment or classes are provided by professionals to students and their parents, teachers or school staff (Decree no. 158/2001 Coll.).

For the success of inclusion, newly defined support measures specifying areas of support, describing measures and risks, illustrating examples and links to resources, are also essential. This is a new practical tool for every teacher of students with special educational needs (cf. Michalík et al., 2015; Janková et al., 2015). Joint education of students with disabilities is initially a stressful situation, especially for a child who previously attended a special school. During transition from special school to a mainstream school, students particularly complain of noise in the classroom during breaks and difficulties in focusing on the speaking teacher, misunderstanding of the needs of students with disabilities by teachers (e.g. slower pace of work as a result of visual impairment; cf. Venclová, 2002). For successful inclusive education, collaboration among teachers, parents, students with disabilities, their peers and other experts participating in the education process is very important.

CONDITIONS FOR EDUCATION OF VISUALLY IMPAIRED CHILDREN IN MAINSTREAM SCHOOLS

To achieve optimum conditions and efficiency of the education process it is necessary to meet the needs of disabled students, specifically framework conditions and methodologies. In inclusive education of students with visual impairments in mainstream schools their individual needs need to be taken into account (cf. Lang, Hofer, & Beyer, 2008; Walthes 2003; Röderová, 2015), including suitable structure of the environment, special equipment (magnifiers, computers, etc.) and the availability of visual, tactile and auditory media (suitable structure, size, form, contrast) corresponding to the visual capabilities of the student.

Students with visual impairments also need a suitable place in the classroom, especially with regard to quality illumination (cf. Appelhans & Krebs, 1995; Krug, 2001; Macháček, 2002). The decisive criterion is the individual needs of the student, some visual impairments are accompanied by photophobia, while sometimes more intensive light is necessary. Based on these needs we choose appropriate lighting (intensity and colour, location and inclination of the light source, aperture). Light conditions significantly affect the quality of work and attention. If expert advice is needed, we recommend contacting special education centers or Tyfloservis, o.p.s.

SPECIFICS IN TEACHING CHILDREN WITH VISUAL IMPAIRMENTS

Teaching students with visual impairment has its specifics and if we want to teach them successfully, it is advisable to follow certain principles (cf. Appelhans & Krebs, 1995; Krug, 2001; Röderová, 2013 etc.).

Teacher and student (preferably also classmates and school staff) should be informed about the student's disability. They should not only know that the students 'sees poorly' or know the name of the diagnosis. The teachers need to be properly informed about special educational needs of the student, about appropriate cooperation with special educational center, an ophthalmologist or visual therapist. Classmates are best acquainted with the visual impairment through summary topics, through interactive and situational games. It is advisable to use simulation glasses, educational programs and methods of experiential learning to let other students acquire an idea of the life of a person with disabilities. In these activities, the student with a disability can be the guide so that he/she can shows others how to cope with everyday problems (cf. Pavlovská & Röderová, 2011).

The basic prerequisite for successful education of students with visual impairments is respect for their needs (large print, special equipment, documents and materials in the required form – haptic display, etc.). When working with typed text, purblind students use optical aids, while students with more severe disabilities use a computer with voice or haptic output.

Preparation of materials for teaching of students with visual impairments requires preparation for lessons – the student needs time to get acquainted with the topic in advance. Texts/examples that will be written for other students on the blackboard must be presented to students with visual impairments in an accessible format (electronic, enlarged black print, etc.). Visually impaired students are entitled to higher time allotment, especially in written tests, assignments, etc. The tests are prepared according to the needs of the student (enlargement/electronic form, etc.), it is not appropriate to test students with visual impairments only verbally while other students do written tests.

Longer time needed to complete challenging assignments can be difficult for students and people around them. Yet it is entirely appropriate to allow involvement of students with visual impairment in the process of education in all its breadth to the maximum possible extent, e.g. in the natural sciences. It is essential to realize that science classes allow students with visual impairments not only an opportunity to understand natural sciences, preferably in the context of everyday life, but also enhance other skills for life – social and communication skills, accuracy, patience in working on assignments, etc.

For students with visual impairments we should provide information in the context of ordinary life, making sure that the student has previously encountered the issue. Many processes are known to seeing people from everyday situations, while remaining imperceptible to persons with visual impairments. Conversely, for example some auditory sensations may be more intense for people with visual impairments. We teach students with impaired vision to describe and explain how they see, what aids they need to do their jobs and what specific problem they have. This approach significantly helps the teacher in preparing, while motivating the student for the class is not compromised due to any failures in methods used by the teacher. Knowing one's own disability and needs is an important personal skill for everyday life. We therefore support key competencies and personal strategies for weakened vision; let us observe visual hygiene. It is advisable to change the requirements for visual perception during the class by changing the method of work and care to the individual abilities regarding visual work (cf. Moravcová, 2004).

It is desirable to provide visually impaired students with education in optimal conditions, when requirements and expected results are comparable with others. We include them in class activities, we offer them other alternative activities, if possible; we use effective teaching methods (project based learning, cooperative learning, drama in education etc.; cf. Kasíková, 2010). Student involvement increases his/her independence and competence, preferably with the use of group work and help from other students.

Teacher and students provide the necessary verbal information to describe the activity in the classroom, because the student with visual impairments often cannot perceive distant events and non-verbal communication of the teacher, sometimes the teacher's explanation is hard to understand without visualization available to other students. Teacher or classmates describe everything important (pictures, events, notes on the blackboard etc.), spelling out unfamiliar terms and names. When video is used, silent actions/scenes need to be described. We also inform verbally of the course of experiments. If possible, the student has access to the board/experiment. We provide clear and structured description/explanation, a short description of the class is helpful before it begins.

Let us emphasize thematic links (targeted linking of educational areas, exploitation of general topics, emphasizing links between phenomena and processes). Let us support evaluation and feedback, making sure the students understand everything in order to connect acquired knowledge and experience. In this sense, the use of clarity and multisensory learning (e.g. using real objects, models, haptic images, practical examples) (Röderová in Pipeková, 2010, p. 273–288).

Let us use situational games, teaching software and close contact with reality in the education process (such as professional experience in the real world, cooperation between schools). For successful education, we can also recommend effective methods and strategies, including drama in education (cf. Pavlovská & Röderová, 2011).

TACTILE METHODS AND TECHNOLOGIES

In the education process we often need to build upon specific ideas and experience (use maps, drawings, illustrations), while methods and technologies through which we can convey senses, especially touch, to a person with impaired vision, are also essential. In the case of purblind students, we work with text/image magnification, we strive to provide good contrast or highlight the essential with colours.

Students using primarily compensatory senses will rely on hearing, on our descriptions and tactile display. The term tactile graphics relates to graphical display for the needs of people with visual impairments through haptic lines and surfaces (Voženílek et al., 2010). It means haptic display of plans, images, drawings and maps; it also includes graphic creations made by the blind and aids for persons with severe visual impairments. Tactile graphics refers to rendition of maps, globes and plans to meet the needs of people with visual impairments (Voženílek et al., 2010). In addition to these specific procedures we can also work the body (position, shape), specific illustrative items, toys etc.

The representation can be realized by a point, line, relief drawing – requiring resolution of haptic means, contrasting figure against the background, compositional elements, zooming in and out. In tactile graphics, the smallest size of the tactile point is well defined, there are experienced users and beginners. The representations work with tactile lines – i.e. important tactile information; the line is solid, dotted, dashed, etc. (Voženílek et al., 2010) with tactile graphic characters extended by haptic information – surface roughness and texture, colour is less substantial (especially amber, magenta, green and black are used). Layout and design must be created according to the needs of touch rather than sight. Information is accessible to both hands, in a standardized way (map legend at a specific location, etc.), the same composition is necessary a group of maps and representations.

Tactile graphic displays are produced manually (e.g. manual drawings on Braille paper, use of tactile pastes and colours) or by machines (pressed cardboard, plastic, metal). In schools, we can encounter the so-called thermal printing, which enables creation of a contrasting tactile copy from a pre-drawn black print original. Complex representations must be simplified for tactile perception by persons with impaired vision (reduced details, focus only on the essential aspects).

If typographic illustrations are necessary, special educational centers for the visually impaired provide advice and support for elementary and secondary schools, you can also contact centers at universities or employees of regional Tactile Centers. People with visual impairments can use a large variety of tools that are useful for study or work, but also for daily self-care. It is essential that persons with impaired vision have these tools and use them as these skills open the doors to the world of the sighted and to active life (in education, employment, hobbies).

4.2 PROFESSIONAL PREPARATION OF STUDENTS WITH VISUAL IMPAIRMENTS

Students with visual impairments may, after completing elementary school, attend high schools, vocational or secondary vocational schools. The aim of education in high school and vocational school is to prepare for the future profession and comprehensive development of personal, social, professional and civil competencies. Graduates of secondary schools should be independent young people who are aware of their disability by being aware of their limitations and options, who can fully integrate into society through social and specific skills (ability to move in space, do shopping, go to school, communicate, etc.), the ability to compensate for their disabilities with appropriate aids (cf. Christensen [online], 2000; Jesenský et al., 2007), expertise and also knowledge of who to turn to if necessary. Secondary school students have the opportunity to further strengthen their competencies, it is essential that they realize the importance of these competencies for their careers and strive to master the strategies of the use of sight, compensatory senses and special aids. Due to deficits in visual perception and often inaccurate ideas about work, it is advisable to introduce the students to real jobs, preferably through practical training in a real workplace using all special measures that a young person with a disability needs for the job (Röderová, 2015).

CAREER GUIDANCE DURING PRE-VOCATIONAL AND VOCATIONAL TRAINING

Pre-vocational and vocational training as a period in the life of a young person, if it is to be effective, is the period of supply of consultancy services, career guidance and decisions on the vocational orientation and the future. Educational dictionary (Průcha, Walterová & Mareš, 2013, p. 181) defines career guidance as a *"system of institutional assistance designed for young people in their long-term preparation for a job, transition from school to working life, adapting to the occupation, retraining, job placement, etc. It is supervised by school administrations or labour offices. The services operate independently (Germany, Austria, the Netherlands, Sweden), or in connection with the educational system (France, Belgium) or directly at schools (USA). In the Czech Republic it is part of the educational counseling."*

Foreign literature uses the terms *career guidance* or *Berufsberatung, berufliche Beratung,* D. H. Rost (2001) also uses the term *Laufbahnberatung,* which means guidance for the duration of training and career. Job counseling is dependent on the supply of labour offices, S. Deichsel (1992) includes in it job training *(Berufsorientierung),* career guidance, support for vocational education and training, including mediation of practical training. These services are provided to young people in particular. If we also take career into account, counseling will not be one-time support, but rather *"provision of career assistance and integration in decision making throughout the career"* (Seifert, 1990, p. 9). In this case, professional counseling has longitudinal, processional character.

Career guidance during pre-vocational and vocational training is provided through a variety of measures that D. H. Rost (2001) classifies into five groups:

- Providing information in order to inform candidates for training or employment about the world of work. This includes in particular information on jobs and training opportunities in the form of documents and articles in the media, lectures and support in the actual training.
- Awareness of the world of work by providing direct contacts, e.g. to businesses and firms, but also through exhibitions and labour and job fairs, practical training in real workplaces. For students with visual impairments, obtaining specific and realistic notions of employment (job description, requirements and environment) is a very substantial component of career choice in light of their deficits in visual perception.
- Controlled informative programs in which the candidates can go through various tests and interviews in which they expand their self-awareness, deepen their knowledge about the world of work (e.g. requirements) and put both into perspective.
- Group counseling using the potential of the group and mutual interaction.
- Individual counseling using diagnostic methods for direct interaction between client and counselor (cf. Hořánková et al., 1995).

- American Foundation for the Blind (AFB [online], 2015) states that the task of a vocational counsellor is to provide information on jobs and practical training, and offer assistance in finding employment. In practice, this means that he/she evaluates the student, maintains contacts with parents and teachers, has knowledge of the situation on the labour market and developments in legislation, care and counseling. His/her responsibilities may also include training of specific skills for students with disabilities, their support in the workplace or in supported employment.

Not all schools in the Czech Republic employ professionals vocational counselors, their role was analyzed as a partial objective under the Equal project as *Integrated counseling for disadvantaged people in the labour market in the context of national and European collaboration,* Faculty of Education Masaryk University was a co-sponsor of the project (cf. Bartoňová, Pipeková, & Vítková, 2005). Career guidance in the Czech Republic is currently dealt with by networks of experts and institutions that offer support in vocational counseling, which is being moved from the business world to schools where it is provided by counselors, school psychologists and special educators (Pipeková et al., 2004).

Career guidance is based on comprehensive information acquired about the client assessed in context (Svoboda, Krejčířová, & Vágnerová, 2001). In the case of students with visual impairments we need to pay attention to the current condition of visual function and its prognosis, academic achievements indicating the abilities of the student, his/her career wishes, taking into account various interests (there is a need to evaluate the adequacy of the career choice and, if necessary, make different recommendations) and the results of psychological examination and preliminary examination of personality. G. Gstettenbauer (1996) states that vocational guidance *(Berufsorientierung)* may, inter alia, provide knowledge about the world of work, help in choosing a profession, facilitate understanding the alternatives in job offers, etc.

The aforementioned options in vocational counseling suggest that this is a long and deliberate process of developing personal abilities of the young person, not a one-time help before he/she leaves the school. Young people with visual impairments suffer from significant limitations in knowledge of occupations, world of work, and their practical experience is also limited (Mason et al., 1997).

Vocational training for students with special educational needs is a long process that requires the support of experts, collaboration and cooperation of various institutions (cf. Mason et al., 1997; Svoboda, Krejčířová, & Vágnerová, 2001; Ginnold, 2000 etc.). Consulting during schooling and professional training in the Czech Republic is provided by a network of consulting institutions and individual professionals working within and outside schools, which is governed by the Decree no. 197/2016 Coll., *on counseling in schools and school guidance facilities.* Assistance in career choice and vocational guidance is part of comprehensive counseling to the students with special educational needs offered through special education centers. Counseling in schools is provided by education counselors, school psychologists and special education teachers. Staff of special education centers also provide care for students educated in mainstream schools, coming to visit them. Abroad, this is provided by various providers, in Germany it is referred to as *Mobile sonderpädagogische Dienste* (cf. Schor, 2002; Appelhans et al., 1992).

Individual transition plan as part of individualized education program, working with general topics and strengthening of competencies play key roles in vocational guidance and vocational training (cf. for example Soriano, 2006). The issue of career choice and training is dealt with in different materials for teachers (Mertin et al., 2002; Němec, Bodláková, & Jiránek et al., 2004). Key factors for finding an optimal job, vocational training and competence development are systematic approach and long-term nature of the decisions.

4.3 CAREER CHOICES FOR STUDENTS WITH VISUAL IMPAIRMENTS

According to Antje Ginnold (2000) it used to be a privilege when someone did not have to work, today it is the other way round. Employment is the foundation of financial security and self-fulfillment in life, it brings a sense of satisfaction and joy, defines social status and identity, expands skills and capabilities and thus the entire boundary of the human personality.

L. Novosad (2002) indicates the importance of working at several levels according to the benefit to humans – on existential and material levels (remuneration, salary, satisfaction of individual needs, etc.), creative and developmental (development of capabilities, implementation of ideas about the world, etc.), cooperation and socialization levels (in collaboration with other people, the need for communication skills and respect), aesthetic and cultural (artistic creation, culture in society, etc.) and relaxation (allowing activities that provide emotional enrichment).

Employment has further significance in the area of emotions and experience. It allows distinctive experience, divides time and daily routines to leisure and work, work/employment extends boundaries beyond family and friends. Given that labour is organized collectively, it enables one to experience self as a socially active being cooperating with others, part of the working process. Work/employment significantly affects social identity and status, job and position in society are closely linked. Occupation allows regular, systematic activity whose goal is beyond personal, linking the person to social reality. Labour and employment can be conceived from the perspective of different disciplines. Sociological perspective sees the work as a combination of social expectations and patterns of conduct (roles), psychological perspective as self-realization, meeting of needs and fulfillment of objectives. Temporal aspect understands work employment as a long-term, possibly lifelong activity.

One factor that may significantly affect career choices and growth is impairment. For some people with disabilities, the importance of employment as a financial security is very questionable, since the income from work is often negligible. However, their justification for work may lie in its social dimension, as they have the opportunity to work in a team of people without disabilities, they can meet new people, establish new relationships and actively integrate into the majority. Inclusion of a person with disabilities in the workplace contributes to a better understanding of the competencies of people with disabilities and to refuting of numerous prejudices.

Labour allows one experiencing oneself as a creator of something new, of one’s own performance, the person self-develops through work, educates oneself. Self-growth and self-realization promote positive self-esteem and self-acceptance and motivate young people with disabilities to be active and lead a meaningful life (cf. Köenigstein, Oerter, & Montada, 1995; Helus, 2004 etc.).

CAREER CHOICE

Choosing a career is a very difficult and responsible decision, which begins in early childhood and occupies the entire period of schooling and vocational training. First decisions on the choice of profession take place in childhood and are closely associated with upbringing and home environment. Parents are role models for their child in shaping ideas about occupations and environments in which they are carried out, and the requirements for a person who performs such work (cf. Mason et al., 1997; Svoboda, Krejčířová, & Vágnerová, 2001). For children with visual impairments, especially at a time when they are already aware of the consequences of their disability for independent life, life examples of people with disabilities who are successful in being independent and live full lives like people who see, are important (cf. Milian & Erin, 2001).

M. Vágnerová (in Svoboda, Krejčířová, & Vágnerová, 2001) reports that for adolescents with disabilities career choice may be associated with a tendency to compete with peers without disabilities and thus confirm their competencies. Acceptance of own disability is the foundation of successful building of an independent life (cf. Milian & Erin, 2001; Svoboda, Krejčířová, & Vágnerová, 2001). In this process, parents and close people can significantly affect young people with disabilities. They may promote their positive self-esteem and independence (e.g. by working on their competencies), and in extreme cases confirm their incapacity and inferiority (overprotective upbringing or denial of the disability).

J. Pipeková (2004) states that the majority of students with special educational needs find it difficult to make decisions, use the acquired skills, accept responsibility and self-evaluate. Young people with disabilities should be educated in an environment that supports their independence and recognizes them as equal partners (in family and in school). It is necessary, however, to teach them critical and objective self-assessment, leading them to the right path of professional orientation and training. The main content *of professional orientation* according to the Educational Dictionary lies *"in particular in formation and working on realistic career goals and perspectives of young people and properties and capabilities relevant for career choice, its execution and possibly retraining"* (Průcha, Walterová, & Mareš, 2013, p. 181).

Career choice for young people with visual impairments is very difficult, factors that impede or facilitate it according to the P. Appelhans (1992) include the degree of visual impairment, impairment of other functions, school performance and the level of socialization. However, P. Appelhans sees objective conditions as a much bigger barrier, namely the labour market situation, qualitatively changed demands of professions and the related performance requirements.

D. Moravcová (in Pipeková et al., 2004, p. 46) defines the following factors affecting careers choices of students with visual impairments:

- intellect, talent, interests and family traditions;
- early diagnosis of disability, adequate care and education;
- restrictions arising from visual or combined handicap and its progression;
- early training in compensation and re-education techniques;
- availability of rehabilitation and assistive devices and the ability to use it and benefit from it;
- family background, physical and functional conditions;
- need for personal assistance;
- availability of accommodation near the school, its distance and accessibility;
- availability of support from institutions in the region.

Proper career choice and vocational training can be greatly assisted by counseling services (in the Czech Republic, counseling is part of educational counseling and constituents of school and institutional advisory services participate in it, e.g. school counselor, educational and psychological counseling, special education centers, information and counseling centers). Abroad (e.g. Germany) career guidance is part of a career counseling and vocational guidance system – a network of educational and training institutions which allows young persons with disabilities realistically evaluate their options, get acquainted with the world of various professions and be free to choose their careers.

The task of careers advisors is mainly to inform and direct young people to be able to make informed career choices (Hořánková et al. in Vítková, 2004). The aim is to inform students about various professions, their demands and required qualifications. Professional counselors take interests, capabilities and abilities of the young person in the account, involving parents and educators in the process of career counseling.

To support career choice, motivation to pursue it and awareness there exist special public employment programs implemented at places set up for this purpose in our country and abroad. *Information and counseling centers for career choice* in the Czech Republic, *Berufsinformationszentrum (BIZ* – Information center for employment) in German-speaking countries and *Job centers* in English-speaking environment (Pipeková et al., 2004; Mason et al., 1997). Through media, brochures and consultations these centers provide information about various professions, requirements for their performance, available vocational training and of course about situation on the labour market. Young people can try taking tests for their chosen professions in the center. They can come individually or as a group and participate in meetings, workshops and lectures. Unfortunately, the centers are not equipped with special diagnostic and other programs for students with disabilities and thus do not reflect their specific needs and possibilities.

Choosing a career should not be a decision taken in his last year of primary school attendance, but rather targeted and long-term, in which the student with special educational needs is not alone with his/her parents, but is part of a network of individuals and institutions that he can provide assistance with this fundamental decision.

TRANSITION FROM SCHOOL TO WORK

As a result of volatility in the labour market, vocational training can no longer be focused on the current labour market situation, but rather on complex personality development of the student. T. Wright (in Mason et al., 1997) believes awareness of the importance of employment and acquisition of key competencies for the profession is the key element in the education of young people. The transition between school and profession is a very stressful stage for everyone, and for individuals with disabilities in particular. The stress consists in leaving familiar school environment, often insufficient qualifications and limited options due to impairments that reduce the chances of being hired. These limitations are apparent in both directions – in limited offer of employment for individuals with disabilities and in the very limits of the people who cannot perform numerous activities, and if they can, their reduced work pace and inflexibility are seen as a handicap.

Transition from school to work (*Übergang Schule Beruf, 2. Schnittstelle*) means not just a different place for daily activities, which in itself is a heavy stress for people with visual impairments (the must learn how to get there, spatial orientation in the workplace, etc.). This process is characterized by the below described factors (Ginnold, 2000):

- **new institutions** – the student must leave the familiar school, often losing the privilege of individual support
- **new people and relationships** – the student must form new relationships, to be able to communicate with colleagues and superiors, assume new social roles.
- **new methods of learning** – practical learning, improving skills and knowledge is a change compared with the often theoretical learning at school.
- **leaving home** – this change is often experience by boarding students at elementary schools, but for many it only takes place after graduating from high school. However, the trend may be the opposite – student who lived in a boarding house finds a job near the place of permanent residence.

Whether the child leaves home or not, change in attitude of parents toward the young person and of the young person to the parents should be apparent. Bonds should be loosened, the young person should have the opportunity for autonomous learning, leisure activities and experience of responsibility for own actions.

- **relation between subjective career wishes and their materialization** – often there are major differences between subjective expectations and reality. Critical self-evaluation and self-assessment skills are very important for the young person with a disability to understand the requirements and possible objections to his/her work. For some young people, it is very difficult to assess the situation, such as objective assessment of work by superiors requesting a change of attitude – some people may see it as a personal attack or ridicule due to their disability.

- **new agencies** – new offices can be a burden for people with disabilities and people around them. Young people should be actively involved negotiations with the authorities concerning for example social benefits. It is often in this period that people realize they have serious deficiencies in their ability to assume responsibility for dealing with authorities, blind people with congenital disabilities are often confronted with the fact that they are unable to sign documents.
- **confrontation with notions about disability and inclusion** – especially young people who have been educated in elementary and secondary schools for the visually impaired experience a very difficult period of confrontation with the views of intact population concerning their disability.

Transition from school to work is more difficult when the environment in which the young people were educated was segregated and detached from reality. If we arrange practical training and excursions to sites where they may end up working, we give the young people a clearer idea about the world of work.

The period of transition between school and profession involves three main elements – it is a PROCESS – a preparatory period for employment, TRANSITION – from one educational level to the next, and CHANGE – both in terms of personal and professional situations (Soriano, 2002). The Salamanca Framework for Action (UNESCO, 1994) states that *"young people with special educational needs should be supported in the transition from school to work. Schools should assist them to become economically active and provide them with the necessary skills for everyday life by offering exercise skills especially in social and communication aspects and prepare them for adult life."*(in Soriano, 2002, p. 9; Soriano, 2006).

TRANSITION FROM SCHOOL TO WORK AS PART OF A LONG PROCESS

The transition from school to employment is a critical period for everybody. It is a time when young people come to adult life, part of a long process that should be organized in a clear and simple manner (cf. Mason et al., 1997; Soriano, 2002; Appelhans et al., 1992; Ginnold, 2000 etc.). This period should be characterized by engagement, integrating the family in the, collaboration among experts, schools and employers is also very important (Soriano, 2002). Training should avoid rigid structures, poor diagnostics and late coordination of the school – employment transition, structural barriers and shortcomings in the legislation, poor cooperation between institutions and individuals, and inadequate legislative measures by the Ministry of Education and Ministry of Labour.

Vocational training requires early diagnosis of capabilities, abilities and skills, targeted training, development of competencies and timely preparation for the transition to adult life, but earlier than at the end of compulsory schooling (cf. Johnstone, 2006). In this process, collaborating counseling institutions and experts can be very helpful, as well as personal advisers/assistants – experts who are able to properly estimate the capabilities of the student, appropriate support and time for which it is necessary to provide this support. The consultant should be present at school and participate in the creation of the individual transition plan (Soriano., 2002; Soriano, 2006).

Transition from school to employment requires close cooperation between schools and the labour market and creation of real job experiences, in the processional and longitudinal aspect it must also include the student's progress in the learning process. It is a long and complex process, which prepares young people for entry to economic and adult life, and therefore it is necessary to facilitate this transition. For young people with visual impairments, the process and the change are much more difficult because they often know the real world of work only indirectly.

PROBLEM AREAS IN VOCATIONAL TRAINING AND EMPLOYMENT

In pre-vocational and vocational training, transition from school to occupation and employment of individuals with disabilities are problem areas that require attention. Access to education and vocational training is a complex process for individuals with disabilities. Theoretical studies assume equal opportunities for people with and without disabilities, but in practice, people with disabilities are often offered only social programs or badly paid jobs. There is a need to develop programs to support the needs and interests of these persons so that they are not in disadvantageous position in the labour market *(ILO,* 1998 in Soriano, 2002).

Vocational training is not linked to real practical employment, it often takes place in segregated environments and is not focused on comprehensive approach to employment, individuals with disabilities do not receive the required qualifications (cf. Soriano, 2002). *ILO report* (1998 in Soriano, 2002) states that the unemployment rate among people with disabilities is double or triple compared to intact population. Unemployment benefits paid to individuals with disabilities are among the top three expenditures under social benefits along with pensions and sickness benefits *(EC Employment*, 1997 in Soriano, 2002; Soriano, 2006).

Czech Republic is one of 24 countries that have adopted the measures of the European Social Charter of the Council of Europe and is committed (pursuant to Art. 9) *"to provide or promote, as necessary, services that assist all persons, including disabled persons, to solve problems related to occupational choice and career progress with due regard to their personal abilities and situation on the labour market"* (Zámečníková in Opatřilová, & Zámečníková, 2005, p. 65).

In the Czech Republic, employment is legislatively enshrined in the Act no. 435/2004 Coll., on employment. According to the Czech Ministry of Labour and Social Affairs, long-term unemployment rate results from accumulation of handicaps, which are caused by skills, personal, labour and social characteristics and **low motivation for employment** (Zámečníková in Opatřilová, & Zámečníková, 2005).

It is obvious that integration of the individual into society and labour market requires active participation in the process of preparing for employment and flexibility to meet the requirements of the labour market. Unavailability of jobs also remains a major problem, as well as insufficient and inadequate material and personnel resources for the inclusion of individuals with disabilities. Legislative protection of employment and training of individuals with disabilities is insufficient. If legislative measures are taken, they often take the form of recommendations rather than effective solutions (Soriano, 2002).

Effective collaboration and support network are the most important aspects of successful education and mastering the changes in the lives of young people consisting in transition to higher levels of education and consequently the transition from school to work. Lack of cooperation between institutions and individuals is a fundamental deficiency in the support for young people with special educational needs (Appelhans et al., 1992; Soriano, 2002; Mason et al., 1997). A prerequisite for cooperation at the national level is to create appropriate flexible measures and legislation, and regulation of national education plans. At the regional level, it is the focus of institutions and non-profit organizations on projects supporting young people in education, vocational training and transition from school to employment, and raising awareness about legislation and social measures for employment of people with disabilities and the resulting benefits (Soriano, 2002). According to P. Appelhans (1992), cooperating entities include teachers and school staff, educators, doctors, psychologists and other experts, representatives of employment offices, chambers of commerce, other educational institutions, employment agencies etc. V. Soriano (2002) emphasizes the need for involvement of employers/labour organizations in active cooperation with employees and trade unions to provide chances possibilities to young people. One feature of such cooperation is for example setting of common objectives, procedures and interventions, mutual exchange of information, co-teaching, collaboration with parents, cooperation and ongoing evaluation.

The aim is to create a flexible network of cooperating individuals and legal entities, understanding the real capabilities of students with special educational needs because their abilities and potential are often underestimated (cf. Soriano, 2006; Procházková, 2014). Job training and smooth transition from school to employment requires **close cooperation between the school and the labour market** and support for students after they leave school (cf. Ginnold, 2000; Soriano, 2002; Soriano, 2006). Young people should experience the real world job market, schools and businesses should not be two separate worlds, they should know each other better and share common goals. Schools often delay the process of training people with special educational needs due to their inability to adapt the education plan and personalize the teaching. The aim of the cooperation between schools and companies/businesses is to make students confident and independent, to confirm their realistic expectations. Practical on-the-job training of students is beneficial in establishing contacts with businesses, firms and companies. This option supports the student's job decision making in light of existing opportunities in the labour market. High schools and vocational schools should also cooperate in this process.

Realization of these goals is facilitated by **creating a support network** – establishing connections between education and employment sectors, including involvement of parents' organizations. The cooperation can be promoted through visits and discussions of employers and experts with students in schools, active mutual interest – schools looking for potential employers and places suitable for training and practice of their students, companies/enterprises actively searching for schools and prospective employees. It requires awareness of both parties on legislation and social measures concerning employment of persons with disabilities. Soriano V. (2002) mentions the option to us **flexible arrangements for on-the-job training of students** – e.g. establishment of preparatory classes before the start of the practical training, a year of on-the-job training before taking up the job, extended training etc., as needed. Primary schools and secondary schools should provide an updated database of employers for the chosen fields and suitable jobs. The basis for mutual cooperation is the student´s file which documents his/her skills and quality of work, which may help the employer to make decisions relating to maintenance or establishment of new places for people with disabilities. The aim of the cooperation is to **establish flexible and permeable dual system** – combining theory learned at school and the experience gained in the firm/business (e.g. in Germany; cf. Ginnold, 2000; Soriano., 2002).

Parents and home environment strongly influence the choice of profession. H. Mason et al. (1997) speaks of parents as role models, with their personal experience in employment and their careers. The way they speak of their jobs, employers and working environment in front of their children shapes the children's ideas. For children with visual impairments, who as a result of a deficit in their visual perception have limited personal experience with employment and limited social contacts, the parents (or educators for boarding students) are the persons who shape their opinions and career choices.

Hyper-protectiveness by parents can be a major barrier in all areas of personality development of young people, including career choices and vocational training (Soriano, 2002; Mason et al., 1997; Svoboda, Krejčířová, & Vágnerová, 2001; Milian & Erin, 2001). Young people should have the prospect of an open future that we can support in their housing, leisure activities, social involvement, employment etc.

By engaging the student and parents in the process of vocational training experts can alleviate the protective tendencies of parents and join them in focusing on their child's inclusion into society. Respect for the student's personal decisions supports their commitment and opens up possibilities for success.

Creation of an adequate individualized education program is another precondition for job training and good coping with the transition period. Some countries require two concurrent plans for effective job preparation of individuals with disabilities – *IEP (Individualized Education Program),* focusing on the process of education, and *ITP (Individual Transition Plan; an individual plan for transition to the next education level or from education to employment)* focused on the period of transition between school and job and on the difficulties of this life period (Soriano, 2002; Mason et al., 1997).

Individualized education program (IEP) is a document for ensuring the educational needs of the student (Decree no. 158/2001 Coll.). IEP describes the education process (modification of the content of education, methodology and data on provided support measures), personal and social aspects play a major role in it. The entire student documentation specifying necessary support measures should characterize his/her abilities, the student is an active part of the collaborative network of people who create the IEP and its documentation. To make sure the documentation is useful, periodic evaluations are required, which also includes the student self-evaluation increasing his/her responsibility in education and vocational training (Soriano, 2002; Baslerová et al., 2012).

Individual transition plan (ITP) – reflects the wishes of the student, his/her abilities and skills, acquired qualifications an employment options. This plan outlines the course of chosen education, short and long-term goals, and it must be constantly updated and evaluated (Soriano, 2002, 2006; Steendam in Bartoňová, Pipeková, & Vítková, 2005). The transition plan should have a form of portfolio. Young people with disabilities are trying to describe their strengths, their needs and express their ideas about education, work, housing and leisure activities.

This plan should be developed in cooperation between schools, families and employers, involve all stakeholders in this process and clearly state their options. It should contain continuously assessed analysis of the student's competencies, a career plan and its ongoing evaluation, preparation for real job conditions and support for the on-the-job preparation (Soriano., 2002, 2006). Individualized education program (IEP) and individual transition plan (ITP) should be two independent documents, the ITP can be part of the IEP and it must be initiated at least two to three years before the end of elementary school attendance.

The individual transition plan results in an assessment that should reflect the student's real achievements and qualifications recognized by employers. With the planned transition period, attention is focused on the support of sufficient on-the-job training, the student learns to cooperate and be responsible, is obliged to follow clear rules. The documents guarantee equal conditions without gender, cultural, ethnic or racial discrimination (Soriano, 2002).

Like with the IEP, the basis for creating the school – job transition plan is good cooperation and teamwork of everyone involved – parents, teachers (class teachers, special education teachers, assistants, career counsellors), psychologists and other experts, institutions from the Ministry of Education, Labour and Social Affairs and from the Ministry of Health. Functional planning period for the transition between educational levels or from school to employment can be significantly improved by smooth cooperation between institutions (cf. Mason et al., 1997).

CONDITIONS FOR EFFECTIVE MANAGEMENT OF SCHOOL TO EMPLOYMENT TRANSITION PERIOD

Individualized education program and transition plan are created in a format that is accessible to the student. We create written plan for the transition between school and profession as soon as possible and we update it as necessary for optimal cooperation with the student. The school – job transition plan should be part of the IEP, teachers should have enough time, information and opportunity for consultation with advisory bodies while they work on it.

For optimum planning of the school – job transition for young people with visual impairment the following conditions need to be met: comprehensive counseling reflecting the impairment, support for the young people in learning behavioural and social skill strategies, vocational training in school, support in education, common addressing of problems and preparation and support for various systems in the context of inclusion of people with visual impairment (Appelhans, 1992, p. 86).

Efficient transition requires acquiring of attitudes, values, behaviour and social relations, a chance to obtain specific experiences and life skills. P. Appelhans et al. (1992) mentions that during the transition period young people need to be accompanied by people with whom their life has been linked previously and who make this difficult life stage easier.

4.4 INFLUENCE OF EMPLOYMENT ON THE QUALITY OF LIFE FOR PERSONS WITH VISUAL IMPAIRMENTS

Employment is an essential part of human life because it guarantees economic security and self-realization. The ability to get a job and keep it gives a person a certain status and includes him/her in the society. People without jobs are frequently seen as incapable, they lose self-confidence and if the situation takes long, the motivation for finding a new job dwindles. The importance of work and employment is very closely related to the quality of life, with life fulfillment and life satisfaction (Jesenský, 2000, p. 81).

M. Millian and Erin N. (2001), from the perspective of gender studies, indicate that visually impaired men are 5–10 times more likely to be unemployed than sighted men. When employed, they earn less and their working and leisure opportunities are minimal compared with their peers. Finding a job for men with visual impairments takes longer than for men without visual impairments, and the same applies to achieving career positions. Unemployment of women with visual impairments reaches 60–70% and their pay is way below average (Kirchner, 1992 in Milian & Erin, 2001).

Prerequisites for finding employment for women with visual impairment include intelligence, self-discipline, good self-image, self-esteem, motivation, ability to take risks, creative thinking, assertiveness, good written and oral expression, independence, ability to make decisions and endurance (Milian & Erin, 2001).

Research shows that necessary skills for getting and keeping a job involve competencies that requires targeted training and preparation. Acceptance of the disability and the fact that it is a lifelong process are essential, the same applies to acceptance changed ability to work due to disability in the context of work, trained skills and level of autonomy (cf. Jesenský, 2000; Appelhans, 1992; Milian & Erin, 2001). The level of autonomy of people with visual impairments depends on their key competencies for everyday life, for the job, and also how well they cope with assistive devices. When people with visual impairment show insufficiencies in this regard, it reduces their chances of getting a job.

For self-fulfillment of people with visual impairments, it is important to enhance their self-evaluation and motivation to develop and use their competencies so that they can work 'where they want', not 'where there is a vacancy' (Květoňová-Švecová in Bartoňová, Pipeková, & Vítková, 2005).

Good quality of life, self-realization and fulfillment are essential for well-being of every human being, not just for the visually impaired. In order to achieve these objectives, we need targeted training, support and development from childhood, but it is a lifelong process that cannot stop in adult life.

Jesenský J. (1988, p. 44; cf. Jesenský et al., 2007) highlights the problems that affect the quality of life of people with visual impairments on both qualitative and quantitative levels – among them the availability of information and the opportunity to work with them (acquiring, processing, exploitation and reproduction), ability of independent movement and opportunities for social contact and development of social activities. These problems can be relieved or prevented through social rehabilitation aiming to achieve independence of individuals with disabilities and their maximum integration into intact society.

5 REHABILITATION AND SOCIAL INCLUSION OF PERSONS WITH VISUAL IMPAIRMENTS

5.1 SOCIAL INCLUSION OF PEOPLE WITH VISUAL IMPAIRMENTS IN THE CZECH REPUBLIC

Inclusive education and pre-vocational and vocational training of persons with disabilities must be followed by social acceptance and open labour market, creating conditions for the participation of disabled people in public life, public space and leisure activities. Social acceptance, given the historical context of approach to people with disabilities in the Czech Republic, cannot be completely changed at once. It is a long and slow process of social inclusion, which is linked to inclusive education. If the process of social acceptance were halted and inclusive education existed in isolation, the importance of both would be reduced significantly. School and social inclusion are related. For this reason it is necessary to promote overall development of inclusion of persons with an otherness in the Czech Republic.

Social inclusion includes a system of complex rehabilitation that targets persons with disabilities in childhood, adults and the elderly. It consists of medical, social and educational components. The goal of the rehabilitation is to help people with disabilities/visual impairment to get involved in society and achieve the highest possible quality of life (Vrubel, 2015).

5.1.1 REHABILITATION OF PERSONS WITH VISUAL IMPAIRMENTS

Rehabilitation aims to eliminate the consequences of diseases, injuries or degenerative changes, which for people with visual impairment result in reduced functional abilities in sensory perception, in the psyche, in orientation, to actively respond to stimuli, to participate actively in society or participate in the working process. Rehabilitation is defined as coordinated efforts to achieve quick recovery of complex functional capabilities and participation in social life with the use of medical, educational, social and work facilitators (Votava, 2005). The main goal of rehabilitation is to involve the person with disabilities in society, ensuring the highest quality of life and equalization of opportunities in education, employment, housing, travel, and social status (Votava, 2005).

Roles of rehabilitation based on the principles according to J. Jesenský (1992):

a) creates conditions for acceptance of health (visual) disabilities;
b) develops versatile personality of people with health (visual) disabilities;
c) enables social inclusion;
d) improves quality of human life;
e) activates human development and urge to participate in rehabilitation of other persons with visual impairments;
f) reduces the need to use social services and state aid;
g) it is a prerequisite for integration in the labour market, improvement of social status and emancipation.

Rehabilitation is divided to physiotherapy, educational rehabilitation, social and vocational rehabilitation.

In childhood, the aim is to promote natural development of the child with disabilities and catching up with children without disabilities, or even eliminate the differences completely (Votava, 2005). The course of rehabilitation should take into account the demands of changes in the environment for the child, while changes in educational establishments should be kept to a minimum (Jesenský, 1992).

In terms of rehabilitation, the International Classification of Functioning, Disability and Health is very important (see the first chapter). It serves, as the name suggests, to classify the functional capabilities of people with diseases, after an injury or another change in body structure having an impact on functional ability. This classification is assessed individually for each individual based on specific constraints arising due to reduced functional ability. The reason for the introduction of this classification is mainly a chance to evaluate the subjective impact of the restrictions on the particular individual, i.e. disability

(Votava, 2005), as the impact of the same pathology may be different for different people. The International Classification of Functioning brings positivist approach to the process of health status evaluation, evaluating not how much the person is ill, but rather what he/she is capable of. This ability is understood as the person's ability alone and the person ability using various aids/facilitators.

5.1.2 COMPREHENSIVE REHABILITATION OF FUNCTIONAL VISION

Definition and specification of visual functions is not as difficult as actual inclusion of the rehabilitation in the system of comprehensive rehabilitation. Rehabilitation of visual functions can be included under medical (therapeutic) rehabilitation. However, these rehabilitations do not have an entirely clear definition corresponding to the needs of persons with visual impairments, either. J. Jesenský (1992) states that persons with visual impairments need medical rehabilitation only in the presence of general or associated disease. Jesenský thus completely ignores options in developing visual functions and perceives medical rehabilitation only as a tool to remedy associated pathologies or injuries. Jesenský also ignores the importance of medical rehabilitation as a means of supporting persons with progressive ocular pathologies and as a means for preservation or development of visual functions.

From the perspective of the needs of people with visual impairment, Votava (2005) definition of medical rehabilitation is better – it should lead to improved functional ability and elimination or reduction of disability. The aim of medical rehabilitation is according to J. Votava (2005) is to provide treatment. The treatment, however, is a term whose use in the context of visual functions may be inaccurate and misleading. A better term, based on the principle of rehabilitation and the results to be achieved (improving the function of the damaged organ) is the term 'function' – i.e. functional rehabilitation. Since functions are directly related to health condition, functional rehabilitation is provided by paramedical experts (similar to the definition of medical rehabilitation – cf. Votava, 2005) specializing in specific functions. Functional rehabilitation follows or coincides with medical approach. Functional rehabilitation is provided by a team of experts, which includes doctors – specialists. Rehabilitation of visual functions is provided by a health worker – optometrist, orthoptist and visual therapist – in cooperation with doctors – ophthalmologists and neurologists. Depending on the specific needs, elements of vision therapy, vision training and visual optometry are applied.

A wide range of expert fields and sub-disciplines we shall introduce in this chapter focus on rehabilitation. Functional vision rehabilitation is a complex activity based on cooperation among many medical and non-medical fields, building on the work of ophthalmologists and neurologists. Currently, there is no clear comprehensive definition of functional vision rehabilitation, nor a unified system of inter-related rehabilitation techniques. However, there are sub-disciplines that are from time to time perceived as above other disciplines, thereby partially overarching the system. This is not an ideal situation, though. This chapter introduces sub-disciplines (vision therapy, visual relearning, visual stimulating, vision training, rehabilitation of eyesight) that despite their similar-sounding names have their own specific fields of activity. Some sub-disciplines directly follow each other, yet remain independent. This chapter seeks to clearly define the limits of the sub-disciplines and call for the necessity for cooperation between medical and special education disciplines. Beyond the definition of sub-disciplines, we also strive to find the key to the definition of comprehensive rehabilitation of functional vision, which is the only chance to cover all appointed sub-disciplines and make sure they communicate with each other.

Rehabilitation of functional vision focuses on the target group of people with varying degrees of preserved vision up to 1/60. The target group may be people whose visual acuity is not weak enough to be placed in the category of persons with visual impairment (visual acuity better than 6/18), but they have difficulty with visual functions (for example, with accommodation or fusion).

VISION THERAPY DISCIPLINES

According to D. Moravcová (2004), the umbrella discipline for the above-mentioned disciplines (vision therapy, visual relearning and visual stimulation) is referred to as *low vision rehabilitation,* or rehabilitation of persons with visual impairments. The field includes elements of *low vision therapy,* social rehabilitation, educational and vocational rehabilitation.

Low vision therapy involves activities which a person with visual impairments may use when integrating into society, such as spatial orientation (in case of severe visual impairment), independent movement, autonomy (self-service), Braille training and working with special assistive devices, activities used in the integration in the labour market and in increasing and changing of qualifications (Moravcová, 2004). It is therefore a system of rehabilitation of consequences of reduced visual function and practice of compensatory mechanisms, while maintaining the possibility of comprehensive exercise in the context of low vision therapy.

This field corresponds to the educational approach to the rehabilitation of people with visual impairments, which addresses the consequences of visual impairment and strives to achieve the highest possible quality of life for individuals with visual impairment in light of their current condition. Emphasis is placed primarily on compensation mechanisms. Development of visual functions is one of the possible approaches, but not the essential one.

Moravcová (2004) defines the low vision therapy as a *vision therapy*, but a more accurate term would be *therapy for reduced visual functions* or *therapy for persons with impaired visual function.* Vision therapy (a widely used term) uses exercises and special support to use impaired but still existing visual functions to ensure the highest possible quality of life for people whose visual functions worsened. Vision therapy emphasizes autonomy and independence in the use of residual vision. Systematic long-term support to enable the target group to learn how to work with special optical and non-optical aids is provided as part of the therapy. Vision therapy (Moravcová, 2004) places great emphasis on the use of visual functions despite their poor quality, setting out the task to teach people with impaired quality of visual function to achieve the highest possible quality of life.

Sub-disciplines of vision therapy are visual relearning and visual stimulation.

Visual relearning is, according to D. Moravcová (2004), a special education method used to develop underdeveloped visual functions. Visual relearning can be carried out for example to treat amblyopia, consisting in disrupted communication between the retina of the eye and the patient's visual center, or when there is a need for consolidation of visual function. According to M. Sováková (as cited in Moravcová, 2004) the visual relearning is primarily a means of healing and social integration. Relearning can help learn to perceive space, use spatial thinking, use spatial memory, visual coordination and motor apparatus. Remedy of vision can ultimately help improve student attention in the class, his/ /her academic results and/or improve self-confidence while performing physical activities.

Visual stimulation consists in targeted providing light stimulation to children, adults and seniors. The subjects may suffer from sensory deprivation, from functional visual disorders resulting from imperfect development of visual functions and also from various external factors including injuries – one example is amblyopia, retinal damage, inflammation of the optic nerve, but also as a consequence of traffic accidents.

Visual stimulation uses markedly contrasted objects, light sources and light pulses. Multisensory aids, however, are essential – in addition to light stimulation, they also emit sound stimuli and can be touched. Key visual stimulation aids include *light box* and *little room.*

In addition to the above-mentioned fields, a new field hardly mentioned in special education publications, has been emerging lately – vision training, also known as vision therapy. Vision training is based on the principles of behavioural optometry, which is why its main promoters are experts in optometry (cf. Vymyslický, 2007, 2008, 2011; Veselý, 2013). Vision training is very close to vision therapy promoted by visual therapists and special educators, and to pleoptic therapy, which is the domain of orthoptists.

Vision training based on the aforementioned system focuses on improving the functional aspects of vision in people who need this sense exceptionally functional (such as athletes, hunters), in people whose functional vision is slightly disturbed (e.g. due to excessive workload), but also for people whose functional vision is impaired significantly – due to genetic predisposition, pathologies or injuries.

Vision training is chosen after verification of proper correction of refractive errors using traditional optical aids. Vision training focuses on exercise and improvement of the following visual functions: speed and overall quality of small eye movements (saccades), training of accommodation and relaxation of accommodation, increasing the speed of accommodation, training of fusion.

These training and therapeutic approaches choose different methods, but they have one common goal – achieving the best possible state of functional vision and the highest possible quality of life. For the success of each approach it is undoubtedly important to work on their interdependence, including better cooperation among experts (special teachers – vision therapists, optometrists, ophthalmologists and orthoptists) who specialize in different areas.

ORGANIZATIONS PARTICIPATING IN REHABILITATION OF FUNCTIONAL VISION

In the Czech Republic, there are various organizations dedicated to rehabilitation of functional vision, most of which are aimed at children. It is interesting that there is no comprehensive system ensuring cooperation among experts employing different rehabilitation strategies in their respective fields of expertise. Selecting the appropriate procedure, however, is individual in relation to a particular client, and therefore a higher level of mutual cooperation could facilitate overall rehabilitation significantly.

Essential organizations dedicated to rehabilitation of functional vision in the Czech Republic include:

Association for Early Intervention and **Early Intervention EDA** provide services to clients at an early age**.**

Center for Visual Impairments (CVI), located in Motol University Hospital in Prague is dedicated to caring for people of all ages with visual impairments. It specializes in providing therapy for persons with impaired visual function. Furthermore, it is an important promoter of vision therapy, as a therapeutic methods and the eponymous field known as clinical opthalmopaedia, classified according to the Act no. 96/2004 among paramedical disciplines (clinical opthalmopaedia name is mentioned in this Act in § 23 article 3). The main services of the Center for visual impairments include ophtalmopaedic diagnosis, examination and prescription of special optical aids (the center specializes in special optical aids and organizes special courses for ophthalmologists dedicated to proper provision of special optical aids), long-term training of working with special optical and electronic aids and examinations of the visual field width. The CVI also specializes in functional eye examinations for children (testing children's responses to visual stimuli, examination of colour perception and contrast vision), training how to live with reduced visual functions, special education counseling, career guidance and providing contacts to specialized facilities near the place of residence of clients (University Hospital Motol, 2012).

Another similar organization is the **Visual Impairments Clinic** in Dvůr Králové nad Labem, focusing on treatment and rehabilitation of strabismus and amblyopia. The target group are primarily children aged 4–10 years. This is an inpatient clinic where ophthalmologists and orthoptists participate in the rehabilitation. The average length of stay of children in this facility is 6–7 weeks. The clinic includes a special kindergarten and elementary school. Special education teachers work in the schools (Visual Impairments Clinic, 2014).

Center for Pediatric Ophthalmology in Litomyšl is headed by the prominent Czech ophthalmologist MD. Miroslav Dostálek, Ph. D. and specializes in outpatient treatment and rehabilitation of strabismus and amblyopia, including correction of functional vision using orthoptic-pleoptic therapy. This facility was established from the original Center for functional impairments in Litomyšl Hospital (Binocular, 2015).

Private Vision Clininc, MD. Anna Zobanová offers services combining elements of vision therapy and visual rehabilitation. In addition to standard ophthalmologic examination it specializes in functional examination of children with visual and multiple disabilities. The clinic collaborates with special educators and visual therapists to provide therapy of functional vision impairments. For clients with severe visual impairment beyond vision therapy it teaches spatial orientation.

5.1.3 EDUCATIONAL REHABILITATION

Educational rehabilitation involves teaching and special education for people with disabilities. The aim of educational rehabilitation is to achieve the highest possible degree and the highest possible qualification of persons with disabilities. Educational rehabilitation thus increases independence of people with disabilities, their level of social participation and collaboration with intact society, thus becoming a major facilitator of social inclusion of persons with disabilities (Votava, 2005).

Educational rehabilitation (described in detail in Chapters 2, 3, 4) is performed by teaching staff in cooperation with auxiliary professions. It is therefore a mutual cooperation of an interdisciplinary team of experts, in which the teaching staff plays the leading role – special education teachers (if the rehabilitation target group are persons with visual impairments, this is a special education teacher – ophtalmopaedist/typhlopaedist). The special educator must work closely with other teaching and non-teaching staff, including teachers, school management and psychologists.

Educational rehabilitation focuses not only on achieving the necessary level of knowledge during elementary school education, but also on education and retraining for adults, leisure and recreational activities.

Leisure activities and recreational activities significantly affect the abilities and talents of people with disabilities and encourage them to live an active life (Votava, 2005). For this reason it is taken into consideration. Activities in this area are organized by many educational institutions and organizations providing services to people with certain disabilities – in the case of people with visual impairments, this includes centers for the visually impaired and scout organizations that also prepare long-term summer stays.

5.1.4 SOCIAL REHABILITATION

The main goal of social rehabilitation is integration of people with visual impairments in society. Other goals are to ensure economic security and create opportunities for further education and leisure. Social rehabilitation should develop all human skills and abilities that can be used in the process of social integration. J. Votava (2005) defines social rehabilitation as a *"process in which the disabled person reaches the maximum possible autonomy and self-sufficiency in order to achieve the greatest degree of social integration".*

Social integration implies acceptance of all persons without distinction as part of the society. Social inclusion creates diverse society composed of people who accept each other as equals. While social integration is based more on physical acceptance, social inclusion is more immediate and it is based on the perception of others as equal, regardless of differences (otherness). A prerequisite for a functioning society based on the principle of social inclusion is a functioning inclusive educational system (Votava, 2005).

Social inclusion is an individual matter that depends on the capabilities and needs of individuals. However, the process of inclusion requires social support. J. Jesenský (1992, p. 8) states: *"Most visually impaired people do not require care, but rather reliable and secure services and measures that create conditions for the development of independent or at least minimally dependent visually impaired person, allowing them to overcome or prevent their disability and making sure that the quality of life of the visually impaired equals the quality of life of the sighted people."*

The aforementioned services and measures categorized under social rehabilitation and integration of individuals with visual impairments are provided mostly by nonprofits and registered associations. The activities of these organizations are irreplaceable for persons with visual impairments, because they prevent development of external factors limiting social inclusion. People with visual impairments have no control over the existence of these influences.

Major facilitators of social inclusion include positive attitudes towards inclusion and equalization of opportunities, which are exacerbated by the presence of disability. While societal attitudes are significantly influenced by the media informing about the problems of people with visual impairments, equal opportunities and positive discrimination are directly affected by the state and local government. Direct financial compensation or tax benefits for employers who employ people with disabilities, financial compensation for higher cost of living, i.e. disability pension, contributions for removing of barriers in the house, contributions for the purchase of a vehicle are examples of such equalization of opportunities (Votava, 2005).

Social rehabilitation of persons with visual impairments means development of independence and autonomy of each individual.

The task of social rehabilitation can be defined by the following points, based on the still valid definition of the essence of social rehabilitation (Jesenský, 1992):

a) help the process of accommodation with the visually impaired;
b) reconciliation with the feeling of reduced ability to play social roles and tasks that the person performed before they fell into the category of persons with visual impairments;
c) help with the process of developing the preserved skills;
d) support for the highest quality of life;
e) support and service for family and friends of persons with visual impairments;
f) maintain direct links to educational and vocational rehabilitation;
g) support for integration into the community of persons with visual impairments;
h) support for integration of persons with visual impairments into society;
i) support for persons with visual impairments wherever they live, removal of barriers and an emphasis on individual and independent life;
j) this is a life-long endeavor for persons with visual impairments.

Social rehabilitation is carried out in two systems:

1. System I – social rehabilitation for persons with congenital visual impairments;
2. System II – social rehabilitation for persons with acquired visual impairments.

Within social rehabilitation, persons with visual impairments are offered basic courses in self-service, independent movement (Wiener, 1986) and orientation in space. Furthermore, the visually impaired are offered courses in leisure and sports activities.

Self-service courses *(independence courses)*

The courses teach people with worsening visual function or people who lost their visual function basic everyday skills such as meal preparation, getting dressed, hygiene, cleaning. They learn to work with assistive devices (level detector, light detector, colour detector, etc.). The individual becomes independent, has higher self-esteem, asserts his/ /her rights, meets his/her needs and advocates for his/her interests, is an active citizen (Votava, 2005). Autonomy in everyday life is assisted by special tools – facilitators of independence. The courses are organized by centers for the visually impaired (Tyfloservis).

Spatial orientation and independent movement courses

The courses help people learn skills of independent movement and walking with a white cane. Persons with visual impairments learn to walk along the guiding line without the white cane (alone or with a guide) and with the white cane, they learn to walk in free space, turn in a clear angle, walk straight and cope with the traffic. People are also taught to use assistive elements (artificial guiding lines, signaling and warning paths, acoustic beacons), they learn to work with orientation aids and with a guide dog. Other skills taught include working with assistive graphics helping in navigation. The courses are organized by centers for the visually impaired (Tyfloservis).

Courses teaching working with special tools

The courses help people manage working with complex sophisticated tools, including electronic magnifying devices and electronic reading devices, Braille notepads, tactile displays, special software – screen readers, and so on. The courses are organized by centers for the visually impaired (Tyfloservis).

Leisure activities as a determinant of personality development

Leisure activities are an important part of social rehabilitation. Leisure activities help to develop the skills and abilities of the individual, working with fine motor skills and other senses. In addition, they often give persons with visual impairments a sense of social normality, importance and usefulness. Many people with disabilities are not employed (Votava, 2005), and therefore leisure activities activate the individual in society, making these people remain in touch with the world and avoid isolation. Activation of persons with visual impairments through leisure activities is an important facilitator of social inclusion.

Leisure activities are mostly organized in daily social-therapeutic workshops focused on creative and artistic work, manual labour, electronic aids and sports activities. Sports activities, in addition to socialization, develop physical skills and can be performed on an unorganized, voluntary basis (domestic and foreign trips), and in an organized form, under the auspices of the Czech Association of Visually Impaired Athletes and by Scout troops – under the auspices of Scouting for All. Another important function of organizations offering leisure activities is providing social contact. Visually impaired people have the chance to meet other people with visual impairments and exchange information.

Working in social-therapeutic workshops

The purpose of working in social-therapeutic workshops is activating people with visual impairments through daily routine, work habits and a sense of social purpose despite the visual impairment. Therapy by manual labour also develops other functioning senses – primarily touch, fine motor skills, spatial orientation, self-care, independence and social interaction with other users of this service. Work therapy, in contrast to vocational rehabilitation, does not aim to prepare the person for the job market or profession.

Work therapy activities may be seasonal or year-round. Seasonal activities involves making products with seasonal themes – for example during Christmas and Easter holidays. An example of such work can be baking and decorating cookies, making Christmas decorations, decorating Easter eggs, weaving Easter whips, production of paper greeting cards, bookmarks or packaging for gifts.

Year-round activities usually take place in workshops with special equipment, such as wiring workshops (making decorations and products of daily use), cardboard (manufacture of decorative boxes, packaging boxes), ceramic (manufacture of ornaments, utensils of various shapes and use), basket-making (making of traditional products from willow twigs) and weaving (pads, blankets).

Products made in social-therapeutic workshops are sold, thus promoting the issue of persons with visual impairments, while the revenues are often used to improve equipment. In addition, the sales provide feedback on the demand for the products manufactured by persons with visual impairments.

Organized and unorganized sport activities for persons with visual impairments

Sport is a very important activity for persons with visual impairments because the lack of visual control often leads to reduced physical activity, incorrect posture (body axis tilted unnaturally backwards) and general uncertainty. Regular physical activity may reduce or even eliminate the defects. Ideally, there should be regular and systematic practice of mobility and functional capacity of various body parts. Emphasis should be placed mainly on the hands, which are main path for obtaining information for people with severe visual impairment (Belšan, 2013).

When people with severe visual impairment move, some physical structures are subjected to particularly high stress. P. Belšan (2013) identifies four types of activities for practicing body structures for people with visual impairments, which are essential for maintaining and improving their functional resilience: a) coordination of muscle tension, b) improving of mobility and manipulation capabilities of hands, c) practice of proper erect and walking body posture, d) physical development and improvement of physical fitness.

Popular paralympic sports in the Czech Republic include track and field, swimming, skiing, cycling on a tandem bike and goalball (Trnka, 2012). All of the above activities promote development of movements, maintaining balance and stability of the body, coordination and orientation in space, besides being significant facilitators of social inclusion.

Major non-paralympic sports practiced in the Czech Republic are tourism, thanks to which many visually impaired people get into a different environment than the one in which they live every day. Tourism integrates visually impaired people into groups of persons without disabilities, because it is these people who frequently accompany visually impaired persons in hiking. Other sports in this category are aquatics, archery, sound shooting and showdown.

Sport events for persons with visual impairments are organized by the Union of Disabled Athletes in the Czech Republic, the Czech Paralympic Committee and the Czech Association of Visually Impaired Athletes.

Secondary activities of leisure organizations involve preparing a variety of training courses and courses developing qualities, knowledge and skills of people with visual impairments and enabling them to obtain a higher chance of finding employment. Examples of such activities include cooking classes, self-defense courses, first aid courses, language courses, computer courses, use of electronic social networking, use of electronic communication, creating websites and competitions in spatial orientation and independent movement (Eye–T. cz, 2010–2014).

Leisure activities for persons with visual impairments are offered by a wide range of organizations. Among the most active are the United Organization of the Blind and Visually Impaired, Tyflokabinet České Budějovice, Dědina Residential Rehabilitation and Retraining Center for the Blind and the Okamžik association.

5.1.5 VOCATIONAL REHABILITATION

Employment is a crucial facilitator of social inclusion. Employed person is in contact with intact population at work and while traveling to work. This creates an interaction between a group of people with disabilities and people without disabilities, which is a prerequisite for social integration and the beginning of the process of social inclusion (Vrubel, 2014). Employment means access to money, thereby increasing the independence of persons with visual impairments. Job positions also translate into social status.

Prior to 1989, during the communist regime, the main institution dedicated to inclusion of people with disabilities into the workforce was the Social Security Advisory Committee, which assigned the so-called altered working ability status (mostly to people with mild disabilities) and subsequently recommended inclusion in protected workshops or in the manufacturing association of the Union of the Disabled. However, this status was rarely assigned to persons with severe disabilities and the state treated them as unemployable (Votava, 2005). Similar attitudes were reflected in society. After 1989, there were efforts to integrate people with disabilities into society and the consequent efforts to involve people with disabilities in the labour market. One of the consequences is legislative anchoring of the so-called vocational rehabilitation, which develops the knowledge and skills of people with disabilities and prepares them for the labour market.

Vocational rehabilitation is currently defined in § 69 of Act no. 435/2004 Coll., on employment, as a *"continuous activity focused on obtaining and maintaining suitable employment for persons with disabilities.*

Vocational rehabilitation encompasses consultancy focused on career choice, employment choice or other gainful activity, theoretical and practical training for employment or other gainful activity, mediation, maintaining and changing of a job and creating suitable conditions for employment or other gainful activity".

Vocational rehabilitation has the form of special training courses and retraining courses, taking into account specificity of the target group to choosing special approaches. Vocational rehabilitation is organized by specialized institutions at provincial centers for the visually impaired and by the Dědina Residential Rehabilitation and Retraining Center for the Blind.

5.2 ACCESS TO PUBLIC SPACE

In public spaces, there are dangerous and sometimes life-threatening obstacles to safe movement and participation in society (social inclusion) for people with visual impairments. These barriers are referred to as hard and soft barriers. Hard barriers are architectural, structural and other man-made obstacles. Improperly indicated ditches or unmarked crosswalks would be good examples. Hard barriers adversely affect quality of life of people with visual impairments because they make publicly available and commonly used premises inaccessible, thus significantly affecting everyday lives of people with visual impairments.

Removing hard barriers in the Czech Republic is promoted by the *Decree no. 398/2009 Coll., on general technical requirements ensuring barrier-free use of buildings,* issued by the Ministry for Regional Development on 5 November 2009, and also by the *Act no. 266/1994 Coll., on rail and public areas used for traveling by the blind,* and its *implementing decree no. 177/1995 Coll.,* and *Act no. 111/1994 Coll., on road transport,* regulating removal of barriers in vehicles.

These standards impose the so-called typhlo-engineering elements that eliminate hard barriers from the environment, acoustic beacons or radio commands combined with acoustic beacons designating means of public transport. With these devices, people with visual impairments learn the number and direction of the vehicle and may notify the driver of the decision to use the vehicle.

Purpose of the Decree no. 158/2001 Coll.

The Decree on general technical requirements ensuring barrier-free use of buildings establishes general technical requirements for buildings and their parts in order ensure the option to use them for persons with disabilities and persons accompanying a child in a stroller or baby aged up to three years.

The decree sets out conditions for use of buildings by persons with disabilities. The decree is a source material in processing of documentation for zoning decisions, for processing of simple technical description of intent for zoning approval and when processing project documentation, in permitting or reporting of execution of works, when issuing occupancy permits, in use and removal of buildings or equipment and in building inspections, including roads and public spaces of civic amenities in parts intended for public use, common areas and residential amenities of a residential building containing more than three apartments, spaces for work for 25 or more people or buildings where people with severe disabilities are intended to work. The decree determines how to build sidewalks, public transportation platforms, one level and multi-level crossings, sidewalks in orchards and parks and other pedestrian areas. Buildings must allow independent, secure, easy and smooth movement of people with visual impairment and their passing by with other pedestrians according to the decree.

The decree also applies to renewals and modification of buildings already in use, unless precluded by territorial or technical reasons. In the case of cultural monuments, the provisions of this ordinance are used in accordance with the interests of conservation.

The following facilitators of inclusion for persons with visual impairments remove hard barriers based on definitions set out in Decree no. 158/2001 Coll. (MMR, 2009).

5.2.1 GUIDING LINES FOR INDEPENDENT MOVEMENT OF PERSONS WITH VISUAL IMPAIRMENTS

The guiding line is characterized as part of the environment or building that is used for orientation by blind people. An important and often broken rule is the prohibition of placing objects on the guiding line.

Obstacles on pedestrian pathways (such as telephone booths, benches, sales counters, constructions for advertising, and information or advertising equipment and trees) must be placed so as to maintain walk-through space along a natural guiding line of a width of 1,500 mm (in special cases 900 mm). Solid parts of buildings over pedestrian pathways are permitted at a height of at least 250–2,200 mm above the surface, extending from wall contours by 100 mm maximum.

Objects, constructions for advertising and information or advertising equipment, restaurant terraces and other structures must be at a height of 100–250 mm above the walking surface equipped with a stop for the white cane (an example is the bottom beam of a handrail or a foundation at a height of 1,100 mm) or a fixed protection following the floor plan of the obstacle. Objects and structures with side walls not touching the ground, excavations and construction sites must be secured in the same way. Violations of these rules at construction sites can be particularly dangerous (unprotected excavations, unprotected scaffolding, unmarked building material on the guiding line). The guiding lines are classified into natural (buildings, fence retaining walls, curbs, tactile grass-walkway transition) and artificial (tactile guidance path – paving).

Visual contrast is also important (for the visually impaired). The biggest problem is false visual indication (low contrast against the surroundings) of poles, traffic lights for pedestrians, false designation of traffic signs, glass surfaces (public transportation stops, glazed entrance doors, shop windows), stairs, doors into lifts and into rooms, improper marking of sinks, toilets and controls, grips and handles.

Natural guiding line may take the form of buildings, curbs (must be at least 60 mm high), handrails (not necessarily with stops for the white cane) and other objects at least 400 mm wide and 300 mm high. A curb at the edge of the road is not considered a natural guiding line. In exceptional and justified cases, the edge of the road without a curb facing vegetation can be considered a guiding line – but only in urban areas.

Guiding line must be continuous at least in the length of 1,500 mm. It must not be interrupted for longer than 8,000 mm (by for example entrances to buildings, street intersections). If the guiding line is interrupted for longer than 8,000 mm, it is necessary to supplement the space with artificial guiding lines (often in the form of tactile guiding paving).

Artificial guiding line is a part of the building that guides visually impaired persons indoors (long corridors of buildings without natural guiding lines) and outdoors (crossings across pedestrian zones, train platforms). Artificial guiding lines are formed by longitudinal grooves (in some cases tactile pavement suitable for the construction of a signal path is used incorrectly) at least 300 mm (interior) 400 mm (exterior) wide, which shall be directly connected to a natural guiding line. Furthermore, placing of obstacles at a distance of up to 800 mm on both sides of the artificial guiding line is prohibited.

Figure 2: Artificial guiding line (Vrubel, M. Personal archive, 2015)

5.2.2 ACCESS TO PEDESTRIAN CROSSINGS

Pedestrian crossings represent a significant risk for movement of persons with visual impairments, because this where the walker moves from the relatively safe space on the road. When crossing an unequipped crosswalk, people with severe visual impairments must rely solely on their hearing (in dense traffic in urban environments, the sound alone may not suffice), or rely on public assistance (limiting the autonomy).

Pedestrian crossings are made accessible through engineering elements for the blind – signaling and warning paths, or guidance paths on pedestrian crossings. Pedestrian crossings with traffic lights must be equipped with acoustic signaling. Pedestrian signaling column is positioned no more than 750 mm from the safe distance and generally in the axis of the signal path. Tactile elements near crossings are designed in accordance with the applicable standards.

Figure 3: Barrier-free crosswalk (Vrubel, M. Personal archive, 2015)

Corridors for crossing of tram lanes are equipped with warning and signaling paths spaced about 300 mm from the warning paths. For tram safety islands, this spacing can be ignored for space reasons. Corridors for crossing tram lanes equipped with traffic light signals must also be equipped with acoustic signaling. The pedestrian signal column is positioned no more than 750 mm from the safe distance and generally in the axis of the signal path.

Departures from fire stations shall be provided with warning paths and acoustic signaling or with a guidance path on the crossing.

Signaling path has the form of contrasting tactile paving and it is used to determine the correct approach to a pedestrian crossing or a railway crossing. The signaling path also determines crossing direction because it must safely guide people with visual impairments to the road so that after leaving the path they can to go straight over the pedestrian crossing and then find the signal path on the other side of the road. The opposing path also guides the visually impaired person to the guiding line. Another function of the signaling path is to mark boarding to public transport vehicles (located at public transport bus stops where vehicle doors open). The signaling path must be 800 to 1,000 mm wide and at least 1,500 mm wide, 1,000 mm in special cases. In place where two signaling paths meet (often a pedestrian island at the crossroads), the signaling path must be interrupted for 800 to 1,000 mm, depending on the width. The signaling path must be distinguishable from its surroundings by foot or by white cane.

Figure 4: Signaling path, warning path on the crossing (Vrubel, M., Personal archive, 2016)

Pedestrian crossing guidance path allows safe crossing for people with visual impairments across wide, mostly four-lane roads. It is mandatory on crossings longer than 8,000 mm or arch-shaped crossings. The pedestrian crossing guidance path must be 550 mm wide. The actual path consists of two or three pairs of tactile paths. The pedestrian crossing guidance path must follow signaling paths placed on the sidewalk.

Warning path is a tactile contrasting element defining places that are dangerous or inaccessible for people with visual impairments. It is located on the border of the sidewalk and the roadway at the declining curb (ensuring accessibility for strollers, cars), it encloses a safe area before the railway crossing, public transport stops, platforms or boarding islands. Furthermore, it indicates steps recessed into the pavement, end of the platform and borders of residential and pedestrian areas. If placed at the pedestrian crossing, it follows the signaling path – but it is perpendicular to the axis of the pedestrian crossing. It extends over the signaling path by 800 mm on both sides. The width of the actual warning path is 400 mm.

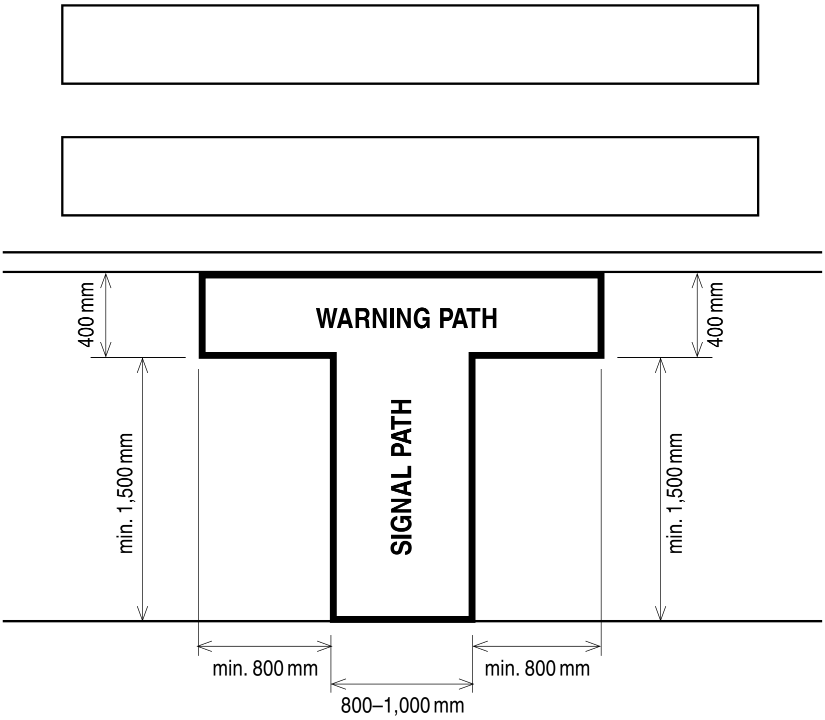

Figure 5: Diagram of signal and warning path (Tyflocentrum Olomouc)

Acoustic signaling on pedestrian crossings is installed on traffic lights for pedestrians. Acoustic component signals ‘Stop’ by slow frequency of the acoustic signal (TA --- TA --- TA) and ‘Free’ by fast frequency of the acoustic signal (TA – TA – TA). Acoustic indication of the pedestrian crossing may be permanent or induced by pressing a special button on the traffic light mast or by pressing a button on the command radio.

5.2.3 ACCESS TO PUBLIC TRANSPORTATION PLATFORMS

Buses, trolley bus and tram platforms are equipped with guidance lines and signaling paths. The signaling path indicates the point of entry to the first door of public transport vehicles and it also indicates the stop. The warning path is establishing on boarding islands near the crossing point (also on the edge of the tram platform).

Subway platforms are provided with a guiding line and warning path on a special track.

Railway platforms are provided with a guiding line with the function of a warning path, with signaling and warning paths, and/or with acoustic elements. Paved surfaces on railways adjacent to the track and meant for the public shall be provided with a warning and signaling path. Guidance lines functioning as warning paths are not established here. The surface of the warning and signal path must contrast visually.

Platforms of terrestrial and aerial shuttle cableways are equipped with a guiding line and a signaling path.

5.2.4 USING OTHER ENGINEERING ELEMENTS FOR THE BLIND

Tactile path (tactile and contrasting element) is a type of warning path on the sidewalk with a bicycle trail or a path for in-line skates, which defines the interface between defined areas for pedestrians and cyclists/in-line skates. The tactile path is 300–400 mm wide and must overlap the signal path on both sides by at least 800 mm.

Guidance lines functioning as warning paths are used on railway station platforms. Its function is to assist people with visual impairments in moving along the platform while separating secure areas from hazardous areas. Guidance line functioning as warning path is a tactile element with required width of 400 mm, indicated by a contrasting colour in the width of 150 mm.

Warning path on a special track is a tactile element in the form of 150 mm wide grooves on subway platforms. The function of this element is to separate the hazardous area from the platform.

Acoustic elements

Acoustic elements are acoustic signals for pedestrians or guidance beacons with acoustic announcement or voice phrases. The beacon is placed into the entry axis.

Examples of announcements:

a) level entrance 'T–AA';
b) fixed stairs and wheelchair ramps 'BRLM';
c) escalators and moving walkways 'CTNK';
d) information systems.

Acoustic elements are usually controlled by commands from a remote control transmitter. The transmitter starts the acoustic element (receiver) at a minimum distance of 40 meters. Encoded commands are transmitted at 86.790 MHz. The response of some beacons may be delayed by one to three seconds (MMR, 2009).

The following rules apply to individual commands:

a) Button 1 activates basic information about the type of construction. For example announcement "Regional Office of the Olomouc Region" or announcement "Railway Station Brno Central".
b) Button 2 activates the announcement and additional information about the building and a brief description of the interior or announcement 'ding' and information about the current operation of escalators or walkways. For example: Right escalator goes up, left escalator goes down.
c) Button 3 activates announcement of the bacon located in a public transport vehicle informing about the line number and destination.
d) Button 4 activates automatic door opening or informs the driver about embarking and disembarking of a blind person.

e) Button 5 activates acoustic signaling on pedestrian crosswalks.
f) Button 6 activates voice output of electronic information systems and similar equipment (information on departures in transport hubs, train stations, etc.).

Staircase

Boarding areas of embarking and disembarking stairs must be clearly distinguishable from contrasting surroundings. In buildings for rail, subway and public transport handling terminals, stairs wider than 3,000 mm must be marked with yellow a stripe at least 100 mm wide, no more than 50 mm from the edge of the step.

Protruding flights of stairs must have either a fixed barrier or a plinth at least 300 mm high, or be equipped with a fixed stop for the white cane at a height of 100–250 mm (its absence poses a risk of serious head injury). The fixed barrier or stop must be positioned so as to prevent entry of persons with visual impairments in an area with a lower height than 2,200 mm in the exterior and 2,100 mm in the interior.

Elevators

Controls inside the elevator and entry points must protrude above the surface of the surrounding area by at least 1 mm. The control must be equipped with an embossed standard Braille character (MMR, 2009) on the right. The elevator should also be equipped with voice output informing about the direction of the elevator ride, stops and floors (ideally also about opening and closing of the door). The use of old elevators whose modernization for the visually impaired is not possible is a problem. However, there is a major ongoing effort to replace old elevators with new ones and thus removing barriers for persons with visual impairments.

5.2.5 ACCESS TO PUBLIC BUILDINGS

Public buildings, such as offices, courts of law, post offices or schools need to have properly visually identified entrances. They should also be marked with acoustic beacons. If the entrance to the building is equipped with a glass door, in terms of the needs of visually impaired persons it is necessary that at a height of between 800 and 1,000 mm and between

1,400 and 1,600 mm there are distinctive and contrasting elements – a stripe at least 50 mm wide, or a stripe of contrasting markers with a diameter of at least 50 mm and no more than 150 mm apart (MMR, 2009).

Bottom parts of small windows and glazed walls need to be protected against mechanical damage (by the white stick). At a height of 800 to 1,000 mm, and also at 1,400 to 1,600 mm there needs to be a contrasting marking. The contrasting marking must take the form of a contrast stripe with a minimum width of 50 mm or a stripe of marks with a diameter of at least 50 mm no more than 150 mm apart (MMR, 2009).

In buildings, contrast is needed in key areas – contrasting doorframes, doors and door handles. If necessary, guidance lines are suitable in long corridors.

Sanitary facilities can be made accessible by simply marking them with a Braille emblem at a height of 200 mm above the handle.

5.2.6 SPECIAL BARRIER-REMOVING AIDS

Special aids are an important facilitator of education and social inclusion, because it compensates for the effects of visual impairment and markedly improves the quality of life for persons with visual impairments. D. Finková and L. Ludíková (2013) reported that with special aids visually impaired people are able to perform exactly the same work, and in exactly the same quality as people without visual impairments.

In Czech Republic, the aids are classified in a number of categories. They can be classified according to type to classic and modern (Finková & Ludíková, 2013); according to function to optical and non-optical (Hamadová, Květoňová, & Nováková, 2007); according to purpose to correctional, relearning and compensating (Lopúchová, 2011); according to the degree of visual function restrictions to aids for the blind, visually impaired and people with impaired binocular vision (Lopúchová, 2011); according to application to aids for daily life and orientation in space, for studying and learning, for work and leisure (Finková & Ludíková, 2013). The most comprehensive categorization is by A. Keblová (1999), who classifies them to aids for information technology and communication, orientation, everyday life, for handicraft and production activities, toys and sports equipment, training aids and aids for diagnostics.

From our perspective, it is appropriate to use the classification to optical and non-optical aids and the classification according to the degree of visual impairment. We therefore classify the aids to regular optical aids, special low vision optical aids and non-optical aids. The non-optical aids are classified by purpose to aids removing information barriers, guidance aids and household aids.

Conventional optical aids are not intended to magnify the observed object, but focus, move the image of the object on the retina. The basic division of conventional optical aids is limited to glasses and contact lenses. Similarly, conventional optical aids can be divided into monofocal lenses, bifocal lenses, multifocal lenses, lenses produced by free-form method and prismatic lens. Prismatic lenses are a borderline category with special low vision optical aids.

Special low vision optical aids can be divided into special free-form lenses, filter lenses, magnifying glasses, magnifying glass systems, telescopes, telescope glasses, folding monoculars, electronic magnifying and magnifying aids.

Non-optical aids removing information barriers are mostly intended for partially sighted and blind people. They include special electronic reading devices, notebooks for the blind and Braille. According to D. Finková and L Ludíková (2013) Braille is usually not taught to people with acquired visual impairments in old age, because their hardened fingertips and poorer fine motor skills make them unable to read Braille. The non-optical aids also include Braille machine, computer screen readers – special OCR software, magnifying software, braille display, etc.

Guidance aids include the white cane, guide dog, GPS, VPN transmitters, public space acoustic beacons and engineering elements for the blind in public space.

Household aids are level detectors, light and colour detectors, label readers, Braille labelers, templates for signatures, scales, clocks and thermometers with voice output, etc.

As a rule, working with special aids is not difficult. Nevertheless, it is advisable to undergo basic training that offered by rehabilitation facilities and centers for the visually impaired (Tyfloservis/Tyflocentrum) staffers. In terms of difficulty, guidance aids (white cane) are the exception to the rule – to learn to use them safely, the client needs to undergo a prolonged course of spatial orientation and independent movement. The same applies to electronic aids. Working with these tools is taught in special courses organized by centers for the visually impaired and by Dědina Rehabilitation and Retraining Center for the Visually Impaired.

5.3 SUPPORT MEASURES FOR SCHOOL INCLUSION

5.3.1 SCHOOL READINESS

Every school should prepare for the acceptance of students with visual impairments as a challenge to move forward. One of the principles it should stick to is the international model of education for the 21st century. The model is based on tolerance and democratic approach to all group members without discrimination (Vrubel & Sayoud Solárová, 2013). The class must be understood as a living organism based on openness, flexibility and mutual cooperation, within which diverse needs of students are respected (Hristovski & Mitkovska, 2010).

It is a common problem in creating an inclusive school that hard barriers are removed and the environment becomes more accessible, but supporting measures aimed at students and teachers are not created. For successful implementation of inclusion, supporting principles must be followed to support continuing education for teachers, planning of lessons for visually impaired students by teams of teachers, preparation of individualized education programs in collaboration with experts from special educational centers, active approach of school management and promoting of active approach by parents. Failure to do so frequently results, as found by Czech and foreign experts, in frustration of teachers, students and parents, and may ultimately result in rejection of the very concept of inclusion (cf. Baker & Zigmond, 1995; Fox & Ysseldyke, 1997; Bricker, 2000; Nováková, 2004).

School principals are an important determinant of inclusion. Senior staffers play key roles in the process of creating of inclusive schools. They significantly contribute to creating the school culture. Their job is not to promote change to inclusive schools against opposition from teachers and parents, but rather to win as much support from school staff, parents and the community that around the school for this change as possible. The goal of senior staffers is to motivate employees for change, inspire them and convince them that inclusive school is in their interest as well (Voors, 1998).

Prior to acceptance of a student with visual impairments, the class teacher should be informed well in advance. The teachers should be offered special support in the form of counseling and opportunities to attend special courses aimed at working with students with visual impairments (Vrubel, 2015). The teacher should meet with the student and his parents in advance and establish good relationships, which are crucial for the subsequent cooperation. Inclusion is facilitated by effective cooperation between family and school (Nováková, 2004). The student should be able to become acquainted with the environment of the school in advance as well.

The class teacher must prepare for a different role than he/she had previously. No longer a mere mediator of information, but a manager of the entire group. Teacher in inclusive school is subject to different requirements than in non-inclusive school. Teachers in inclusive schools should be open to inclusive perception, to the idea of counseling, he/ /she should take into account different needs of students, he/she should flexibly adjust his/her teaching style and work with small groups of students – small teams – more, and use methods of project-based learning. Teachers in inclusive schools should be open to new ideas and trends, broad interdisciplinary collaboration and cooperation with practice (Hristovski & Mitkovska, 2010). They should be able exercise self-control and use the principles of mental hygiene to be able to influence the emotional side of students properly (Vrubel & Sayoud Solárová, 2013).

5.3.2 SPECIAL EDUCATION SUPPORT

For successful inclusion, schools integrating children and students with visual impairments need expert support and counseling. These services are provided by special educational counseling centers (SPC). Special educational counseling centers for children, students with visual impairments provide consultancy services in kindergartens, primary and secondary schools, families, for students with disabilities, state authorities and organizations and associations dedicated to the care for persons with visual impairments. (Nováková, 2010) describes their activities as *"outpatient visits in the environment in which the child lives, in schools where students are educated and integrated, and as short inpatient diagnostic stays"*. Special education centers house multidisciplinary teams consisting of special education teachers, psychologists and social workers. Special educators usually work in pairs – one is devoted mainly to preschool age children, the other is in charge of school-age children. The centers are usually located in school facilities for persons with visual impairments.

Ministry of Education Decree no. 197/2016 Coll., on counseling in schools and school counseling facilities defines the main activities of the counseling centers as screening of students with visual impairments; comprehensive diagnostic of the students (special educational and psychological); creation of a plan of care for the student; individual or group work with students; timely intervention; comprehensive care aimed at a student with a disability and his/her family; consultations with legal representative, teachers, schools and school facilities; social and legal counseling (for example regarding social benefits); crisis intervention; creation, design and supply of special equipment to suit individual needs of the student; counseling on removing of barriers and modifications to the environment; coordination of activities with school counselors, counseling and educational care centers; methodological support for legal guardians and teachers (support in designing individualized education programs); lending of books; career guidance for students with disabilities; lending of rehabilitation and assistive devices; assistance in the integration of students with disabilities (visual) in nursery, primary and secondary schools; drafting of admission applications to schools for students with special educational needs; drafting of individualized education programs; comprehensive support for psychomotor and social development of students in the spirit of the so-called comprehensive rehabilitation (using of educational, psychological, medical, social and labour tools); management of documentation and preparation of documents for administrative proceedings.

Special educational centers for children and students with visual impairments provide, in addition to their core activities, also special activities focused very specifically on the needs of people with visual impairments.

Special activities of special education centers for the visually impaired:

- training of specific activities for students with visual impairment and training in the use of assistive devices;
- training of working with special tools;
- training of orientation and independent movement of visually impaired students and practicing of self-care;
- counseling for visual hygiene;
- sensory education of students with visual impairments;
- development of visual functions, visual stimulation;
- methodological support for teaching of Braille;
- methodological support for teaching of reading and writing of magnified black print and graphomotoric exercises;
- creation of graphic aids for the visually impaired;
- practicing of document signing;
- guidance for development of mathematical concepts;
- assistance in development of aesthetic perception of students with visual impairments;
- providing information on teaching aids for the visually impaired students, providing of audiovisual aids;
- providing of social rehabilitation programs;
- coordination of meetings with legal representatives and staff involved in teaching students with visual impairments;
- methodological support for teaching assistants who work with students with visual impairments.

5.3.3 SPECIAL COURSES FOR STUDENTS WITH VISUAL IMPAIRMENTS

Special items expanding skills of persons with visual impairments into schools and society and compensating for specific visual impairments are an important facilitator for their seamless integration. These items include spatial orientation and independent movement, working with assistive devices, visual education, social learning and aesthetic education.

Spatial orientation and independent movement of persons with severe visual impairment are among the most important facilitators of school and social inclusion. These are skills that help social integration and subsequent inclusion of individuals with severe visual impairments into society. Let us look at them in more detail. The aim of the course called spatial orientation and independent movement is to achieve a high capability of independent movement of persons with visual impairments and reduce their dependence on others. The course takes place at two levels – as a separate class and as part of other classes. Teaching of spatial orientation and independent movement is based on the curriculum issued by the Czech Ministry of Education, Youth and Sports in 1998 and the methodology developed by P. Wiener (1986).

"Spatial orientation and independent movement" class is divided into groups A to D to which students are enrolled based on the diagnosis made by a certified spatial orientation instructor. While teaching in group 'A' is carried out in a bigger group, teaching in group B takes place in pairs. Teaching in groups C and D is individual. Persons with multiple disabilities are also treated individually (Vrubel, 2012).

Knowledge and skills of spatial orientation, such as walking with a guide, independent walking along the guiding line – trailing, estimation of distance, estimation of angles, estimation of path curvature and slope, reducing of deviations from a straight line, auditory orientation, strengthening stability and proper movement habits – are practiced depending on the age of the students.

Walking with a white cane is practiced from the fourth grade of elementary school. When teaching how to use the white cane, pendulum, sliding and diagonal methods are practiced, holding the cane from the top, from the side and as a pencil. An innovative holding by the crosspiece promoted by P. Belšan has emerged recently under the auspices of the United Organization of the Blind and Visually Impaired (Slouka, 2013). "Spatial orientation and independent movement" classes develop analytical/synthetic activities. People are trained in the use of public transport, spatial orientation and independent movement in difficult conditions (under stress, with tooth pain, under emotional distress, in rain, snow). Teaching is always carried out by a certified spatial orientation and independent movement instructor (Vrubel, 2012).

Spatial orientation is also taught during regular classes by teachers trained in teaching spatial orientation by spatial orientation and independent movement instructors. Teachers then apply the skills in their regular classes. The main forms of teaching include educational games, field trips and practicing how to cope with various situations. It takes place under the supervision of spatial orientation and independent movement instructors (Vrubel, 2012).

In the first to third grade, the objective of the course is spatial orientation and independent movement, one class per week, to create basic skills and habits in spatial orientation and independent movement. In addition to basic skills such as straight walking (15 m), estimation of distances (1 m, 5 m, 10 m 20 m), estimation of angles (90° and 180° left and right), movement in school and orientation in the classroom, including its immediate surroundings, spatial memory and spatial imagination are also practiced. The classes emphasize physical preparation *(watching of posture, relaxation and the ability to coordinate large muscle groups*) and sensory training *(auditory orientation –identification of sounds and recognition of materials based on tapping response).* Touch recognition is also trained *(recognition of fundamental differences in the surface structure of materials, such as sand or grass, smell training – using olfactory sensations in orientation).* The classes may involve training of sliding finger techniques in conjunction with movement, but also walking with a guide (*walking up the stairs, through the door or sitting down on a chair*) or practicing of independent walking (Vrubel, 2012).

In the fourth to fifth grade, there is one class per week, too, but the goal is, in addition to strengthening existing skills, also mastering of the art of using the long cane, which is crucial for independent movement. The rehearsed white cane techniques include sliding, pendulum and diagonal methods. Cane holding techniques are also exercised *(top holding, side holding, pencil holding and the so-called Belšan crosspiece holding*). Spatial orientation in the school building and other senses are developed as well, including correct reactions to traffic situations, emphasis is placed on art education *(imagination),* intellectual and ethical education (*practicing of the principles of good conduct and safety).*

In the sixth and seventh grade of primary school, spatial orientation is taught in one two-hour class every 14 days. The student is prepared to master independent navigation on challenging routes. Emphasis is placed on physical education and the associated motivation for independent movement, body posture, good fitness and muscle relaxation. In addition, the instruction focuses on coping with aids for the blind, such as maps, charts, proper and safe movement in traffic and independent cane maintenance.

In the eighth and ninth grade, the objective is to consolidate all that has been learned in previous years, plus independent navigation on a challenging route. Mastering of up to five routes of varying length and difficulty is practiced, including basic orientation in an unfamiliar terrain, independent use of public transport and the rules governing movement in unfamiliar buildings.

The assistive aids course teaches visually impaired students efficient use of optical aids and electronic magnifying devices. Partially sighted and blind students learn how to work with electronic reading devices, tactile displays and other tools providing access to information.

Visual education for partially sighted individuals teach them to use it in everyday life as much as possible.

Social and aesthetic education should develop social skills and aesthetic perception of individuals with visual impairments, including independent dining, clothing, personal hygiene and choice of proper communication strategies (Nováková, 2012).

5.3.4 SPECIAL SCHOOL AIDS SUPPORTING INCLUSION

Students with visual impairments need to use special aids to achieve the best possible job performance, as mentioned in previous chapters. These devices must be provided to them and they should be able to work with them. The teacher should take into account that using them is sometimes time consuming.

Partially sighted students should have a job with ideal lighting conditions so as to avoid being dazzled (proper dimming), while having enough light (higher light intensity from a table lamp). The worksite should be sufficiently large. School desks should have hinged worktops to adapt the working conditions to individual needs. Partially sighted students also use special notebooks with contrasting highlighting lines and thick felt tip pens. Textbooks should have the text in enlarged black print. Calculators and other devices should be equipped with increased contrast displays.

Students with severe visual impairments use hybrid books, raised relief atlases and maps, 3D pictures, books in Braille, drawing wheels, Braille typewriters and computers with special software.

5.4 SOFT BARRIERS TO SOCIAL INCLUSION

Other barriers that prevent school and social inclusion are often problematic attitudes of people without disabilities to people with disabilities. These barriers, manifested as negative attitudes, are referred to as soft. Removal of soft barriers is perhaps more significant for the success of the process of inclusion than the removal of hard barriers, because while hard barriers can be removed by compliance with standards and by financial grants, soft barriers are much more difficult to get rid of.

Attitudes can be defined as a mental state of readiness to respond influenced by experience (Allport, 1967). Attitudes influence the behaviour of people in certain situations or behaviour towards certain groups. Attitudes are not innate, but created in the course of life (Kohoutek, 2008). Most attitudes are formed in adolescence between 14 and 20 years of age. At this time, both positive and negative attitudes may form, but it is also possible to change them. Attitudes are very difficult to change after 20th year of life. At older age, attitudes become stereotypes that are almost impossible to change. Negative social attitudes may transform into prejudices or unjustified negative assumptions about a particular group (Allport, 2004).

Positive attitudes to visually impaired people created in students are very likely to remain for a lifetime (Vrubel, 2015). Besides authorities, formation of attitudes is also affected by the group of which a particular person is a member, and by mass media (Kohoutek, 2008). For the above reasons, positive teacher attitudes towards people with visual impairments are important facilitators of social inclusion, since teachers significantly influence the attitudes of future generations (Vrubel, 2013). Czech public attitudes towards people with disabilities are constantly improving, although the current situation is hardly perfect (Pančocha, 2013).

Positive attitudes of parents, teachers, special education teachers and classmates play a key role in the success of the school inclusion process (cf. Požár in Lechta 2010; Bazalová, 2012).

What prevents social inclusion is mostly the lack of access to people with disabilities, public fears and prejudices (Pančocha, 2013) stemming from lack of awareness and segregated education experienced by most people. Inclusive education has a significant impact on social inclusion.

6

ROLE OF THE FAMILY IN EDUCATION OF CHILDREN WITH VISUAL AND MULTIPLE DISABILITIES – RESEARCH SURVEY

6.1 THEORETICAL ASSUMPTIONS

Child has significant emotional and sentimental value for families, giving new impulses and experience to the parents, giving meaning to their life, strengthening emotional bonds within the family, increasing their social status and providing them a perspective for the future. Birth of a child with disability is a major hit for the parents. It is a situation that alters their linearity and weakens their joy (Přinosilová in Opatřilová & Nováková, 2012).

In adapting to the challenging life situation, individual will, ability to overcome obstacles and draw positive experience from difficult conditions play an important role. Good relations with the closest social environment and the community where the family lives, the experience of parents with raising children, a stable value system of the family and relationship of trust with specialists in medicine and experts with whom the family works during the period of adaptation also play an important role (Prevendárová, 1998).

The personality of the child and its education and training may require many non-standard approaches and procedures because of the disability, often beyond the means of the parents, while the resulting situation reflects the dynamics of relationships within the whole family. Adaptability of the family depends on the flexibility of the family system and its ability to change its structure depending on the developmental and situational stress. Emotional stabilization and transformation of the family system takes place as a process in variously long periods of time within which individuals adapt to new challenges (Habalová in Horňáková, 2010). Parents of a child with disabilities go through stages of shock and denial, gradual acceptance of the reality, coping with the problem and transition to the stage when they take a realistic approach and accept the child with disabilities as it is and are willing to develop it within its possibilities (Vágnerová, 1995). Coping with this burden in the family is based on cognitive appreciation, on the importance and the meaning it has for the individual, associated with some emotions and the process of coping with the situation (Vágnerová, Strnadová, & Krejčová, 2009).

The most important task for the family at this time, and it cuts across the entire life of every family with a child with disabilities, is *education.* Education in itself integrates two interdependent components, namely *upbringing* and *education.*

The aim of education of individuals with multiple disabilities according to A. Vančová (2010) is optimal development of their complex personalities while respecting their particularities and educational needs, to achieve the desired behaviour and education and maximum socialization.

In terms of education of a child with multiple disabilities, the objective of education is to accept the child as it is and in appreciation of its qualities, as if they were irrelevant. Assessment of a child with multiple disabilities and attitude of its parents includes both emotional and rational assessment of its properties and manifestations by narrower and extended family (Vágnerová, Strnadová, & Krejčová, 2009).

On the one hand, the process of advanced education according to M. Vítková (in Opatřilová & Nováková, 2012) is reflected by the effort to integrate the highest number of students with special educational needs in mainstream schools and school facilities and thus gradually create inclusive education. On the other hand, school legislation respects special educational needs of students with disabilities for whom educational programs are created and implemented in special schools and school facilities staffed with experienced special educators.

In the research below, we aimed to answer the question of the role of the family in this education model, the status of the family in the upbringing of a child with multiple disabilities and on the attitudes of parents in integrated education or education in special schools.

6.1 RESEARCH OBJECTIVES

The research objective was to find out what role the family plays in education of a child with multiple disabilities. The starting point for the determination of the research objectives was to objectively identify real attitudes, opinions and needs of parents of children with multiple disabilities concerning education.

In view of the above research objective we set out to implement the following research projects:

- to theoretically analyze available domestic and foreign literary sources and legislative documents
- to analyze the role of the family in upbringing of a child with multiple disabilities.
- to analyze the role of the family in education of a child with multiple disabilities.

Given the topic, to fulfill the research objectives we chose the following research questions:

> **What is the role of the family in bringing up a child with multiple disabilities?**
>
> **What is the variability of family attitudes to education of a child with multiple disabilities?**

WE SPLIT ALL RESEARCH QUESTIONS INTO THREE SEGMENTS:

1. ***Upbringing***

Segment 1: *Family attitude to a child with multiple disabilities*

Segment 2: *Family support in raising a child with multiple disabilities*

Segment 3: *Family objectives in raising the child*

2. ***Education***

Segment 1: *Family support in the education of a child with multiple disabilities*

Segment 2: *Attitudes of parents towards integrated education*

Segment 3: *Attitudes of parents to education in special schools*

6.2 METHODS AND THE COURSE OF THE RESEARCH

The research investigation was carried out through group discussion, the so-called 'focus group' between April and June 2015, there were 3 meetings (1 meeting per month). The sample consisted of five mothers of children with multiple disabilities.

Methodological basis for choosing the 'focus group' approach is the so-called group dynamics, which follows individual attitudes of the respondents and the ongoing social interaction.

Processing of the results of the focus group is accompanied by testimonies of the mothers to ensure a detailed analysis of the studied subject.

As this is sensitive information provided by parents of children with multiple disabilities, it is necessary to maintain strict anonymity.

6.3 ANALYSIS OF RESEARCH RESULTS

Using statements of parents of children with multiple disabilities our objective was to answer two main research questions that we split into three segments.

Research question 1:

What is the role of the family in bringing up a child with multiple disabilities?

Segment 1: *Family attitude to a child with multiple disabilities*

Child with multiple disabilities requires a different approach in education and assumptions, skills and personality traits of parents, such as balance and life optimism, may be a significant contribution in coping with this challenge.

In terms of attitudes of the wider nuclear family to a child with multiple disabilities, research shows that the most important factor is the *acceptance* of the child and its disability. Parents need to work with positive characteristics of the child and with idea of its acceptance by the family and the majority in the society. Emotional attachment to the child often takes a tendency to protect the child and by all means encourage its development, but there is also tabooing of criticism and defense reaction failing to reflect the limitations and special approach to the child and its education.

> *… I accepted the disability. But it took a couple of years. It helped me to see the child in another dimension and be more precise is education, less fearful, take it as it is. The advantages and shortcomings.*
>
> *… I felt terribly stressed out. Stressed by problems in raising the child, problems with his disabilities, problems in the relationship with my husband. Let me tell you, the early years were really critical. When I look at it now, with hindsight, I am grateful that there were these situations, they persuaded me to accept optimism, that things will be better, which is something did not have before.*

"For me it is still not easy. Even after so many sleepless nights and consultations. I try to take accept him like other children, but I cannot, really…" Acceptance of the child by the family and people around has impact on attitude and different views that can be especially important for the capture and subsequent regulation of extremes. Especially fathers often react by raising the child as it were intact, as confirmed by the testimony of one of the mothers:

> *I have learned to respect our child, to perceive his needs, know what is good for his upbringing as he communicates it to me, rather than what I think. But with my husband, it was much worse. He went at it differently, and this is what made me perceive the child's needs. He treated the child as if he was healthy and he even had higher demands. When he wanted a toy, he had to find it himself. If he failed at anything, they repeated the task over and over until the child succeeded. My husband didn't care that the boy was tired…*

Attitude to the child and coping with its disability changes the perception of time.

> *I learned to be very tolerant. It is about terrible patience. We live fast, one is forced to work under pressure. It had to change in my family. My grandparents and my husband understood that the child needs calmness and deliberation, which does not take five minutes, or ten, or even an hour… But we know that all the time we invest in it will pay off. And I mean in the good way!*

Segment 2: *Family support in raising a child with multiple disabilities*

Quality of marriage and coping with stress with the support of the partner is one of the most important social factors that affect education of a child with multiple disabilities. According to research, it is clear that mothers are aware of the need for mature and balanced relationship and the need to communicate about problems and stressful situations openly.

> *I found it most helpful when my husband spoke to me. The fact that he was, after such a long time, so open and willing to discuss it moved me on in the upbringing of the child and gave me a feeling that I can manage the situation.*

Support requires rationalization of otherness of experiencing difficult life situations associated with raising a child with multiple disabilities by the father.

> *My husband just does not act like me. But guys are just different. They are less dramatic when it comes to raising the child. They cope with failures more quickly. They do not say much and they prefer to act immediately. This is something I admire.*

Grandparents are an important source of assistance and emotional support in the upbringing of the child for a family with a child with multiple disabilities. Support of relatives is an equally important resilience factor and the basis for a good education. Position of the nuclear family affects education, as well as the quality and coherence of marriage. In this respect, however, we sometimes encounter ambivalent reactions and attitudes. Positive, when the parents of a child with multiple disabilities do not feel excluded, but also negative, when the relatives are ashamed of the child with disabilities, making the education even harder for the parents. *"The whole family supported us. Both sides. And I am truly grateful. They accepted the child like any other, as their own."*

> *My mother helped me greatly. Also my father-in-law. He is a carver, and helped us make various aids. And my husband's family helped us financially. Without them we could not afford to pay for all the rehabilitation, which is so expensive.*
>
> *For us it was unfortunately a negative experience. The father has not accepted it yet. He said that the child would be better off in an institution,*

> *he did not help with raising the child at all. My mother felt she suffered a loss. It looked as if it she had lost something in her life she never had. She said that it's my child and that I should take care of it…*

From the testimonies of the mothers it was clear that they need appreciation for the care and for the effort devoted to bringing up the child. In situations where family support in raising the child is missing, life optimism, so important at this moment, is failing as well.

Segment 3: *Family objectives in raising the child*

As regards the objectives of raising the child, the mothers had different positions. For some mothers, it is important that the child learns as much it can, achieves something, makes some progress and thus proves its (and eventually the mother's) value. Some mothers, however, suffered from concurrent increasing sense of fear. "*We want to give the child as much as we can. So that he can use it later. After all, what happens when we pass away?*"

For mothers of children with severe multiple disabilities, the factor of happiness and satisfaction is the most essential. Through education, they want to make the child's life pleasant and provide him with enough incentives for optimal development. "*I try make his life as pleasant as possible. While I still have the strength. Mentally and physically.*"

The objectives of education among parents vary in this regard. For some mothers, the most important achievement in education of children with multiple disabilities is dignity, meaning enjoying life with all that it offers, with the greatest possible involvement of skills so as to underline the human value and strength.

> *We give our child everything. Not too much, not too little. To be a normal member of society – neither standing out, nor neglected. So we can say we raised him best as we could.*

Educational objectives of families, as reported by mothers, also differ in matters of education and care by the father. While raising the child, mothers tend to provide feelings, emotions, while fathers provide pragmatism and relevance.

> *My husband and I do it as follows. I teach the child how to love, my husband how to build a house (laughs). In reality, this truly is how it is. By my sensitive approach I try to teach him what I feel inside, while my husband teaches him what thinks he needs in real life.*

Financial security of the child and the whole family is essential. In this respect, according to the mothers, fathers become breadwinners and the mother raises the child.

> *I'm basically happy with this arrangement. But I know women where passion disappears from the relationship and the husband is really just a money maker and the woman carries all the burden. I do not know what I would do if it happened to me.*

Feedback, how the child with a disability reacts to the parents and how it accepts their care and education, is important. In relation to the child, it is essential on what the mother puts the greatest emphasis. Whether it is the performance of primary education requirements, namely that the child does what the mother wants it to do, be it performance or behaviour, or whether she is more focused on the development of the child's adaptation competencies. That is, she wants that the child learns to establish contacts, communicate and act appropriately to the situation.

> *When I see the child is satisfied, it is all I ask. When he knows how to communicate, reacts to impulses accordingly and when he perceives that I am there, my husband is there, the family is there.*

Research question 2:

What is the variability of family attitudes to education of a child with multiple disabilities?

Segment 1: *Family support in the education of a child with multiple disabilities*

The issue of education of a child with multiple disabilities is currently highly discussed by experts and the general public. It is all the more important for parents and families of the children. Education is in this case closely related to raising the child and is an integral part of it. The goal of the education is the highest possible socialization of the child with disabilities.

However, if the family fails in this respect, and is not united, it is burden for the child and for the parents alike.

> *You know, me and my husband want the child to be educated as much as he can. But given the nature of the disability, the grandparents disagree. Also my husband's sister. They keep saying he is just a child and why are we pushing it, and the worst part for us is when they say that he will not*

> *learn anything, anyway, so we better do something else. Such statements from the family can really hurt. Especially when you know how much effort you spend on this issue and how hard you try…*

The burden of and efforts to achieve adequate education and training vary depending on the age and developmental level. It usually becomes more difficult in the early school years, when parents have to deal with the challenges of finding a new school and an adequate peer group for their child. Attitudes of fathers are usually characterized by *acceptance.* Men usually entrust full responsibility in the hands of the mothers and try to support them in decision-making, contributing mostly by realistic advice, but accepting their decisions.

> *My husband is unbelievable in this. He accepts everything as it comes. If I choose integration, he gives me in the freedom and supports our baby to succeed. If I chose education in a special school, his attitude would not change and he would encourage the child there.*

Variability of family attitudes to education of a child with multiple disabilities is also closely related to time. Some family members first had to see the children making progress in order to express support for their education.

> *… and then it somehow changed. When our baby used the correct sign for 'Mama' for the first time. Then my husband and my parents understood that it all mad sense. That education is not about straight A's, but about achieving something!*
>
> *My mother is a kindergarten teacher. I thought that she would be in favor of integrated education like me, if not more. However, her reaction was quite the opposite. She discouraged me, we even had a fight and did not speak for a very long time. Until one day she came to our house and saw that her grandchild holds a crayon in his hand and he can even choose from 2 colours, and then she burst into tears and realized how important education is.*

Segment 2: *Attitudes of parents towards integrated education*

Integrated education serves as a link for adoption of a child with multiple disabilities into society. The mothers say it is an integral part of not only the child's inclusion in society but also for the preparedness of society to educate children with disabilities. While implementing the objective of education – achieving the highest possible degree of socialization, integrated education is of one of the most important elements, the family being the other. *"For me, integrated education is perfectly natural. I see no reason to see it any other way. As one of the options."*

> *I do not see any easier way for my child to meet other children. Other parents are not in the class, the views of parents of intact children and their averting looks…*

Especially parents of children with multiple lighter disabilities agree with education in integrated conditions. This is evidenced by testimonies of mothers.

> *Yes, it's an obvious choice for us, but I cannot imagine how parents of children with more severe disabilities decide. It must be harder for them. Lack of aids, training of teachers, assistants … I do not know how I would decide in this case.*
>
> *With our type of disability, combining different types of often severe diagnoses, we would not make it. For us, education in schools intended for the type of disability is definitely more rewarding. Every parent wants the best for their child, and this (integrated) approach is not good for us.*
>
> *Every disability limits education and training in a different direction. Multiple disabilities the most. And the severe multiple disabilities totally. I have nothing against integration. I am less sure about inclusion. We are happy with integrated education, but I understand some people are not.*

In integrated education of a child with mild multiple disabilities it is necessary to observe certain conditions, such as having an assistant teacher in the classroom. In this respect, it is an integral part of quality education. A good teacher and a qualified assistant can improve the developmental potential of a child and provide a good basis for its further education, contributing to better quality of life of the child and the family.

> *… I do not really see how the teacher would do it alone. Giving full attention to other children and my boy at the same time, now that would be a real feat. My husband and I are happy that there is an assistant in our school, working with our child.*
>
> *… definitely. Classes without an assistant* are *unimaginable for us. One person could not make it, no matter how hardworking. This is a long time effort.*

Integrated education is also a factor in resilience and coping with difficult life situations. It helps the parents to quickly cope with disabilities and their consequences. It creates a defense mechanism for the wider family and helps with social adaptation to the child's disability.

> *Integrated education is the best choice for our child. And it also helps my family to accept the fact that our child is different, that it has some limitations that may also affect its education.*
>
> *I am thankful for this opportunity. That my child is in a group of peers where it can learn as they do. You would not believe how much it helped my husband. How it strengthened his relationship with our child.*

Segment 3: *Attitudes of parents to education in special schools*

Complementary to integration in mainstream schools, parents have the choice to opt for another type of education, namely in special schools.

Education of children with multiple disabilities requires support from parents. In this work, upbringing and education, endurance and patience are particularly important, namely when special methods, approaches and aids are needed by the child with multiple disabilities, and the same applies to special classes, socialization and most everyday situations.

> *Determination and patience are essential. Certainly there are times and moments when you want to give up because the results are disappointing. But we did not give up, we gave everything to the education, we have to succeed, we can do this! And we are successful, our child is in school and learns! Along with others who are in a similar situation. Hooray!*

One of the benefits offered by this type of education is the opportunity to work under the guidance of specialized teachers and other professional staff. This results in a variety of services. Opportunities for education, re-education, rehabilitation and compensation are increasing, and with them the quality of provided services. This fact is confirmed by testimonies of the mothers.

> *I tell you, this rehabilitation is priceless. In our school we have a physiotherapist, who works with children individually. It saves me so much time – I don't need to go to other therapy after school and it gives my child the opportunity to be constantly watched and, if necessary, exercise more or less.*

> *This external psychologist who works for the school is so much help. Once a month he comes to assist the teachers with psychological supervision and give advice about the children and their development. He helps teachers with methodological work and us parents with reports that are necessary for other health professionals. He just recently helped us to get a cochlear implant.*

Besides the experts, the mothers perceive the small number of students in the class as another benefit. They say the reduced number of students gives the teacher opportunity to devote more time to individual children and at the same time it stimulates the children's attention and provides a higher degree of concentration on the assignment or job.

> *… I had the opportunity to be in the classroom, you know, in the beginning, during the adaptation. I had a chance to compare. This was the first time I saw my child concentrate. Because in the integrated class, it was also fine, but the higher number of children meant loss of focus and other problems.*

"We like the fact that we have adequate time. When fail to meet a deadline, we do not worry, we just relax and do it later." Type of education depends on the type, form and severity of the disability. Some cases require schools for the specific type of disability, while for other cases it is desirable and preferred to educate children in an integrated environment, with no social exclusion.

> *I understand it when a mother tries to place the child in a mainstream school. I would have done the same. But we can't due to the nature of our child's disability.*
>
> *… I agree that the child is educated in a mainstream school. For me it would be a major taboo to place him in a special school. I would just remind me unnecessarily of his condition and that he is different…*

6.4 SUMMARY OF RESEARCH AND PRACTICAL RECOMMENDATIONS

The goal of the research was to find out what role the family plays in the education of a child with multiple disabilities, while we were interested in the real attitudes, opinions and needs of parents of children with multiple disabilities in education.

In *upbringing* we chose as the most important factors (as described by the mothers) *approach of the family of the child with multiple disabilities, significance of the family support in raising the child and ultimately the objectives of the family in raising the child.*

The most important in terms of *attitude* of family members to the child were personality traits of the parents, their requirements and skills, which is closely related to balance and life optimism. Acceptance of the child by the family, but also by people around, has an impact on the attitude and different views on education. Especially fathers frequently try to raise the child as if it were intact. Emotional bond between the mother and the child often results in a tendency to overprotect the child and provide it with all kinds of support, but on the other hand, criticism and failure to reflect limitations and special approach to the child's education are often a taboo.

Support of the family in bringing up the child is another important aspect. The quality of marriage and coping with the stress while being supported by the partner is one of the most important social factors. According to research, it is clear that mothers are aware of the need to have a mature and balanced relationship and the need to communicate about problems and stressful situations openly. Grandparents and the relatives are an important source of assistance and emotional support in the upbringing of the child for a family with a child with multiple disabilities. In this respect, however, we encounter with ambivalent reactions and attitudes. Positive, when the parents of a child with multiple disabilities do not feel excluded, but also negative, when the relatives are ashamed of the child, disavow it and fail to accept the disability, making the education even harder for the parents.

Educational objectives of families with children with multiple disabilities differ. For mothers whose child has severe multiple disabilities, simple happiness and satisfaction are the most essential factors. The mothers say they put more emotions in the education, while fathers provide pragmatism and realism. Feedback, how the child with a disability reacts to the parents and how it accepts their care and education requirements, is very important. This what the nature and quality of educational objectives are based on.

In *education,* we chose as the most important factors (resulting from the mother's testimonies) *family support in the education of a child with multiple disabilities, parental attitudes towards integrated education and to education in special schools.*

Family *support* in the education of a child with multiple disabilities essential. The important factors are family unity, balancing of stimuli, coping with and acceptance of the disability. Attitudes by fathers are usually characterized by acceptance. Men entrust full responsibility in the hands of the mothers and try to support them in decision-making, mostly with realistic advice, but accepting them.

Family *attitudes* towards *integrated* education, according to testimonies of mothers, are mostly positive. It is an integral part of not only the child's inclusion in society but also of the preparedness of society to educate the children with disabilities. Integrated education is also a factor in resilience and helps parents cope with the actual disability and its implications. The mothers really emphasized the position of the teaching assistant, who they claim is necessary in integrated education.

Attitudes to education of a child with multiple disabilities in *special* schools was also positively reflected by the mothers. Mothers emphasized the professionalism of staff, more teaching time, fewer children in the class and the associated activation and higher attention of the students. The type of education depends on the type, form and severity of the disability.

SUMMARY

Education, Support and Rehabilitation for People with Visual Impairments introduces the current system of inclusive education and rehabilitation for visually impaired people in the Czech Republic to foreign readers.

The first chapter defines visual impairment in special education and medical terms. It also describes different definitions of visual impairment and the percentage of people with visual impairments in the population – definition of the target group.

The second chapter describes the system of early care, including organizations that provide early care in the Czech Republic.

The third chapter is devoted to early childhood education for children with visual impairments, with the emphasis on analysis of legislation.

The fourth chapter focuses on education and training of students with visual impairments.

The fifth chapter introduces the reader to the system of visual rehabilitation, including medical, educational, social and labour rehabilitation. It is devoted to making schools and public space in Czech Republic accessible for persons with visual impairments. It describes barriers that hinder further opening of the environment and facilitators that help it.

The sixth chapter contains the results of the survey, which deals with the role of the family in the education of children with visual and multiple disabilities. An analysis of the evaluation of this issue by 5 mothers forming a ‘focus group’ and recording their real attitudes and opinions about education shows in particular the importance of the factors of acceptance of the child by the parents, coping with the disability and the loss of life optimism. The survey revealed the irreplaceable role of the family in the education process and close links between education and upbringing.

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EDUCATION, SUPPORT AND REHABILITATION FOR PEOPLE WITH VISUAL IMPAIRMENTS

Mgr. Martin Vrubel, Ph.D.
PhDr. Petra Röderová, Ph.D.
PhDr. Mgr. et Mgr. Nora Jágerová

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