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**Proceedings of the 7th ICEVI Balkan Conference in Sofia, Bulgaria
20.10.2019-23.10.2019**

“Free access, real educational inclusion and unlimited technologies”

**The Bulgarian Association for Education of Visually Impaired Children
and ICEVI-Europe**

Editors

Mira Tzvetkova-Arsova

Margarita Tomova



7th ICEVI BALKAN CONFERENCE

"Free access, real educational inclusion and unlimited technologies"

Forward by Prof. Dsc Mira Tzvetkova-Arsova – Bulgaria

In the period of time 20–23.10.2019 in Hotel Ramada in Sofia, Bulgaria the 7th ICEVI BALKAN CONFERENCE took place. After some years of gap in the initiative of having ICEVI Balkan conferences, the capital of Bulgaria – Sofia, hosted the 7th ICEVI Balkan conference.

Its main theme was **"Free access, real educational inclusion and unlimited technologies"**. In relation to the main theme, few thematic areas were set up:

1. Access to inclusive education.
2. Development of social and emotional competencies.
3. Access to programs for independent living and social participation.
4. Access to technology.
5. Orientation and mobility.
6. Low Vision Training.
7. Early intervention.
8. Education of children with multiple disabilities.
9. Updating school programs.
10. Career Development and Vocational Training.

The local co-organizing NGO from Bulgarian side was Bulgarian Association for Education of Visually Impaired Children. The conference was under the honorary patronage of the Vice Minister of Education and Science of Bulgaria Mrs. Denitsa Sacheva.

The Scientific Committee included:

- **Prof. Dsc Mira Tzvetkova-Arsova – Bulgaria (chairperson)**
- Prof. Dr. Daniela Dimitrova-Radojichikj – North Macedonia
- Assoc. Prof. Dr. Vassilis Argyropoulos – Greece
- Assoc. Prof. Dr. Andrea Hathazi – Romania
- Assoc. prof. Dr. Aleksandra Grbovic – Serbia
- Dr. Emine Ayyildiz – Turkey
- Mrs. Darija Udovicic-Mahmuljin – Croatia

The Local Organizing Committee included:

- **Prof. Dsc Vladimir Radoulov (chairperson)**
- Dr. Margarita Tomova (secretary)
- Prof. Dsc Mira Tzvetkova-Arsova
- Dr. Emanuela Stoilova
- Dr. Kaloyan Damyanov
- Dr. Maria Valyavicharksa-Karaivanova
- Mrs. Julieta Petkova
- Mrs. Elka Belokapova
- Mr. Lazar Jivankin

After the successful ICEVI Balkan conferences held in 2000 in Varna (Bulgaria), in 2002 in Athens (Greece), in 2006 in Belgrade (Serbia), in 2008 in Istanbul (Turkey), in 2010 in Zagreb (Croatia) and in 2012 in Cluj-Napoca (Romania), it was high time for the Balkan professionals to meet again and to share their achievements, best practices and new ideas.

In addition there were representatives and interesting presentations by professionals from countries beyond the Balkans – France, Russia, Italy, Hungary and Lithuania.

KEYNOTE SPEECH

Free access, real educational inclusion and unlimited technology

**Prof. Dsc Vladimir Radoulov,
Chairperson of Bulgarian Association for Education
of Visually Impaired Children**

The topic of this conference suggests to try to interpret the three directions it covers and to discuss these issues in the Balkan region. Until recently, we thought that the education of visually impaired should encompass the academic education and the skills for independent living. In recent years, a third area has been added as very necessary – the development of social and emotional skills and competences.

On this basis, a framework of nine fundamental areas of skills has being established today by Hatlan (1996), which defines the contemporary view of and the vision for education and rehabilitation of visually impaired:

1. Compensatory skills,
2. Assistive technology,
3. Social interaction skills,
4. Independent living skills,
5. Career education,
6. Sensory efficiency skills,
7. Recreation and leisure skills,
8. Orientation and mobility,
9. Self-determination.

FREE ACCESS

Let us first answer the question: free access to what?

1. Access to assessment. Assessment is the first important component of any modern education. Each visually impaired child should have access to the four types of assessment: medical, general, current (or the progress made) and specialized and, as a result, to an individual educational plan or program. In Bulgaria, this issue was resolved by a special Ordinance in 2002.
2. Access to modified programs and to new program areas.

Let us start with correction of blindness It stems from the principle of normalization in education. Since blindness is not a personal characteristic, but a physical feature, in the program section “Social skills” we need to develop the concept of equal participation through equal conditions and equal chances. The new program areas can be the following (Radoulov, 2019):

- development of empathy and social interaction,
- evelopment of self-esteem,

- development of self-efficiency,-
- self-determination and self-advocacy,
- access to art works,
- mentoring and volunteering,

In the past, all students in the special schools had to learn everything, regardless of their desires and abilities. Everyone had to learn basket-making, brush-making, theory of music etc. Today, the self-determination is a new field that largely enters the education of the visually impaired in the United States in 2004. In Europe it is not very popular, yet.

Self-determination includes 4 main characteristics: autonomy, self-regulation, psychological empowerment, and self-realization (Wehmeyer, 1999).

The history of the movement of the blind in the world has gone from paternalism to self-determination.

3. Access to multi-literacy.

In practice, this is access to information. Today Braille literacy is simply not enough. It should be combined with large print, standard ink-print and traditional talking books, computer literacy and synthetic speech. This way visually impaired readers can be divided into dual readers using two reading options and multi readers, using several reading options. Imagine, even in the time of the information revolution, only 5% of information is accessible to the blind. They are starving for books. A very important step ahead was the Marrakesh Treaty (2013), which regulates the free distribution of books of all formats and kinds to the blind. Let us beware of two extreme claims. New technologies cannot replace Braille. Will the sighted people give up the ink-print literacy for the digital technologies? The effective use of low vision is indisputable, but it should not be maximized. Every teacher and every parent should know that vision cannot eliminate tactility.

4. Access to modern mobility. Today, it is not the same as it used to be, because it is facing new challenges. Mobility is a basic interdisciplinary field, because it is related to academic education and to all special programs.

New challenges in front of Mobility:

- New design of the environment,
- The participants are active partners. They should be able to discuss and to add their own routes,
- Parental involvement beyond the classes and lessons,
- Assisting blind instructors, especially in the adult education and rehabilitation,
- Teaching in the context of inclusive education,
- Getting the skills to an automatic level,
- Linking mobility to cyber space. Physically, the visually impaired can not travel everywhere, but in cyber space they can, because it is virtual reality. The blind can shop, browse the mailbox, visits certain sites. In the cyber space there is also orientation, getting lost and searching. Of great practical value in the real orientation are the different telephone applications and the electronic traffic light control.

5. Access to multisensory education for children with multiple disabilities. Today, researchers, teachers, psychologists and therapists have new specific approaches and principles towards the multiple disabilities that can change the processing of information, the organization of interventions, curricula, the daily practice, the structuring, and the environmental design. All of this leads to an already accepted worldwide framework known as the International Classification of Functioning (ICF).

In 2012 the Ministry of Education and Science introduced a new set of special programs. In 2015 Radoulov, Tzvetkova-Arsova and Balkanska developed a guide for assessment of the individual needs of children with multiple disabilities. We used the experience gathered in the United States, Germany and Croatia, but shared our own experience with Serbia, Turkey and North Macedonia. The painful question in Bulgaria is the unclear future of the youth and adolescents with multiple disabilities. We need new models for after-school intervention and care.

REAL EDUCATIONAL INCLUSION

It means full and equal participation and equal standards for both the blind and the sighted students. Bishop (2010) describes 6 consecutive steps in the process of inclusion in the regular class:

1. Recording;
2. Accessibility;
3. Acceptance;
4. Joint activity;
5. Inclusion;
6. Independence.

Every resource teacher can determine the real and successful educational involvement of the student by answering four questions (Fraser, 2009):

1. Is the child with SEN desirable in the regular class?
2. Is the student really part of the class or just a supplement to it?
3. How often the SEN student is isolated from the class activities?
4. How many of the special activities of the integrated student are shared by all children in the class?

Let us list some of the reasons for educational failure:

1. Failure in the regular school. The reasons are due to poorly organized integration or the inability of the student to integrate.
2. Discrimination with all its variety. It may be related to limited access to information, exclusion from certain lessons (e.g. physical education) or favoring the student.
3. Social isolation. It stems from the unpreparedness of the student to be included, uninterested regular teachers and poorly educated resource teachers.
5. Improper parental intervention.

These challenges can be addressed by the development of skills for social and emotional competences. They are crucial for the acceptance of the student.

CONTENTS OF SOCIAL COMPETENCES (Bruce, Harrow and Obolenskaya, 2007):

1. Joint and pro-social behavior,
2. Introducing and maintaining friendship and adult relationships;
3. Control of aggression and conflict;
4. Developing a sense of superiority and self-worth;
5. Emotional regulation and reactivity.

BASIC SKILLS FOR SOCIAL AND EMOTIONAL DEVELOPMENT (Lang, Hintermair & Sarimski (2017):

- communication skills,
- ability to control behavior,
- ability to understand one's motivation,
- personal feelings and needs,
- the feelings and needs of others,
- ability to handle any situation from multiple perspectives,
- having social competences to build relationships with others.

Let us say few words about the educational inclusion in Bulgaria. The number of the visually impaired children and students included in regular schools is dominant and it is 57%. For more accurate data refinement, there is the opportunity to calculate the Index of educational inclusion (Radoulov, 2018). The Index is a result of the ratio between the number of integrated/included students with special educational needs and the total number of those students enrolled in the education system. The surveys reveal the following picture, presented in Table 1:

Table 1. Index of educational inclusion in Bulgaria

School year	Integrated/included	Enrolled in school	Index
2014- 2015	13 313	16 298	0,81
2017- 2018	17 817	21 261	0,84

It is clear from the table above that the picture of educational inclusion in Bulgaria is developing in a favorable direction. The Index of educational inclusion from 2015 to 2018 increased by 0,3 and comes closer to the full digit 1. The number of integrated students has increased as well as the total number of students with SEN enrolled in school. This index can be used in any country.

As a result of the good partnership between our Association and the Ministry of Education and Science, very soon each integrated visually impaired student will attend the special school for assessment and counseling within 5 working days. At the request of a group of regular teachers, the Ministry organized 3 one-week long Braille literacy courses. As a result, 60 teachers were educated.

UNLIMITED TECHNOLOGY

Today, there is a direct collision between the social problems of the visually impaired and the speedy invasion of the new technologies. Unlike in the past, when the blind had to wait for what they would be offered, today they are looking not for means, but for solutions of specific tasks: reading books, textbooks, newspapers, menus, magazines, route plans etc. There is no universal tool to solve any problem to 100%. There is a need for education based on the combined use of different sensory channels. Having in mind their own personal needs, the visually impaired have to set their own requirements. It is not uncommon non-trained people and non-professional organizations to offer meaningless devices such as the electronic device to find the curb on the sidewalk. The idea of electronic Braille did not come from the side of the sighted people, but from the Braille users. In order to solve some specific problems in a coordinated way, a Technology Council was established in 2018 at the Union of the Blind in Bulgaria.

In conclusion, let me emphasize that all important and major changes in the education and rehabilitation of visually impaired can occur through systematic actions in three main areas:

- change in the minds and thinking of the visually impaired by building a positive image for themselves,
- overcoming the stigma and labeling by educating the society,

- changes in legislation.

References:

- Радулов В.** 2018, Приобщаващото образование – нови реалности и предизвикателства, Научни и практически аспекти на приобщаващото образование, сборник с материали от юбилейна конференция с международно участие, 12 – 13 октомври 2018, Университетско издателство „Св. Климент Охридски“, София, 2018. стр. 11 - 20
- Радулов В.** 2019, Социални проблеми на слепотата и слабото зрение, „Феномен“, София, 2019.
- Радулов В. Цветкова – Арсова М. Балканска Н.** 2015, Методика за оценка на индивидуалните потребности на деца и ученици с множество увреждания, програма „Развитие на човешките ресурси“, Европейски социален фонд, София, 2015.
- Bruce, I., Harrow, J., Obolenskaya, P.** 2007, Blind and partially sighted people’s perceptions of their inclusion by family and friends, *British Journal of Visual Impairment*, Volume 25, Number 1, January 2007, p. 68-85.
- Fraser, P.** 2009, Integration in a Changing Europe – time for an update?, ICEVI Europe Conference, 5-th – 10-th July Dublin, 2009.
- Hatlen, P.** 1996, The core curriculum for blind and visually impaired students, including those with additional disabilities, *RE.view*, volume 28(1), p. 25 -32.
- Lang m. Hintermair m. Sarimski k.** 2017, Social-emotional competences in very young visually impaired children, *British Journal of Visual Impairment*, Vol. 35 №1, p. 29 – 43, 2017.

Plenary session

INCLUSIVE EDUCATION IN BULGARIA – REGULATIONS AND POLICIES

Greta Gancheva

Director of the Directorate for Inclusive Education

Ministry of Education and Science

„Well begun is half done.“

Aristotle

Education as a national priority is implemented in accordance with the principles laid down in the Pre-school and School Education Act (2016) for equal access to quality education and inclusion for every child and every student; equality and non-discrimination in pre-school and school education; orientation to the interest and motivation of the child and the student, to the age and social changes in his life; preservation of cultural diversity and inclusion through the Bulgarian language.

In accordance with these principles, the Ministry of Education and Science ensures the implementation of the state policy in the field of pre-school and school education, creating the conditions for: introducing and developing inclusive education by supporting personal development while taking into account the individual needs of each child and each a student with an emphasis on children and students with special educational needs; socialization and inclusion in the educational process of children and students whose mother tongue is different from Bulgarian, while preserving and developing their cultural identity; inclusion in the educational system and support for children and students from migrant families and for asylum seekers or recipients of international protection; the implementation of the new functions of special schools and centers for special educational support aimed at providing additional support for the personal development of children and students with special educational needs; providing methodological support and resource support from state specialized service units such as the 28 Regional Centers to support the inclusive education process.

Inclusive education is the 21st century approach to education. It is a new philosophy, but not an innovative policy in our educational system, because for more than 15 years it has been fully synchronized with a number of contemporary global educational trends. In Bulgaria, inclusive education naturally upgraded integrated education, which was regulated by the legislative changes in 2002 and 2003. Inclusive education in our country was also conditioned by a number of fundamental international documents and regulations:

- The United Nations Convention on the Rights of the Child (1989), the United Nations Convention on the Rights of Persons with Disabilities (2006) and the United Nations Sustainable Development Goal No. 4: „To ensure inclusive and equal access for all to quality and education; to enhance everyone's lifelong learning opportunities“ (UN, 2015), set the framework for the implementation of a rights-based approach to all students and protect the rights of students with disabilities. They ensure that „such students will not be marginalized or excluded from general education“ (European Agency for Special Educational Needs and Inclusive Education, 2015);

- General Comment No. 4 (2016) on the right of inclusive education of the UN Committee on Human Rights, which provides further guidance on the right of inclusive education to all students (www.ohchr.org/EN/HRBodies/CRPD/Pages/GC.aspx);

- Communication from the European Commission of December 2016 on Improving and modernizing education, including a range of actions to support EU countries in delivering high quality early childhood education and care and developing high quality innovative and inclusive education systems.

- European Pillar of Social Rights, adopted in December 2017 by the European Council, the European Parliament and the Commission. Their agreement underlines the importance of the social, educational and cultural dimensions of European Union policies for building a common European future. The first principle of the European Pillar of Social Rights emphasizes:

"Everyone has the right to access quality and inclusive education, training and lifelong learning in order to maintain and acquire skills that enable him or her to participate fully in society and successfully transition into the labor market."

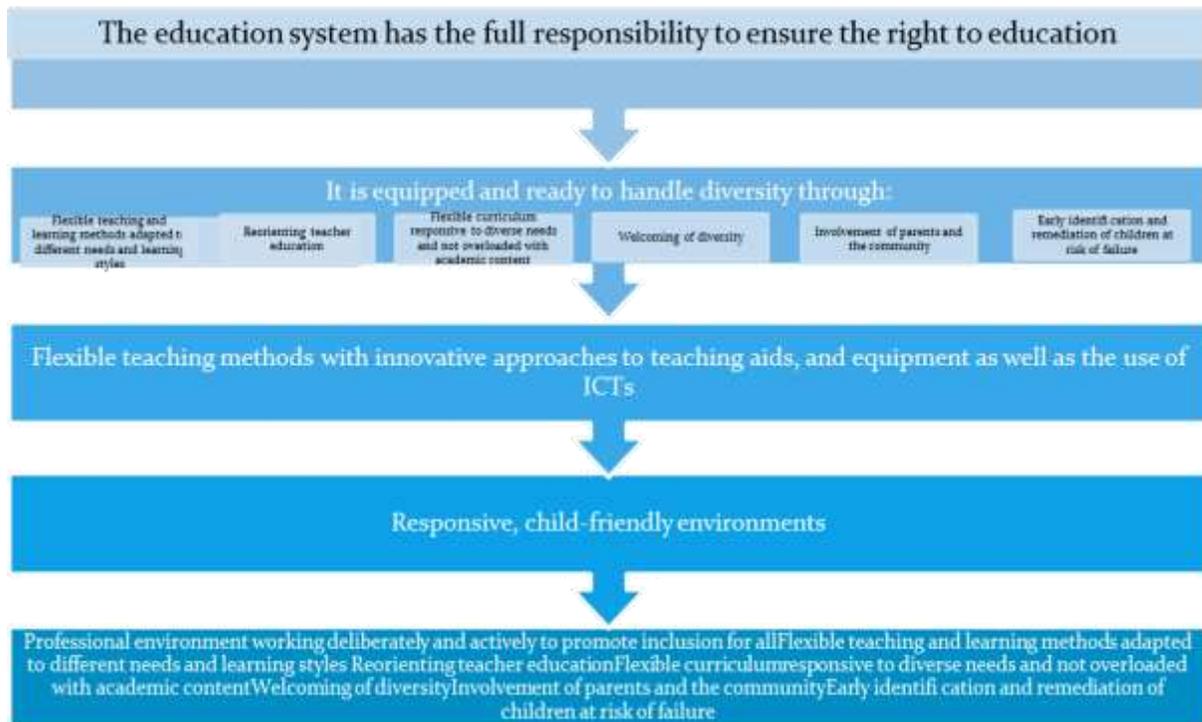
Inclusive education is always about providing high quality education for all, combining excellence and equity. A recent study of the link between inclusive education and social inclusion shows that inclusive education increases the opportunities for peer interaction and close friendships between students with and without special educational needs. At the same time, students with special educational needs, educated in inclusive conditions, can perform better at academic and social levels.

The Education and Training 2020 Working Party on Promoting Citizenship and the Common Values of Freedom, Tolerance and Non-Discrimination through Education made it clear that education must go beyond equal opportunities and ensure the inclusion of diversity of learners and that values should be shared by teachers and learners. Values are part of the "whole school approach" in which students, teachers, parents and the wider community are actively engaged.

An inclusive education system is a key element of our shared pursuit of a more inclusive society. In this sense, inclusion is a fundamental principle that enables educational institutions to develop their capacities and become more flexible about the differences between individual children and students. In this way, institutions are improving their ability to ensure equal access for all to quality education.

The following scheme presents the vision of an inclusive education system through the prism of the idea of inclusion (Guidelines on Policy Guidelines on Inclusion in Education, UNESCO, 2009):

Figure 1: Inclusive education system



Social interactions that take place in an inclusive environment are prerequisites for building friendships, social and communication skills, maintaining networks, a sense of belonging and positive behavioral models.

The key to social inclusion of children and students in an inclusive environment is the wider involvement of all stakeholders (professionals, children, students, parents) in all fields and at all levels (school policy and practice, school culture).

For inclusive education to have an impact on social inclusion, it is necessary, both through policies and in practice, to ensure that students with disabilities participate on an equal basis with students without disabilities in all aspects of learning (learning, playing, access to all places in the school and to all school activities).

In order to become working communities, kindergartens and schools must provide:

- Welfare of all children and students;
- Flexible learning opportunities that ensure continuity and smooth transition from one stage of education to another and guarantee the applicability of the acquired knowledge and skills;
- Shared management responsibility and enhanced collaboration between pedagogical professionals and other school staff;
- Shared classroom teaching between subject teachers and resource teachers;
- Effective partnerships with parents to increase motivation and encourage the involvement and involvement of children and students;

- Involvement of the local community and employers in order to increase the applicability of the acquired competences and to expand the opportunities for realization on the labor market.

In a national context, the **Pre-school and School Education Act, in force in 2016**, defines inclusive education as an integral part of the right to education and as a process for recognizing, accepting and supporting the individuality of each child or student and the diversity of needs to all children and students by activating and integrating resources aimed at removing barriers to learning and learning and creating opportunities for the development and participation of children and students in all aspects of life and community.

The Pre-school and School Education Act:

- Introduces a new philosophy aimed at supporting and developing the child's personality, his or her autonomy and freedom of choice, the right to a personal pursuit of prosperity and well-being, belonging, participation and responsibility to multiple communities and groups simultaneously;
- Focuses on child care and the human factor, which are of particular importance when it comes to involving children from vulnerable groups;
- Bases support for the personal development of an inclusive education perspective that accepts the difference between children as a value and the conditions that the educational environment provides for developing the potential of each child and student, and addresses obstacles to the learning and participation of the child or student in the activities of the educational institution;
- Regulates the provision of personal development support provided by educational institutions – kindergartens, schools, centers for personal development support, state specialized service units, jointly with state and local authorities and structures and with social service providers;
- Stipulates the existence of a personal development support team designed for a particular child or student, consisting of a psychologist and speech therapist, and, if necessary, resource teachers, social workers and other specialists in kindergartens and schools, according to the assessment of the individual needs of the child or pupil as a regional support team for the personal development of children and pupils with special educational needs in each of the 28 regional centers to support the inclusive education process in the country;
- Introduce the development of a plan to support the child or student when additional support is needed for his or her personal development, as well as the opportunity to develop individual plans and programs for the education of students as needed;
- Decides on the conversion of support schools (special schools for students with intellectual disabilities) into new institutions – centers for special educational support.

Pursuant to the Law on Pre-school and School Education, the **Ordinance on inclusive education (with Decree No. 232 of the Council of Ministers of 2017)** was adopted, which defines the state educational standard for inclusive education. The regulation regulates public relations related to the provision of inclusive education for children and students in the system of pre-school and school education, as well as the activities of educational institutions to support the personal development of children and students. The regulation regulates the practical implementation of activities for support for personal development in accordance with the individual needs of each child and student and their provision by teachers and other pedagogical specialists (psychologists, pedagogical advisers, speech therapists), as well as by other specialists (social workers, kinesiotherapists, etc.)

The Pre-school and School Education Act, as well as the Inclusive Education Ordinance, are the two main normative acts in the Bulgarian legislation that define inclusive education policies in Bulgarian institutions in the pre-school and school education system. They define support for personal development at two levels - general and additional support.

Common support for personal development applies to all children and students and includes the following activities:

- Team work between teachers and other pedagogical specialists;
- Additional consultations on subjects and additional training in subjects in schools / additional modules for non-Bulgarian children in kindergartens;
- Career guidance of students;
- Interest activities;
- Library and information services;
- Health care;
- Providing a hostel;
- Promotion with moral and material rewards;
- Activities to prevent violence and overcome problematic behavior;
- Early needs assessment and prevention of learning disabilities;
- Speech therapist work.

Additional support for personal development applies only to children and students with: special educational needs; at risk; with outstanding gifts; with chronic diseases, and includes:

- Work with a child and a student on a case by case basis;
- Psychosocial rehabilitation, rehabilitation of hearing and speech, visual rehabilitation, rehabilitation of communicative disorders and physical disabilities;
- Providing accessible architectural, general and specialized support environment, technical means, specialized equipment, didactic materials, methodologies and specialists;
- Providing training in special subjects for students with sensory disabilities;
- Resource support.

Additional support for personal development is provided only after an assessment of the individual needs of the child or student. The assessment of individual needs for additional support for personal development is functional. It is done by a personal development support team created for a specific child or student in the kindergarten or school where they are trained. In assessing children and students with special educational needs, disability and functioning are considered as a consequence of the interaction between health and environmental factors in accordance with the International Classification of Human Function, Disability and Health World Health Organization (ICF). For this purpose, 70 specialists from the regional centers for supporting the process of inclusive education in the country were trained as national trainers in the implementation of this tool for assessing the needs of children and students.

Ensuring conditions for the provision of general and additional support for the personal development of children and students, as well as providing a supportive environment for the participation of students with special educational needs in national external assessment and in state matriculation exams, are priority policies of the Ministry.

Another major priority is the qualification of pedagogical specialists and experts from regional education departments, which is realized through systematic training aimed at inclusive education and work with children and students with special educational needs, as well as early assessment of individual needs of students.

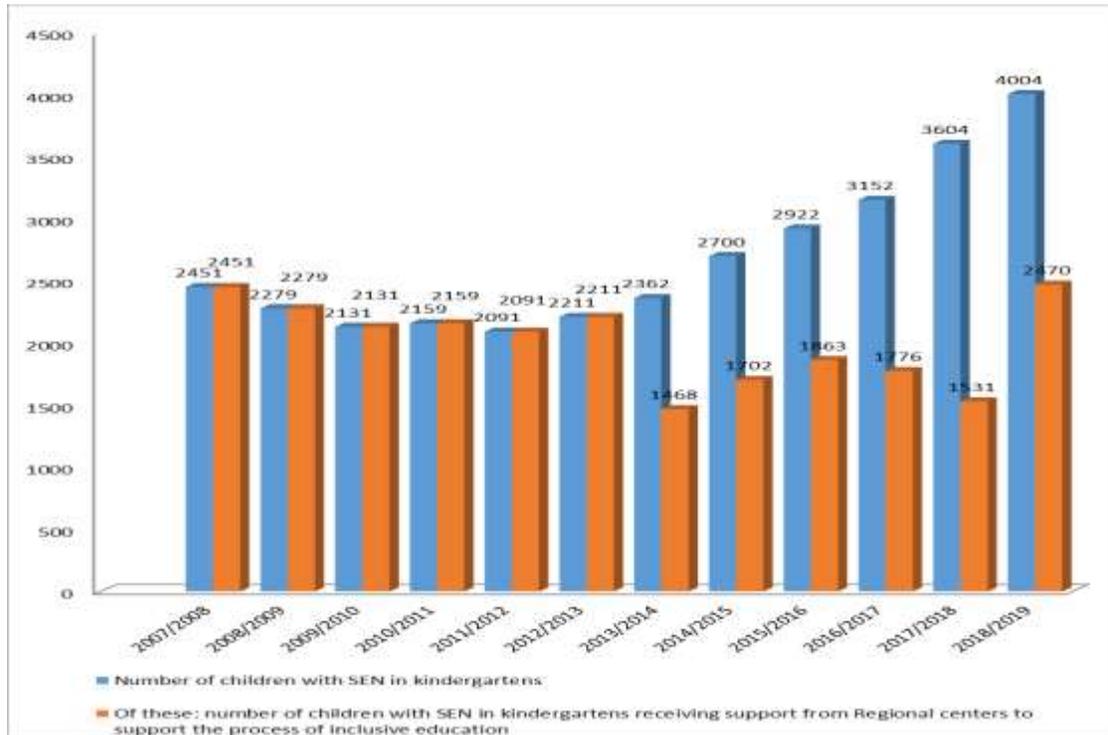
In 2018, the Ministry of Education and Science organized the training of 1739 kindergarten teachers for early assessment of children's needs by applying a screening test to identify the risk of learning disabilities in children from 3 years to 3 years and 6 months, and of psychomotor, cognitive and language development programs for early detection and prevention of learning disabilities, as part of the general support provided in the Pre-school and School Education Act. Currently, there is at least one pedagogical specialist trained in each kindergarten in the country to conduct a screening test to identify the risk of learning disabilities.

Providing conditions and resources for building a supportive environment in kindergartens and schools for inclusive education is a consistent policy of the Ministry of Education and Science. For the past year of 2019, a supportive environment has been provided by specialists recruited in kindergartens and schools themselves or by specialists from Regional Centers to support the process of inclusive education for a total of 20,368 children and pupils with special educational needs:

- in kindergartens, a total of 4,538 children with special educational needs;
- in schools, a total of 15,830 children and students with special educational needs.

The following chart (Chart 1) shows the number of children with special educational needs in kindergartens with additional support (resource support) provided in a comparative plan for the last 12 school years.

Chart 1:

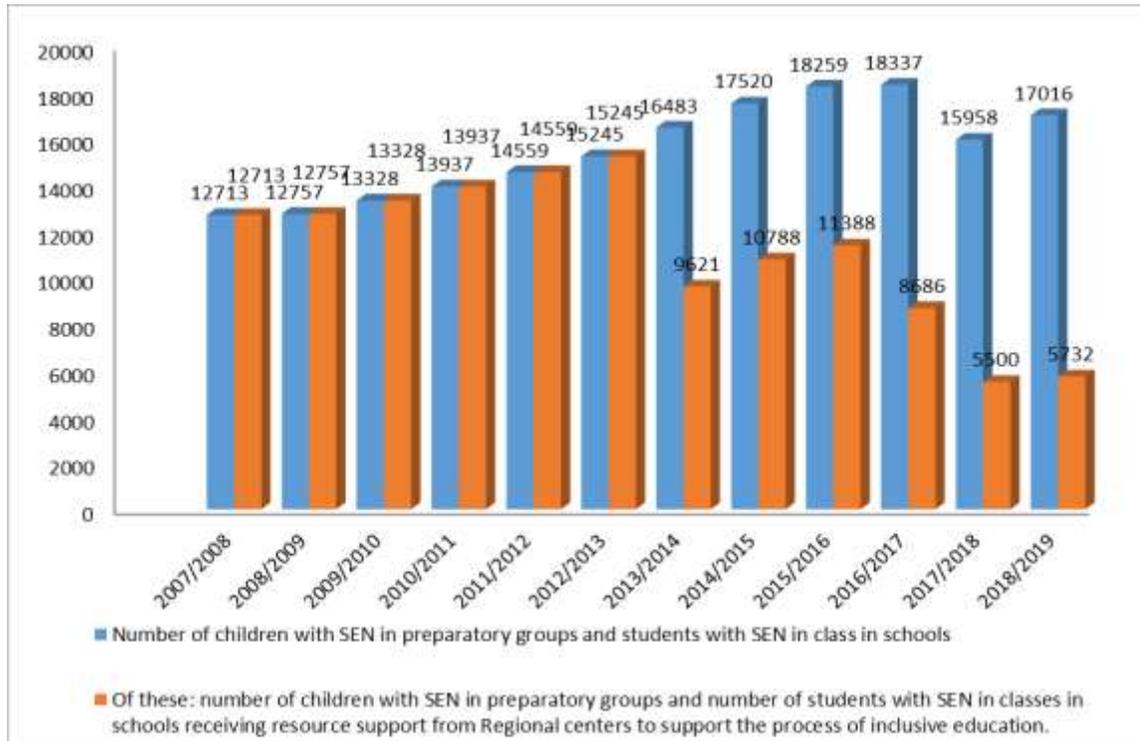


The trend is that an increasing number of children with special educational needs in kindergartens are supported by specialists appointed in the kindergartens themselves, leading to a decrease in the number of children being supported by specialists at Regional Centers to support the process of inclusive education.

This trend has been lasting since the entry into force of the Pre-school and School Education Act, which stipulates that primary responsibility for inclusive education rests with the kindergartens and schools where children and students are educated.

The chart below (Chart 2) shows the number of children with special educational needs in the preparatory groups in schools and the students with special educational needs in the classes provided additional support (resource support) in the comparative plan for the last 12 school years.

Chart 2:

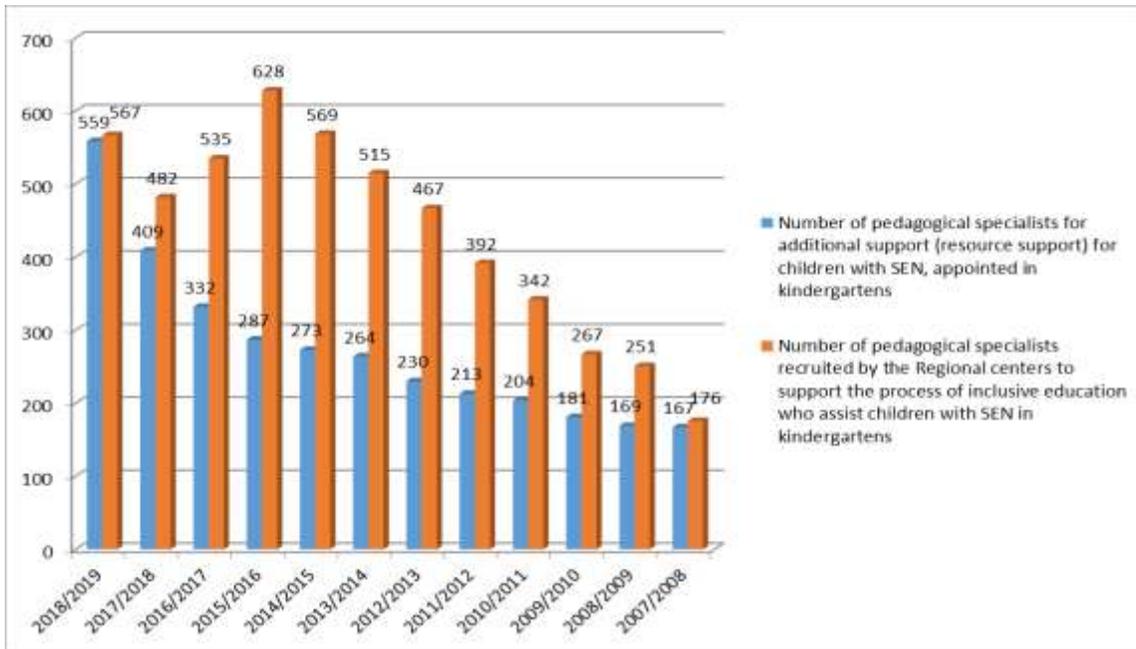


In schools, we see an even more pronounced tendency for an increase in the number of children and students with special educational needs supported by specialists appointed at schools, compared to children and students supported by specialists at Regional Centers to support the process of inclusive education.

In 2019, the staff assigned to support the personal development of children and students in kindergartens, schools and Regional Centers to support the process of inclusive education were 4864, of which 3933 were appointed in kindergartens and schools and 931 were appointed at Regional Centers to support the inclusive education process.

The following chart (Chart 3) presents the provision of additional support (resource support) by pedagogical specialists for children with special educational needs in kindergartens in a comparative plan for the last 12 school years.

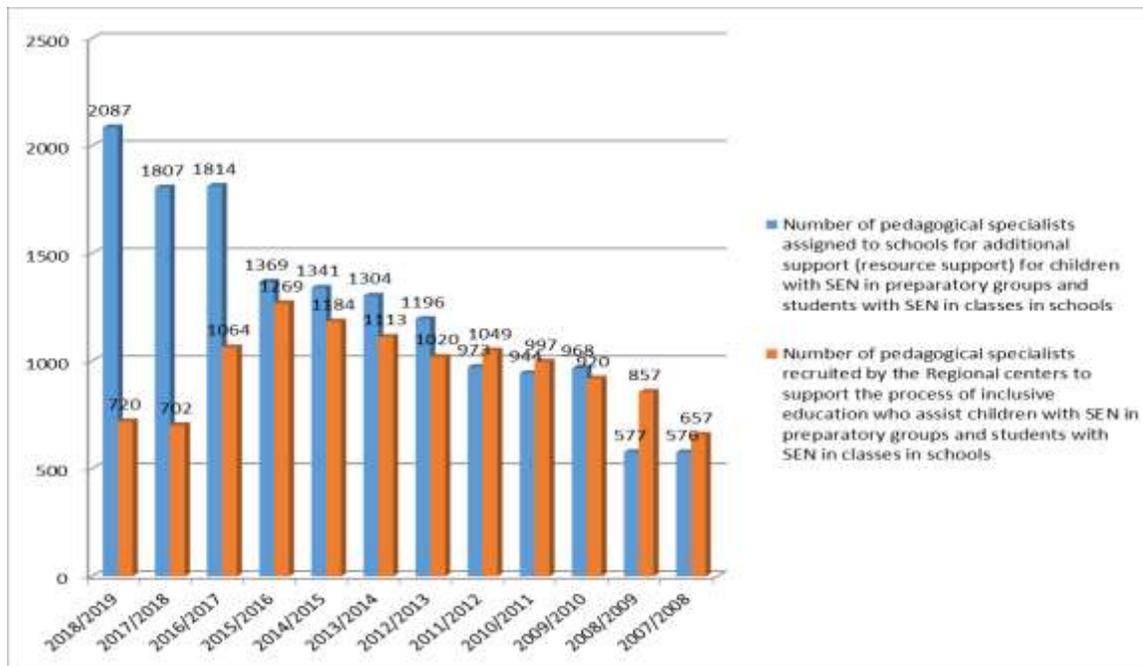
Chart 3:



This chart shows that the number of pedagogical specialists appointed in the 2018/2019 school year to provide additional support (resource support) to children with special educational needs in kindergartens themselves, and the number of specialists from Regional centers to support the process of inclusive education providing support to children with special educational needs in kindergartens, is almost offset by the very small majority of Regional Center specialists.

The chart below (Chart 4) shows the provision of additional support (resource support) by pedagogical specialists to children with special educational needs in preparatory groups in schools and to students with special educational needs in school classes in a comparative plan for the last 12 school years.

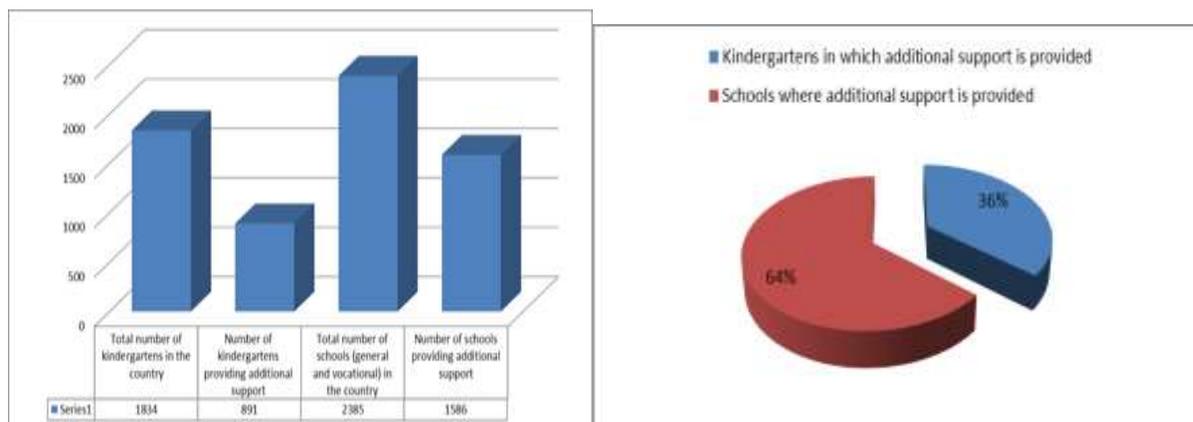
Chart 4:



The chart shows a completely different picture of schools – here, the specialists recruited in the 2018/2019 school year in the schools themselves are significantly larger than those provided by the Regional Centers to support the process of inclusive education and this one the trend is lasting.

Kindergartens and schools with specialist staff in 2019 to provide additional support for the personal development of children and students, against the background of the total number of kindergartens and schools in the country, are presented in the following graph (Chart 5).

Chart 5:



In the implementation of inclusive education policies, Bulgaria through the Ministry of Education and Science is a full member of the European Agency for Special Educational Needs and Inclusive Education. For the Agency and its Member States, inclusion is a key factor in quality assurance, aiming: „...all students, whatever their age, be able to receive adequate, high-quality

education in the community in which they live, alongside with your friends and peers“ (European Agency, 2015, p. 1). It was with the support of the Agency and the European Commission that the Ministry of Education and Science organized a peer consultation on inclusive education in November 2017 with the theme: „Inclusive education for all. Unlocking the potential of individuals and creating sustainable partnerships for an inclusive and sustainable future for Bulgaria.“ Peer counseling provided an opportunity for experts and professionals working in the field of education, from Bulgaria and Norway, Portugal, Belgium, Greece and Romania, to contribute based on their experience, providing examples of how changes were made in education systems, to become inclusive, to present the progress made so far, to discuss the challenges that still need to be overcome, and to outline the next steps in this process. Legislative measures and policies were discussed, building a comprehensive school approach by providing the necessary measures to enable schools to become more inclusive, redefining and reorganizing existing human and financial resources and identifying the necessary additional resources.

The focus of the work of the Ministry of Education and Science is the reforming and modernization of special schools and centers for special educational support. Activities are organized and coordinated to support special schools for children with sensory disabilities and centers for special educational support to realize their new functions to provide additional support for the personal development of children and students with special educational needs. Directors and pedagogical specialists from special schools and special education support centers are being trained in the context of inclusive education.

In accordance with the Concept approved by the Minister of Education and Science for the implementation of Article 21 of the UN Convention on the Rights of Persons with Disabilities, a national scientific study of the Bulgarian Sign Language was carried out, resulting in the development of a dictionary of the Bulgarian Sign Language and a scientific description of the grammar in the Bulgarian Sign Language. The study is the basis for the official recognition of the Bulgarian sign language, for enhancing the conventionality of gestures, for expanding its grammatical structure, for creating methodological tools for learning and its use in various fields and activities. To this end, the Ministry of Education and Science, in broad cooperation with institutions and organizations of hearing impaired people, is drafting a law on the Bulgarian sign language.

Under the Operational Program „Science and Education for Smart Growth“, co-financed by the European Union through the European Structural and Investment Funds, the Ministry of Education and Science is a specific beneficiary of projects supporting national inclusive education policies:

Project BG05M2OP001-2.011-0001 „Supporting Success“

The duration of the project is 30 months as of 28.02.2019.

- The main objective is to promote equal access to quality education and fuller coverage of students in school education through activities to overcome learning difficulties and gaps in learning content, as well as to develop their potential and opportunities for successful completion of secondary education and future social, professional and personal realization;
- The project activities are aimed at providing general support to all students who have difficulty in learning the content of the various subjects, through additional training, as well as through interest and career guidance activities;

- As a result of the activities, the share of early school leavers and the education system should be reduced, and reintegration should be achieved. The focus is on primary and secondary school students;
- Depending on the individual needs, activities will be undertaken to supplement, develop and upgrade competences acquired during the compulsory hours, as well as to motivate students to attend school and to prevent early school leaving.

Project BG05M2OP001-3.005-0004-C01 „Active inclusion in pre-school education“

The duration of the project is 30 months as of 16.05.2019.

- The project aims to increase access to pre-school education for children from vulnerable groups and people in poverty;
- The project envisions a set of measures – provision of additional Bulgarian language training for children with a different mother tongue as an effective tool for social inclusion in the peer group; motivation of parents for active cooperation between family and kindergarten and the benefits of pre-school education; development of a specialized methodology for mastering the Bulgarian language for children with a different mother tongue; training kindergarten teachers to apply a screening test to identify early on the risk of learning disabilities in children 3 years of age.

Project BG05M2OP001-2.012 „Tomorrow's Education“

The project lasts 36 months - until October 2022.

- The project will help transform the traditional learning environment and integrate new educational technologies;
- The project will contribute to the digitalization of Bulgarian education through the development of digital educational content, such as electronic textbooks and E-learning aids, interactive and multimedia lessons, educational applications and games, tests, etc., as well as enhancing digital competence and students' skills in the form of interest activities;
- One of the project activities envisions the construction of a modern protected educational environment in schools and kindergartens, based on modern facilities (visualization equipment), presentation of educational content through information and communication technologies (such as interactive whiteboards, interactive tables for kindergartens, tablets, multimedia projectors and displays for interactive content visualization, specialized advanced technology for children with sensory impairments, children with ASD, children with cerebral palsy, etc.).

In addition to the good policies and practices of inclusion and support for the personal development of children and students, inclusive education in Bulgaria has a number of challenges:

- Developing workable policies at local level to provide support for the personal development of children and students, including inclusive infrastructure and necessary professionals;
- Achieving full, effective and efficient cooperation between kindergartens, schools, municipalities, regional support centers for the inclusive education process, centers for special educational support and regional education departments in order to support the personal development of children and students in their best interest;
- Providing appropriate digital technologies, digital learning content and alternative means of communication to support the learning and development of children and students and to achieve greater creativity and innovation in education;
- Providing sufficient training for pedagogical specialists to work with children and students with different needs in the diversity of the classroom and to support personal development, work with

modern tools and technologies, work and effective partnerships with parents and with the community;

- Providing specialists and sufficient financial and material resources to carry out activities to support the personal development of children and students, especially in smaller areas;
- Achieving a change in attitudes (within educational institutions and in society at large) for awareness, acceptance and support of the individuality and potential of each child or student, as well as for participation in activities aimed at removing obstacles to learning and creating opportunities for development and participation of children and students in all aspects of community life.

Inclusive education is both a new educational philosophy and a process that cannot be a solitary endeavor, but is essentially a cause, policy and practice of the entire educational community and requires a systematic approach and interaction of all participants in this process.

BIBLIOGRAPHY

1. The United Nations Convention on the Rights of the Child (1989).
2. The United Nations Convention on the Rights of Persons with Disabilities (2006).
3. The United Nations Sustainable Development Goal No. 4: "To ensure inclusive and equal access for all to quality and education; to enhance everyone's lifelong learning opportunities" (UN, 2015).
4. *Policy Guidelines on Inclusion in Education*. UNESCO. Publication Date. 2009.
5. General Comment No. 4 (2016) on the right of inclusive education of the UN Committee on Human Rights.
6. Communication from the European Commission of December 2016 on Improving and modernizing education.
7. European Pillar of Social Rights, 2017, the European Council, the European Parliament and the Commission.
8. European Agency for Special Educational Needs and Inclusive education, 2017. Improving the performance of all students in inclusive education: Final summary report. (Odense, Denmark).
9. The Pre-school and School Education Act (2016).
10. The Ordinance on Inclusive Education (Decree No. 232 of the Council of Ministers of 2017).

"WE THINK, WE CREATE, WE PLAY...TOGETHER: AN INCLUSIVE PARK FOR EVERYBODY"

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The Robert Hollman Foundation supports the development of blind and visually impaired children in the two centres of Padova and Cannero Riviera (both in Italy). The Foundation has been operating since 1979. Every year we care for 450 children, whom we support and care for, together with their families, with our comprehensive and multidisciplinary approach.

Every child, also a child with disability, loves playing and playing is the right of every child. It often happens that a child with disability cannot play as other children because playground equipment is usually not adequate.

The Robert Hollman Foundation recently promoted an innovative project with the aim of creating an inclusive park in the town near the Foundation, where every child could play and which every person could enjoy. The creation of the park was the result of a fusion of two apparent parallel, but at the same time intertwining, paths. One involved sharing the project with 16 bodies and professional associations* (see the list below), including Padua University and the municipality. The other involved 1378 children and 80 teachers of kindergartens and primary schools in the town, who followed a lab path to finalize and create their ideal concept of an inclusive park and playground. Different areas of disability (sensory, motor, cognitive) and age groups (3-6 and 6-11 years) were included in the planning process.

Starting from the principles of the International Classification of Functioning, Disability and Health (WHO, 2016) and of Universal Design (CAST, 2018), a lab path was developed.

For ICF, the functioning of a person is an interaction or a complex relationship between health conditions and contextual factors. Within these components of the functioning and disability of a person there is a dynamic interaction: interventions on one component might modify one or more other components.

Universal Design is the design and composition of products, structures, programmes and services so that they can be accessed, understood and used to the greatest extent possible by all people regardless of their age, size, ability or disability, without the need for adaptation or specialized planning.

As a part of the process to involve the local schools and children a children's book was first created and printed; it was written in different codes (Braille, simplified text, AAC, audiobook) to be accessible to everybody. The book was structured and its content developed so that it could be read by everybody as a simple story, while working on different levels, creating in the reader questions and considerations, which deal with different codes and aspects of disability. Every character in the book represents a different disability and the reader can understand not only the weak points, but also more importantly the strong points of each character.

Children participated in the labs over one year period and they identified with the main characters of the book and had the chance to reflect on their experiences and emotions. Through the reading of the book, the analysis of the characters and personal introspection, children identified what should be present in an inclusive park for everybody. Finally they reproduced this, creating a model park for everyone and their hand-made works were exhibited to other schools.

As part of the lab path development, teachers underwent a training course of a general nature on the objectives and the roots of this project. At the same time, they received specific

training related to different aspects of disability, which was provided by the professionals of the different bodies and associations involved.

On the other side of the project creation and since January 2017, there have been meetings, which are still ongoing, between the interested bodies and associations, of both general (with all 16 bodies) and specific (regarding technical aspects with all relevant parties) natures. Throughout this consultation period parents' associations have been involved. Every association and body identified its own concerns and needs about what was necessary and important to include in the park, which were then discussed among the professionals to obtain a fully balanced result.

In the meetings there were always technicians and designers of the Municipality, who shared all the contents and wrote reports so that needs of the bodies and associations could be translated also at a technical level.

The suggestions of the children, together with those of the associations and professionals have been combined in this co-participated project.

Being a co-participated project, the district has been involved also at a financial level, investing money for a municipal public park, so that it could be a gift for the citizens' community.

Another Municipality has already communicated its interest in adopting this project; the mayor of Cannero Riviera (Verbania, Italy) is already working on the principles of this project to build an inclusive park there too and labs are starting in the province of Verbania.

In Padova, the next step will be the "laying of the first stone" of this inclusive, tailor-made park, accessible to everybody, which is scheduled for autumn 2019.

We hope that this project will spread the culture of respect for the specificity of every individual.

*List of co-participating bodies and associations:

- ANFFAS Onlus Padova
- Associazione Fiori Blu ONLUS
- Associazione Uniti per Crescere
- Centro Medico di Foniatria
- Cooperativa COISLHA
- Federazione Nazionale delle Istituzioni Pro Ciechi (Padova)
- Fondazione I.R.P.E.A. Istituti Riuniti Padovani di Educazione e Assistenza
- Fondazione Opera Immacolata Concezione
- GRUPPO POLIS Cooperative sociali
- IRIFOR Ricerca, Formazione, Riabilitazione per la disabilità visiva (Padova)
- Istituto Configliachi
- Lega del Filo d'Oro (Padova)
- Nostra Famiglia di Padova
- UILDM (Padova) Unione Italiana Lotta alla Distrofia Muscolare
- Unione Italiana Ciechi (Padova)
- Università degli Studi di Padova

References

- "International Classification of Functioning, Disability and Health (ICF)". World Health Organization. 22 July 2016.
- CAST (2018). Universal Design for Learning Guidelines version 2.2. Retrieved from <http://udlguidelines.cast.org>

REGIONAL CENTERS FOR SUPPORTING THE PROCESS OF INCLUSIVE EDUCATION IN THE ADDITIONAL SUPPORT FOR PERSONAL DEVELOPMENT OF CHILDREN WITH VISUAL IMPAIRMENTS IN BULGARIA

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Summary: *Bulgaria has undertaken a radical reform of its educational legislation by regulating inclusive education for all children and students in kindergartens and schools. The inclusion of a functional assessment of special educational needs has provided an opportunity for children and pupils with visual impairments to receive additional educational support in kindergartens and schools by providing all the necessary specialists.*

With the entry into force of the Law on Pre-school and School Education in Bulgaria, Regional Centers have been established to support the process of inclusive education as specialized service units of the Ministry of Education and Science for conducting state policy in this field at local level. These units are of particular importance in the current stage of development of the inclusive education system in our country, because we are still in a transitional phase between integrated, inclusive and inclusive education. These educational concepts have similarities but also significant differences that are not always differentiated by individual participants in the process. (Damyanov, 2019).

Providing additional support for the personal development of children and students with visual impairments is one of the major challenges facing the work of these specialized educational structures.

In the focus of inclusive education, resource support as part of additional support is one of the main concepts because each participant in the learning process is unique and needs support in order to develop his or her individual abilities. (Yankova, Zh. 2018)

The activities of the regional centers are mainly organized in two sectors, one related to the organization of the regional team to support the personal development of children and students with special educational needs, and the other to the provision of resource support and therapeutic support in kindergartens and schools in the respective administrative area of the country.

Providing support for children and pupils with visual impairments in a general education environment goes through several basic phases, with the provision of specialized expertise by regional centers being fundamental to the effectiveness of inclusive education.

These stages of support are:

- Monitoring and identifying the problem
- Targeting an ophthalmologist
- Functional assessment of special educational needs
- Defining support plan and specialists
- Training of general education teachers
- Tracking development dynamics

Usually, children and students who have visual impairments fall into the general education environment, but not to the extent that this would impede access to the kindergarten or school itself. Sometimes parents themselves have no idea of their child's real difficulty, including what happens and they understand that he or she needs glasses and a doctor visit from the teacher. It is in this first stage that teachers usually report having difficulty seeing what is written on the board or certain uncoordinated movements during sports activities and more.

An ophthalmologist's visit also begins with an evaluation using standard procedures, which typically require the investigated child to recognize letters, numbers, or other symbols at different distances from the eye. (Tsvetkova-Arsova, M. 2015)

Once the visual impairment in the school environment has been medically identified, a functional assessment of the special educational needs of the personal development support team can be made.

In Bulgaria, we are at the beginning of implementing a functional assessment model based on the World Health Organization's International Classification for the Functioning of Human, Disability and Health (ICF-CY).

ICF-CY is based on the so-called “bio-psycho-social model” that combines aspects of the "social" and "medical" models. According to Hollenweger (2014) at ICPFZ, functioning and disability are understood as the result of complex interactions between biological, psychological and social factors. ICPF also provides a common language for exploring the dynamics of these factors and can therefore provide a basis for improving the lives of people with disabilities.

In the context of the development of functional assessment, members of the personal development support teams should in all cases be encouraged to consider themselves from a social context, which means placing a major emphasis on the environment, which is the general framework for assessing a person in relation to their personal behavior, adaptation, etc.

According to the functional assessment, vision falls into the second section and therefore, based on the organism's structures and functions, activities and the environment are determined, which can improve and develop the inclusion of the child with visual impairments.

Structures of the body (s)	Functions of the body (b)	Activities participation (d)	/	Environment (s)
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Eye, ear and related structures	Sensory functions	Common tasks and challenges	The natural environment and human-induced changes in the environment
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In addition to the results of the functional assessment, a support plan for the child is defined in which, in addition to the need to adapt the teaching methods in the general education room, the need to appoint additional specialists in the person of a resource teacher and a teacher of the visually impaired is prescribed, as well as and the need for appropriate aids and technology. Parents' opinions are also taken into account during the evaluation and the preparation of the support plan. This is an essential part of gathering prior information. In this direction, a questionnaire for parental observations in the Methodology for Assessing the Individual Needs of Children and Students with Multiple Disabilities of Radulov, B, Tsvetkova-Arsova, M and Balkanska, N can also be used. (2015).

Aids such as the braille typewriter and the Yankova Desktop Classification Magnifier (2018) fall into the group of high-tech solutions that can be used in the education of children with visual impairments. At the same time, most of these children in general education can be trained without using specially selected tools because they have good enough vision for normal communication with the inclusion of elementary strategies by the teacher, such as preparation of teaching materials in enlarged font, location in proximity to study board, placement of desk near or far from window, type of work desk flooring, etc. All these prescriptions should be included in each child support plan and implemented by all teachers. It is at this stage that teacher training is provided, with special information seminars organized by the school or the regional center for this purpose. Such training is compulsory in differentiated teaching. In inclusive education, this is a basic tool for the general education teacher to involve all students in the lesson, regardless of their special educational needs. In this direction, we need to highlight four techniques for teaching in a differentiated classroom according to Tomlinson, K (2018):

- Activities for the whole class, which include teaching and conducting demonstrations and discussions with the opportunity for the visually impaired child to express himself and to find accessible information
- Independent activities that involve the work of the visual educator and the resource teacher with the child to make sense of the content and provide personal instruction
- Interview between teacher and student. It is compulsory for inclusive education for the teacher to take some time to talk individually with each student to discuss how he or she feels in the classroom and how his / her results and interest can be improved.
- Activities in small groups. The childcare environment has no alternative, so inclusive education must necessarily plan and prepare children for permanent work in small groups. The visually impaired child can participate in smaller groups and other participants should receive basic instructions and communication rules.

The overall concept of differentiated education can also be seen as part of the need to introduce a concept of universal design in school, not only for children with visual impairments, but in general for educational institutions.

The principle of universal design is a leader in the system of design disciplines including environment, products and communication. (Radulov, B.2007).

Follow-up in development dynamics is the final stage and is conducted at the end of each academic term or academic year again by the personal development support team. Standard procedures are used, and it is desirable for parents to be included in this procedure.

In addition to resource teachers, regional centers can also provide resource teachers for visually impaired students, so we will also look at the profile of these pedagogical specialists.

-Resource teacher	Educator of visually impaired children
<ul style="list-style-type: none"> - Builds a positive attitude towards learning in a mainstream environment; - Assists in adaptation of educational content; - Participates in personal development support teams; - Promotes communication and interaction between the visually impaired student and his / her classmates and teachers; - Prepare training materials; - Focuses on continuing education; - Consultant teacher during state exams; 	<ul style="list-style-type: none"> -Braille literacy; - Training in the use of specialized aids and software; - Development of social skills; - Helps the student how to use the stored knowledge; - Teaches special subjects; -Training in working with white cane; -Provision of specialized educational materials and use of e-books and library; -Consultant teacher during state exams

As seen in the table above, both specialist resource teachers and pedagogues of visually impaired children have quite common work activities, but with regard to children with visual impairments, the visually impaired educator has specific knowledge related specifically to this impairment, which can be very important importance for the future realization of these students, including ensuring an independent and independent life.

In Bulgaria, the total number of teachers of visually impaired students in regional centers for support of the inclusive education process is 22, and they work with 321 children and students with visual impairments, according to the National Resource Teachers Association 2018.

Undoubtedly, one child with visual impairments in the general education classroom needs both the help of a resource teacher and a teacher of visually impaired children. Their role is to help the child to cope with the new knowledge better at school and to make it clear, easy and understandable and accessible to him / her. It's good to work individually as well as in class with him. The best result for the child would be if the two specialists work in a team and combine and coordinate with each other the work with the student.

There are three important groups of factors for the success of a visually impaired student in the general class:

1. School factors:

- Admission by general education teacher and flexible teaching
- Acceptance and interaction with peers

- Individual support for the student
- 2. Factors related to the pupil's visual impairment
 - Level of social skills
 - Higher secondary school achievement
 - Positive image of yourself and the world around it
- 3. Family factors:
 - Conditions for admission of the child to the comprehensive school
 - Supporting parental independence
 - Realistic expectations and requirements

According to a study by Radulov, 85% of seeing students are convinced of the successful education of visually impaired children in the mass class. As for the interaction in the lesson between the visually impaired and the visually impaired, it is most intense in subjects with a pronounced speech character such as history, languages, etc. outside the lessons, the visually impaired students feel isolated. (Radulov, Sofia, 2007)

Today, with the technologies we have, with the help of the resource teacher and educator of the visually impaired, a child with visual impairment can safely learn on an equal footing with his or her peers in the norm without experiencing any difficulty in perceiving and presenting the teaching material . This is where regional centers play a major role, providing the necessary specialists to work with the child to feel integrated and understood with his or her individual needs in the general education environment, where he or she will develop with all other classmates.

Bibliographic reference:

Дамянов,Калоян. (2019г). Помощникът на учителя в приобщаващото образование. София.

Радулов,Владимир. (2007г.)Децата със специални образователни нужди с училището и обществото. Бургас.

Радулов,В, Цветкова-Арсова,М и Балканска,Н. (2015г.) Методика за оценка на индивидуалните потребности на деца и ученици с множество увреждания. МОН.София.

Цветкова-Арсова, Мира. (2015г.) Педагогика на деца и ученици с множество увреждания. София.

Томлинсън,Каръл.(2018г.) Диференцирано преподаване в академично разнородни класни стаи. София.

Янкова,Жана. (2018г). Допълнителна подкрепа на деца и ученици чрез помощни средства и технологии в предучилищното и училищно образование. Стара Загора

Hollenweger, J. (2014). Definition and classification of disability. New York: UNICEF. (accessed on 23.8.16) http://www.inclusive-education.org/sites/default/files/uploads/booklets/IE_Webinar_Booklet_2.pdf

Yankova, Zh. (2018)Development of Special Educational Needs Support For Children and Students with Special Educational Needs, Научно списание, Стратегии на образователната и научната политика, кн.5, с.545-551

<http://www.narubg.org>

<http://www.mon.bg>

ATTITUDES AND KNOWLEDGE ABOUT INCLUSIVE EDUCATION OF STUDENTS WITH VISUAL IMPAIRMENT: ELEMENTARY AND HIGH SCHOOL TEACHERS

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Abstract

The success of inclusive education (IE) largely depends on teachers' attitudes and knowledge toward students with disabilities (Dapudong, 2014). A great deal of scholarly research focuses on the attitudes of teachers regarding educating students with disabilities. Unfortunately, a small number of studies refer to teachers' attitudes and knowledge toward students with visual impairment (VI). This research focuses on elementary and high school teachers' attitudes and knowledge regarding the inclusive education of students with visual impairment. This study brings up the following research questions: 1) Do elementary and high school teachers have positive attitudes towards IE of students with VI? 2) Do these teachers consider that they have enough knowledge toward inclusion of students with VI? A total of 135 teachers, working in elementary and high schools, returned the completed survey. A two-part questionnaire was used in this study. Part one gathered information relating to personal and professional characteristics of the teachers. Part two was a 14-item Likert scale titled, Attitudes, Knowledge and Previous Experience about Inclusive Education Questionnaire (AKPEIEQ). The major finding of the study was that the elementary and high school teachers had positive attitudes towards the inclusion of students with VI. Almost all of participants (90,4%) considered the presence of support professionals (special educators) in the classroom an indispensable element for an efficient IE. In addition, 39.3% of them have the ability to provide guidance to students with VI about their future professional opportunities and felt qualified to do their job according to the requirements of IE.

Keywords: *teachers, attitudes, knowledge, inclusive education, students with visual impairment*

Introduction

Inclusive education (IE) is not simply about making regular schools available for students with visual impairment. In fact, it is about being proactive in identifying barriers and obstacles faced by those students in trying to access quality education opportunities, as well as removing

those barriers that lead to exclusion (UNESCO, 2013). In order inclusive education to become a reality, we as a society must ensure that all students, especially students with disabilities, have access to quality education.

In a very large number of studies, the attitude of teachers towards the education of students with disability has been put forward as a decisive factor in making schools more inclusive. Namely, if mainstream teachers do not accept the education of these students as an integral part of their job, they will try to ensure that someone else (often the special educators) takes responsibility for these students and will organize covert segregation in school (Mutasa, Goronga, & Tafangombe, 2013).

Teachers seem to be a key factor in successful inclusion, as they have an important position in education (Forlin & Chambers 2011). They serve as intermediaries between the state, various stakeholders in education, parents, policies and legislation, and the students, as they are responsible for implementing policy in inclusive environments and sharing and promoting inclusion principles in the classroom (Pappas, Papoutsi and Drigas, 2018).

The success of inclusive education largely depends on teachers' attitudes and knowledge toward students with disabilities (Dapudong, 2014). A great deal of scholarly research focused on the attitudes of teachers regarding educating students with disabilities. Unfortunately, a small number of studies refer to teachers' attitudes and knowledge toward students with visual impairment (VI).

This research focuses on elementary and high school teachers' attitudes towards and knowledge about inclusive education of students with visual impairment. The present study explores the following research questions: 1) Do elementary and high school teachers have positive attitudes towards IE of students with VI? 2) Do these teachers consider that they have enough knowledge toward inclusion of students with VI?

Method

Sample

The research involved 135 teachers from two municipalities: Berovo and Negotino. Of these, 71 (52.6%) are teachers in elementary school, and 64 (47.4%) are high school teachers. Half of them, 68 (50.4%) are aged 35-50, over 35 were 45 (33.3%), and 22 (16.3%) were less than 35 years old. According to the length of service, the respondents were divided in 3 groups: up to 10 years, from 10 to 20 years, and more than 20 years of work experience. Most of them had a working experience of 10 to 20 years (55 or 40.7%), and at least up to 10 years (36 or 26.7%).

Instrument

The Attitudes, Knowledge and Previous Experience about Inclusive Education Questionnaire (AKPEIEQ) was used to examine educators' attitudes and knowledge about educational inclusion of students with VI. This instrument consisted of two parts: (a) the IE Attitude Scale, and (b) the IE Knowledge Scale, which comprised seven items. Both dimensions used a five-level Likert scale (1= Strongly disagree, 2= Disagree, 3= Undecided, 4= Agree, 5= Strongly agree). For the purposes of this research, the original term "students with special educational needs" was replaced by "students with visual impairment". At the beginning of the questionnaire, the definition of students with visual impaired was briefly explained. In the Republic of North Macedonia, blindness is defined as visual acuity equal to or less than 0.1, or equal to or less than 0.25 corresponding visual field loss to less than 20°, in the better eye with the best possible correction. Low vision is defined as visual acuity equal to or less than 0.4, in the

better eye with the best possible correction, or more than 0.4, if there is a medical prognosis of progressive reduction of visual acuity(Official Gazette of the Republic of Macedonia, No.30/2000). The umbrella term visual impairment includes low vision and blindness.

In our country, students from 5 to 14 years of age are educated in elementary school, and in high school from 14 to 18 years of age. Both schools are compulsory.

Statistics

The results were analyzed using the software package SPSS 14.0. In order to compare and determine the relationship between the obtained data from the different groups of subjects, an independent test T-test, and Fisher's test were used at a level of significance of $p < 0.05$.

Results

From Figure 1 it can be noted that 42 (59.2%) teachers and 31 (48.4%) of the professors reported having teaching experience with students with visual impairments. With the application of the Fischer test, no statistically significant difference between teachers and professors regarding teaching experience with students with visual impairments was determined ($F = 0.2302, p > .05$).

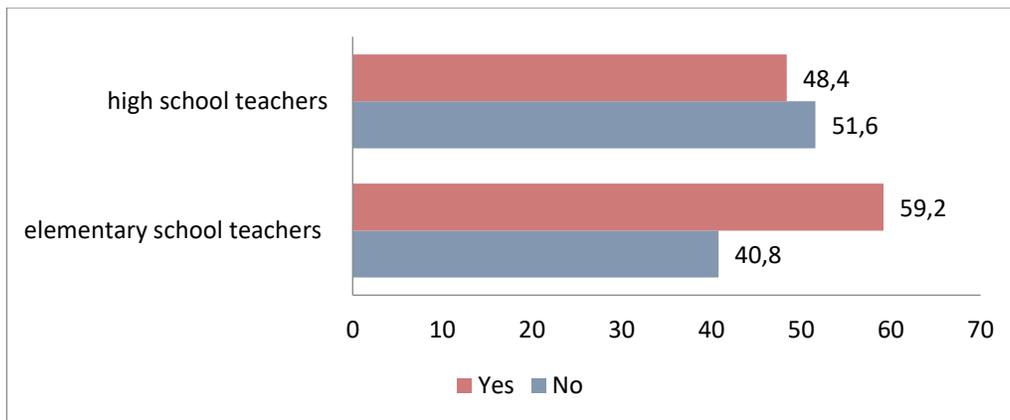


Figure 1. *Teaching experience with students with VI (%)*

The first part of the questionnaire named as *IE Attitude Scale* consists of seven items expressed in the form of statements (Table 1). Five answers are offered for all statements (1 = strongly disagree, 5 = strongly agree).

Table 1. Attitudes towards inclusion

Items	Disagree	Unsure	Agree
It is unfair to separate students with SEN from the rest of their peers	11 (8,1%)	4 (3%)	120 (88,9%)
IE develops tolerance and respect among students	4 (3%)	10 (7,4%)	121(89,6%)
I think that all students, including those with moderate and severe disabilities, can learn in inclusive settings	23 (17%)	29 (21,5%)	83(61,5%)
IE* is also possible in secondary education	13 (9,7%)	28 (20,7%)	94(69,6%)
Inclusion has more advantages than disadvantages	7 (5,2%)	42 (31,1%)	86(63,7%)
I am in favour of inclusion	21 (15,6%)	55 (40,7%)	59(43,7%)
Inclusion requires the presence in the classroom of support educators	3 (2,2%)	10 (7,4%)	122(90,4%)
Total	82 (8,7%)	178 (18,8%)	685 (72,5%)

* Inclusive education

As Table 1 shows, less than half of the participants (43.7%) were in favour of IE, although 88.9% have declared themselves against educational segregation of students with visual impairment. The majority of participants (89.6%) believe that IE develops tolerance and respect. Almost the same percentage of the respondents think that IE is possible in secondary education (69.6%), and the IE has more advantages than disadvantages (63.7%). Lastly, almost all of participants (90,4%) considered the presence of support professionals (special educators) in the classroom an indispensable element for an efficient IE.

Table 2. Knowledge toward inclusion

Items	Disagree	Unsure	Agree
I know the declaration and the convention on the rights of persons with VI*	47 (34,8%)	26 (19,3%)	62 (45,9%)
I am able to diagnose a student with VI*	15 (11,1%)	19 (14,1%)	101 (74,8%)
I know the different schooling modalities available for students with VI*	59 (43,7%)	37 (27,4%)	39 (28,9%)
I can provide guidance about the organizational proposals which should be included in a School Educational Project in order to develop IE**	26 (19,3%)	57 (42,2%)	52 (38,5%)
I am able to provide guidance about the methodological adaptations that can be used in class in order to deal with students' diversity	18 (13,3%)	26 (19,3%)	91 (67,4%)
I can provide guidance about future professional opportunities for students with VI*	33 (24,4%)	49 (36,3%)	53 (39,3%)
I feel qualified to carry out my work according to the requirements of IE**	39 (28,9%)	43 (31,8%)	53 (39,3%)
Total	237 (25,1%)	257 (27,2%)	451 (47,7%)

* Visual impairment ** Inclusive education

From Table 2 it can be seen that one third (34.8%) of the participants admitted that they do not know the international regulations for IE. It is interesting that a large percentage of them (74.8%) are considered capable of making a psychopedagogic assessment for students with

visual impairment. 39.3% of them have ability to provide guidance to students with visual impairment about their future professional opportunities, and felt qualified to do their job according to the requirements of IE. Also, 67.4% of them agree that they are able to provide guidance about the methodological adaptations that can be used in class in order to deal with students' diversity. At the same time, 28.9% of participants confirmed they did know about the different inclusive schooling modalities of students with visual impairment.

Table 3. Differences in attitudes towards inclusion

Items	elementary school teachers n = 71 M (SD)	high school teachers n = 64 M (SD)	t	p
Separate students with VI*	4.27 (0.92)	3.95 (0.82)	2.075	< .05
Tolerance and respect among students	3.99 (0.83)	4.17 (0.48)	-1.554	> .05
All students can learn in inclusive settings	3.73 (0.83)	3.44 (0.48)	1.834	> .05
IE** is also possible in secondary education	4.03 (0.60)	3.65 (0.55)	2.635	< .05
Has more advantages than disadvantages	3.62 (0.90)	3.72 (0.65)	-0.724	> .05
I am in favour of inclusion	3.21 (1.09)	3.47 (0.81)	-1.536	> .05
Requires the presence of special educators	4.45 (1.09)	4.33 (0.81)	0.942	> .05

*Visual impairment** Inclusive education

The differences between educators' attitudes was statistically analyzed using the independent-samples t-test (Table 3). A statistically significant difference was found in two of the above statements: "it is unfair to separate students with visual impairment" (p < 0.05) and "IE is also possible in secondary education" (p < 0.05). Namely, high school teachers had more positive attitudes toward the above statements.

Table 4. Differences in knowledges towards inclusion

Items	elementary school teachers n = 71 M (SD)	high school teachers n = 64 M (SD)	t	p
Declaration and the convention	3.24 (1.07)	3.09 (1.10)	0.774	> .05
Diagnose a student with VI*	3.8 (0.82)	3.8 (0.92)	0.039	> .05
Modalities available for students with VI*	2.96 (1.00)	2.83 (0.93)	0.772	> .05
Develop IE**	3.22 (0.77)	3.23 (0.91)	0.045	> .05
Methodological adaptations	3.69 (0.80)	3.55 (0.99)	0.926	> .05
Future professional opportunities	3.46 (0.93)	3 (0.90)	2.916	< .05
Qualified to the requirements of IE**	2.99 (1.03)	3.38 (1.01)	-2.200	< .05

*Visual impairment** Inclusive education

It was particularly noticeable that elementary school teachers are much more likely to think that they can provide guidance about future professional opportunities for students with VI than high school teachers (p < .05). At the same time, high school teachers state that they are more qualified to do their job according to the requirements of IE (p < .05).

Table 5. Differences in attitudes and knowledge towards inclusion

Teachers	Attitudes	Knowledge	t	p
Elementary school	3.89 (0.79)	3.34 (0.92)	3.821	< .05
High school	3.83 (0.69)	3.27 (0.97)	3.763	< .05

An independent-samples t-test was carried out to evaluate the differences in attitudes towards IE and its specific knowledge and the results did prove to be statistically significant at $p < .05$ level (Table 5). The educators in this study reported that they had more positive attitudes than knowledge about the inclusion of students with VI in both elementary and high education.

At the end of the questionnaire, educators could write their comments about the inclusion of students with visual impairment. Most of them stressed the need for additional training and educational workshops for working with students with VI, as a need for the continuous professional help from a special educator. One respondent noted: "I accept inclusion, but only on the condition a special educator to be employed in the school," another one believes that "only students with mild impairment can be included in regular school." Obviously they are more positive toward students with moderate visual impairment. This could mean that the effectiveness of inclusive education depends on the types of disabilities. A review of existing literature from the United States, Asia, and Africa suggests that attitudes of teachers toward inclusive education seem to be influenced by the severity of disability and the lack of facilities to support inclusion (Bailey et al., 2015; Gyimah et al., 2009).

Conclusion

Reviewing the attitudes of teachers toward inclusive education, de Boer, Pijl, and Minnaert (2011) posit that teachers are often negative or neutral toward inclusion due to the lack of resources and adequate training they receive. Namely, teachers' attitudes toward inclusion are often not based on ideological arguments but rather on practical concerns about how inclusive education can be implemented (Warnock et al. 2010). In this study, the majority of educators express positive attitudes toward inclusion of students with VI, but at the same time emphasize the need of appropriate teacher training and continuous professional help from a special educator. Consequently, inclusive schools should provide special education training to their teachers to promote inclusion of students with VI. Furthermore, inclusive education in our country is a relatively new concept. Further research is needed to understand the current state of inclusive education of students with VI within the country.

1. Nomanbhoy, A., & Tubpun, T. (2015). Inclusive education: Teacher perspectives from Malaysia. *International Journal of Inclusive Education*, 19, 547-559.
2. Dapudong CR (2014) Teachers' Knowledge and Attitude towards Inclusive Education: Basis for an Enhanced Professional Development Program. *International Journal of Learning & Development*, 4(4): 1-24.
3. de Boer, A., Pijl, S. J., & Minnaert, A. (2011). Regular primary schoolteachers' attitudes towards inclusive education: A review of the literature. *International Journal of Inclusive Education*, 15, 331-353.
4. Forlin, C., & Chambers, D., (2011). Teacher preparation for inclusive education: Increasing knowledge but raising concerns. *Asia-Pacific Journal of Teacher Education* 39, 17-32.
5. Gyimah, E. K., Sugden, D., & Pearson, S. (2009). Inclusion of children with special educational needs in mainstream schools in Ghana: Influence of teachers' and children's characteristics. *International Journal of Inclusive Education*, 13, 787-804.

6. Mutasa, J., Goronga, P., & Tafangombe, J. (2013). Challenges experienced by students with disabilities when pursuing programmes with Zimbabwe Open University. *SAVAP International*, 4(4), 513–521.
7. Official Gazette of the Republic of Macedonia [Online]. No.30/2000 [Cited 2019 Apr.]. Available from: URL: <http://www.pravo.org.mk>
8. Pappas, A. M., Papoutsis, C., & Drigas, S. A. (2018) Policies, Practices, and Attitudes toward Inclusive Education: The Case of Greece. *Social sciences*, 7(90), 1-15.
9. United Nations Educational Scientific Cultural Organization. (2013). Inclusive education: Addressing exclusion. [Cited 2019 Apr.]. Available from: URL: <http://www.unesco.org/new/en/education/themes/strengthening-education-systems/inclusiveeducation/browse/4/>
10. Warnock, M., Norwich, B., & Terzi, L. (2010). *Special Educational Needs: A New Look: Key Debates in Educational Policy*. London: Bloomsbury Publishing.

Students with visual impairment and physical education: segregated in “inclusion”?

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Abstract

After the decades of purposeful and consistent segregation of individuals with disabilities during the Soviet regime of Hungary, The LXXIX. Act on Public Education of 1993 stated that all students with disabilities have the right to attend mainstream schools, and study together with their non-disabled peers. As a result, the number of students with VI (visual impairment) in mainstream schools has been multiplied since 1993. These students, their families and teachers, however, still face challenges of different types. Segregation is present in many school subjects: more than half of students with VI do not participate in PE (physical education) lessons or in extracurricular physical activity. Blind and low-vision students are therefore facing all physiological and social risks of a physically inactive lifestyle. The majority of PE teachers and coaches are not provided education on inclusion and students with disabilities, and the term ‘adapted physical education’ is not yet part of the scientific vocabulary of PE. This paper highlights the barriers of involving students with VI in mainstream PE lessons, and introduces initiatives which are meant to promote accessible PE.

Keywords: visual impairment, physical education, access

Background

Regular PA (physical activity) has multiple, life-long benefits for persons with VI (visual impairment) or blindness, and individuals with disabilities in general. It is therefore vital to underline these outstanding benefits on the widest possible range of scientific and teacher training forums, among experts and parents likewise. This paper introduces participation rates of individuals with disabilities in PA. Then, consequences of an inactive lifestyle, followed by

disability-specific benefits of PA, are briefly revised. Finally, participation rates of Hungarian students with VI or blindness in PE are introduced, together with some barriers to inclusion in PE.

Statistics on sport participation rates of persons with disabilities

PA is defined as „any bodily movement produced by skeletal muscles that require energy expenditure.” (WHO, n.y.) More than 1 in 4 adults (28% of the World’s population) are physically inactive (Guthold et al., 2018). According to the latest Special Eurobarometer 472 survey on Sport and PA (2017), 2 in 5 Europeans exercise at least once a week. Activity rates are extremely low in Hungary. 20% of Hungarians are most likely to say they did not walk for ten minutes or more on any day during the previous week.

Research on the involvement of children and adults with disabilities in PA is globally rare. In the US almost 50% of the population with disabilities is found to be inactive, while among non-disabled citizens this figure is under 30% (Carroll et al., 2014). According to data gathered in the Active People Survey by Sport England (2015), 17,2% of all people with a long term limiting illness or disability play sport at least once a week, while individuals with disabilities are still half as likely to do sports as non-disabled persons. Among the factors preventing them from exercising with higher frequency, citizens underlined illness or disability in Estonia (24%), Latvia,

Finland (both 21%) and Sweden (20%) (Special Eurobarometer 472, 2017).

No representative national data is available on sport participation rates of individuals with VI in any developed country. However, experts agree that there is a high need for increasing physical activity levels of the VI population worldwide, since both children and adults with VI and blindness tend to spend their free time with sedentary activities, like watching television or playing computer games (Holbrook, Caputo, Fuller, Perry, Morgan, 2019). Gombás in a survey research (N=140) among adult citizens with VI, living in Budapest, Hungary (2016) found that although respondents are aware of both the risks of physical inactivity, and the general benefits of sport, the lack of accessible sport facilities, together with the fear of tendencies for exclusion on behalf of trainers, prevents many individuals with VI from doing sports.

Why does regular PA matter?

Regular PA is an essential means of improving both physical and mental health and overall well-being (CDC, 2017). According to WHO (World Health Organisation), insufficient PA is worldwide one of the leading risk factors of death, and of noncommunicable illnesses like certain types of cancer, cardiovascular diseases or type 2 diabetes (Schmidt, 2016), and it is widely acknowledged in the prevention and cure of some mental disorders, e.g. depression and anxiety (Petrika, 2012). Obesity, resulting in part from physical inactivity, is by far one of the most severe health issues in the developed world, and individuals with disabilities are proven to be obese in greater numbers than non-disabled persons (Liou et al., 2005; Weil et al., 2002). 'This is troubling considering that people with disabilities are at risk for the same weight-related chronic conditions experienced by the general population, while also being at increased risk for chronic medical conditions associated with disability.' (Froehlich-Grobe, Lollar, 2011, para. 2)

The WHO recommendation on daily accumulated moderate and vigorous-intensity PA for children aged 5-17 is at least 60 minutes. Children with disabilities have lower levels of cardiorespiratory fitness and higher rates of obesity than typical children, and decreased muscular strength is also characteristic, especially among children with cerebral palsy and down syndrome

(Murphy et al., 2008). 'In addition, the psychosocial implications of inactivity include decreased self-esteem, decreased social acceptance, and ultimately, greater dependence on others for daily living.' (Murphy et al., 2008, p. 1057)

Psychosocial benefits of PA are much less investigated than physiological ones. In relation to athletes with disabilities, research shows that it promotes the acceptance of a disability (Spornier et al., 2009; Shapiro & Martin, 2010). Research highlighted that regular involvement in community-based exercise has a multiplying impact on the individual's social interactions and friendships (Giacobbi et al., 2008; Shapiro, Martin, 2010). Crawford and colleagues (2015) pinpointed increased resilience and self-esteem in physically active individuals with disabilities.

Physical activity and visual impairment

Having listed some general physiological, psychological and social benefits of sport for individuals with disabilities, let us underline some important VI-specific benefits of regular involvement in physical exercise. Consistent research shows that childhood sporting habits track from childhood to adulthood (Telama et al., 2005). Hence, it is vital to focus on PA from the youngest age, and understand physical behaviours of young children with VI or blindness. The primary scene for participating in PA is school-based physical education, which is tailored in accordance with the child's needs. However, extensive research (Bredahl, 2013; Fitzgerald, 2005; Gombás, 2016) found that students often experience challenges, and even exclusion at PE classes. In Hungary, it is common practice that students with VI and blindness are exempted from PE, and are told to stay away from the gym (Somorjai, 2008; Perlusz, 2008; Gombás, 2016). In a qualitative research Füller (2019) found that 15 out of 24 students with VI or blindness were exempted from PE, which not only meant that they got no grades, but were also told not to take part in the lessons. Ironically, one of these young people was a professional swimmer. The exemption was, in a single case only, explained by the student's visual condition.

The number of students with VI in mainstream education is growing in Hungary. The vast majority of students in the country's four segregated primary schools for those with a VI have multiple disabilities. Unfortunately, both Gombás (2016) and Füller (2019) found that in mainstream settings, inclusive PE classes are, in most cases, only dreamt of, and barriers are multiple. Osvath and his colleagues (2007) carried out a survey research among university students of physical education (N=582). The research showed that though students were open to teach children with disabilities, their university education provided them with no information on working with people with special needs. International research verifies that PE teachers' openness and positive attitudes are crucial during the inclusion of students with VI and blindness (Block & Obrusnikova, 2007). But access to sport and inclusion cannot be achieved without knowledgeable sport experts. In the recent years, several courses with a focus on disabilities are available at the University of Physical Education (Budapest, Hungary), and in the academic year of 2018-2019, a post graduate course on inclusive training methods started, with the goal of preparing PE teachers and other sport experts for working in inclusive settings.

Conclusion

Each individual has the right to live in both physical and mental health. Children who get in touch with regular sport at a young age are more likely to be active and fit adults. Yessick and Haegele (2019) in a qualitative study made interviews with 16 adults with VI on their childhood sporting experiences. The study concluded that as a result of insufficient inclusion into PE, respondents felt that as students they had no chance to achieve their full potential and get to know their real capabilities. All successes and failures experienced in childhood may have a long-term

effect on a person's self-esteem, self-confidence, and personal choices. It is therefore important to stress that PE is not one of the least important school subjects, as many Hungarians think. Meaningful and successful participation in regular sport has long-term, comprehensive benefits for individuals with VI or blindness.

REFERENCES

Block, M. E., Obrusnikova, I. (2007). *Inclusion in physical education: A review of the literature from 1995–2005*. *Adapted Physical Activity Quarterly*, 24, 103–124.

Bredahl, A.-M. (2013). *Sitting and watching the others being active: The experienced difficulties in PE when having a disability*. *Adapted Physical Activity Quarterly*, 30, 40–58.
Carroll, D. D., Courtney-Long, E. A. Stevens, A. C., Sloan, M. L., Lullo, C., Visser, S. N., Fox, M. H. & Dorn, J. M. (2014). *Vital signs: Disability and physical activity – United States, 2009–2012*. *Mortality and Morbidity Weekly Report*, 63(18) 407–413.

CDC, Centre for disease Control (2017). *Healthy Schools – Physical activity facts*. Retrieved 12/01/2018 from <https://www.cdc.gov/healthyschools/physicalactivity/facts.htm>

Colgan, J. C., Bopp, M. J., Starkoff, B. E., & Lieberman, L. J. (2016). *Fitness Wearables and Youths with Visual Impairments: Implications for Practice and Application*. *Journal Of Visual Impairment & Blindness*, 110(5), 335–348.

Crawford, C; Burns, J; Fernie BA. (2015). *Psychosocial impact of involvement in the Special Olympics*. *Research in Developmental Disabilities*, 45–46. 93–102.

Fitzgerald, H. (2005). *Still feeling like a spare piece of luggage? Embodied experiences of (dis)ability in physical education and school sport*. *Physical Education and Sport Pedagogy*, 10, 41–59.

Froehlich-Grobe, K; Lollar, D. (2001). *Obesity and Disability, time to act*. *American Journal of Preventive Medicine*. VOL. 41, ISSUE 5, PP. 541–545.

Füller, N. (2019): *Látássérült tanulók tapasztalatai az integrált középiskolai oktatásról* (BA thesis). ELTE Bárczi Gusztáv Gyógypedagógiai Kar, Budapest.

Giacobbi, PR; Stancil, M; Hardin, B; Bryant, L. (2008). *Physical Activity and Quality of Life Experienced by Highly Active Individuals With Physical Disabilities*. *Adapted Physical Activity Quarterly*, 25. 3. 189–207.

Gombás, J. (2016). *Budapesten élő, 18-65 év közötti látássérült személyek szabadidő-sportolási szokásainak, és a szabadidősport látássérültek számára akadálymentes hozzáféréseinek vizsgálata*. Doktori értekezés. Testnevelési Egyetem, Budapest. Retrieved 25/11/2017 from <http://real-phd.mtak.hu/467/1/gomb%C3%A1sjudit.d.pdf>

Guthold, R; Stevens, GA; Riley, LM; Bull, FC. (2018). *Worldwide trends in insufficient physical activity from 2001 to 2016: a pooled analysis of 358 population-based surveys with 1·9 million participants*. *The Lancet Global Health*.

Groff, DG, Lundberg NR, Zabriskie RB. (2009). *Influence of adapted sport on quality of life: Perceptions of athletes with cerebral palsy*. *Disability and Rehabilitation*, 31. 4. 318–326.

Holbrook, E. A., Caputo, J. L., Perry, T. L., Fuller, D. K., Morgan, D. W. (2009). Physical activity, body composition and perceived quality of life of adults with visual impairment. *Journal of Visual Impairment&Blindness*, 103(1), 17-29. Kerling, A., Keweloh, K., Tegtbur, U., Kück, M., Grams, L., Horstmann, H. & Windhagen, A. (2015). *Effects of a Short Physical Exercise Intervention on Patients with Multiple Sclerosis (MS)*. *International Journal of Molecular Sciences*, 16(7), 15761-15775.

Liou, T. H., Pi-Sunyer, F. X. and Laferrere, B. (2005). *Physical Disability and Obesity*. *Nutrition Reviews*, 63, pp. 321-331.

Murphy, N. A., Carbone, P. S. and the Council on Children with Disabilities (2008). *Promoting the participation of children with disabilities in sports, recreation and physical activities*. *American Academy of Pediatrics*, vol. 121, no. 5. Retrieved 11/01/2018 from <http://www.pediatrics.aapublications.org/>

Osváth, P., Käbli, K., Ramocsa, G. (2007). Attitudes of students in sport education to the sport activity of blind people in Hungary and possible reasons for them. *Gymn.* 37(3), 21-25.

Perlusz, A. (2008). *Látássérültek iskoláztatása és társadalmi integrációja*. In: Bánfalvy, Cs. (szerk.) *Az integrációs cunami. Tanulmányok a fogyatékos emberek iskolai és társadalmi integrációjáról*. ELTE BGGYFK. 113-130.

Petrika, E. (2012). *Rendszeres testedzés hatása a mentális egészségre és az életminőségre fiatal felnőtteknél*. Doktori értekezés. Debrecen. Retrieved 11/01/2018 from https://dea.lib.unideb.hu/dea/bitstream/handle/2437/132063/Petrika_Erzsebet_Ertekezes-t.pdf;jsessionid=B1C36AA2983505491BCF00E213CDAC43?sequence=5

Shapiro D. R., Martin J. J. (2010): *Athletic identity, affect, and peer relations in youth athletes with physical disabilities*. *Disability and Health Journal*. 3 (2010) 79-85.

Schmidt, S. (2016). *Obesity and exercise*. *American College of Sport Medicine*. Retrieved 08/01/2018 from <http://www.acsm.org/public-information/articles/2016/10/07/obesity-and-exercise>

Somorjai, Á. (2008). *Integráltan és szeparáltan tanuló vak fiatalok*. In: Bánfalvy, Cs. (szerk.) *Az integrációs cunami. Tanulmányok a fogyatékos emberek iskolai és társadalmi integrációjáról*. ELTE BGGYFK, Budapest. 77-112.

Special Eurobarometer 472 on Sport and Physical Activity (2017). Retrieved 15/11/2018 from <https://ec.europa.eu/commfrontoffice/publicopinion/index.cfm/ResultDoc/.../82432>

Sporner, M. L., Fitzgerald, S. G., Dicianno, B. E., Collins, D., Teodorski, E., Pasquina, P. F.

Sporner, M. L., Fitzgerald, S. G., Dicianno, B. E., Collins, D., Teodorski, E., Pasquina, P. F. & Cooper, R. A. (2009). Psychosocial impact of participation in the National Veterans Wheelchair Games and Winter Sports Clinic. *Disability & Rehabilitation*, 31(5), 410-418.

Sport England (2015). *Why disability sport matters*. Retrieved 01/09/2017 from <https://www.sportengland.org/our-work/disability-sport/why-disability-sport-matters/>.

Telama, R., Yang, X., Laakso, L., Viikari, J. (1997). *Physical activity in childhood and adolescence as predictor of physical activity in young adulthood*. American Journal of Preventive Medicine, 13, 317–323.

Weil, E., Wachterman, M., McCarthy, E. P., Davis, R. B., O’Day, B., Lezzoni, L.I. (2002). *Obesity among adults with disabling conditions*. Journal of the American Medical Association, 288 (10), pp. 1265-1268.

World Health Organisation (n.y.). *Physical Activity*. Retrieved 10/10/2019 from <http://www.who.int/ncds/prevention/physical-activity/introduction/en/>

Yessick, A., Haegele, J. (2019). *“Missed opportunities”: Adults with visual impairments reflections on the impact of physical education on current physical activity*. British Journal of Visual Impairment. 37(1), 40-49.

Can we think of a tactile learning resource based on sign language structures?

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This paper questions how the spatial representation of sign language speech can be thought of as a tool for the education of students with deafblindness, and as an aid to their parents or teachers.

Sign languages are spatialized languages that show discourse. According to the "theory of iconicity", the speaker, expressing himself, performs cognitive operations that allow him to transfer imaginary or real experiences into the three-dimensional discursive universe. These transfers show the shape and/or size of an entity, the movement of an actor or offer the possibility for the speaker to become the entity which he/she speaks about.

Thus, taking into account certain adaptations, the projection of this discourse in a two-dimensional space offers the possibility to think about new pedagogical resources, in particular for people who use sign language, whether deaf or deafblind.

Our presentation will first follow the path of our reflection based on the example of a tale signed, redesigned and drawn for parents or teachers of a deafblind child. We will then describe the multilingual and multimodal collaborative platform Ocelles in OpenData, which addresses the difficulties of distributing tactile educational resources. This website respects the accessibility criteria of the WAI and allows to propose 2D modeling in the form of accessible pdf files accompanied by speech in sign language and written text in the

language of the country (for example: French sign language, written French). Each file will include the areas thought out from the sign language story and how to approach them with the child. Each zone will indicate the type of materials and textures expected, which parents, or teachers, will have to stick in the spaces shown. Thus, deafblind learners, for instance, will have access to this new tactile resource in addition to those offered by the site in sign language and in written form. Finally, beyond the production of resources, we will broaden our reflection on interculturality between parents, children and professional researchers in order to co-construct resources for a more inclusive society.

Thinking of knowledge transmission in an inclusive perspective means thinking of the construction of knowledge in a continuum in which each protagonist, whether learning or knowing, can find their place and learn from the other. Our work stems from the field experience, taking into account the daily life of the authors but also the expectations of future contributors to this participatory research.

For the average child, the usefulness of storytelling is no longer to be demonstrated in its spatial and temporal construction, in the acquisition of language and in the development of its identity (Platiel, 1993). Initially, our work will be established in collaboration with parents of deafblind children and may eventually be extended to teachers working with this audience.

Our objectives are both pedagogical and linguistic. From a pedagogical point of view, we wish to:

- provide the target audience with educational resources for their children/students
- make participants aware of the needs of their children/pupils through a socio-constructivist approach
- provide resources that can be adapted to the pace and needs of students and their families which could be summed up as natural positive parent-child interaction and meaningful symbolic communication: information exchange, discussing everyday-life situations , telling stories and fairy tales
- consider the transferability of the protocol to other media and to a wider audience with a view to an inclusive society
- consider how meeting specific needs can be appropriate for a wider audience
- test the relevance of the Ocelles project for its response to the needs of the target audience

From a linguistic point of view, we would like to explore the interest of using the spatialization of a sign language discourse to develop history materials for deafblind learners.

Our reflection here focuses on the implementation of an adapted collaborative tool, which would allow parents of deafblind children to read/tell stories with their children. We will first describe the paradigm in which the genesis of this research is based. We will present the results of a survey conducted to understand better the uses and needs of parents. We will identify the first guidelines for our tool and for the operation of the multilingual collaborative platform Ocelles, which our work is based on. We will conclude by addressing a reflection on

interculturality between parents, children, researchers and professionals in order to co-construct resources for a more inclusive society.

Genesis

The acquisition of "fundamental" gestures, such as eating, drinking,... can sometimes be a source of difficulty for some deafblind students. Ivan Sokolyansky developed principles and methods of teaching deafblind children in Russia. He approved of the importance of spatial skills and the development of linguistic tools, in and in relation to a familiar framework punctuated by routines.

According to I. Sokolyansky, the teacher includes the child into active interaction, instructing him/her on how to use various objects. A deafblind child gets to know the objects around him only when the teacher tries to impart the simplest daily living skill to him or her to satisfy his / her natural needs. A child is taught how to use a spoon, a plate, how to sit on a chair, at a table, how to lie down on a bed, place his or her head on a pillow, cover up in a blanket, etc. A child generalizes means of interaction with objects of a certain kind, and attempts to act independently (Sokolyansky, 1989). Teaching means of communication should begin with gestures referencing well-known objects and actions, which are commonly encountered in everyday life. The next stage concerns the child's verbal speech development, when gestures, which have been reinforced earlier, are replaced by their fingerspelled form. After mastering fingerspelling, the child is taught the Braille alphabet. Sokolyansky developed a system of training texts. The first texts are composed according to the following rules: they are devoted to situations from the daily life of the child, consist of 3 to 5 simple sentences, all objects present in the described situation are marked in turn (Sokolyansky,1989; Basilova,2015).

We assume that stories of similar content and built on the same principles would be available to children who have not yet mastered or unable to master reading skills, provided that gestures and alternative means of communication are used.

The stories told to children using different media are perfectly integrated with this approach to the education of deafblind children. Therefore, the rest of our reflection is based on the use of the narrative techniques of a storyteller analyzed by Cuxac (Cuxac, 2007). The speaker may, in a vocal language, add sounds with low illustrative contents such as standardised onomatopoeias or imitations of significant sounds more faithful to the sound reality, in addition to the use of words specific to oral expression. At the same time, the storyteller may also mimic the gestures, attitudes and feelings of the characters, describe the shape of the objects... Another possibility is to separate the two ways: that of saying and that of showing the scenes of the fragmented story. In this second approach, the information provided by the visual-gesture illustration will be significant compared to that of the audio-phonatory illustration, and will allow for a better understanding of the story's plot. (Cuxac, 2007).

In sign language, two discursive aims coexist (Cuxac, 2000). The speaker may switch from one discursive strategy to another and choose between two representational paths, one that allows to say by giving something to see, by showing, by illustrating, and the other that allows to say without giving anything to see. According to the "theory of iconicity" or the "semiological model of the bifurcation of aims", some linguistic structures of sign language called "transfers" seem quite similar to the elements present in co-verbal gestures. These cognitive operations make it possible to transfer real or imaginary experiences into the discursive space, present in front of the speaker, by weakly anamorphosing them. This three-dimensional discursive space is called

"space of signing". (Cuxac, 2000, p. 24). Three main transfer structures exist (Cuxac, 1996) (Cuxac, 2000):

- Size and/or shape transfers that allow the speaker to represent the size and/or shape, partial or global, of places, objects, or characters
- Situational transfers that allow the speaker to represent the movements of the actors in the space of signing in relation to a stable rental benchmark
- Personal transfers that allow the speaker to reproduce one or more actions performed or suffered by an actor in the process of the statement. The narrator then uses his whole body to "become" the actant he is talking about, whether he is a person, an animal, a plant or any other object.

Transfers can then combine with each other to create more complex structures.

In the space of signing, different scenes representing different places with different characters or objects at different times (Cuxac, 2007) may therefore be achieved over time.

We observed how productive the illustrative structures of sign languages are. We were able to see that the best way to have a rather good idea of an object is to draw it -- in the case of sign language, to draw it in space. All over the world, deaf people use such accurate linguistic structures, whose evocation power is no longer in question.

In this perspective, we hypothesize that a narrative in sign language, in which the elements of the discourse are already organized in space-time, seems particularly relevant for the creation of tactile books. We therefore inscribe our work in this paradigm, whose foundations lie in the theory of iconicity (Cuxac, 2000) and the work of Ivan Sokolyansky (1989).

Expression of uses and needs

The theoretical approach to our work must be based on the experience of parents. We have therefore established a questionnaire to find out how they communicate with their children and the place given to storytelling in their daily lives. The questionnaire contains 14 items devoted to 3 main topics: the features of parent-child communication (means and themes), experience of reading or telling stories with the child in the family (including special tools which parents use to make the content of stories available and clear) and parents' thoughts and ideas regarding new tools which could be useful for developing storytelling with their children.

26 parents have participated in the survey so far. 25 of them were mothers and one was a father of children from 3 to 13 years old having dual sensory impairment of different degrees and etiology (including cerebral visual impairments and deafblindness as a part of severe multiple disabilities). Analyzing their responses, we can make some preliminary conclusions.

- Only 3 of 26 children definitely understand and can use oral speech.
- Most of parents practice reading, telling stories to their child and do it every day, but not all of them know if the child understands the content well. Most of them understand this activity as oral speech. And tell stories to the child despite of being not sure if the child understands the content or even being sure that he/she doesn't understand.
- All parents recognize the importance of this activity for different aspects of their child's development and communication with him/her.
- Most parents need new ideas for stories.

- Most recognize the importance and availability of stories about daily routines.
- Most talk about the benefits of sign language (including tactile sign language) in communicating with a child and the hope to use it in the future. Some parents don't think that sign language is an appropriate communication tool for their child, because the child has severe motor disability or is totally blind but can understand and use oral speech.
- Most of respondents mention a tactile book as one of the means of explaining the content of a story.
- Most of respondents would like to participate in the creation of a story book for their children but some of them say that they don't imagine how.

Guidelines for creating a tactile book

In order to widen the spectrum of future users as much as possible, we must first reflect on the structure of the envisaged narrative and now think about a possible progression. We therefore choose to start the story from elements of everyday life, and then move towards abstraction with, for example, three different stage and clear breaks between each:

<p>1st stage everyday things</p>	<p>Breakdown Extraordinary highlight</p>	<p>2nd stage elements of everyday life + contribution of an imaginary element</p>	<p>Breakdown Extraordinary highlight</p>	<p>3rd stage elements of everyday life + contribution of an imaginary element</p>
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The advantage of such a structure will eventually allow to modify one of the times, without modifying the other two. Several stories can thus be constructed and exchanged between the parents.

We decide, in accordance with the answers to our survey, to focus on the first step of the story. Indeed, this stage seems to be a key point in the development of the majority of the children whose parents we interviewed. We are also aware of the granularity of the situations. The theme addressed in this step may thus be in the process of being acquired, consolidated or considered as a more or less long-term objective. A first pilot version was devoted to how to eat with a plate. Our experimental protocol is based on exchanges between researchers and users. This first version also seems necessary to us, to involve parents in our project and support them in their reflection.

Sign language speech is an original speech created in collaboration with fellow Russian and French sign language teachers, based on previous constraints.

We would like to include the use of the story in a pedagogical progression, so we plan to offer parents an educational kit so that they can accompany their child in the discovery of the story.

Creating a story for a child with deafblindness, we have to take into account the following:

- Materials available for tactile perception (textures, shapes, spatial representations)
- Available level of symbolisation

- Available content (Like the first training texts developed by Sokolyansky the first story should contain 4-5 phrases of 2-3 words/signs, all present objects should be defined, the story should be addressed to the child).

We assume that starting to tell stories in accordance with our guidance is possible if the child is already able to keep visual attention on objects or explore them with hands, to take objects and put them in specific places, to understand simple nonverbal instructions, to understand functions of familiar objects and maybe to use real objects as symbols.

The text and video resources we provide will highlight three fundamental steps:

1. Playing / living a real situation (having a meal for instance).
2. Playing the same action with the doll.
3. A story about this real situation in a tactile book with a sign and / or verbal explanation.

Depending on the profile of the students, not all steps will necessarily be completed.

With some of the children, on the contrary, it may be possible to keep developing storytelling skills, relying on Elena Goncharova's method to form reading activity (Goncharova, 2018). The next stories in the tactile book may look like:

4. A story about a similar situation in the life of another person.
5. The story of the life of abstract characters.
6. A story with a fictional component / fairy tale.

The tactile book is made up of a succession of plates. Given the random distribution of participants on the Russian territory, educational resources and exchanges will be carried out via the Internet. The sheets will be downloaded from the Ocelles.fr website (in accessible pdf format, created using the Indesign software to ensure optimal accessibility). The transition and number of new elements between the boards may vary depending on the student's abstraction skills. Each board contains the areas of the drawing that parents will have to complete with materials of different textures. Taking into account local constraints, textures may be very different, so it is necessary to support parents in their choices (give examples) according to the context. For instance, it may be interesting to use a texture similar to that of a garment to represent it, so that the student can make the link between the object and its symbolic representation.

Ocelles

How was the Ocelles project born? This is a multilingual and multimodal collaborative project, which aims to define all concepts, in all fields of knowledge and in all languages (written, oral or signed). (Moreau, et al., 2010). It receives financial support from the Ministries of National Education, Research and Culture in France. It is also under the aegis of the General Delegation for the French Language and the Languages of France.

Ocelles is a tool, originally conceived to meet the needs of deaf people, and is therefore part of an inclusive society that is ready to respond to a much larger spectrum of users. It is intended not only for those communicating in sign language, but also for those communicating with the help of any other written or oral languages. Indeed, its use is bijective and can be useful to any citizen wishing to get plurilingual support, especially to teachers who may teach deaf, deafblind or allophone students, or to students in the perspective of inclusive classes. Its collaborative

nature and its dynamic architecture also make it possible to foresee the needs at school, at the university, but also in companies and more widely within an inclusive society.

Ocelles is based on the same principle as the semiotic triangle described above, but proposing to make explicit the links between systems of different linguistic signs. The website is divided into three types of spaces: "Definitions", "Signs" and "Projects" linked together in the image of the vertices of the semiotic triangle, with a block system inside. Each block can present content according to the three modalities: written, oral or signed. Content may be co-authored by several editors and will automatically be validated by a group of experts in the concept, but also in the language in which it is expressed, before being visible to everybody. The amount of contents is unlimited, and each can be labelled by one of three levels of complexity: beginner, intermediate, or advanced.

The space of the site gathers the "Definitions" pages which allow at least to define the properties of the signified. Therefore, each page has a definition that:

- must be self-sufficient, without resorting to others pages or other definitions,
- should begin with a generic term,
- should not be circular and contain a root of the term to be defined as it is sometimes found in some dictionaries, as, for example, in the Cambridge online dictionary "seller : a person who sells something"¹.

Other contents can be added at will to complete the definition: examples, linguistic remarks, pedagogical remarks, etc. To strengthen the conceptual involvement of the users, links refer to concepts close or opposite to that of the visited page. This space also contains the different signifiers of the denotata described, each of which refers to the second "Signs" space that allows to group the places where they are used on a map and illustrating contents, for example their use in context or linguistic, or etymological analyzes, etc. specific to each. Lastly, the "Project" space allows for a pedagogical reappropriation of the contents from the two previous spaces, in which each user can create a project, by inviting his collaborators, - not making results visible to other users, if he/she does not wish so. This space makes it possible to arrange the existing contents or create the new ones according to certain needs for example:

- creation of courses, creation of contents for visiting a cultural site,
- creation of practical fact sheets for the explanation of administrative procedures ... This last space is therefore to be paralleled with the third vertex of the semiotic triangle "the referent".

It is in this last "Project" area that we will store the previous materials for families. One place will be reserved for upcoming documents adapted to children, another place will be dedicated to parents. The different versions of the resources created will be accessible in order to analyze the progress of our reflection. A forum will allow for the exchange of experiences and users will eventually be able to submit their own achievements in order to share them with other parents. Indeed, given the number of families involved, sharing resources and ideas seems obvious.

The Ocelles research gave us the opportunity to be confronted with a great number of issues related to language, pedagogy, web design or even ethics.

¹<http://dictionary.cambridge.org/fr/dictionnaire/anglais/seller>

Conclusion

As mentioned before, much of our work consists in a reflection on languages and speech acts, in terms of efficiency, relevant strategies for better understanding, and misunderstood phenomena. We reinvest our understanding and expression capacities, by producing pedagogical resources.

Objectively in the researcher's position, parents of deafblind children must be able to meet their children's needs and analyze the invariants necessary to make their own stories. The objective is therefore ultimately the identification of the scheme allowing for the implementation of a tool, i.e. the identification of the invariant organization of the conduct of a subject that allows to deal with the same class of situations (Vergnaud, 2001, p. 111). However, we are aware of the potential difficulties of implementation, given the diversity and the difficulties of fine-tuning the analysis of the situations experienced, which are difficult for all the protagonists to grasp. This work is therefore rooted in an intercultural approach, in which each participant, whether a researcher, parent or child, contributes with his or her knowledge and learns from that of others. The objective is not a heap of knowledge, but a co-construction, in which each person develops his or her individual representations to collectively build new ones. The longer-term objective is also to mobilize this "new knowledge" on a daily basis and in the production of new educational resources.

References

Basilova (Басилова), Т. (2015). *The history of teaching of deafblind children in Russia. (История обучения слепоглухих детей в России.)*. Moscow: Eksmo.

Cuxac, C. (1996). *Fonctions et structures de l'iconicité dans les langues des signes ; analyse descriptive d'un idiolecte parisien de la Langue des Signes Française*. Thèse de Doctorat d'Etat, Université René Descartes, Paris V.

Cuxac, C. (2000). *La Langue des Signes Française : les voies de l'iconicité*. Paris: OPHRYS.

Cuxac, C. (2007). Une manière de reformuler en langue des signes française. *La linguistique*, 43(1), 117-128. doi:10.3917/ling.431.0117

Cuxac, C., & Pizzuto, E. A. (2010). Émergence, normes et variation en langues des signes : vers une redéfinition conceptuelle. *Sourds et langue des signes. Norme et variations, Langage et Société*(131), 37-53.

Friedman, L. A. (1977). *On the other hand: new perspectives on American sign language*. New York: Academic Press.

Goncharova (Гончарова), Е. А. (2018). *Teaching reading and reader's development: a scientific publication*. Moscow: Publishing House "National Education".

Liddell, S. K. (1980). *American Sign Language Syntax*. The Hague: Mouton De Gruyter.

Moody, B. (1980). *Histoire et Grammaire, tome I*. Paris: Ellipses.

Moreau, C., Geffroy, V., & Vanbrugghe, A. (2010, Avril). OCELLES. Observatoire des concepts et lexiques en langues écrites et signées. *La nouvelle revue de l'adaptation et de la scolarisation (NRAS)*(49).

Platiel, S. (1993). L'enfant face au conte. *Cahiers de Littérature Orale*(33), 55-73. Consulté le 2019, sur <https://halshs.archives-ouvertes.fr/halshs-00606144/document>

Sokolyansky (Соколянский), I. .. (1989). Training for deafblind children (Обучение слепоглухонемых детей). *Defectology (Дефектология)*(2. С), 75–84.

Stokoe, W. C. (1960). Sign Language Structure: An Outline of the Visual Communication System of the American Deaf. *Studies in Linguistics*(8).

Vergnaud, G. (2001). Piaget visité par la didactique. *Intellectica*(33), 107-123.

Yau, S.-C. (1992). *Création Gestuelle et début du Langage Création de langues gestuelles chez les sourds isolés*. Hong Kong: Langages Croisés.

STORY BOX FOR THE BLIND AND VISUALLY IMPAIRED CHILDREN SOCIAL INCLUSION – A CASE OF LITHUANIAN LIBRARY FOR THE BLIND

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Introduction

Lithuanian Library for the Blind is implementing a project “Story box” dedicated to improving the understanding of blind and visually impaired children about the social environment they live in. In the centre of the project are two stories called “Jar” and “Tea club”, written by the famous Lithuanian children writer and illustrator Kestutis Kasparavicius. Librarians tell these stories for the children by using tactile objects specifically created for this project to illustrate the characters of the stories. The story characters were created by typhlo educators at the Education Center for the Blind and Visually Impaired Children. (The Library for the Blind works closely with this Center. The educators of the Center consult the Library on the issues of accessibility and education for the blind and visually impaired children). Children not only watch and hear the performance but also have an opportunity to touch the tactile objects and, in this way, are included in the action. The aim of this presentation is to introduce the methodology and findings of the research “Story box – for the of blind and visually impaired children. The case of Lithuanian Library for the Blind”.

Methodology and research questions

The research was done using observation method to find out if “Story box” as a method to learn social skills is suitable for blind and visually impaired children and what conditions are important so that this method could be used in the most effective way (the aim of the research). The observation method as a purposefully organised perception of the environment and phenomena (Kardelis, 2002) was very useful to find out how do blind and visually impaired children perceive the social environment that surrounds them and how library organised activities can help them to interact with others. In librarianship this method is frequently chosen while researching how and what information in everyday life is used (Baker, 2006). The respondents of the observations

were 375 blind and visually impaired or other disorders children from five different special education centres in Lithuania (most of the respondents were blind and visually impaired, but there also were children with ASD and with complex disability). So there were 5 observations organised. Children were participating in the “Story box” activities (performance and creative workshops) while researchers observed and recorded their verbal and non-verbal reactions, degree of engagement, how the environment where the action took place affected the children’s behaviour, and other relevant information. The main research questions were: 1) how do children react to the performances: what are the verbal or / and non verbal reactions? 2) what is the level of their engagement into activities? 3) what is the impact of the environment that the activities take place?

Research Results

There were positive reactions to the “Story box” performances – children were eager to listen to them and also were keen on touching tactile objects that were used during the occupation. Children showed different nonverbal reactions: some of them laughed watching (hearing) anecdotal situations while others expressed light outrage. There also were verbal reactions – children commented on what they see or hear during the performances (the stories made them remember their own experiences which they wanted to share with others), willingly answered to the questions that was asked during the occupation. However, there were few children with difficult, complex disability who didn’t react to what was going on in any forms. After the performances the majority of the audience were eager to participate in the creative workshop that was proposed to them (to decorate a cup of tea of their dreams). Participation in the creative workshops are useful because it helps to strengthen and fix the experience that children get from the performances, moreover children socialize more freely and openly while they are engaged into creative activity.

Conclusion

The research findings showed that “Story box” performances are a proper method to engage blind or visually impaired or other disorders children and they are eager to participate in the activities. However, the participation of special teachers and psychologists that work with children is needed and preparations for the performance should be made. It is important to have an information about the environment that the performances and creative workshops are going to be organised (if there is a possibility it is very useful to organise the activities outside because it helps children to relax), how many children will participate (the optimal is a group of 15 children), what disorders do they have. A detailed plan should be made before the occupations considering the circumstances, for example children with autism disorder are irritated by loud sounds, so it is important to avoid noise during occupations and talk quietly. This research is the first step to try to evaluate the possibilities of libraries work with blind and visually impaired children (and other disorders) in Lithuania. These activities have proved to be successful, as the study has shown. But they cannot be organized independently without the cooperation of special educators. Therefore, the Lithuanian Library for the Blind is cooperating with the Blind and Visually Impaired Education Center and integrating its activities into the Centre's teaching process

The Library is currently developing new programs for children with visual and complex disabilities, which are aimed at developing social skills and promoting reading.

REFERENCES

BAKER, Lynda M. Observation: A Complex Research Method. Library Trends, Vol. 55, No. 1, 2006, 171–189 p.

KARDELIS, Kęstutis. Mokslinių tyrimų metodologija ir metodai. 2-asis leidimas, 2002, Šiauliai, 143 p.

Social participation of visually impaired adults – Access to leisure activities

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Abstract

Social participation is a determinant of active aging, and can produce positive physical and mental outcomes. Those outcomes satisfy the psychological needs of individuals and help him achieve appropriate life satisfaction. The number of activities in which a person participates reflects her social interaction and social relations.

The aim of this research aimed was determining the barriers that adults with visual impairment face during leisure activity of sport-recreational type, while checking whether there are differences in the self-perception of the barriers of blind and visually impaired people. Sample consisted of 137 persons with visual impairment.

Using the Assessment of Life Habits scale (LIFE-H), domain Recreation in a sample of 92 people with visual impairment, key barriers for leisure activities were highlighted: inadequate public transport, low level of independence, negative attitudes and non-acceptance in a wider environment; additionally, using the Physical Activity Barrier Scale for persons who are blind and visually impaired on a sample of 45 persons, separated barriers were singled out: the one from an inaccessible physical environment and barriers of a psychological nature. Persons with low vision participated in various sports and recreational activities significantly more frequent than blind ones, although the frequency of barriers to exercise was not statistically different.

The inaccessibility of the physical environment is a major factor limiting the social participation of adults with visual impairments in the field of leisure activities which, with inadequate attitudes of the social environment, insufficient material resources and dependence of the help of other people, limits the participation of persons with visual impairment in many domains important for social participation.

Introduction

Activities that individuals engage in in their free time, which they choose to do freely and enjoy it outside of school or professional obligations, are called leisure activities. Most often they are classified into three categories: organized group activities, informal social activities and informal individual activities (Van Naarden & Yeargin-Allsopp, 2006). Through those activities, individual meets his own psychological needs and achieve life satisfaction. The number of different activities in which a person participate reflects his or her social interaction and social relationships, while restrictions on participation in social activities, leisure activities and activities

related to work engagement together with difficulties in carrying out daily activities can impede independence, autonomy and quality of life (Dijkhuizen, Hilgenkamp, Krijnen, van der Schans, & Waninge, 2016; Kempen, Balleman, Ranchor, van Rens, & Zijlstra, 2012; Naël et al., 2017).

Previously conducted research on visually impaired people has mainly been focused on clinical and functional outcomes, while participation in society most often has been neglected. As consequence, knowledge of the social outcomes of visual impairment was limited (Alma, 2012). Contemporary research tendencies are aimed at determining the impact of chronic illnesses or any impairment on an individual's social participation. Undoubtedly, the existence of biological damage of any degree can lead to functional limitations. However, many other factors related to the physical and social environment can represent significant barriers in social participation for people with visual impairments (Stanimirov, 2016).

Theoretical considerations

Social participation (SP) is a determinant of active aging, and can produce positive physical and mental outcomes. Social participation encourages physical activity (PA), and vice versa – social support and networks gained through physical activities encourage SP (Tomioka, Kurumatani, & Hosoi, 2017). Therefore, PA is an essential component of SP. However, persons with disabilities are most often characterized by an alarmingly low level of physical fitness, which impedes inclusion in PA, has a negative impact on quality of life (Ward, Farnsworth, Babkes-Stellino, & Perrett, 2011) and over time contributes to the development of chronic diseases associated with sedentary lifestyles (heart problems, stroke, depression, obesity, etc.).

Research suggests that visually impaired people are least physically active compared to people with other types of disabilities (Haegele, Hodge, & Kozub, 2017). This situation is a consequence of numerous barriers that hinder the inclusion of people with visual impairments in various PA. Barriers may be the result of objective or subjective problems, but they also may be imposed by society (Stuart, Lieberman, & Hand, 2006; Ward, Farnsworth, Babkes-Stellino, & Perrett, 2011). Objective problems include functions of gross motor skills, manual abilities, cognitive abilities, communication skills, etc. (Bult, Verschuren, Jongmans, Lindeman, & Ketelaar, 2011). Over time, environmental barriers become predominant (Wrzesińska, Lipert, Urzędowicz, & Pawlicki, 2018). Adults with visual impairment list functional limitations, dependence on the help of others, disability itself, different physical obstacles in the environment, and fear of injury as the most significant barrier to engaging in PA (Griffin, Phoenix, & Smith, 2016, prema Brunet, Flanders, & Augestad, 2017). Additional problems are the cost, as well as the lack of a suitable company to exercise with (Haegele et al., 2017; Jaarsma, Dekker, Koopmans, Dijkstra, & Geertzen, 2014)

Methodology

The aim

The aim of this research is to identify the most common barriers that adults with visual impairments self-perceive in the exercise of leisure activity, sports and recreational type. A specific goal was to identify differences in self-perception of barriers in persons with different degrees of visual impairment (low vision and blindness).

Method and sample

The paper presents the results of two studies conducted at a time interval of two years. The first study included a sample of 92 visually impaired people (46 respondents had low vision, 46 of them was blind; 40 men and 52 women), aged 19-65 ($M=35,10$, $SD=10,78$). The goal of this study was to determine how often respondents participate in activities from recreation domain. For data collection *The Assessment of Life Habits – LIFE-H* (Fougeyrollas et al., 1998, 2003) was used.

In the second study from 2018, 45 people with visual impairment (24 blind and visually impaired people 21) of both genders (of which 21 men and 24 women) aged 18 to 39 (M=28,78, SD=7,22) were examined. This research aimed to determine the subjective experience of barriers that interfere with PA and their association with PA. For data collection *Physical Activity Barrier Scale for persons who are blind and visually impaired* (Lee, Zhu, Ackley-Holbrook, Brower, & McMurray, 2014) was used.

For purpose of this paper we showed results gained on a Recreation domain of LIFE-H from the first study. This domain consists of seven items which question degree of participation in sport or recreational activities (walking included), art and cultural activities (for example dancing), going to sports events (hockey, basketball, football, etc.), visiting cultural and artistic events (theaters, cinemas, concerts, etc.), tourist activities (trips, excursions, visits to historic sites, etc.), active nature stay (mountaineering, camping, etc.), use of recreation center services, etc. This domain allows estimation of realization of leisure activities degree, which require physical engagement of people with visual impairments.

From the second study factors that may interfere with PA were identified. *Physical Activity Barrier Scale for persons who are blind and visually impaired* contains 48 statements grouped into the following types of barriers: environmental factors, safety concerns, insufficient motor knowledge and skills, barriers arising from poor health, psychological barriers, personal limitations, limitations arising from the social environment and limitations arising from visual impairment. The Scale is three-point Likert type scale.

Data processing

For description of the significance parameters, arithmetic means, medians, standard deviations and standard measurement errors were used to. For further data processing, Man Whitney's U test was used. The analysis and statistical processing were performed using a package for statistical processing for the social sciences (SPSS for Windows, version 23.0). The results obtained are presented in tables.

Results

The self-assessment of the visually impaired respondents regarding restrictions on participation in leisure activities is shown in Table 1.

Table 1. *Self-assessment of visually impaired respondents on single items and score in general of the Recreation Domain of the Life-Scales Assessment Scale*

Item	M	SD	SE
1	5,18	4,25	0,443
2	2,39	3,77	0,393
3	0,46	1,81	0,189
4	5,75	3,60	0,376
5	6,30	3,23	0,337
6	1,82	3,32	0,346
7	6,24	3,90	0,407
Recreation score	28,14	12,146	1,266

Legend: 1 – participating in sport and recreational activities, 2 – participating in cultural and art activities, 3 – visiting sport events, 4 – visiting cultural events, 5 – tourist activities, 6 – active nature stays and 7 – visiting recreational centers.

Based on gained results, it is noticeable that people with visual impairment most often engage in tourist activities and use recreation centers, while the lowest number of respondents attend sport events.

This was followed by checking for differences in self-assessment of respondents with different degrees of visual impairment, as shown in Table 2.

Table 2. *Self-assessment of people with different degrees of visual impairment on individual scores and the overall score of the LIFE-H Scale, Recreation Domain*

Item	Degree of visual impairment	M	SD	SEM
1	Low vision	6,37	4,084	0,602
	Blindness	4,00	4,110	0,606
2	Low vision	2,15	3,881	0,572
	Blindness	2,63	3,684	0,543
3	Low vision	0,39	1,856	0,274
	Blindness	0,52	1,786	0,263
4	Low vision	6,87	3,751	0,553
	Blindness	4,63	3,101	0,457
5	Low vision	6,91	3,741	0,552
	Blindness	5,70	2,520	0,372
6	Low vision	2,26	3,890	0,574
	Blindness	1,37	2,585	0,381
7	Low vision	6,41	4,075	0,601
	Blindness	6,07	3,756	0,554
Recreation	Low vision	31,37	11,852	1,747
	Blindness	24,91	11,686	1,723

Legend: 1 – participating in sport and recreational activities, 2 – participating in cultural and art activities, 3 – visiting sport events, 4 – visiting cultural events, 5 – tourist activities, 6 – active nature stays and 7 – visiting recreational centers.

Respondents with low vision perform more different activities compared to blind (5 vs. 2 activities). Activities that blind respondents are more likely to engage in are cultural and artistic activities and attending sport events.

Considering that visually impaired persons perform more different activities compared to blind ones, we were interested in whether there were statistically significant differences in the frequency of leisure activities between the two sub-samples of visually impaired persons. The results of Man Whitney's U test are shown in Table 3.

Table 3. *Differences between two sub-samples of visually impaired people on LIFE-H Scale, Recreation domain*

Subscale	Man Whitney's U test	Wilcoxon signed-rank test	Z	p
Recreation	740,500	1821,500	-2,493	0,013

Differences on the Recreation domain of the LIFE-H scale are statistically significant. If we look at the average results on domain as a whole shown in Table 2, it is clear that, overall, the visually impaired subjects have higher scores (M=31.37, SD=11.85), more precisely, they realize statistically significantly more leisure and recreational activities.

Considering that on Recreation domain as a whole statistically significant difference between participants with blindness and with low vision were confirmed, we checked in which areas they were most pronounced, and the results are presented in Table 4.

Table 4. Differences between participants with blindness and with low vision od single items on LIFE-H Scale, Recreation domain

Item	Man Whitney's U test	Wilcoxon signed-rank test	Z	p
1	731,000	1812,000	-2,851	0,004
2	964,000	2045,000	-0,909	0,363
3	1015,000	2096,000	-0,785	0,433
4	619,000	1700,000	-3,705	0,000
5	701,500	1782,500	-3,058	0,002
6	986,500	2067,500	-0,737	0,461
7	949,500	2030,500	-0,967	0,334

Legend: 1 – participating in sport and recreational activities, 2 – participating in cultural and art activities, 3 – visiting sport events, 4 – visiting cultural events, 5 – tourist activities, 6 – active nature stays and 7 – visiting recreational centers.

Statistically significant differences were observed when it came to participating in three activities: participation in sports and recreational activities, going to different cultural events and trips, tourist activities etc. Participants with low vision from our sample are more likely to participate in aforementioned activities compared to the blind. No statistically significant differences were observed for participating in other recreational and leisure activities.

After assessing life habits, data regarding self-assessment of barriers to PA were processed and the results are presented in Table 5.

Table 5. Self-assessment of barriers to PA

Barriers	Min	Max	M	SD
1	1	15	5,87	3,395
2	1	10	4,04	2,256
3	0	16	6,84	4,322
4	0	10	3,80	2,793
5	0	10	3,69	2,661
6	0	7	1,89	1,761
7	0	15	5,09	3,831
8	0	6	2,04	1,507
Total	4	78	33,27	18,027

Legend: 1 – psychological barriers; 2 – limitations arising from the social environment; 3 – factors arising from the physical environment; 4 – personal limitations; 5 – insufficient motor knowledge and skills; 6 – barriers resulting from poor health; 7 – limitations as a result of visual impairment and 8 – safety concerns

The results showed that the respondents with visual impairment most often encounter barriers arising from the physical environment, followed immediately by the barriers of a psychological nature, as well as the barriers resulting from the visual impairment itself. The least represented respondents were least frequently encountered safety and health barriers. Given the theoretically possible range of scores (from min 0 to max 88), the overall expression of the barriers to PA in the examined sample of visually impaired individuals may be considered low.

This was followed by checking the differences on the scale as a whole given the degree of visual impairment. The results are shown in Table 6.

Table 6. *Participants’ self-assessment about the presence of barriers to PA depending on degree of visual impairment*

	Category	N	Min	Max	M	SD	SE
Barriers	Low vision	21	4	68	34,24	18,793	4,101
	Blindness	24	10	78	32,42	17,690	3,611

Descriptive analysis of the data obtained revealed that the level of self-assessment of the existence of barriers to PA is slightly higher for the participants with low vision. This was followed by a statistical check of the significance of the differences detected and the results are showed in Table 7.

Table 7. *Differences between the participants with blindness and with low vision on the barrier assessment scale for PA*

	Man Whitney's U test	Wilcoxon test	Z	p
Barriers	231,500	531,500	-0,467	0,641

Examining the significance of differences in self-assessment of barriers to PA between two groups of participants (with blindness and with low vision) it was found that there were no statistically significant differences. Since the differences weren’t detected on the scale as a whole, the differences on individual items were not checked.

Discussion

This study showed that the least visually impaired people from our sample attend sports events, while the largest number of respondents said that they visit recreation centers and participate in tourist activities. In terms of the number of activities that are being realized, the respondents with low vision from our sample realize on average five activities, as opposed to the blind who realize two. Among those two activities more likely will be visiting cultural and artistic events. On the other side, participation in sport and recreational activities, going to different cultural events and trips, tourist activities etc. are all characteristic of people with low vision from this research.

Perhaps these findings can be explained by the existence of certain barriers that impede the pursuit of recreational activities. Assessing life habits, the most common obstacles to the participation of the visually impaired people were: inaccessible public transportation, high dependence on other people's help, negative attitudes and rejection by environment, and insufficient material resources as well. The most common barriers to participation in PA were: lack of motor knowledge and skills, physical environment, factors related to social environment. The least expressed were barriers related to limits of personal nature, and people with blindness and low vision did not differ in terms of the type and frequency of barriers limiting their PA.

Comparing the findings gained from two separate studies as a common factor which limits the physical and recreational activities of people with visual impairment, the inaccessibility of the physical environment was highlighted (e.g. difficulties with transportation, less opportunities for activity, accessibility to facilities etc.). Other authors had the similar conclusion – that environmental factors and safety could account for reduced physical activity among people who are blind (Legood, Scuffham, & Cryer, 2002). However, in our study, barriers related to safety were poorly represented (similar to problems arising from poor health and lack of physical exercise knowledge). Safety, i.e. fear and increased risk of falls and collisions are directly related

with visual impairment. These feelings occur among people who have visual impairments and they interfere negatively with their confidence as independent travelers (Legood et al., 2002), which can affect physical exercise, participating in leisure activities and social participation. In our study, safety barriers were poorly represented (similar as problems arising from poor health and lack of knowledge of physical exercise), because dependence of help from other people, and problems with independent travel make personal barriers significant (Jaarsma et al., 2014; Legood et al., 2002) and undoubtedly creates barriers to (physical) exercising. Our findings confirm that barriers resulting from visual impairment are highly represented as a limiting factor for the social participation of blind and partially sighted people. Regarding the existence of differences depending on the visual abilities of the participants, it was found that the blind people are more often faced with restrictions in doing sports and recreational activities, going to different cultural events (cinema, theater, etc.) and traveling, going to excursions and other tourist activities. It can be said that this is expected, since people with visual impairments have visual possibilities that enable them to perform various social activities much easier. Besides the personal barriers that are a direct consequence of visual impairment, in the realizing leisure activities (sports, recreational, cultural, etc.), for people with blindness and the ones with visual impairments cost (lack of funds) and transport (public transport) are particular problems. These findings confirm the statements of other authors (Jaarsma et al., 2014; Marston & Golledge, 2003), who point out that this may be one of the most significant barriers to engaging in non-sedentary behaviors and physical activities of visual impaired adults. Previous research states that many barriers to regular physical activity participation among adults with visual impairments is associated with lack of social support (e.g., lack of support from family and lack of peers to participate with in activities) (Haegele et al., 2017; Jaarsma et al., 2014). However, in this study the limitations arising from the social environment are less prevalent.

Conclusion

The social participation of adult people with visual impairment is, on a first place, limited by the inaccessibility of the physical environment. This factor, with inadequate social attitudes, insufficient material resources, dependence on other people's help, and barriers of a psychological nature, limit the participation of people with visual impairment in many leisure activities. The general recommendation that emerges from these studies is that it is necessary to actively work on reducing the impact of barriers arising from the unfavorable physical and social environment and which impede the social participation of adults with visual impairments. By assessing the limitations that come from the physical and social environment, areas of intervention can be identified to improve the number and range of activities that can be offered to people from this population. It is possible to design and implement strategies that will lead to increased participation and, consequently, to improvement of people with visual impairment quality of life of (Lamoureux, Hassell, & Keefe, 2004).

References

- Alma, M. A. (2012). *Participation of the visually impaired elderly: determinants and intervention*. Doctoral dissertation, University of Groningen. Retrieved November 3rd 2016 from: <http://www.rug.nl/research/portal/files/14565617/thesis.pdf>
- Brunen, A., Flanders, W. D., & Augestad, L. B. (2017). Physical activity and symptoms of anxiety and depression in adults with and without visual impairments: The HUNT Study. *Mental Health and Physical Activity*, 13, 49-56.

- Bult, M. K., Verschuren, O., Jongmans, M. J., Lindeman, E., & Ketelaar, M. (2011). What influences participation in leisure activities of children and youth with physical disabilities? A systematic review. *Research in developmental disabilities*, 32(5), 1521-1529.
- Dijkhuizen, A., Hilgenkamp, T. I. M., Krijnen, W. P., van der Schans, C. P., & Waninge, A. (2016). The impact of visual impairment on the ability to perform activities of daily living for persons with severe/profound intellectual disability. *Research in Developmental Disabilities*, 48, 35-42.
- Fougeyrollas, P., & Noreau, L. (2003). *Assessment of life habits (LIFE-H 3.1), general short form*. INDCP/RIPPH, Canada.
- Haegele, J. A., Hodge, S. R., & Kozub, F. M. (2017). Beliefs about physical activity and sedentary behaviors of adults with visual impairments. *Disability and health journal*, 10(4), 571-579.
- Jaarsma, E. A., Dekker, R., Koopmans, S. A., Dijkstra, P. U., & Geertzen, J. H. (2014). Barriers to and facilitators of sports participation in people with visual impairments. *Adapted Physical Activity Quarterly*, 31(3), 240-264.
- Kempen, G. I., Balleman, J., Ranchor, A. V., van Rens, G. H., & Zijlstra, G. R. (2012). The impact of low vision on activities of daily living, symptoms of depression, feelings of anxiety and social support in community-living older adults seeking vision rehabilitation services. *Quality of life research*, 21(8), 1405-1411.
- Lamoureux, E. L., Hassell, J. B., & Keeffe, J. E. (2004). The impact of diabetic retinopathy on participation in daily living. *Archives of Ophthalmology*, 122(1), 84-88.
- Lee, M., Zhu, W., Ackley-Holbrook, E., Brower, D. G., & McMurray, B. (2014). Calibration and validation of the Physical Activity Barrier Scale for persons who are blind or visually impaired. *Disability and Health Journal*, 7(3), 309-317.
- Legood, R., Scuffham, P., & Cryer, C. (2002). Are we blind to injuries in the visually impaired? A review of the literature. *Injury prevention*, 8(2), 155-160.
- Marston, J. R., & Golledge, R. G. (2003). The hidden demand for participation in activities and travel by persons who are visually impaired. *Journal of Visual Impairment and Blindness*, 97(8), 475-488.
- Naël, V., Pérès, K., Carriere, I., Daien, V., Scherlen, A. C., Arleo, A., ... & Helmer, C. (2017). Visual impairment, undercorrected refractive errors, and activity limitations in older adults: findings from the Three-City Alienor study. *Investigative ophthalmology & visual science*, 58(4), 2359-2365.
- Stanimirov, K. (2016). *Correlations of self-concept with quality of life and life habits in persons with visual impairment*. Doctoral dissertation. University of Belgrade – Faculty of special education and rehabilitation. Belgrade.
- Stuart, M., Lieberman, L., & Hand, K. (2006). Beliefs about physical activity among children who are visually impaired and their parents. *Journal of Visual Impairment & Blindness*, 100(4), 223–234.
- Tomioka, K., Kurumatani, N., & Hosoi, H. (2017). Positive and negative influences of social participation on physical and mental health among community-dwelling elderly aged 65–70 years: a cross-sectional study in Japan. *BMC geriatrics*, 17(1), 111.
- Van Naarden, B. K., Yeargin-Allsopp M. (2006). Factors associated with leisure activity among young adults with developmental disabilities. *Research in Developmental Disabilities*, 27, 567–583.

- Ward, S., Farnsworth, C., Babkes-Stellino, M. & Perrett, J. (2011): Parental Influence and the Attraction to Physical Activity for Youths Who Are Visually Impaired at a Residential–Day School, *Journal of Visual Impairment & Blindness*, 105(8), 493-498.
- Wrzesińska, M., Lipert, A., Urzędowicz, B., & Pawlicki, L. (2018). Self-reported physical activity using International Physical Activity Questionnaire in adolescents and young adults with visual impairment. *Disability and health journal*, 11(1), 20-30.

The access of visual impaired children and students to aids and assistive technologies

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The current report reviews the modern aids and assistive technologies in support of the education of visually impaired children and students. The access to them is not always guaranteed and possible, which depends on a number of factors and reasons. To what extent and in what aspects do teachers know and use these tools and assistive technologies and how does the curriculum adapt through them? What is parental involvement and how does the family support the use of these assistive technologies ? There are many questions and their answers reveal what assistive technologies are available to children and what are the difficulties in using them in the educational process.

I. Aids and assistive technologies

Atanasova (2016) describes assistive assistive technologies , as follows:

Low-tech aids to the following functional difficulties and skills, developed in the educational process:

- graphic writing skills;
- reading skills;
- mathematical skills;
- visual skills;
- Cutting skills (manual technical actions);
- communication skills;
- computer skills.

Hi-tech aids to the following functional difficulties and skills, developed in the educational process:

- writing skills and reading skills;
- mathematical skills (geometry, arithmetic skills);
- Cutting skills (manual technical actions);

- communication skills;
- Computer skills (peripheral devices and software).

They can be used in individual or group work, depending on the needs of children and students. The problem with assistive devices is that some of them are expensive, are produced in limited series and sometimes inaccessible to children. They are often provided by charity through donations. This is an obstacle for building an inclusive educational environment.

According to Radulov (2004), proper use of aids and assistive technologies and their timely introduction into the support process facilitates the formation of skills for the independent life of visually impaired children and students. He points out three groups of factors, that determine this process – factors, relating to the visually impaired child, family environment factors and school factors.

II. Low-tech aids and assistive technologies.

Braille plate and awl



Through them the visually impaired people can write text in Braille on their own.

Braille machine



Through it the visually impaired people can write text by simultaneously pressing the keyboard of the machine with the configuration of the fingers.

White walking stick



The white walking stick is used as a mobility tool for people with visual impairment.

Magnifiers and magnifiers for fonts and various glasses.



They enlarge text and/or zoom in distant objects.

Tsvetkova Arsova (2002) emphasizes the importance of the proper use of aids in the training of the visually impaired students. Sometimes they are deliberately avoided, because they are a symbol of blindness, which is their disadvantage, but at the same time is their advantage, such as the white walking stick. The task of integrating visually impaired children and students is of particular importance and in this context Petya Marcheva (2016) points out that “integrating students with serious disabilities in the mainstream learning environment can be a difficult task and that a quality inclusive education is good for all students ”. The success is due to the correct use of assistive technology.

III. High-tech aids and assistive technologies.

Visual impaired children and computer.

The computer is the only tool that can fully partner the child with SEN. Along with the tablet and mobile phone, it is present in the daily routine of this group of students and is somehow gradually replacing traditional pedagogical techniques and teaching methods. These tools satisfy the requirements of the so-called multi-sensory approach. Here we have sound, picture, touch, virtual reality similar to reality. Quite often, pedagogical situations are more accessible to children with SEN when the mediator is the computer or mobile application of the tablet or phone. In certain software applications the correct or incorrect answers to certain tasks are pre-set. There are options, which allow them to choose from several answers. There is a danger here that the tasks can be solved stereotypically, because the child with SEN is a multi-layered personality with sometimes strange understandings and interests.

Software for the visually impaired children and students.

To adapt a computer to assist a visually impaired child or student, it must be equipped

with at least two types of specialized software. One is a text reader - a screen reader and the other is a speech synthesizer. As the name implies, the screen reader "relies" on what is displayed on the screen. The information is then interpreted by the synthesizer using sound icons, human speech or Braille output for the Braille display. In recent years, it has become more common for a speech synthesizer to be integrated into the screen reader. The voice from the synthesizer that reads the text is heard through the standard speakers, connected to the sound card of the computer. Through this software combination for the blind, Internet resources (without flash animations), all texts contained in files, e-libraries, e-mail, forums, etc. are accessible. There are also many computer games adapted or specially designed for the visually impaired.

As anyone can guess, a text-based operating system is more convenient for visually impaired users, than a graphical one. For this reason, both in Bulgaria and abroad, the DOS systems have not yet been abandoned.

Screen readers

The most used screen readers in Bulgaria are Freedom Scientific's JAWS and GW Micro's Window-Eyes. Unfortunately their price is too high. Both programs work with Windows 98, Windows 2000, Windows XP (Home, Professional, Media Center), Windows Server 2003 and Windows Vista (all 32-bit versions including Vista Ultimate, Vista Home Premium, Vista Home Basic, Vista Business and Vista Enterprise). They also work with Microsoft Office 2000 / XP / 2003/2007, Internet Explorer and Mozilla Firefox.

JAWS (Job Access With Speech) is software, created by Freedom Scientific (www.freedomscientific.com) specifically for visually impaired people. The program converts the information on the computer screen into text and transmits it through speech or, if a Braille display is connected to the system, in the form of a Braille letter. It was first developed for DOS (1990), its first version for Windows is released in 1995, the latest version (12) is released in October 2010.

Talking applications in a regular mobile phone.

It speaks the hour with one or more keystrokes in a regular mobile phone's menu.



Braille phone

The phone's keyboard is made with a 3-D printer and allows good orientation of the visually impaired people, when working with it. In order to use it, it is required very good knowledge of the Braille.



Electronic Braille Fingerprint Reader



It is a thimble that connects to a computer through a cable and magnifies the text that the finger shows.

Braille tablet



Still prototypes. Quite expensive and unprofitable due to the narrow market and low consumption.

Focus 14 Blue Braille display



The Braille display is irreplaceable for deaf people as well as sighted text correctors. It is used less often by visually impaired people. The device contains rows of special "soft" cells. Each cell has 6 or 8 needles (pins) made of metal or plastic and arranged in a rectangular shape.

Braille keyboard



The difference with the standard keyboard is that the keys on the braille keyboards have protruding dots that correspond to a letter in Braille. Some keyboards have mouse replacement keys as well as keys that replace basic keyboard shortcuts. Thus, with the help of the touch of the fingers, visually impaired people can write and control their computer properly.

Braille printer



This is a hardware device that prints text documents in the form of Braille. It uses a special software program to convert text to Braille.

Braille printers are expensive.

Closed TV

A computer device with a movable counter and projector-type optics that enlarges standard text up to 20 times. The disadvantage is that it is heavy and positioned in a specific workplace.



Video magnifier or portable font magnifier.

Portable screen and optics device that enlarges standard text 16 times. The advantage is that it is easily portable. The downside is that it has a small screen reach.



BrailleNote

Computer, tablet, keyboard and talking program and Braille machine all in one. It connects to a computer and displays image and text in a flat-print font and back to Braille and features talk programs, readers, and software.



IV. Access to assistive technologies for visually impaired children and students

Wong, M. Cohen, L (2015) examine the access of visually impaired students to assistive technology and make the following findings:

1. Access depends on the competences of teachers.

Most teachers are familiar with the low-tech aids and assistive technologies , but find it difficult to use the high-tech ones. They worry that they cannot properly include them in the educational process.

2. Access depends on the teacher's desire to be the first to use the new assistive technologies .

Despite their lack of awareness and knowledge of how assistive assistive technologies work, these teachers encourage their students to use them. They disclose their functions at work while taking risks and guessing, but still try.

3. The opposition of classic Braille to new assistive technologies .

The belief that the introduction of Braille is the basis of literacy for visually impaired children and students is an obstacle to the introduction of assistive technology. Today, we believe in the simultaneous use of Braille and assistive technology, which we call multitasking.

4. Resource constraints

Not always does the school or family have the resources they need to provide the tools and assistive technologies they need. Some of them are expensive and cheap ones cannot be used due to lack of experience.

To ensure children's access to technology, the following is required:

1. Integration of assistive technologies - overcoming the fear of the new and incorporating assistive technologies into education along with the classic special training programs and Braille.
2. Inclusion of aids and assistive technologies as mandatory in the student support plan and in the school curriculum. Then their provision will be mandatory.
3. Differentiation between assistive technologies for visually impaired and information computer assistive technologies . Often teachers confuse them.
4. Assistive technologies should be used not only in Bulgarian language and mathematics but also in all disciplines.
5. Professional development and qualification of teachers to use tools and assistive technologies . This will increase their use by the students.

In conclusion, the use of aids and technology by visually impaired children and students guarantees the proper formation of their academic and personal qualities and achievements. It determines their overall development. Educational professionals are beginning to use more and more tools and assistive technologies in the support process, although intuitively. Family involvement and participation is also important in this process. Aids are the bridge between the curriculum and its absorption by the child or student, so they are of particular importance in providing educational support, and the access to them is mandatory.

Bibliography:

1. Atanasova, G. "Aids and assistive technologies for training children and students with SEN in the training of resource teachers", PA Paisii Hilendarski, 2016.
2. Ivan Dobrovolov, BG-Assist- Company Catalog, Sofia, 2015-2019
3. Marcheva, P. "Concept of inclusive education", Pedagogical Almanac of VTU "St. Cyril and Methodius", Issue 1, 2016, ISSN 1310-358X.
4. Radulov, V. "Pedagogy of the visually impaired", Sofia University "St. Kliment Ohridski, 2004
5. Tsvetkova-Arsova, M. "Training of the visually impaired with multiple disabilities and the deaf", Sofia, Ecoprint 2002.
6. Longley, Dennis etc. Dictionary of Information Technology. 2. Macmillan Press, 1985.
7. Hilbert, Martin etc. The World's Technological Capacity to Store, Communicate, and Compute Information, 2011
8. Wong, M. Cohen, L. "Access and Challenges of Assistive Technology Application: Experience of Teachers of Students with Visual Impairments in Singapore", 2015.

Learned helplessness in children and students with multiple disabilities – the views of the teachers

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Abstract:

The phenomenon “Learned helplessness” is in the focus of this paper. Its essence is described as well as the factors that influence it.

A short research via questionnaire among 32 teachers from 4 different groups was carried – teachers in special schools for students with sensory disabilities, teachers in centers for special educational support, teachers private day care centers for children and students with SEN and resource teachers in regional centers for supporting the process of inclusive education in Bulgaria. The results of the questionnaire are discussed.

In the last few decades, an interesting phenomenon has been discussed in special education, which is observed among many children with special educational needs – the so-called "learned helplessness." In Bulgaria the topic was firstly discussed by Tzvetkova-Arsova (2011).

The term "learned helplessness" was introduced in 1975 by Seligman after research on dogs that were kept and unable to escape. After a while and after numerous escape attempts, the dogs realized that they could not escape and stopped trying. Thus, Seligman came to the idea that environmental factors can create in animals the feeling of helplessness that has been learned over the course of their lives.

Later, similar experiments were carried out with humans in order to investigate their reactions when confronted with situations in which they had no control.

Kay (1986, in Marks, 1998) described two types of helplessness:

- **Inborn passivity;**
- **Learned helplessness.**

The inborn passivity may be relatively typical for certain groups of children with SEN, such as children with multiple disabilities and especially the deafblind. They usually expect others to do something for them or expect to be told what to do without taking any initiative. Since many of the deafblind have nutrition issues, this major stimulus – hunger, does not really play a special role in them, and they often do not take the initiative even to ask for food.

Unfortunately, in many cases teachers, parents and staff can further "contribute" to the development and deepening of such passive behavior. Adults start doing almost everything for the children, always help them, even in situations where help is unnecessary and the children can handle it on their own. This can happen for various reasons:

- adults try to protect the child more than necessary,
- adults do not have enough time or are eager to wait for the slower completion of activities by the children, such as eating, dressing etc. and they do the work for them faster,

- adults often do not understand well the difference between helplessness and the need for some help and guidance.

In each of these cases, the child quickly and easily learns that the adult will do something for him /her - the adult will feed him/her, dress him/her up, take him/her somewhere, etc., which over time becomes a learned helplessness.

The learned helplessness is discussed in detail by Marks (1998). She cited Abramson, Seligman & Teasdale (1978), who pointed out that learned helplessness is demonstrated in the following areas:

1. Motivation.
2. Affective.
3. Cognitive.

When a person's efforts have little or no effect on the results, their motivation is diminished. Lack of motivation, on the other hand, leads to a reduction in the attempts to change something, because the attempts do not lead to anything. In the most extreme form of this condition, the individual has no initiative for anything. This is actually the most typical characteristic of those who show "learned helplessness" – they are not initiative. This can lead to depression. The depressed person often shows behavior of learned helplessness.

Marks (1998) described many risk factors for developing learned helplessness with a focus on deafblind children and students (listed with some reductions):

1. Lack of initiation.
This lack is a signal and also the first consequence of the learned helplessness. It has a particularly strong impact on learning because students do not want anything, they do not initiate anything, and they do not seek a new activity.
2. Lack of participation and persistence.
Demonstration of persistence is an indicator of motivation. Children who have already learned to be helpless demonstrate low motivation for choice tasks – they are passive when offered a favorite and unloved activity or object and do not insist on receiving their favorite thing.
3. Dependence of prompts.
Children do nothing without being prompted or directed by a physical, verbal or another prompt. The many and frequent physical directions give the child a full sense of helplessness.
4. Seeking others “to do for them”.
This behavior is manifested in all situations – the child does not reach for toys, but waits for the adults to put them in their hands, or needs to go to the toilet, but does not just go and looks for an adult to go with.
5. Refusal to make choices.
Not making choices is a consequence of expecting to get everything without any effort.
6. High levels of external and tangible reinforcements for little efforts.

This becomes a typical reaction if there were plenty of previous situations in which the child has always been rewarded and praised for very little efforts.

7. High number of failures.
Children who are more likely to fail to perform an activity over time lose the motivation to try because they know they will not succeed again.
8. Depression.
Often, behaviors such as aggression, self-aggression etc. can actually be a sign of depression.

Marks (1998) also suggested strategies for reducing or preventing learned helplessness.

DESIGN OF RESEARCH

Main goal: to establish if there is learned helplessness among students with multiple disabilities attending different educational institutions, according to their teachers.

Participants in the research

Participants in the research were 32 teachers of students with multiple disabilities – representatives of 4 different educational institutions: special schools for students with sensory disabilities, centers for special educational support, private day care centers for children and students with SEN and regional centers for supporting the process of inclusive education in the country. The participants were from several cities in Bulgaria – Burgas, Varna, Pazardzhik, Pleven, Plovdiv and Sofia. The original intention was to collect 10 questionnaires from each group of teachers, representatives of the 4 types of educational institutions, but in the end, 15 questionnaires were collected from the resource teachers, and from the other educational institutions – 5 and 7 questionnaires.

Methodology

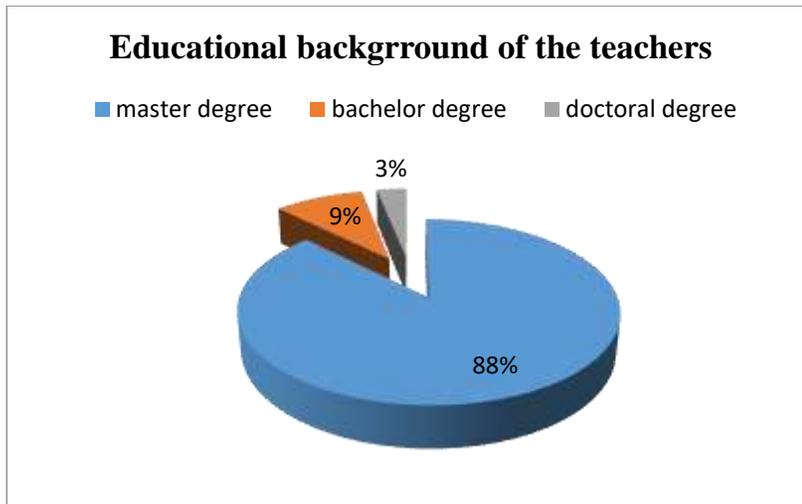
In order to establish the presence or absence of learned helplessness among students with multiple disabilities, according to their teachers, a short questionnaire was developed, consisting of 11 questions. The first 3 questions collected direct demographic data, 3 others collected educational data, and the rest were questions regarding learned helplessness.

RESULTS

All 32 participants in our research were women.

28 had a master degree in special education, 3 had bachelor degree and 1 had doctoral degree.

Graph 1. Educational background of the participants



The teachers work with children and students with multiple disabilities across a wide age range – from kindergarten to grade twelve, ie. the presence or absence of learned helplessness can be traced both to younger children and to students in secondary education.

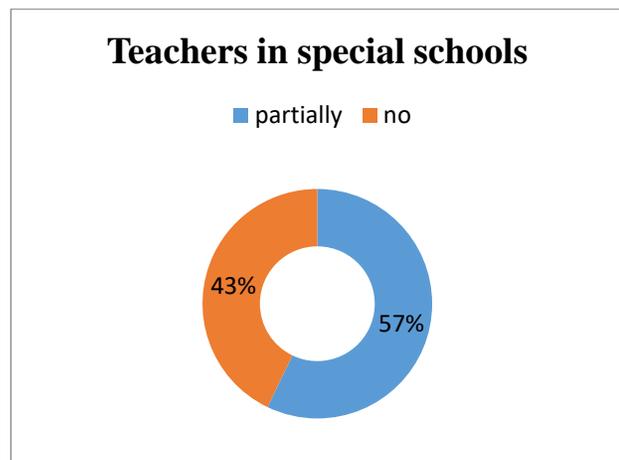
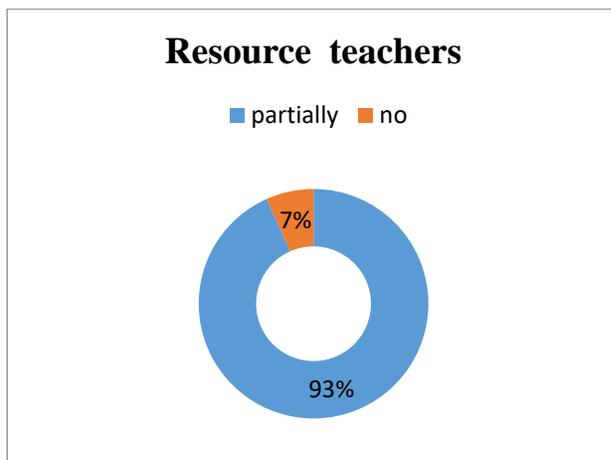
Most teachers work with children and students with almost any type of disability – autism spectrum disorders, motor disabilities, hearing impairments, intellectual disability, ADHD, language disorders, specific learning disorders. Of these, 12 work with students with visual impairments.

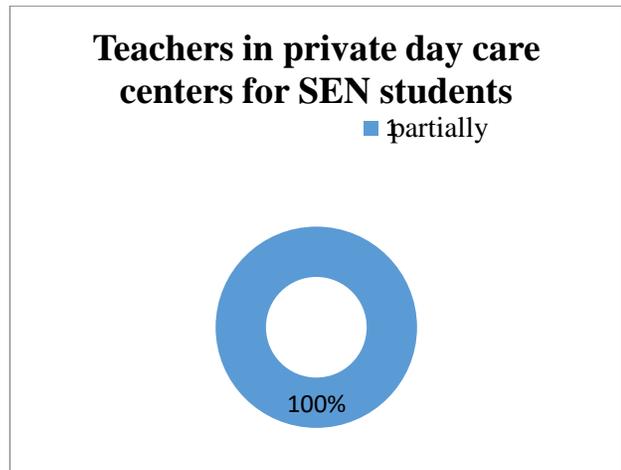
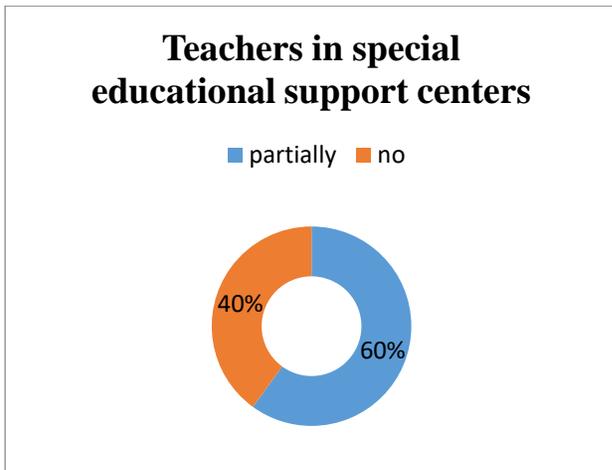
The answers to questions 7, 8, 9, 10 and 11 will be presented in a more detailed way.

Question 7 stated: "Do you think that the students you teach are independent enough and able to handle different situations, to the extend their disabilities allow them to be?"

The answers are presented in graphs 2 – 5.

Graphs 2, 3, 4 & 5. Level of independence of the children and students according to their teachers





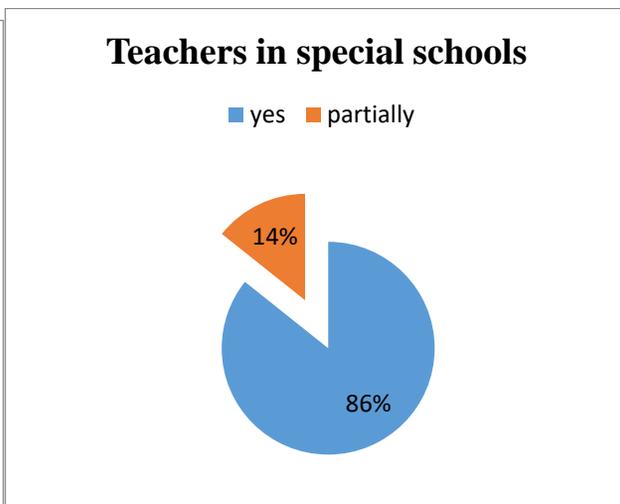
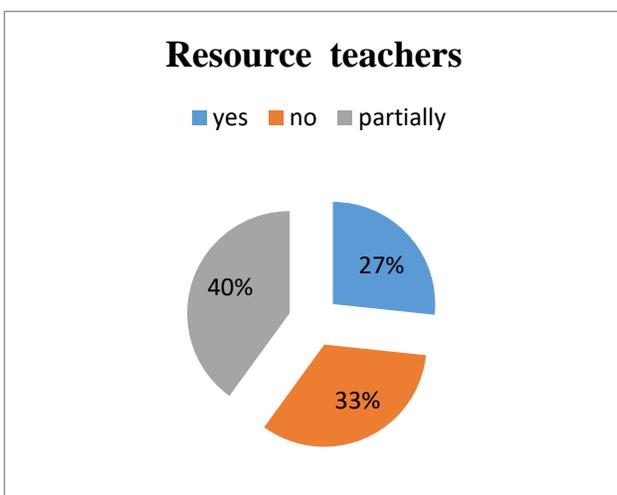
As can be seen from the four diagrams above, the majority of the teachers from the four groups of responded with "partially" – 93% of the resource teachers, 57% of the teachers in special schools, 60% of the teachers in the special educational support centers and all teachers in private centers.

There is no answer "yes", a considerable percentage have answered negatively – 43% of the teachers in special schools and 40% of the teachers in special educational support centers.

Question 8 stated: "Are independent living skills / activities of daily living taught in your school?"

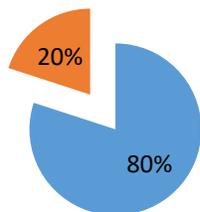
Graphs 6 – 9 represent the answers given.

Graphs 6, 7, 8 & 9. Teaching of independent living skills / activities of daily living in the school.



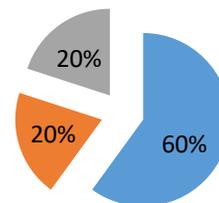
Teachers in special educational support centers

■ yes ■ partially



Teachers in private day care centers for SEN students

■ yes ■ no ■ partially



The answers to this question were more differentiated. Almost all teachers in special schools – 86 , as well as 80% of the teachers in special educational support centers responded with "yes". Indeed, traditionally, special programs in useful/daily living/independent living skills are well-trained in these educational settings. However, representatives of special schools for hearing impaired students did not give a positive answer. A large percentage of teachers in private centers - 60% also responded positively.

Among resource teachers, the answers were distributed between “partially” – 40%, “yes” – 27% and “no” – 33%. This means that in the inclusive education system, there is a need for more time to develop skills and competences for autonomy and independence.

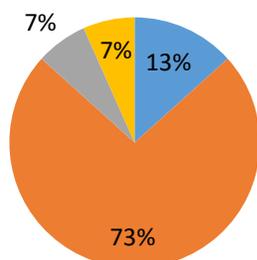
Question 9 stated: "Do you think that your students' parents are promoting independence and at home?".

The answers are presented on graphs 10-13.

Graphs 10, 11, 12 & 13. Promotion of independent skills by the parents at home.

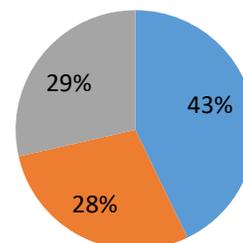
Resource teachers

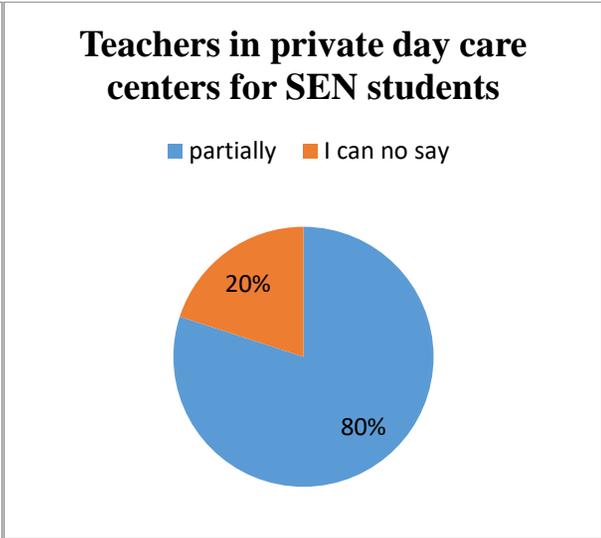
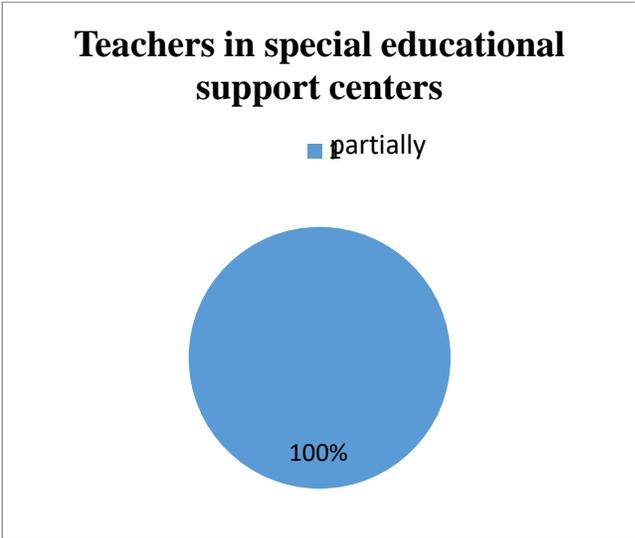
■ yes ■ partially ■ no ■ I can not say



Teachers in special schools

■ partially ■ no ■ I can not say



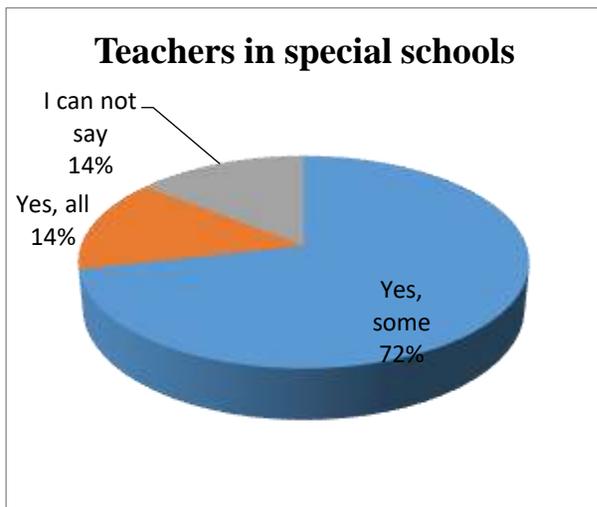


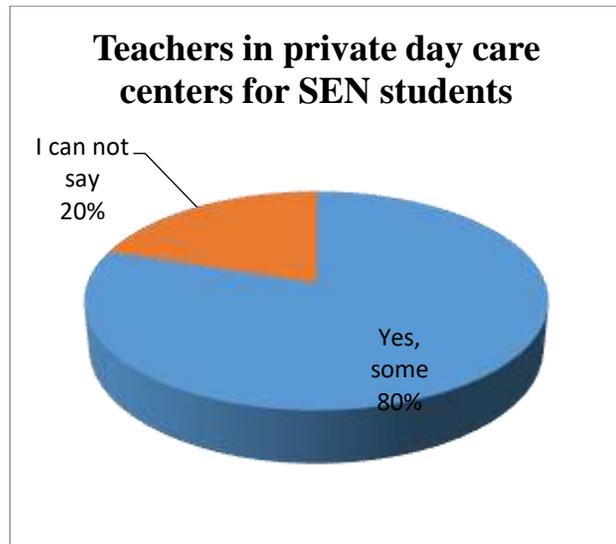
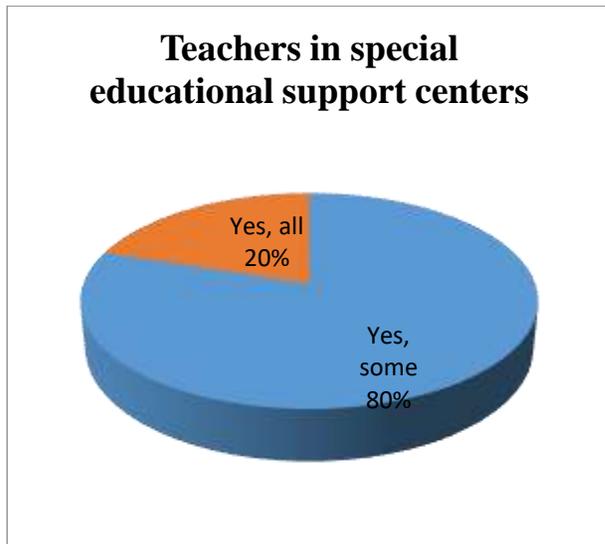
On this question again the answer "partially" dominated – it was given by all teachers in the special educational support centers, by 80% of teachers in private centers, as well as by 73% of resource teachers and 43% of teachers in special schools. Only some of the resource teachers gave a positive response to the parental involvement in the development of these skills, with 13% of them claiming that parents promote home-based autonomy skills.

Question 11 stated: “Do you think your students have learned helplessness?”

The answers are presented on graphs 14-17.

Graphs 14, 15, 16 & 17. Is there learned helplessness in your students?





The dominant answer to this question was “yes, some” – given by 60% of the resource teachers, by 72% of the teachers in the special schools, and by 80% of the teachers in private centers and the special educational support centers. It is worrying that there is also a fair percentage of answers "yes, all" – 20% of the teachers in the special educational support centers, 14% of the teachers in special schools and 13% of the resource teachers.

Question 10 stated: “In your opinion, what is the learned helplessness?”

Graph 18 presents some of the answers given.

Graph 18. What is learned helplessness?



CONCLUSION

Learned helplessness is a serious problem that many teachers and families of children and students with multiple disabilities have faced recently. More in-depth research is needed on this topic, with parents views and opinions included.

Learned helplessness appears to be present in a large number of children and students with multiple disabilities, regardless of the type of school they attend, as almost all teachers responded that some or all of the students they work with have learned helplessness. Few teachers responded that they could not say.

However, they are possible solutions. By “teaching at the appropriate level for each child”, a strategy for overcoming the learned helplessness described by Marks (1998), learned helplessness can be prevented. It is also appropriate to apply Vygotsky's (1982) classic views of the “area of closest development” by identifying what a multidisabled child can do on their own at the current moment, and providing adequate education and training in order to achieve the next level in his/her development, taking into account all child’s potential and abilities.

Last but not least, it is important to properly understand and interpret learned helplessness by parents and teachers, and to find the balance between the care and assistance that children with SEN in general, and especially those with multiple disabilities, really need, and the provision of opportunities for real learning, participation, initiative and development of autonomy and independence in them.

REFERENCES

1. Abramson, L., Seligman, M., Teasdale, J. (1978). Learned helplessness in humans: Critique and reformulation. *Journal of Abnormal Psychology*, 87, 49–74.
2. Kay, M. (1986). Overcoming passive behaviour. *Academic Therapy*, 22, 35–39.
3. Marks, S. B. (1998). Understanding and Preventing Learned Helplessness in Children who are Congenitally Deaf-Blind, *Journal of Visual Impairment and Blindness*, 92 (3), 200–211.
4. Seligman, M. (1975). *Helplessness*. San Francisco: W. H. Freeman.
5. Выготский, Л. С. (1982). *Собрание сочинений*, т. 5, изд. Педагогика, Москва.
6. Цветкова-Арсова, М. (2011). “Заучената безпомощност” – един нов проблем в обучението на зрително затруднени ученици с множество увреждания, сп. Обучение и рехабилитация на зрително затруднените, 1–2, 17–31.

TEACHER TRAINING IN MDVI THROUGH BLENDED-LEARNING WITHIN ERASMUS+ PrECIVIM PROJECT²

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Abstract. Evaluations of teacher training programs state that there is a need to re-think and re-structure teacher training programs, taking into consideration the complex and various needs of students, aspects of inclusion and also specific support according to the needs of individuals, available evidence-based studies, various educational paradigms, legislation and implemented programs, promoted approaches, expectations of families and competences of professionals. (OECD, 2017). The development of competences of teachers in the field of visual impairment and additional disabilities needs to be approached taking into consideration the specific needs, complexity and heterogeneity of children with MDVI. Teachers acknowledge the need to get specialised training to develop their specific professional competencies to improve assessment of children with multiple disabilities and learn about techniques and methods to implement educational and intervention support programs. Many teachers cite items such as “having experts visit the school or facility to consider and deal with educational issues together” and “training in the use of educational materials and supportive devices,” more often than items such as “lectures by experts” and “receiving training at a specialized institution”. Simply attending a lecture away from the classroom is insufficient for resolving specific individual problems. Rather, it is necessary for training in the classroom to be further developed, such as participation in resolving individual and specific issues in cooperation with the school. In this view, the blended learning approach implemented in the Erasmus+ PrECIVIM project supports access to learning materials, in-class mentoring activities, follow-up guided activities though on-line mentoring, resources for structured independent study, development of professional network

Effective professional development is on-going, includes training, practice and feedback, and provides adequate time and follow-up support. Successful programs involve teachers in learning activities that are like ones they will use with their students and encourage the development of teachers’ learning communities. There is growing interest in developing schools as learning organizations, and in ways for teachers to share their expertise and experience more systematically (TALIS, OECD, 2009)

The Kinsey Report (Barber, Mourshed, 2007 cited by Malm, 2009) states that the quality of an educational system cannot exceed the quality of its teachers, that the only way to improve results is to improve instruction and that the achievement of results is possible only when mechanisms are implemented to assure high quality instruction for each child.

Competence is defined as the ability that successfully meets the complex requirements in carrying out an activity or task. Competence is the internal structure, ability and capacity of the person that correspond to cognitive and practical skills that interrelate, associated to elements of cognition, motivation, values and moral judgments, attitudes, emotions and social and behavioral components that are put to use in a particular context. Teachers of children with multiple disabilities must have specialized competencies in order to provide their students with high quality educational opportunities and learning experiences These competencies are in addition to the basic competencies required of all teachers of children with disabilities (Riggio, McLetchie, 1998), but also to education in general. Assessment of the competencies must take into consideration two elements: the demonstration of knowledge and understanding, that would be assessed through written assignments, seminars, workshops, and a teaching practicum and the demonstration of practical ability, assessed mainly through observation during practicum and also through practical workshops, but also reflective logs.

The teacher should be able to demonstrate knowledge and understanding of:

- implications of visual impairment and multiple disabilities;
- the need for a holistic approach of the child;
- assessment procedures,
- development of communication
- alternative and augmentative systems of communication
- behaviors;
- intervention particularities and specific support;
- the importance of cooperation with parents;
- the types and functions of support services.

The teacher should be able to demonstrate ability to carry out an assessment, to design and implement appropriate curricula and intervention, choose and use adequate methods of teaching and appropriate methods of communication; design an individualized intervention plan, to work in team, to support and collaborate with parents.

In the TALIS report referring to the types of professional development, the following types of programs were mentioned:

- courses/workshops related to specific knowledge and techniques
- education conferences or seminars
- qualification programs;
- observation visits to other schools;
- participation in a network of teachers formed specifically for the professional development
- individual or collaborative research
- mentoring and/or peer observation and coaching.
- reading professional literature

The competences can be formed through initial training, in-service training, professional training, specific programs training, mentoring and training within projects.

Initial training refers to following a specialized curriculum for the students that includes: introduction of terminology and definitions, etiology, characteristics of children with multiple disabilities, early intervention, assessment procedures, systems of communication, individualized intervention plan, orientation and mobility, daily living skills, personal and emotional development, working with families.

In-training service that refer to course and workshops with the purpose to enrich specific knowledge and develop practical abilities. Develop content, discuss strategies and methods of delivering the course, number of hours needed, interactive methods based on learning through doing (simulation activities), video analysis, case study discussions, form of evaluating the participants, feed-back from the participants, ways of monitoring after delivering the course.

Blended online environments support initial teacher education, but also in-service teacher programs, offering interesting opportunities to develop and implement alternative approaches that blend with practical skills in the field (Hunt, 2015). Blended learning as an approach supports the needs of the professionals, both for theoretical concepts, but also for development of practical skills for assessment and intervention. This is supported by individual study and mentoring,

focusing thus on the role of a mentor or trainer who supervises the process of learning of the teacher. It is the added value of a program, when the teacher is guided by a mentor or trainer, while taking into consideration the specificity of the working and educational environment, but also the needs and challenges of the disability or other issues in discussion.

Mentoring is essential for the professional development in all the stages of a teacher's career and all teachers should see themselves as mentors. The necessary abilities and competencies should always be developed and upgraded through continuous training and lifelong learning. The abilities gained through mentoring are meant to help the teachers to offer a personal high-quality support to all the students, as part of the curriculum (Donaldson, 2010). A mentor must have the knowledge, personal qualities and abilities necessary to address the needs of the young teachers and must also be able to create a friendly environment meant to positively stimulate the participants. The ideal mentor has the following features:

The Educational Service Guidelines (Riggio, McLetchie, 2008) developed at the Perkins School for the Blind focuses on some questions that will determine the content and methodology of the possible programs of training:

- How to help students build personal, trusting relationships with family members, peers, and other significant people in their lives?
- How to provide predictable routines that will develop anticipation and stimulate communication?
- How to develop the student's ability to use a variety of communication forms or methods (e.g., gestures, objects, pictures, signs, speech) that they can understand and that can be understood by others?
- How to create learning environments that foster the desire to communicate and develop and expand the student's interests?
- How to help the student to build and sustain social relationships?
- How to assist the student in moving safely and confidently through different physical environments?
- How to provide real life learning experiences?
- How to prepare the student for the transition from school to adult life?

These questions must determine a reflection on the knowledge and skills that the teachers should acquire so that all these development and intervention areas are addressed. The finality of the intervention must be the independence of the child, him being able to function in daily situations and being part of the community.

The Erasmus+ PRECIVIM project aims to develop competences of professionals who work with individuals with visual impairment and multiple disabilities referring specifically to their communication abilities. Development of communication in individuals with visual impairment and multiple disabilities can represent a challenge for professionals, taking into consideration the heterogeneity of the group, regarding levels and complexity of disability, age, onset of disability, additional disabilities, previous educational experiences, available support and technology.

The training is organized with a transnational approach and a strong interactive input both from the trainers and trainees. It lasts for six months and implies a face-to-face training session with the aim to understand implications of disability and aspects of communication, followed by on-line discussions and training that consists in teleconferences and tasks, uploaded on a learning platform, that are assessed with the aim to provide feed-back and adequate recommendations that

the professionals implement, observe and assess their efficiency. The trainees implement that recommendations are made, and interventions are guided taking into consideration the specific context that each of them is working in, following the developmental and communication characteristics of the individual with visual impairment and multiple disability that they intervene for. The course components emphasize functional approaches, practical skills for teaching and offering support, adequate and appropriate field-based experiences based on analysis of specific contexts, examples of best-practices using case-studies. To prepare teachers for the challenge of educating

Teachers should develop also their reflection skills, which is a critical component of teaching practice, because being reflective practitioners requires systematic and structured training which integrates their peers' advice, their supervisors' recommendations and their own experiences into their own practice (Kim, J. H., Baylen, D. M., Leh, A., & Lin, L., 2015). The authors mention also the problem- solving approached called also the IDEAL (Identify, Define, Explore, Act, Look) approach, which is developed by Bransford and Stein in 1993. The IDEAL approach consists of the following steps:

- 1) Identify problems and opportunities;
- 2) Define goals;
- 3) Explore possible strategies;
- 4) Anticipate outcomes and act;
- 5) Look back and learn (Kim, J. H., Baylen, D. M., Leh, A., & Lin, L., 2015).

Ololube, N. P., Kpolovie, P. J., & Makewa, L. N. (Eds.). (2015) citing Park and Kim (2000) state that another key effect of the blended format is to form a community of learners, a network of professionals who share learning experiences, through the synchronous and asynchronous online discussions. They emphasize the educational, managerial and emotional support within the approach, so that participants receive teaching ideas (educational support), classroom management approaches and ideas (managerial support) and they see similar experiences and identify themselves and relate to other professionals who face the same challenges and experiences (emotional support).

Teacher training programs need to approach all aspects of the disability, including cultural contexts, educational finalities, dynamics of the multidisciplinary members of the team, implications of legislation and methodologies of implementation, aspects of curriculum, initial training and qualifications of teachers.

Resources

Donaldson, G. (2010). Teaching Scotland' Future – Report of a review of teacher education in Scotland. Edinburgh: Scottish Executive. Available: <http://www.scotland.gov.uk/Resource/Doc/337626/0110852.pdf> (accessed on 20/08/2019).

Hunt, A. M. (2015). Blended online learning in initial teacher education: A Professional Inquiry on preservice teachers' inquiry projects in *Journal of Open, Flexible, and Distance Learning*, 19(2), 48-60

Kim, J. H., Baylen, D. M., Leh, A., & Lin, L. (2015). Blended learning in teacher education: Uncovering its transformative potential for teacher preparation programs. In *Handbook of Research on Enhancing Teacher Education with Advanced Instructional Technologies* (pp. 166-185). IGI Global.

Malm, B., (2009), Towards a new professionalism: enhancing personal and professional development in teacher education in *Journal of Education for Teaching*, 35:1, 77-91

Ololube, N. P., Kpolovie, P. J., & Makewa, L. N. (Eds.). (2015). Handbook of research on enhancing teacher education with advanced instructional technologies. Information Science Reference.

Riggio, McLetchie (1998), Research to practice focus: Competences for teachers of learners who are deafblind in *Deafblind Perspectives*, volume 6, issue 1.

Riggio, M., McLetchie, B. (Eds.) (2008). Deafblindness: Educational service guidelines. Chapter 5: Supportive structure and administration. Perkins School for the Blind. To download pdf version: www.perkinsproducts.org/store/en/perkins-publications/155-deafblindness-educational-service-guidelines.html

***OECD 2009, Creating Effective Teaching and Learning Environments: First Results from TALIS, <https://www.oecd.org/education/school/43023606.pdf>

***OECD (2017), "Do new teachers feel prepared for teaching?", *Teaching in Focus*, No. 17, OECD Publishing, Paris, <https://doi.org/10.1787/980bf07d-en>.

Parallel session 1

“Inclusive education for visually impaired”

Accessibility of textbooks and study aids for visually impaired children and students in inclusive education in the context of multi-literacy

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Summery: Braille Literacy, Part of Multiple Literacy: The Development of Literary and Bookless Braille in Teaching Visually Impaired Children in the Inclusive Education Process.

Literacy is the most important part of the education and development of visually impaired children. Braille literacy, which is the basis of multi-literacy and its application in the overall learning process. Working with a screen reader or a braille display allow most of the visually impaired students to use more and more electronic materials. Therefore, the accessibility of e-textbooks and teaching aids play a significant role and application in the process of inclusive education in the education of visually impaired students.

What does an on-screen e-learning tool mean? Are they applicable in the learning process for students with visual impairments in the implementation of inclusive education?

To what extent do publishers in Bulgaria offer accessible textbooks and textbooks with a screen reader? Are online tests applicable with a screen reader? Increasingly, for easier feedback from the teacher, the use of electronic tests for entry and exit levels, which are part of the education of students with visual impairments in the inclusive education process.

The use of electronic textbooks and teaching aids is becoming increasingly necessary, but there are many questions that teachers of children and students with visual impairments face.

How to get real accessible electronic aids and then adapt them to a Screen Reader.

The issue of accessible e-textbooks and teaching aids is on the one hand a personal solution through scanning and processing with other programs, and on the other hand as a policy of the Ministry of Education and Science in Bulgaria to make them accessible to all in the process of inclusive education, especially for the visually impaired students.

Keywords: Multi-literacy, braille literacy and training and accessible e-textbooks, study aids and e-tests to support the inclusive education process.

In modern inclusive education, visually impaired children and students are part of mainstream school.

This is a challenge first and foremost for themselves, and then for their teachers and parents.

We, the specialists for visually impaired children and students, help the environment to change depending on the individuals of each child, who needs to be practically included in the real learning environment and classroom. Visually impaired children and students should not be involved in the environment and the learning process, but vice versa, the environment and the means by which they are trained to satisfy their specific needs.

Braille literacy is part of multi-literacy in the education of visually impaired children and students.

Since the focus of this report is not on Braille literacy, I will not dwell on literacy itself.

But it is important to note that children who need to be literate in Braille is the only way to make them literate at all. On the other hand, Braille is a major tool in Mathematics, Physics and Chemistry. Objects that have tasks, equations, and specific characters that are irreplaceable with the screen reader because they are not read correctly and the visually impaired student is not able to provide feedback on the layout of the task, and hence the spelling of its solution. If a chemical equation is written, again the chemical elements are not read correctly and the signs below the index are barking to the reader. Therefore, Braille is an important part of multi-literacy, which puts it at the forefront of the literacy of visually impaired children.

Bookless braille increasingly spreads in everyday life and learning. Though it is rare to use a Braille display because the price is too high. In many countries, this issue has been addressed through the provision of one for use during the training period for each child and pupil with visual impairment who has such a need.

One girl, a visually impaired student of mine, has a second-hand Braille display that she uses in her English and German language training if the teacher provides her the exercise or lesson online.

One of the drawbacks of book braille is that it is bulky and textbooks and study aids take up too much space and do not always coincide with the chosen publishing company in the subject under study. Therefore, electronic textbooks and teaching aids are needed as an important part of multi – literacy. Technology advances are increasingly being used in the classroom. For this reason, students with visual disabilities are increasingly using the NVDA or Jaws screen reader after completing the 4th Grade.

According to the author (Tsvetkov) of an article in the internet, screen reader is the main type of assistive software used by people with impaired or missing vision in order to use a computer and a mobile phone. Overall, the screen reader transforms the electronic text from the display into a form that the visually impaired user is able to perceive. The text can be read by an artificially generated voice, called a speech synthesizer (TTS), presented in tactile or both.

There are numerous keyboard shortcuts for operating systems and screen readers themselves, through which the user gets to the various elements of a program called controls. These are text boxes, buttons, sliders, drop-down menus, and more. If the user has residual vision and is using the mouse, he or she can use a screen reader to speak the text under the cursor. So many computer habits are preserved and you do not have to look hard at the screen while reading long texts.

The use of a screen reader, especially for students with zero vision, is done mainly through the keyboard and they do not need a monitor and a mouse.

Windows operating systems work through screen readers, according to (Flower 2019) an article on the Internet explains: NVDA NonVisual Desktop Access, or Visual Desktop Access, is the most used free screen reader for Windows. It is open source, meaning any user can enhance its features and help its development if it has the necessary knowledge. Its huge popularity is due to its agility, ease of use and high stability. Multiple Braille models are supported. It can be installed on a USB Flash memory drive and run on any computer running Windows 7, 8 and 10. This screen reader has an eSpeak speech synthesizer that supports over 80 languages, including Bulgarian. JAWS: Job Access With Speech is the most used paid screen reader for Windows. It is being developed by Freedom Scientific, a world leader in the creation of software and specialized devices for the visually impaired, such as braille displays and electronic magnifiers. JAWS supports a huge range of settings and features. It offers the most personalization options and is constantly being refined. However, its high cost is often a deterrent for our consumers.

Feedback with the teacher in the classroom of a visually impaired student is easily achievable in written tests when the student is working with a laptop in the classroom. The student attends different exams with his classmates if a digital format test is provided. This makes a visually impaired student involved in the learning process, real inclusion happens.

Publishers typically use the PDF format for their e - textbooks.

According to a piece of information from the Internet :

(source :<http://bezbarieri.info/page%2061.html>) PDF is Portable Document Format.

To create pdf files, the documents are encoded in a specific way so that their format is retained regardless of the system that opens them. The pdf files are smaller in size, convenient for storing scanned files, preserve the original text format, quality of graphics and other elements, can be edited, and at the same time allow the author to disable modification and correction. The

important arguments for using pdf documents are: First, the PDF format is much more secure, unlike other documents with word, html, or text file extensions, each of which can be modified within seconds. Second, the format of the original document is supported by all operating systems and platforms. But PDF documents can create a number of user access issues with visual impairments. Unfortunately, some designers create documents that are read only for visual perception, but if the PDF document was created with cursor access, it would be readable by most versions of JAWS or NVDA. Adobe Reader is the global standard for viewing PDF files. Navigating shortcuts in PDF documents is similar to navigating html documents on the Internet, using the corresponding keyboard shortcuts.

Regarding readable PDF e-books, according to an article on a Microsoft page, adding accessibility labels to PDFs makes it easier for screen readers and other assistive technologies to read and navigate a document, with tables of content, hyperlinks, bookmarks, alternative text etc. Accessibility labels can also read information on different devices, such as large type displays, personal digital assistants (PDAs) and mobile phones. In Windows, Office for Mac and Office for the Web, labels can be added automatically when a file is saved as a PDF.

In the middle of 2019 BGASIST EOOD tested a large part of the publishing houses and the offered by them accessible electronic textbooks from I to VII class to be tested by pupils, students, teachers of visually impaired children and other persons with visual impairments working with screen reader. In this study, I tested five textbooks and three handbooks from three publishing houses: Enlightenment, Archimedes 2 and Riva AD, of which offline i.e. The PDF format was not readable with the Jaws 18.00 screen reader and Acrobat Reader DC. The screen actually has text, but it is invisible to the screen reader. And the result of online testing with Jaws 18.00 and the Google Chrome browser, the three textbooks of education publishing are inaccessible. And the textbook and aids of publishing house Riva AD are opening, but the inconvenience is that it is difficult to reach them. There are no clearly marked links to the textbooks, there is no keyboard navigation available on their pages, and this difficulty costs a lot of efforts and nerves.

Personal experience has shown that "accessible" e-books are unreadable by screen readers. This requires scanning them or, if possible, downloading the PDF file with a converter program that can process the text in an accessible screen reader format. Only Enlightenment electronic textbooks allow this conversion. And the electronic textbooks of most publishers cannot even be converted.

Therefore, scanning textbooks, or converting electronic textbooks to PDFs through other programs, does not violate the publishers' reserved rights in order to reach a readable textbook and textbook version. Since on 13 September 2017, the Council adopted implementing legislation to transpose into EU law the new mandatory exceptions to copyright in accordance with the Marrakesh Treaty. The directive was adopted on the basis of the same contract to facilitate access to published works for the blind, visually impaired or other disabled persons who do not allow the reading of printed material from (Draft Law on Amendments to the Copyright Act and its related rights (APIAA).

What is an accessible online textbook? Taking one textbook in their hands, anyone can go to the page they want and find the title they are looking for. Fast, easy and affordable. These two important steps also apply to the online textbook and tutorial. Navigate to a specific page and discover the title, exercise, or test. Ability to search the document by word, or go to the desired

page via a keyboard command. A tests should be arranged in a row in succession: question-by-question questions and answers, such as Hristova (cf. p.28)):

1. Specify the word that is misspelled.

- A) lawlessness
- B) arrogance
- C) a masterpeace
- D) prompting

2. Specify the word in which there is NO misspelling.

- A) envi
- B) danger
- C) consoltant
- D) inapropriate

It is incorrect to put the text of the suggested answers in a single line, as navigating through the keyboard is more difficult and the screen reader does not correctly read the suggested answers. It is so difficult to note the correct answers. For example:

1. Specify the word that is misspelled.

- A) lawlessness B) arrogance C) a masterpeace D) prompting

2. Specify the word in which there is NO misspelling.

- A) envi B) danger C) consoltant D) inapropriate

Creating an accessible electronic textbook version can be easily accomplished. By creating hedges for all titles and subheadings, and if there is a keypad to access a specific page, search for words and text to be formatted and arranged properly for use with a screen reader. This is possible through the publishing houses with the creation of the e-textbook or study manual with exercises or tests, no further processing will be required.

Currently, in most cases resorting to scanning, correcting, formatting and creating headings is resorted to, and finally the adaptation in question. Explanations of photos, charts, etc. All this is labor-intensive and time-consuming.

In my work with 8 - 12 visual impairment students, Braille literate for the period from 2010 to 2019, I have scanned, corrected and processed 39 textbooks and teaching aids, and nearly as many tests per year.

The use of Braille textbooks is becoming increasingly difficult for students after seventh grade, as they are in profiled classes and have professional textbooks that are not printed in the two specialized schools for the blind in Sofia and Varna. Even in general subjects such as literature, history, geography, philosophy, etc. they are not printed on time for the school year and do not always match the publishers. For the 2019/2020 school year, the two specialized schools for the blind will print one set of textbooks under the new 9th grade curriculum, ie. will not print one subject from two publishers. Of course, this is economically viable and cost-effective, but every

mass school chooses its publishers in different subjects. These obstacles cause us to seek permission for every child. Here it is important to point out the students using larger fonts, which are facilitated by the online textbook. Therefore, creating adapted e-textbooks is a challenge for every teacher of visually impaired children, especially with annual curriculum changes and the publication of new and new textbooks. Every year, our students are confronted with the question: Now where are the textbooks available? It is most difficult for students after seventh grade because there is no provision of accessible e-textbooks. And accessible online textbooks from grades I through VII became a fact from the 2017-2018 school year. But this fact did not make the work of teachers of visually impaired children much easier.

Too often, the PDF format is provided as an image that is visible on the monitor, but the screen reader does not see the text and does not read it. Most convenient and without the extra work of scanning and adjusting with customization is the ability for publishers to offer the purchase of e-textbooks in Word format, since the PDF format again risks being incompatible with a screen reader. In most cases, they are designed so that if the screen reader can read the text, then navigating the textbook is impossible. It is not possible to reach the desired page via a navigation key combination. Reaching the title is also impossible. They need to be adapted with descriptive text of photos, charts, diagrams, tables. Online e-textbooks are unreadable via a screen reader, which impedes the work of visually impaired students in information technology classes, where there are test papers with reading answers that do not adequately communicate with the screen reader without descriptive text on the graphical buttons on the online navigation buttons text and test tasks. Flash presentation is still in use, which is not accessible with the screen reader. In this way, students with visual impairments become dependent and cannot take the digital technology exam on their own. This exam is compulsory in grade 10, but there is still no accessible option for the full participation of students with visual impairments. And here's the question: How in the tenth grade is a student with visual disabilities meeting the state educational standards going to the online digital technology exam? Will questions such as check boxes be made available to mark the correct answer or select radio buttons? Will visually impaired students be able to show their digital technology knowledge?

For example, 8th grade English after purchasing a textbook that has an online code cannot be navigated in a flash format and is not available for use with a screen reader:

<http://www.expresspublishingbg.com/bg/catalog/digi-books>

To use this tutorial, page by page is being copied , using the mouse, to become an electronically accessible screen reader.

I tried to test some more publishers, but my efforts and knowledge of working with a screen reader were not enough for me to handle. BG Textbook EOOD has a code registration inaccessible code to determine if the textbooks are accessible:

<http://bguchebnik.com/bel/>

Subsequent publishers again do not work with the screen reader at registration and does not return me an email with a code that I need to enter into their system. If some code appears on screen, it is not readable by screen readers and there is no alternative audio option. This is the publishing group Anubis Ltd., Bulvest 2000 Ltd.:

https://www.anubis-bulvest.com/%D0%B1%D0%B5%D0%B7%D0%BF%D0%BB%D0%B0%D1%82%D0%BD%D0%B8_%D1%83%D1%87%D0%B5%D0%B1%D0%BD%D0%B8%D1%86%D0%B8

Here I would immediately ask the question: Why should a parent or teacher register after they are free? This does not allow the use of textbooks.

The most difficult way is to scan and adjust the textbooks, if they are scanned with an A4 scanner. This means that each page is crawled individually. The Resource Centre for Support of the Process of Inclusive Education of the city of Vratsa will purchase for a faster scan a3 scanner, through which the textbooks will be easier to scan.

In Table 1. I present statistics for the total number of textbooks and textbooks already scanned from grades 5 to 12 for the period 2010 to 2018.

Table 1

Grades	Number of textbooks and study aids	Number of scanned pages
5	3	199 pages
6	9	1157 pages
7	10	3074 pages
8	5	488 pages
9	1	221 pages
10	1	238 pages
11	6	2411 pages
12	4	601 pages
	39 textbooks and study aids	8389 pages

Each textbook and tutorial are adjusted and adapted for the screen reader with the necessary easy and fast navigation in the document. Thus, the table below shows that the total number of textbooks and textbooks scanned is 39 with a total of 8389 pages scanned, an average of 900 pages per year. Current tests are not included. The average number of pages per year is not real because there were years in which more textbooks were scanned and years when it was not needed. But changing new programs with new textbooks is definitely about to change statistics.

The challenge for the 2019/2020 school year is the new portion of textbooks needed for students at a regional center to support the inclusive education process in Vratsa. In the tab. Table 2 presents the classes and the number of subjects to be scanned for 5 visually impaired students for the new 2019/2020 school year.

GRADES	NUMBER OF STUDIED SUBJECTS	PAGES TO BE SCANNED
8	10	1475
9	16	2428
10	10	1746
11	10	2010
12	4	1300
TOTAL	40	8960

This study does not include study books and other aids and self-assessment tests and tests for preparation for national external assessment in the 10TH grade. My conclusion is that if the same number of subjects were scanned for 9 years, then for the next 2019 - 2020 school year the same number of textbooks would have to be scanned because it is a new program and there are no Braille textbooks. I ask myself: How many more teachers in the country will face this challenge?

In conclusion: Support for the inclusive education process must include truly accessible textbooks and teaching aids that do not need further processing and adaptation for screen readers. Digital learning tools are a fact, but whether they can be used freely by students with visual impairments in the 21st century. Learning and accessibility to information go hand in hand, so it is necessary to implement the adopted directives to create electronic resources for students with visual difficulties that could effectively integrate into the labor market and be able to compete in the new market economy. Education is an important part of their development, but accessibility to the web and electronic resources is a necessity that can be achieved and realized first by publishers and second by web developers in the internet space.

By investing in accessible electronic media, we create a real environment for the multidimensional literacy of visually impaired students in inclusive education.

SOURCES

Vladimir Radulov Pedagogy of the Visually Impaired (Sofia 2004)

Margarita Hristova Language Culture for Excellent 2014

Draft Law on Amendment and Supplementation of the Copyright and Related Rights Act (APAAAA)

Internet sources:

House of Culture of the Blind Varna: <http://bezbarieri.info/page%2061.html>

Marrakesh Treaty on facilitating access to published works for the blind and visually impaired:

<https://www.consilium.europa.eu/bg/press/press-releases/2018/02/15/marrakesh-treaty-on-access-to-published-works-for-blind-and-visually-impaired-persons-council-authorises-ratification/>

Stephan Tsvetkov : <https://home.bgassist.com/kakvo-predstavljavat-ekrannite-chettsi/>

Stephan Tsvetkov : <https://home.bgassist.com/ekranni-chettsi-windows-linux-mac-os/>

Microsoft – Creating accessible PDF files:

<https://support.office.com/bg-bg/article/%D0%A1%D1%8A%D0%B7%D0%B4%D0%B0%D0%B2%D0%B0%D0%B9%D1%82%D0%B5-%D0%B4%D0%BE%D1%81%D1%82%D1%8A%D0%BF%D0%BD%D0%B8-pdf-%D1%84%D0%B0%D0%B9%D0%BB%D0%BE%D0%B2%D0%B5-064625e0-56ea-4e16-ad71-3aa33bb4b7ed>

Child mental health and visual impairment

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Keywords: DC:0-5TM, visual impairment, blindness, parent-child interaction, mental health

Background

The mental health of children is the base for healthy adulthood. Recently professional publications, many authors write about this very important fact. In 2016 Zero to Three published the revision of the Diagnostic classification of mental health and developmental disorders of infancy and early childhood – DC:0-5TM with an extended age group. The literature on the field of visual impairments and blindness is not strong in mental health topic. Some important surveys were carried out in the past on mother-blind/VI child interactions and a valuable literature review on parenting was also published by Broek et al (2016). None of the antecedent were based on the DC:0-3, DC:0-3R or DC:0-5TM which could have offer a comprehensive, descriptive frame for the early development. This paper and presentation has the aim to introduce DC:0-5TM and to highlight the importance of positive child - parent interactions, successful self-regulation of the infant and small child on healthy development in the early years and the bases of later mental health.

Introduction of classification systems and the road to DC:0-5TM

Before the beginning of the 1990s there was no classification system for the ages 0-3/5. In the medical field the ICD-10 (WHO, 1992) and its former versions in general and the DSM-5 (2013) and its previous editions for mental diseases were available. In 1994 DC:0-3 filled up this blank spot and ten years later in 2005 its revised version the DC:0-3R was released. As a result of a continues need of keeping up with scientific development, new research findings and emerging literature also from clinical practice resulted in a new edition the DC:0-5TM in 2016 (Zero To Three, 2016). In the revision there were over 800 experts of the six continent involved, researchers and clinicians, individuals and groups. As a result of ten years work of the task force the Diagnostic Classification of Mental Health and Developmental Disorders of Infancy and Early Childhood (DC:0-5TM) is the last diagnostic system by Zero To Three so far. It is translated to several languages, e.g. to Dutch, Hungarian, Norwegian etc.

Characteristics and approaches of DC:0-5TM

DC:0-5TM is a developmentally focused descriptive classification system for early childhood. It is multiaxial. It points on the interrelatedness of the domains in which development occurs. It is focusing on context and relationship in the development during the early years. It is counting with cultural differences in child rearing. It is keeping in mind that the child, the family is a part of a determining smaller and wider community which has a continuous effect on them.

Diagnostic classification promotes professional communication between disciplines. The aim is offering a common langue for interdisciplinary mutual understanding.

It is diagnosing the disorders and not children. It considers the power of development, the ongoing adaptive capacity of the individual, deals with perspective. It is respectful towards the child and its caregivers.

DC:0-5TM is a supplement to ICD and DSM and it offers crosswalks to both diagnostic systems.

The structure of DC:0-5™

Axis I: Clinical Disorders

Axis II: *Relational Context*

Axis III: Physical Health Conditions and Considerations

Axis IV: *Psychosocial Stressors*

Axis V: Developmental Competence

The practice and benefits of DC:0-5™

The diagnostic process is detailed, often multi occasions are needed. During the caretaker interview the history taking is detailed and accurate, accompanied by thorough direct observation, followed by appropriate assessment with clinical empathy and holistic judgement. The assessment is focusing on the behaviour of the child but takes into account the experiences the child could have. The diagnosis is descriptive of syndromes. It is exploring symptoms involving distress and the impairment of functioning over time.

DC:0-5 DC:0-5™ includes disorders from birth to 5 years of age. Defines and specifies symptoms in children less than 1 year old whenever possible.

It is counting on the several effects that influence early childhood development and mental health: the physical characteristics of the infant/young child; the quality of the adult relationships in the infant's child life; the caregiving environments; the community context of the family and the infant/young child.

The categorical classification addresses emotional, behavioural, developmental, physical, psychosocial and relational domains. It is offering guidance about expected trajectory, and it is a part of reassessment. The diagnostic process can be described as the circle of Clinical formulation – Assessment – Diagnosis – Clinical formulation - Treatment and again.

Infant/young child mental health – healthy development

Lieberman (2007) Infants and toddlers exist within a network of relationships in the family and community guided by values and beliefs of the culture. The quality of relationships within the network and between each person and the baby influences his or her development.

We could mention several authors from modern developmental psychology who created the bases of the above thought and also contributed to the theory and practice of child mental health and its diagnostics and categorization.

In the relational context Thomas and Chess (1989) theory “goodness of fit” emphasises that if the dyad of the caretaker and infant/young child is fitting well it is optimal for healthy development. The attitude, the strategies, practice of the parent and the temperament of the child meets is “the goodness of fit”. In the counter situation negative interactional circles and difficulties in the development might develop (Danis, Kalmár, 2011)

Sameroff's transactional model (1975) emphasises reciprocity between infant/young child and caretaker. He declares that the child is the creator of his own development through the behaviour

which is evoking adequate - adaptive reactions from the caretaker. The transactional model describes how children and contexts shape each other (Sameroff, 2009)

During the development there are risk and protective factors. There are numerous research and publications about the dynamics of these factors in the development. Stress is e.g. an important risk factor, in the contrary sensitivity and responsiveness are e.g. protective factors. Recently focus is shifting towards resilience as new phenomena. Several researches has proven that among disadvantageous circumstances, even in serious traumatic conditions some individuals are resistant of them and show positive adaptation and advantages developmental results are observed (Rutter, 2007).

Some authors Werner és Smith (1982, cit. Luthar, Cicchetti, Becker, 2000) describe three level of protective mechanisms those inside the child, the competencies of the family and the environmental – societal factors. The child’s own protective factor is infancy are vigilance, responsiveness, sociability and being easy to calm down. These temperamental characteristics are evoking positive reactions from the environment (Werner, 2000, Rutter, 2000 cit. Danis, Kalmár, 2011)

Taking into consideration the factor inside the family children who proved to be resilient had an opportunity to build out strong attachment minimum with one person who provided stabile care for the (Werner, 2000 cit. Danis, Kalmár, 2011).

The infant/young child mental health is an obligatory condition for healthy growing for the enrichment of intellectual, social and emotional development.

Hypothetic effects of visual impairment on mental health and development

Several authors, at the beginning mostly from a psychoanalytic approach studied early development and early mother-blind child relationship (Fraiberg, 1977). These studies came to the conclusion that blindness itself basically has a heavy influence on development including mother-child relationship. Researchers with different approaches like Rowland, 1984; Tröster and Brambring, 1992; Preisler, 1991 identified difficulty to understand the signals of the child, found less initiation, and lower responsiveness from the child’s side all this resulting in less activity from the mother’s side.

As early as in 1980 Als, Tronick and Brazelton found that from the very beginning parents who got immediate help from professionals could understand the distorted signals of their babies (Als, Tronick and Brazelton cit. Dorn, 1993). Tobin, 1989 also points on early professional support to avoid parenting misunderstanding.

In recent studies the high level of stress from both sides is mentioned as burden on development (Tröster, 2001). Parents feeling of guilt, blame, reduced self-esteem also are mentioned as emotional reactions (Neely-Barnes, and Dia, 2008; Reichmann et al., 2008 cit. van den Broek et al., 2017) having their impact on relationship. Howe, 2006 states that lower parental sensitive responsiveness and insecure attachment can be a result of this. The parental emotional reaction on the birth of a blind child has a stronger effect on the quality of attachment relationship then the visual impairment states Rattray and Zeedyk, 2005 (cit. van den Broek at al., 2017)

Schuengel et al., 2013 states that “Intervention to promote a secure attachment relationship, to support the understanding of specific aspects of the child’s behaviour and to strengthen sensitive

responses of parents, may benefit the development of children with disabilities.” This statement is in a close relation with the theory of promoting mental health for infants and young children.

Although mothers of blind children have greater physical and verbal involvement in their interaction with the child these are directive and controlling activities and have a negative effect on the children’s development (van den Broek et al., 2017)

Conclusions

Mothers responsive behaviours have better impact on the development of the visually impaired children than initiatives (Dote-Kwan and Hughes, 1994; Dote-Kwan, 1995; Dote-Kwan et al., 1997 cit. van den Broek et al., 2017).

Interventions has to focus on reinforcing and improving parent-child communication and ultimately improve the quality of parent-child interaction to promote mental health of visually impaired children.

Bibliography

- Danis, I. Kalmár, M. (2011) A fejlődés természete és modelljei. In Danis, I., Farkas, M., Herczog, M., Szilvási L.(szerk.) *Biztos Kezdet Kötetek I. A génektől a társadalomig: A koragyermekkorai fejlődés színterei*. Nemzeti Család- és Szociálpolitikai Intézet.
- Diagnostic of Mental Health and Developmental Disorders of Infancy and Early Childhood (DC:0-5) (2016) Zero To Three
- Diagnostic Classification and Statistical Manual of Mental disorders DSM-5 (2013) American Psychiatric Association (APA)
- Dorn, L. (1993) The Mother/blind infant relationship: a research programme. *The British Journal of Visual Impairment*. 11:1 13-16
- Fraiberg, S. (1977) *Insights from the Blind: Comparative Studies of Blind and Sighted Infants*. Basic Books, New York
- International Classification of Diseases ICD-10 (1990) World Health Organization (WHO)
- Lieberman, A. (2007) Ghosts and angels: Intergenerational patterns in transmission and treatment of the traumatic sequelae of domestic violence. *Infant Mental Health Journal*, 24, 422-439
- Luthar, S.S., Cicchetti, D., Becker, B. (2000) The Construct of Resilience: A Critical Evaluation and Guidelines for the Future Work. *Child Development*; 71(3): 543–562.
- Preisler, G. (1991) Early patterns of interaction between blind infants and their sighted mothers. *Child: care, Health and Development*.
- Rutter, M. (2007) Resilience, competence, and coping. *Child abuse and neglect*, 31, 205-209
- Sameroff, A. (2009) *The transactional model of development: How children and contexts shape each other*. American Psychological Association
- Thomas, A., Chess, S. (1989) Temperament and personality. In Kohnstamm, G.A., Bates, J.E, Rothbart, M.K. (eds.) *Temperament in Childhood*. John Willey and Sons, Chichester
- Tobin, M. (1989) Constraints upon parenting: experience of a psychologist. *Child: care, Health and Development*. 15, 36-43
- Tröster, H. and Brambring, M. (1992) Early social-emotional development in blind infants. *Child: care, Health and Development*. 18:4 207-229
- Tröster, H. (2001) Sources of stress in mothers of young children with visual impairments. *Journal of Visual Impairment and Blindness*. 95(10), 623-637

van den Broek, E.G.C., van Eijden, A.J.P.M., Overbeek, M.M., Kef, S., Sterkenburg, P.S., Schuengel, C. (2017) A systematic Review of the Literature on Parenting of Young Children with Visual Impairments and the Adaptations for Video Feedback Intervention to Promote Positive Parenting (VIPP). *Journal of Developmental and Physical Disabilities* 29, 503-545

Challenges for resource teachers to integrate students with visual impairments

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Introduction

According to World Health Organisation data, there are approximately 37 million blind people and 124 million with visual impairment in the world. When the visual impairment is found late, this results in a permanent decrease in the quality of vision for 7.0% to 12.0% of the children. This troubling information brings to the fore the issues which arise too early and predetermine the future of the young generation. This is why early prevention for children's eyesight is critical. A decisive condition to safeguard it effectively is the prophylaxis of children's eye health. It is aimed at early finding, timely treatment and prevention of adverse health consequences of eye diseases. It should be noted that finding and treating the visual problem would result in a normal physical, neuro-psychological and emotional development and a good quality of life of the child in the future as well.

The priority program *Education for All* in the area of disabilities began in the end of 2001. It **aims** to include the *problems of disabilities on the agenda of development programs and strengthen inclusive education as the main approach to achieving education for all*. The initiative is prompted by the conviction that "*inclusive education offers a strategy to introduce effective universal education because it means building schools capable of meeting the actual diverse needs of children and communities. It means both access and quality*" (Stubs, 2002, p. 16).

An important and decisive condition for the effective implementation of inclusive education is ensuring a supportive environment for the children and students with visual impairments in the Bulgarian general schools. According to Terziyska, it is an "environment where everyone feels accepted, significant and useful to themselves and the school community" (Terziyska, 2012, p. 52).

Description of the problem

A highly valuable and up-to-date document related to inclusive education is the *Education 2030 Framework for Action: Towards inclusive and equitable quality education and lifelong learning for all* adopted in November 2015 by the 38th Session of UNESCO's General Conference. Its main purpose is to guarantee inclusive and equitable quality education and encourage the possibilities for lifelong learning for everyone. The priority set out in the Strategic Framework for

European cooperation in education and training focuses on: equality, non-discrimination and promotion of civic competences. In this regard, Karadzova, an expert in the field of inclusive education, notes that “the negative attitudes to people with disabilities (including people with mental illnesses) are beginning to change” (Karadzova, 2010, p. 148). Vl. Radulov, a Bulgarian scientist and researcher in the area of pedagogy, psychology and rehabilitation of people with visual impairments, emphasizes that “one of the most important criteria for the mechanism and maturity of a society is its attitude to the children with different disabilities” (Radulov, 2007, p. 10).

In English, the word *inclusion* means “involvement, participation of every person in the common work, regardless of their gender, disability, race, ethnicity, religion, age, sexual orientation” (Mladenov, 2012, p. 7). According to the scientist Ivanov, **effective** inclusion is “a continuous process which requires a broad view of one’s personal development and activity” (Ivanov, 2013, p. 236). The researcher Chavdarova-Kostova is of an interesting opinion and notes the following: “whatever the translation of the phrase *inclusive education*, it is a fact that this phrase already has the characteristics of a term in the official educational policy which is gradually gaining the nature of an **umbrella term** covering a totality of other concepts which are interrelated” (Chavdarova-Kostova, 2018, p. 29).

The Transitional and Final Provisions of the Act set out that inclusive education is “a process of becoming aware, accepting and supporting the individuality of every child or student and of the diversity of the needs of all children and students through activating and including resources aimed at removing the obstacles to training and learning and at creating possibilities for development and participation of children and students in all aspects of community life.”¹⁾

The professional profile of a resource teacher is developing in the context of the philosophy of inclusive education and this is why one needs to know the main aspects of the said concept. Its **main underlying idea** is that every child has the right to access to quality education in the general school system. In this way, a student, regardless of differences based on age, gender, ethnicity, abilities and talent, disability or other barriers to learning, may and must be trained in a general school. Inclusive education is “built on a certain set of values underlined by the right to access to quality education for all children regardless of race, gender, religion, sexual orientation, social, physical and mental status, ethnic origin, illness, difficulties in learning or abilities” (Nunev, 2018, c. 2). It is appropriate to mention here the main principles of inclusion which are analysed in detail by Nunev and Nedyalkova. It “guarantees the **access of every child or student to support** for their personal development and, respectively, the application of **differentiated** pedagogical methods with respect to them; inclusion seeks a **change in the environment (system)** so that it would respond adequately to the diversity of students with different needs. ... **every child is unique and distinctive** and, at the same time, capable of learning and may be included through a change in the environment in order to develop their potential to the fullest. ... **equality and no discrimination allowed** guaranteed by the conditions set for the training of all children and students together, regardless of the difficulties and differences which may arise in teaching and learning and in their participation in kindergarten or school. ... inclusive education emphasises the **set-up and cooperation** both among educational institutions at all levels and among all participants. This approach aims to ensure overall development with shared responsibilities and joint problem solving involving all participants in the process of inclusive

education – kindergartens, schools, personal development support centres, children, students, families and communities” (Nunev, Nedyalkova, 2018, pp. 42 – 43).

The formation of skills for an autonomous and independent life is considered one of the most important areas of the training and rehabilitation of people with visual impairments. It is critical to personal development, building an adequate self-assessment, stimulation for communication and effective socialization because “education is a social force which does not only aspire but also acts to ensure the greatest possible welfare for the society, striving to make everyone capable of the highest productivity corresponding to their abilities” (Kuteva, 2000a, p. 127). As the researcher Radulov emphasizes, the practical independence of a person with visual impairments is an essential “prerequisite to effect a true integration and successful professional realization” (Radulov, 2004, p. 351). S. Pavlov shares that “today, 28 regional support centres in the process of inclusive education and the two special schools in Varna and Sofia pursue educational policies with respect to the children and students with visual impairments” (Pavlov, 2019, p. 225). The researcher points out that “the future is in the new technologies for which we need to prepare the children with special educational needs in order to give them a chance to be adequate in the new cyber society” (Pavlov, 2016, p. 48). D. Dimitrova focuses on the use of “different methods, approaches and forms of cooperation. They help to achieve the necessary dialogue between the two parties in the educational and training process” (Dimitrova, 2019a, p. 77).

In this regard, it is **important** to note the following: **for the first time, the Act contains norms which actually signal changes. Children/students with their individual abilities, needs and skills are placed at the centre of the educational system and “contemporary schools need to create conditions for successful education and training of the young generation”** (Dimitrova, 2019b, p. 67).

The Educational Standard provides for the structural principle of the support for personal development classifying it as **general and additional. The general support combines the existing types of educational environment in Bulgaria** – educational institutions, personal development support centres, special educational support centres, regional support centres for the process of inclusive education, hostels, observatories and other. These have the function of meeting the diversity of educational needs.

The resource teachers work as leaders in the process of inclusive education; with their qualifications and expertise, they play an important role in the pursuit of the inclusive policies. When taking their steps in the profession, it is important for them to know that, in their efforts, they can rely on the support of the educational system and be included in mentorship programs to help their professional development. Still, despite the changes outlined, there are still different challenges to the resource teachers when it comes to the inclusion of children and students with visual impairments in the general educational environment. They are faced with a number of problems which are an obstacle to their daily work. This is why the present study aims to research and outline some of the existing issues assuming that finding and analysing them would help to resolve them.

Pursuant to the existing Ordinance on Inclusive Education,¹⁾ the *curriculum in visual assistance* aims to form: basic visual skills; skills on a multisensory basis; training for the use of optical tools. Next comes the *curriculum in orientation and mobility* which is aimed at: development of

the functions of the functioning analysers; training for mobility in small/large spaces. The *curriculum in useful skills* is to form: general educational, daily and social skills.

The introduction of special curricula in the training of students with visual impairments is an addition to their academic preparation for an independent life: “useful skills; orientation and mobility; visual assistance” (Tsvetkova-Arsova, Arabadzhieva, Bachvarova, 2013, p. 9). In this regard, M. Tomova notes interesting facts: as early as “1981, Prof. Vladimir Radulov developed and tested the first curriculum in visual assistance in Bulgaria which was officially approved by the then Ministry of Science and Education. Bulgaria was the first country in the Eastern European Region to introduce a special curriculum in visual assistance in 1982. Later, courses and brief training sessions were held by eminent specialists in the area of impaired vision” (Tomova, 2018, p. 5).

As a result of the analysis of the facts in theory and practice and in relation to the problems being examined and the subject of research identified above, the following **parameters** of the study may be set:

The **main goal** is to study and analyse the attitudes of resource teachers to inclusive education which will ensure a more effective adaptation of the children and students with visual impairments.

The **object** of study are resource teachers from the regions of: Pazardzhik; Veliko Tarnovo; Gabrovo; Pleven; and Shumen.

The **subject** of study is the inclusion of children/students with visual impairments in the general educational environment in Bulgaria.

To achieve the goal of the study, it is envisaged that these research **tasks** will be carried out:

1. Study and analyse the pedagogic-psychological and methodological literature in relation to the issue under examination.
2. Identify the attitudes of resource teachers to inclusive education.
3. Identify the issues in the work with children and students with visual impairments.
4. Outline conclusions and recommendations which are practically oriented and related to the possibilities to enrich the pedagogical experience with innovative ideas.

To achieve the goal and complete the tasks of the study, we apply the following **methods**:

1. Methods of the theoretical study:

A theoretical analysis and synthesis in the framework of the theoretical study of the problem and building the author’s position. An analysis of the pedagogical, psychological and methodological literature on the issue under examination in order to outline the “fields” of study.

2. Methods of the empirical study:

The empirical data are gathered through a non-standardised questionnaire developed by Tsvetkova-Arsova (Tsvetkova-Arsova, 2014; 2018) complemented by the author. The study was held among 102 resource teachers aged from 20 to 65 years. The questionnaire includes 22 questions of which: 17 closed questions; 5 questions with open answers.

3. Mathematical and statistical methods to process the qualitative and quantitative results obtained

The processing has been performed with the software Statistical Package for the Social Sciences– IBM SPSS Statistics v 20 and Microsoft Office Excel 2007.

Conclusions and recommendations

The theoretical analysis and the empirical results of the study give us grounds to reach the following **conclusions** based on the responses of the resources teachers:

1. Children/students with visual impairments are at the level of **educational** form (60.78%) of inclusion and the **physical** environment in kindergartens/general schools **does not meet** their needs.
2. **In place** are: a personal development support team, a support plan, an individual training plan and an individual curriculum for students with special educational needs.
3. **Provisions are made for an information** environment and **access** to ICT (58.82%) at schools, methodologies, didactic materials, tools, technical means; individual training plans and curricula for students with visual impairments (90.20%).
4. **Partial provisions** are made for **special curricula** in orientation and mobility, visual assistance and useful skills (75.49%).
5. **Assistance is provided** by the personal development support team to overcome the **challenges** in the pedagogical work with children/students with visual impairments (68.63%). There are **frequent** difficulties in the work with trainees with **multiple** disabilities (38.24%).
6. The teachers **are partially prepared** to work with those with visual impairments – the **preferred** form of continuing education is the **internal-methodological qualification** (61.76%).
7. The respondents attribute the **highest** level of satisfaction to the following factors: their **trust** in the headmasters and the **recognition of their efforts** by them (21.56%); the **good attitude on the part of the leader** (21.31%); the **volume** and the **pace of work** and the possibilities the profession gives them to **improve their practical skills** (19.06%). In addition, a **large** part of the teachers are **satisfied** with the standard of **healthy and safe working conditions and remuneration** (24.41%); the **low level of discrimination** at the work place and the absence of concerns that they will be **out of jobs** in the coming **one** year (19.68%).
8. The respondents are **least** satisfied with: **remuneration for the teachers' work; the heightened level of stress and pressure, as well as the imbalance** between the time they **spend at the work place and the time together with family/friends; team** relations at the work place as well as between *manager – subordinate* combined with the **minimum** possibilities for **career** development in the teaching profession in the next **two** years.
9. A **main factor** impacting on the **satisfaction** with the work is the **recognition of the efforts** teachers make in their daily work with children/students and the good attitude of the leadership to the staff. A radical change needs to be made to improve the quality of the teachers' professional life and ensure **better working conditions and remuneration as well as possibilities for career development and promotion at the work place.**

Based on the above, the following **recommendations** can be made:

- To optimize the inclusive education, it is necessary to use the possibilities of multiple mass media channels as a tool to form a positive motivation and attitudes among teachers, a possibility for ongoing communication, in different forms, among *parents, specialists and students.*
- Build a National Strategy, a working mechanism of the government institutions with regard to the issues of children/students with visual impairments and their families and close friends.

- Mandatory and ongoing qualification work for the teachers teaching students with difficulties aimed at a good theoretical and practical preparation, development of the critical thinking of resource teachers to form a new attitude to the individuals with visual impairments and accepting them as personalities with all their needs.
- Ongoing improvement of the curricula in *useful skills, orientation and mobility* and *visual assistance* in line with the new realities in the system of education.

In **conclusion**, it should be noted that, in support of the new educational paradigm and educational standards, the topic of inclusive education in Bulgaria continues to be a hot one and raises questions and provokes attempts to find adequate answers.

Undoubtedly, the inclusive education needs to be considered adequately by all teachers and the society as a whole. It is based on the idea that the students can be included in the conditions of the natural social environment because they have resources and potential abilities. Thus, their personal rights in the modern democratic society will come to life to a great extent while the State Educational Standard of inclusive education will boost the quality of the resource support for the children and students with special educational needs in the Republic of Bulgaria.

The observance of the rules set out clearly in the statutory acts and providing the necessary resources to implement these professional activities will guarantee an effective support for young specialists, a higher quality of education and strengthening of the inclusive model.

The research conducted through a questionnaire and the results obtained confirm the preliminary expectations set out in the goals and the tasks of the study.

Notes

Ordinance on Inclusive Education, Article 172 (1).

Literature

1. Ivanov 2013: Ivanov, I. Priobshtavashtoto obrazovanie. V: *Godishnik na ShU „Episkop Konstantin Preslavski“*, t. XVII. Shumen: Pedagogicheski fakultet na ShU „Episkop Konstantin Preslavski“.

2. Dimitrova 2019 a: Dimitrova, D. Formi, metodi i podhodi za osashtestvyavane na pedagogicheskite vzaimodeystvia v sistemata „uchilishte – roditeli“. V: *Sb. „Evropeyski standarti v sportnoto obrazovanie“*, Veliko Tarnovo: Izdatelstvo „Ay and Bi“, 2019, pp. 73 – 77.

3. Dimitrova 2019 b: Dimitrova, D. Znachenie na pedagogicheskoto obshtuvane mezhdu klasnia rakovoditel i uchitelya – vazpitateľ v nachalnoto uchilishte. V: *Sb. „Evropeyski standarti v sportnoto obrazovanie“*, Veliko Tarnovo: Izdatelstvo „Ay and Bi“, 2019, pp. 67 – 72.

4. Karadzhova 2010: Karadzhova, K. *Determinanti na integriranoto obuchenie pri detsa s intelektualna nedostatachnost*. Sofia: Universitetsko izdatelstvo „Sv. Kliment Ohridski“.

5. Kuteva 2004: Kuteva, V. Preduchilishtnoto vazpitanie v pedagogicheskoto nasledstvo na Dimitar Katsarov. V: *Sb. „120 godini preduchilishtno vazpitanie. Yubileen sbornik*. Veliko Tarnovo: Izdatelstvo „Slovo“, s. 47 – 55.

6. Kuteva 2000 a: Kuteva, V. *Dimitar Katsarov – parvostroitel na pedagogicheskata nauka v Bulgaria*. Veliko Tarnovo: Universitetsko izdatelstvo „Sv. sv. Kiril i Metodiy“.

7. Kuteva 2000 b: Kuteva, V. *Problemi na semeynata pedagogika*. Veliko Tarnovo: Universitetsko izdatelstvo „Sv. sv. Kiril i Metodiy“.

8. Mladenov 2012: Mladenov, T. Printsipi na priobshtavaneto. V: *Da uchim po evropeyski: sbornik polezni statii za uchiteli i roditeli ili kakvo mozhem da nauchim za priobshtavaneto ot britanskia opit*. Sofia: „Tsentar za priobshtavashtoto obrazovanie“.

9. Nunev, Nedyalkova 2018: Nunev, Y., B. Nedyalkova. Priobshtavashtoto obrazovanie – normativni aspekti i kazusi ot praktikata. V: *Profesionalno obrazovanie, kn. 1.*, Sofia: Natsionalno izdatelstvo za obrazovanie i nauka „Az-buki“, s. 36 – 53.

10. Nunev 2018: Nunev, Y. Priobshtavashtoto obrazovanie kato sistema ot obshtooobrazovatelni i obshtochoveshki tsennosti. V: *Sp. „Retorika i komunikatsii“*, br. 36, <<https://rhetoric.bg/priobshtavashtoto-obrazovanie-kato-sist>> (data na dostap – 25.07.2019).

11. Pavlov 2019: Pavlov, S. Podkrepa za lichnostno razvitie za detsa i uchenitsi s narusheno zrenie. V: *Sb. „Evropeyski standarti v sportnoto obrazovanie“*, Veliko Tarnovo: Izdatelstvo „Ay and Bi“, 2019, s. 225 – 232.

12. Pavlov 2016: Pavlov, S. Rolyata na IKT v protsesa na obuchenie na detsa i uchenitsi sas SOP. V: *Sb. „Obrazovaniето v sveta na tehnologiite“*. Sofia: MON, s. 33 – 49.

13. Radulov 2007: Radulov, V. *Detsata sas spetsialni obrazovatelni nuzhdi v uchilishteto i obshtestvoto*. Burgas: „DARS“.

14. Radulov 2004: Radulov, V. *Pedagogika na zritelno zatrudnenite*. Sofia: Universitetsko izdatelstvo „Sv. Kl. Ohridski“.

15. Stabs 2002: Stabs, S. „*Priobshtavashtoto obrazovanie. Kogato resursite nedostigat. The Atlas Alliance*“, <http://www.cil.bg/userfiles/library/otdelni/stubs_priobshtavashto_obrazovanie_2005.pdf> (data na dostap – 16.07.2019).

16. Terziyska 2012: Terziyska, P. *Detsata sas spetsialni obrazovatelni potrebnosti v obshtata obrazovatelna sreda*. Blagoevgrad: Universitetsko izdatelstvo „Neofit Rilski“.

17. Tomova 2018: Tomova, M. *Ovladyavane na spetsifichni chetivni tehniki pri slabovizhdashti uchenitsi*. Avtoreferat kam Disertatsionen trud za prisazhdane na obrazovatelната i nauchna stepen „doktor“ po nauchno napravlenie 1.2. Pedagogika (Spetsialna pedagogika). Sofia.

18. Chavdarova-Kostova 2018: Chavdarova-Kostova, S. *Priobshtavashto obrazovanie*. Sofia: Universitetsko izdatelstvo „Sv. Kliment Ohridski“.

19. Tsvetkova-Arsova, Arabadzhieva, Bachvarova 2013: Tsvetkova-Arsova, M., V. Arabadzhieva, Zh. Bachvarova. *Formirane na polezni umenia pri zritelno zatrudneni uchenitsi. Metodichesko rakovodstvo*. Sofia: Izdatelska kashta „Fenomen“.

20. Tsvetkova-Arsova, M. „Savremenni predizvikatelstva pred resursnite uchiteli, podpomagashti integrirani zritelno zatrudneni uchenitsi v Bulgaria“, 2014, <https://www.academia.edu/34425162/Savremenni_predizvikatelstva_pred_resursnite_uchiteli_p_odpomagashti_integrirani_zritelno_zatrudneni_uchenitsi_v_Bulgaria> (data na dostap – 10.07.2019).

21. Tsvetkova-Arsova, M. „Podpomagane na uchenitsi sas spetsialni obrazovatelni potrebnosti ot resursnite uchiteli v usloviyata na priobshtavashto obrazovanie – sravnitelen analiz“, 16.02.2018, <https://www.researchgate.net/publication/331132446_Podpomagane_na_ucenici_ss_spezialni_obrazovatelni_potrebnosti_ot_resursnite_uciteli_v_usloviyata_na_priobsvaso_obrazovanie_-_sravnitelen_analiz> (data na dostap – 12.07.2019).

SENSORY STORIES-STORIES THROUGH THE SENSES

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Listening to the story is a natural way in which every child learns and enriches its experience of the world around it. An inescapable part of learning and developing children with multiple difficulties are sensory stories that we can talk through all the senses so that each child can reach its full potential. „All children exhibit the need for sensory activities and will usually respond to them by focusing better in the classroom, increasing interactions with peers, and improving overall daily functioning“. (Downing, Aldrich and Shelly 2006)

Sensory stories are performed in Mali Dom as a group activity with a group of children with visual impairment or blind children with multiple difficulties. The activity is designed to be presented through themes of four seasons. Educational content is presented through five sensory modalities - tactile, olfactory, visual, auditory, and proprioceptive stimuli that follows the key concepts in the story. The introduction to the activity always begins with the same musical reference that we are connecting with the time of year, and it ends with the same musical reference. Storytelling, through multisensory stimuli, allows children with difficulty participating in the story-telling experience, better understanding of learned concepts and learning of the skills of listening, responding, and active participation in a story that consist of sensory stimuli, such as smell, taste, touch, and sound that needs to be explored.

Sensory stories are a great medium of learning for children with multiple disabilities and visual impairments because of its flexibility they offer opportunities for children to easily learn and absorb information through different sensory modalities they provide. Experts through the creation of such stories have various possibilities of creative expression. Sensory stories can support turn taking, interaction with group members, spreading and learning new vocabulary. Also they support memory, adoption of new concepts and they can help children to retell stories using various materials which lead to the story line. Children learn to wait their turn to experience sensory stimuli and have enough time to explore the offered materials. In the center of sensory stories is primarily the child, his needs and the way of learning and receiving information in accordance with the overall functioning.

Sensory stories

A sensory story is a short story told through combination of spoken language and sensory experience. A good sensory story will have each sentence paired with meaningful and relevant stimuli. Depending on the content of the story, creators should use as many sensory stimuli as possible (visual,tactile,olfactory,gustatory,auditory,proprioceptive and vestibular).Not every child will experience and accept the stimuli equally, however, covering a wide range of different sensory experience will maximise the participation of every child. Sensory stories are mostly used for children with profound and multiple disabilities, but they can also be used with other children, whatever they needs may be. „*Sensory stimulation is vital for the development and maintenance of the brain – and this is true for all ages. Sensory learning can enable you to engage students with a wide range of different needs, providing meaningful experiences to those learning in a purely sensory way, as well as relevant stimuli to those who are able to learn in more abstract ways.*“ (Strick, Grace, Evans, 2019,page 2)

Because of the difficulty in understanding abstract literary situations and figurative meanings, children with disabilities need additional sensory stimulation to experience the story with all their senses. Through sensory stories, children are left enough time to react,they are encouraged to group interaction and participation in the creation of the story in accordance with their abilities and interests. Some of the goals for children with profound and multiple disabilities include:

- Expressing preferences (likes, dislikes through they reactions to the stimuli)
- Rejecting items in a socially acceptable manner
- Joint attention
- Participation using augmentative and alternative communication devices by programming switches with sound
- Retelling a story for students with some verbal or sign language
- Increase tolerance of non-preffered stimuli
- Enrichment of cognitive development
- Initiation, responsiveness and requesting

Creation of a sensory story

Sensory stories, like other stories, are told about a range of subjects. In order for an individual with mulitple disabilities experiencing sensory story to comprehend the world out there it must make sense and relate to their experience.

The topic of the sensory stories should apply to everyday situations and actual experiences from the daily live of the children, so they can relate and have some chance of understanding. *„Moreover, the story must be related to daily life activities and/or reflect aspects of the individual’s personality or interests. It is found that young children learn more effectively and efficiently when instructions are contextually relevant, developmentally appropriate, and instructions capitalises on the child’s focus and interest” (Willems 2014,page 6)*

While presenting a sesnory story, less is more and it's important to use short sentences and avoid unnecessary words. Language should be adapted to the cognitive abilities and mental age of the child. *„Stories should be concise, ideally told in under ten sentences although more can be used if suitable to the person experiencing the story.“ (Grace and Silva 2017, page 12).* Therefore, any sensory story has to be consistent such that the individual has a chance to anticipate forthcoming events. It must be told many times in the same order, using the same words and allow the child to focus on the experiences creating a strong repetitive component. *„This fixed structure makes the story more understandable and evokes a sense of having control over the environment.” (Willems 2014, page 6).*

Sensory stories must be inclusive and that means they can involve everyone at their own level of understanding. Teachers should allow time to reactions and responses. It is very important that the teachers reinforce the children immediately after the desire response because the main goal is to evoke meaningful, social responses to offered stimuli. Also, sensory stories must be enjoyable and educational. Educational aspects are divers and may relate to addressing goals or specific target behaviours of each members of the group. Enjoyable means that the learners are having fun and on this can have an impact the topic, length of the story, the role of each child in the group, etc.

Sensory story –MR. Branch

“We are, as a species, addicted to story. Even when the body goes to sleep, the mind stays up all night, telling itself stories.” — Jonathan Gottschall

This sensory story is a story created for children with profound and multiple disabilities. It is a story based on the travel of Mr. Branch through four seasons. In every season, this main character is experiencing different emotions and changes. Every season has another story, and every story is presented to a group of children in approximately two months. The main thing is that through every season there are a few main concepts and emotions that we would like for children to experience and learn. Before the activity has begun, we are announcing it with a 3D symbol that symbolically represents the activity. This 3D symbol has tactile and visually attractive material on itself.

The setting is a very important aspect of storytelling. The atmosphere during this group activity should be calm and relaxed, and the children need to be placed in the best possible position, so they could experience this story in its full capacity. For every child in this group, the story is adapted, so they could receive every line in the way of their learning canal. When we are talking about the learning canals it is important to say that the stimuli that we are presenting in this story are adapted for children with multiple disabilities, and visual material is adapted for children with profound visual disabilities. For example, the materials are presented in large color contrasts, or they are simply presented on a black surface.

After setting the ambience room and giving children time to adapt to a new situation, we are starting the activity. Every time, the activity of sensory story is beginning with the same musical reference: Antonio Vivaldi, The Four Seasons. The music is being played through a speaker that is placed in the resonated box; this is important for children with hearing disabilities, so that they can feel the vibration. After the music is finished, we are reading the line by line to each child. The lines of a story are read each time the same way, emphasizing the word. For example, the rain right before we demonstrate its characteristic (water drops on hands or face). After the demonstration, we wait for the reaction and then we reflect on the emotion or reaction of the child. For children with hearing and visual disabilities, the word is being replaced with sign language or with a symbolic gesture *“Try to use the same emphasis, and deliver the stimuli, in the same way, each time you tell the story. This can be especially important for some people, for example, if you are sharing the story with someone who has profound and multiple learning disabilities.”* (Grace J., 2014, page 2).

In one big box, we are storing all the materials that are used for telling a story. With each line of a story, we put one thing from the box in front of the children. Mr. Branch is in a form of a big branch from a tree that we are using to tell a story. It is important that the children feel, see and experience every part of the story. When we are reading the line, we are trying to emphasize the important parts of the story with our voice. *„Storytelling often proves an important means for socio-emotional development as well as an valuable asset in establishing and improving attachment in relationships. Additionally it seems that if these social bonds are strong already, it can have a positive effect on the quality of how storytelling is experienced.”* (Boer and Wikkerman, 2008, page 5)

In the fall, Mr. Branch is a part of a tree and it is full of colors that are specific for this part of season. The story is evolving in a way that the strong wind is coming and it tears him apart from his tree and apart from all his colors. In this part of the story we are blowing the leaves in front of the children. The sound of the wind is again being played through speakers inside the resonating box. Importance in storytelling sets in the phase of breaks between the lines. Breaks are time for sensory input to set in with the children. In the winter, when the snow is covering the ground and Mr. Branch, we are using big, white and a little heavy material, and we put it over our children.

Not only, in this specific moment, are they experiencing the fate of the main character ,but also, they are learning the object relations. In the spring, sensory story Mr. Branch is having transformation and little flowers are growing in his little branches. At this point,we are letting children to smell the flowers. As in the summer, our main character has grown into a full-size tree and this tree has fruits. So we are taking these fruits and give them to children so they can taste them, play with them and smell them. "When sharing the story with someone with profound and multiple learning disabilities (PMLD) the most important things are to be consistent and observant." (Grace, 2014, page 9).

After the story is being told through all senses and every sensory input is being delivered to children, at the end of the story, again, comes the time for the music reference. (Antonio Vivaldi, The four seasons). Music takes another important part of the sensory story. It is a deep and profound connection between the child and the story.

„The ICER manual (Kishida & Kemp, 2009) provides definitions of active engagement, passive engagement, active non-engagement, and passive non-engagement.

- Active engagement is defined as the child actively participating in the learning environment by manipulating materials or vocalising in response to the activities presented. ...

-Passive engagement is defined as the child interacting with the environment without manipulation or vocalisation...

-Active non-engagement was recorded when children interacted with the environment in an inappropriate manner by manipulation, movement and/or vocalisation...

-Passive non-engagement is defined as the child not interacting with the environment or participating in the activities in a way that would be expected.“ (Dr C.Gray, Dr S.Main, Dr J. O'Rourke, Ms C. Lovering, Ms L. Jones, 2018., page 14-15)

We are witnesses that sensory stories give the children with multiple disabilities, chance to be active in their environment. It gives them a chance for learning and experiencing their surroundings. The sensory story is a full-size implement for experience learning. This kind of learning experience gives opportunity for children with multiple disabilities to see, hear, touch, smell, taste and actively participate in a story. Then the story becomes the part of them, and they are the part of the story.

Literature:

Grace J.,Silva A.: Refining the guidance for sensory storytelling with individuals with PMLD: a move towards improved research and practice. PMLD link, Volume 29 (3), pp 11-14

Strick A, Grace J.,Evans M.: „A guide to sesnory stories. Teachers' Resource“,2019; <booktrust.org.uk> (10.09.2019.)

Sensory stories: theory and practice (2016): <http://wwwtalksense.weebly.com>

Willems N.:“Sense the story“, *The effectiveness of an adapted version of Multi-Sensory Storytelling on the responsiveness of children, adolescents and young adults with Multiple Disabilities at a Children's Home in South Africa*, 2014; <[file:///C:/Users/3CPO/Downloads/Willems,%20N%20\(2\).pdf](file:///C:/Users/3CPO/Downloads/Willems,%20N%20(2).pdf)> (15.09.2019.)

Grace J.: “*Sharing a sensory story; guide by Joanna Grace*”, *Sharing a sensory story*, 2014; <https://docs.google.com/viewer?a=v&pid=sites&srcid=ZGVmYXVsdGRvbWFpbX0aGVzZW5zb3J5cHJvamVjdHN8Z3g6NTI0NTI4ODU2NzdiZW11ZQ&fbclid=IwAR0R0SbuShczy2aRUH9WzIh6tTK2B-KIDwW1idd_o5mrZEBcajDJFj2sdcM> (11.09.2019.)

Boer N., Wikkerman C.; “*Multi-Sensory Storytelling (MSST) makes sense*”, 2008; <<http://voorlezen-plus.nl/images/Multi-sensory%20storytelling%20makes%20sense.pdf>> (12.09.2019)

Dr Gray C., Dr Main S., Dr O’Rourke J., Ms Lovering C., Ms Jones C.: “*Engaging young children with additional needs in story and nursery rhymes through an arts-based multi-sensory experience*”, 2018; < <https://www.sensoriumtheatre.com.au/wp-content/uploads/2018/07/Sensory-Storytelling-ECU-Evaluation.pdf>> (18.09.2019.)

Inclusion of STEM activities in classes for the education of visually impaired students with multiple disabilities

**at Prof. Dr. Ivan Shishmanov Special School for Visually Impaired Students in
Varna**

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**Prof. Dr. Ivan Shishmanov Special School for Visually Impaired Students,
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In a world of increasing stimulation of a different nature, we must retain the interest of children in the classroom. In order to keep students alert and make them want to go to school, it is best to look at exciting classroom activities, e.g. simulations, puzzles arrangement, problem solving, experiments. Our goal is to change our role and turn from educators to pedagogues who develop skills, offer opportunities, and create a connection with students. The education of pupils with SEN is developing very rapidly and we, teachers of the special school for visually impaired students, have to meet this challenge. This is the reason we seek and apply new tools and methods to our visually impaired students with multiple disabilities.

STEM has nothing to do with the way science is traditionally taught in school. This is a new way of exploring the world that surrounds us. It combines different methods for examining and exploring current topics through the methods of science, technology, engineering and mathematics. One of the main advantages of this method is the integration of different subjects into the curriculum for the realization of a larger project. It allows children to understand the connections between the school subjects they are studying. Active participation and learning through practical application and experience of the lessons learned are the basic principles underlying each lesson. The project enables different groups of children with multiple disabilities to develop independent solutions to the same problem. Working to solve a particular task teaches children to plan, organize, and study according to their abilities.

By applying STEM in the education of visually impaired students with multiple disabilities, our goal is to develop their curiosity, their ability to investigate, to form elementary hypotheses, to draw conclusions, to seek a solution. With this approach, children are learning actively.

One of the activities, introduced over the years in our work with visually impaired students and multiple disabilities, is designing a calendar for the day. It is designed so that the student knows what to expect in his or her daily routine, which is an easy way to get closer to literacy. In essence, reading is character recognition, which is the meaning of using the calendar system.

Symbol objects that represent various activities of the day are placed in a basket. They are arranged in chronological order on a board or sequence of baskets. The symbol is displayed, viewed or touched, depending on the cognitive level of the student before the start of the activity. At the end of the activity, symbol "end" is placed in the last basket. This activity is very effective for all visually impaired students with multiple disabilities.

We match STEM projects with the capabilities, skills and interests of children. For the younger ones, we choose simpler activities to perform. As children grow up, more tasks to perform on their own, to give ideas for new solutions and improvements are delegated. We know that at its core, STEM is a student educational program, and we think that the earlier we start, the better the results will be.

Due to the degree of disability, our students find it difficult to ask questions, so through action projects we can provoke their interest through observation, experimentation and testing. "What is a cloud?", "Why do boats sail?", "How does the car work?" - these are some topics we can talk about. When we propose a project, we playfully motivate the activity of students with impaired vision and multiple disabilities, taking into account their interests and wishes to play and experiment. In each project, we strive to include as many links as possible between different areas of STEM.

Our activities are also related to real environmental problems such as oil spill into the world ocean. To illustrate this activity, we simply mix oil and water in a large container and add a few feathers to the mixture. Then the children, armed with sponges, paper towels or small spoons, try to remove the oil from the water and feathers. We include this project in Surrounding World school subject to show how oil spills can negatively affect the environment. We let the children examine how the oil affects the feathers and determine for themselves how difficult it is to separate and remove it from the water.

On a cloudy day, we take the students out to the school yard to find out what the weather is - is there a wind, are there any clouds, etc. Then we have an interesting "cloud in a jar" activity in which we can illustrate condensation, water cycles and water aggregates. Several simple homemade ingredients (water and hairspray) are mixed to demonstrate cloud formation. It can turn this activity into an experiment with two different cloud-building methods, along with a conversation about how water cycles work in the environment.

Making crystals with salt is another popular, easily accessible children's science activity. The ingredients are inexpensive, not dangerous for children and are available in grocery stores, and the results are very impressive. Children can be amazed how salt crystals break the sun's rays.

Teachers looking for a fun tactile sensation often use “slime” activities. When we add iron oxide powder and magnets to the mixture, we bring students with impaired vision and multiple disabilities to science. This activity is great for a startup conversation, about how magnets work.

In the field of engineering, we involve solving real problems, using different materials to design, construct, plan and create the projects they make. Constructing "buildings" of jellybeans or marshmallows is an activity that helps students to start understanding the thought, design, and technology behind structural engineering. All we need is a handful of jellybeans and toothpicks to help children learn about structures and constructions.

For beginners trying to count, understanding that numbers are increasing in size can be confusing. With just pipe cleaners and beads, we can help them learn how to count, while also getting a visual of how numbers increase in size. In mathematical projects, we apply comparison, measurement, model discovery, counting, and geometric study.

We encourage children to use all their senses. What they see, hear, feel, and smell, what it tastes like. We ask them to document their observations and the results of the experiments, stick stickers, and create simple drawings. The teacher helps visually impaired students with multiple disabilities find the words in order to explain and clarify for themselves, the phenomenon they observe.

In education of visually impaired students with multiple disabilities, we do not use complex scientific terms but focus on their popular names so that children can remember and understand them. We help students to structure what they have learned and present it to other people - their classmates and team members. We focus tasks on survey, observation, experiment, as well as finding a solution. Children can develop a comprehensive understanding of the world around them with the right guidance from adults. We want children to be confident, communicative, self-reliant and independent of adults.

The idea of STEM in the education of visually impaired students with multiple disabilities is not to offer something qualitatively new as activities and games, but to encourage teachers and parents to create an environment in which the child is systematically motivated to observe, experiment and discover. The goal is to develop our student’s natural interest in science and to guide them to seek solutions and innovations according to their capabilities.

Keywords: STEM, project implementation, survey, comparison, search for solutions, training of visually impaired students with multiple disabilities.

INTRODUCTION TO THE USE OF THE WHITE CANE IN THE EARLY DEVELOPMENTAL AGE:

PROPOSAL OF AN OBSERVATION FORM

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The white cane is both a symbol of blindness and a tool for autonomous mobility, which allows the achievement of different purposes:

- Reaching a precise destination independently
- Performing daily activities
- Supporting private life
- Encouraging participation in social life

The present study was conducted in Padova, in one of the two centres of the Robert Hollman Foundation, the other being in Cannero Riviera (VB). The Robert Hollman Foundation is a non-profit organization aimed at taking care of and supporting visually impaired children and their families.

We investigated some technical aspects related to the use of the white cane and especially the psychological-emotional implications associated with its use. We insisted on these last aspects, because we believe that the chance of an early and correct use of the white cane is strictly correlated to factors which are not linked to the technical characteristics of the tool, but to the intrinsic motivation of the children, which in turn is linked to the acceptance and intrinsic motivation of their family/parents. The necessary precursor to the white cane use is therefore the presence in children of motor initiative, giving them the chance to be active subjects from an early age. Early autonomous mobility is a skill, which is fundamental for the development of the child's cognitive (Cuturi et al, 2016) and social abilities.

It is important to start a shared path of orientation and mobility with the children and their parents, to share the image of their child the white cane evokes in them. At the same time, it is possible to share also with them the great advantages of using a white cane for mobility and autonomy, which go far beyond the symbol of blindness.

We believe that it is important that little children feel that the white cane is an enjoyable "playing companion", giving it a name or personalizing it with decorations; this approach allows children, as they grow, to reach an understanding of its usefulness during their mobility in daily life, and also as a protective tool (Gargiulo, 2010).

We devised an "observation form" with the aim of creating an informative tool to assess the usefulness of the white cane in the early developmental age. The choice of the most suitable moment to introduce the use of the white cane, and so start the process of acquiring autonomous mobility, is still a topic of discussion among professionals in this sector.

As a result of our experience at the Robert Hollman Foundation, we first introduce the Brambling pre-cane (Brambling, 2004, 2010, 2011). We start to train children with the Brambling pre-cane, when they have acquired a sufficient stability and autonomy in walking (at

least 10 steps and in the majority of children when they are between 2 and 3 years old). The choice of this cane with a double grip lies in the fact that this type of pre-cane helps the child to achieve to a symmetric balance. In the first stage, the aim is only perceptual; the goal is to help the child to be more aware of walking, without thinking of obstacles avoidance or of orientation (Guth et al, 2010). It is a familiarization step. So the quality of the walking precedes autonomy and this must be explained to parents too, i.e. watching a video together of their children walking. Children receive positive feedback from the professional to increase their self-esteem and motivation. The pre-cane is introduced gradually, beginning 15-20 minutes a day, just for walking. In the second step, we move from a perceptual level to a cognitive level, to help children understanding that the pre-cane is a useful tool also for orientation.

After an individual time of growth and development, when the children move at the same speed with or without the pre-cane, we introduce the first rigid white cane. This passage usually lasts months, depending on the children themselves, their individual characteristics and also on some environmental factors, such as family environment.

After researching available literature (Skellenger & Sapp, 2010; Chamberlain, 2017) and as a result of our experience, we believed that an earlier introduction of the cane was necessary and so we began to introduce the white cane earlier in our Centres. It will not be used immediately as a tool for autonomy, but as a “unique playing companion”. However a cognitive and psychological path will begin, with the final aim being to increase the child’s self-esteem, to socialize more and to promote autonomy.

We devised this observational form, which will be presented during the Conference, dividing it into two main sections: the first part is dedicated to the children and to their parents motivation and emotional experiences during the first approach to the white cane, while the second one is more committed to the technical aspects both of the tool itself (specific characteristics like type, condition, length, tip...) and of its use during walking (technique, reaction to information coming from the cane, safety...).

Our experience leads us to believe that this observational form will be a guiding tool for our professionals in the observation and evaluation of the blind child, in order to define when to begin the use of the cane. This form, if filled in periodically, in fact will allow our professionals also to monitor the evolution of the children during their growth and to adapt objectives and strategies according to their specific needs. It will be also useful for parents for the same reason above described and for professionals too in following the parents’ path in accepting this tool and actively helping their children in their acceptance process.

References:

Brambring M., (2004), *Lo sviluppo nei bambini non vedenti. Osservazione e intervento precoce*, Franco Angeli, Milano.

Brambring M., (2010). Orientation and Mobility Skills in Blind Infants and Preschoolers. Professional training, Robert Hollman Foundation, Padova, Italy

Brambring M., (2011). Orientation and Mobility Skills in Blind Infants and Preschoolers. Professional training, Robert Hollman Foundation, Cannero Riviera (VB), Italy

Chamberlain M.N. (2017) Orientation and Mobility for Babies and Toddlers: A Parent's Guide. *Future Reflections*, 36:3; <https://www.nfb.org/sites/www.nfb.org/files/images/nfb/publications/fr/fr36/3/fr360301.htm>

Guth D.A., Rieser J.J., Ashmead D.H., (2010). Perceiving to Move and Moving to Perceive: Control of Locomotion by Students with Vision Loss. In Wiener W.R., Welsh R.L., Blasch B.B., *Foundations of Orientation and Mobility, History and Theory*, AFB Press, New York.

Cuturi L.F., Aggius-Vella E., Campus C., Parmiggiani A. and Gori, M. (2016). From Science to Technology: Orientation and Mobility in Blind Children and Adults. *Neuroscience and Biobehavioral Reviews*, 71, 240-251.

Gargiulo M.L., (2010). Il bastone bianco: perché? In Autori vari, *Impariamo a muoverci da soli?* Seminario informativo su orientamento e mobilità, Roma.

Skellenger A.C., Sapp W.K., Teaching Orientation and Mobility for the Early Childhood Years. In Wiener W.R., Welsh R.L., Blasch B.B., (2010). *Foundations of Orientation and Mobility, Instructional strategies and practical applications*, AFB Press, New York.



THE WHITE CANE: OBSERVATION FORM (age 2-6)

Child Name and Surname:

Date of birth:

Age:

Professional assessing:

Date:

Preliminary information		Notes
Type of cane	<ul style="list-style-type: none"><input type="radio"/> Pre-cane<input type="radio"/> Brambring pre-cane<input type="radio"/> Rigid white cane<input type="radio"/> Telescopic white cane	

<p>Period of possession/use</p>	<ul style="list-style-type: none"> <input type="radio"/> Days n= <input type="radio"/> Months n= <input type="radio"/> Years n= 	
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Part 1: THE CHILD AND HIS/HER FAMILY

THE CHILD		Notes
<p>Motivation</p>	<ul style="list-style-type: none"> <input type="radio"/> Present <input type="radio"/> Absent 	
<p>Motor initiative</p>	<ul style="list-style-type: none"> <input type="radio"/> Present <input type="radio"/> Absent 	
<p>Emotional feelings about the cane</p>	<ul style="list-style-type: none"> <input type="radio"/> Positive <input type="radio"/> Negative <input type="radio"/> Indifferent 	

Personalization of the cane	<ul style="list-style-type: none"> ○ Put a decorative element ○ Given a name ○ Other 	
		Notes
Use of the cane	<ul style="list-style-type: none"> ○ As a toy ○ Starting to experiment with it ○ As a mobility tool 	
Entrance in the waiting room	<ul style="list-style-type: none"> ○ Arrives using the cane ○ Guided by someone's hand 	
Search for contact with the wall	<ul style="list-style-type: none"> ○ Never ○ Rare ○ Casual/random ○ Frequent ○ Constant 	
Presence of a helper	<ul style="list-style-type: none"> ○ Close ○ Far away 	

Comprehension of the utility of the cane	<ul style="list-style-type: none"> ○ Present ○ Absent ○ Other 	
		Notes
Trust in the cane	<ul style="list-style-type: none"> ○ Ask questions about the surrounding environment ○ Listen to and feel the cane ○ Both ○ Other 	
Changes observed	<ul style="list-style-type: none"> ○ Self-esteem ○ Socialization ○ Autonomy 	
THE PARENTS	Attitude/behaviour	Notes
In relation to the child	<ul style="list-style-type: none"> ○ Positive ○ Negative ○ Ambivalent 	
In relation to the close family	<ul style="list-style-type: none"> ○ Positive 	

	<ul style="list-style-type: none"> <input type="radio"/> Negative <input type="radio"/> Ambivalent 	
 <p>Fondazione Robert Hollman</p>		Notes
In relation to the family environment	<ul style="list-style-type: none"> <input type="radio"/> Positive <input type="radio"/> Negative <input type="radio"/> Ambivalent 	
In relation to the school environment	<ul style="list-style-type: none"> <input type="radio"/> Positive <input type="radio"/> Negative <input type="radio"/> Ambivalent 	

Part 2: THE CANE

Section A: General information			Notes
White cane conditions	<ul style="list-style-type: none"> <input type="radio"/> Good <input type="radio"/> Bad 		
White cane length	<ul style="list-style-type: none"> <input type="radio"/> Sternum 		

	<ul style="list-style-type: none"> ○ Chin ○ Other 		
 <p>Fondazione Robert Hollman</p>			Notes
Tip	<ul style="list-style-type: none"> ○ Fixed ○ Rotating 		
Environment of Navigation	<ul style="list-style-type: none"> ○ Internal ○ External ○ Both 		
Length of walk	<ul style="list-style-type: none"> ○ Number of steps ○ Meters/feet 		
Section B: The grip			
Starting position	<ul style="list-style-type: none"> ○ Right hand ○ Left hand ○ Bimanual ○ Variable 	<ul style="list-style-type: none"> ○ Correct ○ Experimental ○ Incorrect 	

Grip position	<ul style="list-style-type: none"> ○ Central ○ Lateral 	<ul style="list-style-type: none"> ○ Close to body ○ Far from body 	
 Fondazione Robert Hollman			Notes
Section C: Pendular Technique			
Technique	<ul style="list-style-type: none"> ○ Tapping ○ Sweeping 		
Contact with the ground (sweeping)	<ul style="list-style-type: none"> ○ Regular ○ Irregular 		
Rhythm (tapping)	<ul style="list-style-type: none"> ○ Regular ○ Irregular 		
Arch width	<ul style="list-style-type: none"> ○ Correct-complete ○ Incorrect (incomplete-excessive) 		

 Fondazione Robert Hollman			Notes
Step-oscillation coordination	<ul style="list-style-type: none"> ○ In phase ○ Experimenting ○ Out of phase 		
Section D: Adaptation to information coming from the cane			
Perception of characteristic objects of the path	<ul style="list-style-type: none"> ○ Detect objects ○ Not detect objects 		
Behavioural responses	<ul style="list-style-type: none"> ○ Stop and explore ○ Do not stop ○ Go around 		
Section E: safety during movements			
Ability to self-guarantee safety	<ul style="list-style-type: none"> ○ Good ○ Fair ○ Insufficient 		

 Fondazione Robert Hollman			Notes
Cane position when standing still	<input type="radio"/> Safety position <input type="radio"/> Other		
Section F: Attention			
Sustained attention	<input type="radio"/> Continue <input type="radio"/> Discontinuous		
Time of activity	<input type="radio"/> Minutes n:		
Section H: Walk			
Step length	<input type="radio"/> Reduced <input type="radio"/> Normal <input type="radio"/> Increased		
Step width	<input type="radio"/> Reduced <input type="radio"/> Normal <input type="radio"/> Increased		
 Fondazione Robert Hollman			Notes

Step speed	<ul style="list-style-type: none"> ○ Reduced ○ Normal ○ Increased 		
Oscillation of the arm without cane	<ul style="list-style-type: none"> ○ Physiological oscillation ○ Fixed position ○ Other 		
Fluency of oscillatory movements	<ul style="list-style-type: none"> ○ Adequate ○ Not adequate 		
Section K: final observations			

Parent Attitudes to Tactile Books

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Children and parents!

The combination of these two words evokes a plethora of associations: family, playing, sharing, reading, offering advice, walks, laughing, crying, chastisement, mistakes, risk, pride and fear among other shared emotions. In raising and educating our children, we strive for them to grow up healthy, strong, curious, clever and driven. A child’s growth is supported by their family, teachers, classmates and friends. Virtually anything to which a child is offered access and which they encounter will leave a mark on them.

The foundations of literacy are laid during childhood and building on these is heavily contingent on the efforts of families and teachers to provide input for the development of spoken production and to use this to foster reading and writing skills. The influence of adults is of much greater importance in the case of visually impaired children, whose first encounters with literacy and linguistic intricacies are far from immediate. This stands in contrast with the experience of sighted children, which is a very natural one.

A majority of children become literate in pre-school but there are those for whom this may take place at a later point due to additional educational challenges. While taking stock of the age and ability of a child is of importance, it is also significant that teaching literacy should take stock of the circumstances of each child and be target-driven and attractive to them. Hudson (2014) offers the following advice: ‘Make the experience a fun one. Make it meaningful. Allow the child to mature and develop.’ Motivation, capturing attention and fostering a child’s curiosity constitute a long-term investment that allows the child to develop a positive attitude towards reading and writing later on.

It is worth noting that many pre-school age visually impaired children (be they blind or low-vision) do need to develop these skills, i.e. the ability to detect letter-to-sound correspondences by learning to read letters and words in Braille. Research suggests that a majority of typically developing children attending kindergarten are capable of recognising over half the letters of the alphabet. In visually impaired children, the number of letters recognised is significantly lower, which places these children at a disadvantage when compared to their peers as they become part of the school education system.

Reading aloud has a role to play in the maturing of a visually impaired child, allowing them to develop ideas and fostering knowledge about their surroundings. Of course, it is only natural that not every word or activity can be experienced first-hand. Yet reading aloud with a parent and having the parent ask questions of their own or answer questions by the child during the reading session is a joint activity which brings considerable benefits (McGee, Schickedanz, 2014). By sharing in the process of reading aloud, a child develops their vocabulary, shapes their own concepts, develops their reasoning capacity, becomes acquainted with the language of books and smooth reading and fosters an understanding of books as sources of interesting stories and information. Activities of this type focus a child’s attention on letters, spaces, words, punctuation and those features of written texts that will

later have an impact on their reading and comprehension skills. Reading out Braille books or children's books that combine text in ink print with text in Braille allows the parents and teachers of children who will later use Braille to become partners in the process of literacy training.

When it involves a visually impaired child, reading aloud has certain specificities. When a visually impaired child takes part in the reading process, they should be engaged in the content of the text and understand it. Often, words and actions that sighted children are able to pick up after a single glance at the illustrations accompanying the text require explanation. If a child participates only passively or merely listens without taking part in the activity proper, additional individual work with them may be necessary with a view to selecting a more accessible text.

From a very early age, typically developing children are surrounded by books. At first, they tend to treat them in the same way as they would any other toy, throwing them about, doing squiggles on them and ruffling them (Dooley, 2010). At around 2 years of age, they realise that the pictures, shapes and colours in children's books convey abstract messages. A year or two later, they become aware of the connection between words and illustrations that share the same page. It is not uncommon for them to 'read' aloud books with which they are familiar, using their recollection of the story.

Nevertheless, offering books to visually impaired children and creating an environment fostering basic literacy skills has proven to be a challenge facing teachers and parents alike. It is necessary that children that may one day use Braille realise that the words they can utter may be put down on a sheet of paper and then read from it. This awareness can be brought about by an adult setting an example and demonstrating the behavioural pattern described for them to try to imitate. The objective of this would be for these children to gain a holistic awareness of the book in terms of its physical parameters, not for them to be trained in letter or word recognition just yet (Wright, Stratton, 2007). A child's first steps in trying to read may entail them tracing lines in Braille in the book and then retelling the story based on what they remember. Embossed pictures may also be created and used. Initial attempts at writing may include randomly pressing buttons on a Braille typewriter, thus imitating writing and producing what is commonly known as nonsense.

Creating books has the potential to be one of the most fulfilling and gratifying activities that children and adults may share. The very process requires communicating, developing fine motor skills and goes a long way towards enhancing basic literacy skills (both those concerning holistic awareness of the books and others listed above).

The secret to cooperation is engaging the child from the very start of the book-creation process and keeping them engaged until this process is completed. Even the youngest children can take part in the activity by selecting material for the book, gluing pictures to pages and placing specific items in the bag relevant to each page (if the type of book requires that), as well as by offering words and sentences to accompany each of the pictures (items), helping to write the words by spelling them aloud together with the adult doing the writing, numbering pages together the adult and helping in the process of collating material and binding the book. This type of activity generally requires several days, which allows the child to appreciate the time and effort invested in creating a single book. Once the book is finished, the child may read it to their audience (more than once), practicing the skills pertinent to opening and spreading the book, leafing through it, findings items and images on its pages and 'reading out' the words and sentences that relate to these.

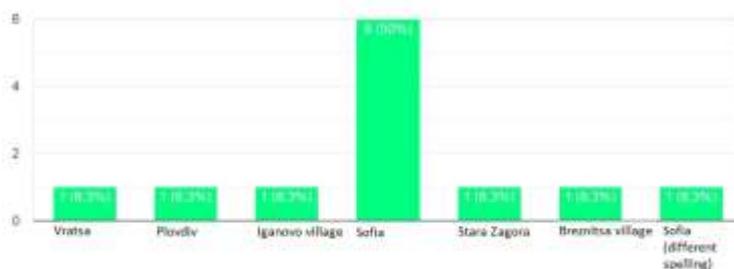
While reading a book may be personal, reading a children’s book with a child is a shared experience and creating and book together with a child constitutes an emotional challenge in its own right. It involves an educational aspect but also presents an opportunity to spend time with the child, engaging in creative and entertaining activities.

It is precisely this observation that has informed the drafting of a questionnaire targeting parents and aiming to explore their attitudes towards reading and books at the stage of basic literacy training for young visually impaired children discussed above, as well as the applicability of books in day-to-day work with their children. The questionnaire looks into parents’ knowledge about tactile books and the significance of these to their children’s cognitive development. The questionnaire has two sections. The first one includes questions collecting data on the demographic and social status of respondents while the second one focuses on tactile books.

As the questionnaire survey is still ongoing, only data collected hitherto will be presented below. At this stage, the survey does not cover cases of multidisabled children. So far, there have been 12 respondents coming from various parts of Bulgaria.

Place of residence

12 responses

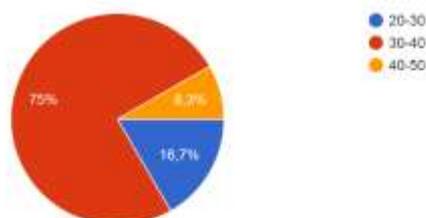


1. Place of residence of respondents

At this stage, the survey covers 12 parents coming from various parts of Bulgaria.

Age (of parent)

12 responses

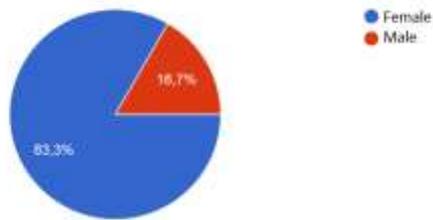


2. Age (of parent)

75 % of respondents are between 30 and 40 years of age. 8.3 % of respondents are between 40 and 50 years of age, while 16.7 % are between 20 and 30.

Sex (of parent)

12 responses

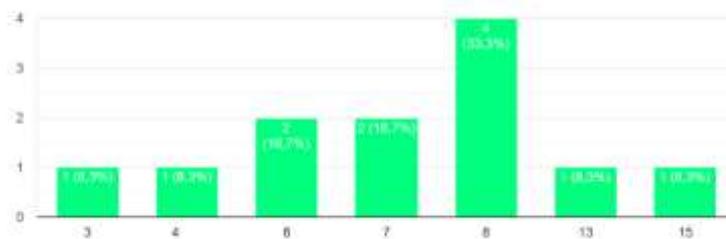


3. Sex (of parent)

The pie chart below points to a significant prevalence of female respondents in the survey (83.3 %) over male respondents (16.7 %).

Age of the child

12 responses

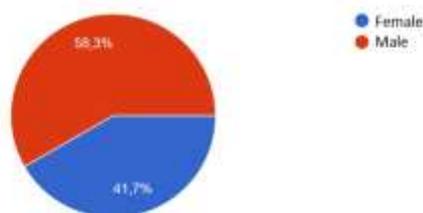


4. Age of the child

The visually impaired children whose parents have filled out the questionnaire are of pre-school and primary school age.

Sex of the child

12 responses



5. Sex of the visually impaired child

Of the twelve participants' children, 58.3 % were boys and 41.7 % girls.

Visual impairment status

12 responses



6. Visual impairment status of the child

58.3 % of children were completely blind while 41.7 % had low vision. The overlap in the figures concerning the sex of the children and those concerning their visual impairment status does not indicate correlation but boys do make up a greater proportion of the children who are completely blind.

Does your child enjoy being read children's books?

12 responses



7. Child's attitude to reading

It is noteworthy that parents are adamant about the fact that their children enjoy being read to. We are not surprised by the overwhelmingly positive responses to this question. At this age, most children enjoy listening to children's books when these have been adequately selected and are presented engagingly.

Do you enjoy reading children's books to your child?

12 responses



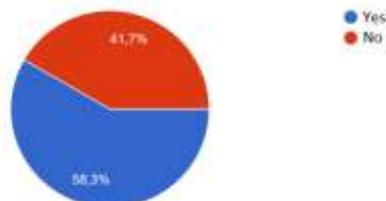
8. Parent's willingness to read to their child

100 % of respondents shared that they enjoyed reading to their children. This question and the one discussed directly above are closely connected and this is evident in the similar responses offered. Attitude to books, reading, processing and storing the information received constitutes an self-same emotional experience, one that sees several parties interacting: the

author, the reader and the listener. The parent’s willingness to convey the author’s message to their child is in fact a very significant emotional connection.

Are you able to find books suitable for your child on the book market?

12 responses

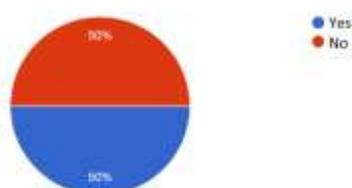


9. Availability of books suitable for visually impaired children on the book market

58.3 % of respondents have given a positive answer to the question concerning the availability of books suitable for their children on the book market. The proportion of parents who are not able to find a children’s book that is suitable in terms of its type, shape, design or one that is accessible is not insignificant (41.7 %) in spite of the range of children’s books offered.

Do you believe that mainstream books are suitable, understandable and accessible to your child?

12 responses



10. Accessibility of children’s books (distribution)

The distribution of respondents who believe that there are books on the market and of those who cannot find a book appropriate for the needs of their visually impaired child presents greater variation.

The table below lists certain clarifications as to why certain books are not considered acceptable by parents. Generally, reference is made to the small font size of the body of the text. This is followed by inaccessible illustrations, with some parents stating that they would like to have embossed images in the book, as well as illustrations of concepts that will be unknown to children or difficult to explain to them.

The font size is small.

My child will be able to understand the content of the book much better if they are able to see illustrations clearly.

My child lacks visual experience, hence a lot of vocabulary requires explaining.

Large-print books are accessible to my child.

Books on the market should be more easily accessible.

Yes.

N/A

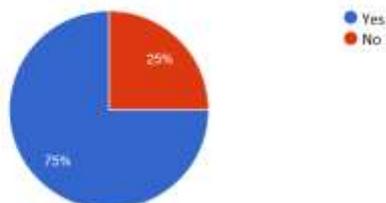
Books do not feature embossed images that would enable my child to acquire concepts relevant to things that are unknown or difficult to explain to them.

The font is not accessible.
 They are not accessible.
 The child cannot see the wonderful illustrations in the book.

11. Limitations to content accessibility

Do you know what a tactile book is?

12 responses

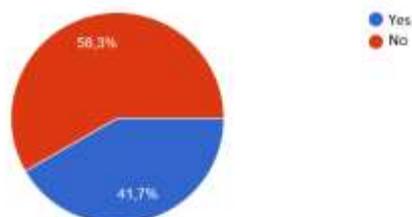


12. Parents' knowledge of tactile books

The proportion of parents familiar with the concept of a tactile book is high (75 %). 25 % of respondents report that they are not familiar with tactile books for visually impaired children.

Have you seen a tactile book?

12 responses

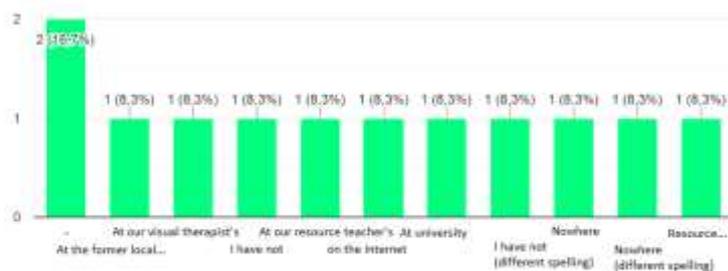


13. Availability to tactile books

In spite of the high rate of awareness of tactile books among respondents, only 41.7 % of them have actually seen one themselves. 58.3 % of parents have never had access to tactile books.

Where have you seen a tactile book?

12 responses



14. Availability of tactile books (distribution)

The majority of respondents who have seen tactile books cite a resource teacher as the person who provided them one. Other respondents have seen such books at the vision therapist's or at university. Others still have only come across tactile books on the Internet.

Would you prefer it if you child used a tactile book rather than a mainstream one?

12 responses



15. Choice between tactile and mainstream books

75 % of respondents would opt for using a tactile book, rather than one of the mainstream ones available on the book market, with their child. 25 % of them cannot give a definitive answer to the question cited.

Do you believe that tactile books should be placed on the mainstream book market?

12 responses

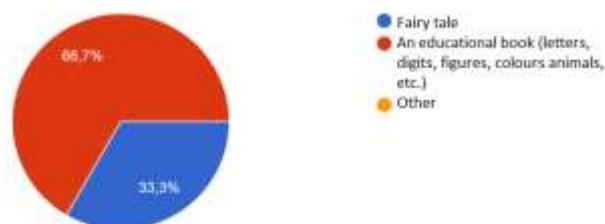


16. Tactile books available on the book market

All respondents share the opinion that tactile books should be readily available and ought to be distributed via the book market. They call for quicker, easier and more unimpeded access to these.

What type of tactile book would you choose for your child?

12 responses

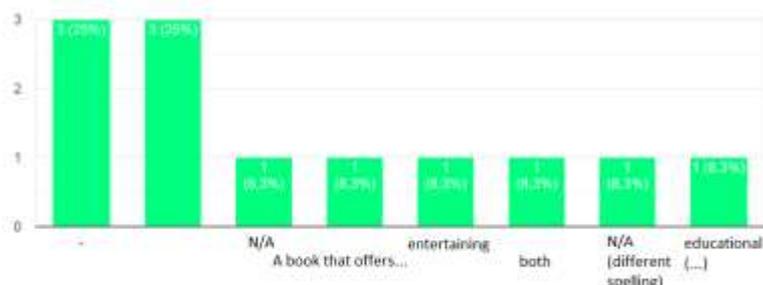


17. Choice of tactile book

If given the option to choose a particular type of tactile book, 66.7 % of parents would choose an educational one (dealing with letters, digits, figures, colours, etc.) while 33.3 % of them would prefer one containing children’s stories.

If you selected 'Other' in the previous question, please specify.

12 responses



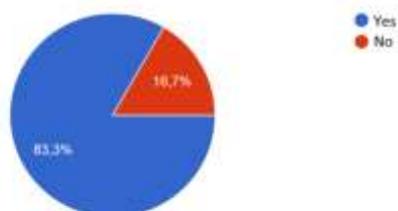
18. Content of tactile books

Responses cite educational books, as well as such focusing on entertainment and children’s stories, but there is also one response suggesting the need for books describing geographical sites throughout Bulgaria (this suggestion can be classed under the category of educational books).

Parents wish to have access to material that allows them to present otherwise inaccessible items, objects or sites to their children.

Would you create a tactile book together with your child?

12 responses



19. Creation of tactile books

When asked whether they were willing to create a tactile book together with their children, 83.3 % of parents responded in the affirmative and 16.7 % in the negative.

The data collected thus far suggest that parents generally share a positive attitude towards tactile books. Even though not all parents have had actual physical access to these books and while some may have only had brief or mediated encounters with them, they are appreciative of the role that tactile books have on developing their children’s cognitive skills.

Tactile books can serve as a foundation, a dotted line of sorts waiting to be traced and coloured in the ongoing process of ensuring early literacy training for visually impaired children. Indeed, they may serve as the key to open up a greater gate still, that of young visually impaired children’s knowledge of their surroundings. When the choice of topic, material to be used and technique is right and where the process is approached with patience, even scanty resources can yield a wonderful book suited to the needs of a visually impaired child. Although it may appear ‘incomplete’, somewhat bland or a little ‘different’ at first

glance, a tactile book actually contains all features necessary for a young visually impaired child to make their first steps in the realm of books, letters and tactile images, thus learning about the world around them and the world fairy tales... In essence, it contains a full-fledged adventure between its covers.

References:

Dooley, C.M. (2010). Young children approaches to books: the emergence of comprehension. The reading teacher.

Hudson L.J. (2014). Introducing braille, Perkins school for the blind.

McGee, L.M., Schickedanz, J. A. (2014). Repeated interactive read-aloud in preschool and kindergarten, The reading teacher, <http://www.readingrockets.org/article/repeated-interactive-read-alouds-preschool-and-kindergarten>

Swenson, A. M. (2016). Beginning with braille. Firsthand experiences with a balanced approach literacy, AFB Press.

Wright, S., Stratton, J.M (2007). On the way to literacy; Early experience for children with visual impairments, Louisville. American printing house for the blind

ACCESS TO INCLUSIVE EDUCATION THROUGH TACTILE IMAGES

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Abstract:

At ADU we started working with Visually Impaired People (VIP) in 2011. Technology has been on our minds from the start, as a big problem in our projects was finding patient volunteers, knowledgeable in various subjects. Then we realised that parents have the same minuses in dealing with VIP kids and sometimes even teachers are overwhelmed by not having enough time to get with every kid into details while exploring tactile images.

So we envisioned an Artificial Intelligence (AI) that would see what they are touching and explain that specific area just like a sighted person would, but with all the knowledge a specialist would give. The proof of concept came in 2014 and was shelved until further development of mobile phones. In 2019 we took this project back to our agenda and now we are able to show you the Alpha Version: The Tactile Circle app is the innovative approach to have many people learn the same information simultaneously. This way, VIPs will have access to e-learning, and the classroom experience is highly improved as the teacher can finally give them extra information and create a better learning experience.

In the last 2 years we invested our energy in creating a tactile library which is now over 500 original images with descriptions. Right now we are working on Geography and Anatomy. Last year we created History lesson images - buildings, maps, artefacts, portraits of national

historical figures. I invite you to our exhibition to explore the future of inclusive education.
#AIvision #Tactileimages #SENDAHAND

App video: bit.ly/TactileVideos

Text of the paper, the slides are in attached PPT:



SLIDE 1

Hello, I'm Dan Patzelt, a director of photography whose father is going blind. Because I understand the need for inter-human visual communication, I am here to talk about the frustration that has led to the creation of a solution that will change the world for the better.

There are so many technical solutions ready...

Why don't blind children have the same modern options already?

SLIDE 2:

I am a father myself, and I used a tablet to teach my child how to write and read through games. Why don't we have in this digital world and easy solutions for blind children so they can learn by themselves?

- Production problems
- The AHA!! moment
- Software solution
- Examples
- Exhibition

SLIDE 3

I want to tell you about the road we traveled at Urban Development Association and how we came out with what you will see tomorrow, at our exhibition.



SLIDE 4

We all know the benefits of tactile images, the importance of spatial culture, and the difficulties in creating representations of concepts and proportions. I have been working with blind children since 2011, and I identified three problems:

- Production techniques,
- Production costs of materials,
- Over-the-shoulder-person's limit

👁️ SLIDE 5

There are three problems, but the good news is that we have solutions for them.

It all started with the experience we had in the association's projects when we went to the technical fairs and the special schools. The AHA!! Moment came when we were at one of our first exhibitions. One blind girl was delayed on a phone call, and she arrived late at one of our bas-relief exhibits. A beautiful tactile representation, of a famous Romanian painting, with different textures, with sand, wood, glossy, slippery, cold, warm, pleasant, unpleasant textures. A wonderful piece; it took me two months to build.

Only that, exploring it alone, without a curator and her mother not knowing anything about the painter or the painting, her experience lasted 5 seconds: she paused, she passed her hand over the exhibit, did not understand much and left. You can't imagine what was in my head after two months of work and the money spent. I could see her colleagues enjoying themselves, too - who didn't? - so the work was top-notch, but she could not appreciate it. Then I realized the importance of a permanent specialist near when exploring tactile images. Her mother was not to blame for not knowing the subject, you can't ask a man to know everything, and so I met another barrier. The blind man is dependent on the level of knowledge of the companion. Depending on time, goodwill, and especially the level of expertise.

I was telling you about my frustration and shocking moments, another moment that led to the free e-learning platform Tactile Circle is the one in which I discovered the business model in the industry dealing with educational materials. "Expensive for a few, because the state reimburses it!"

Well, what about the rest? What about them? The access to information, the right to education, what do you mean? The percentages are scary: 80% of visually impaired people globally live in poor countries, where the state does not reimburse; 97% live out of pension in Romania, only half of the blind children go to special schools in Romania, the rest stay home because only a few of them go to mass schools; well what about Sustainable Development Goals?

Remember the question from the beginning: Why are there no digital solutions that can be used to study images? From my understanding, it's because there is no commercial interest.

So we created a product that coincidentally has the same visions as today's conference "Free access, real educational inclusion, and unlimited technologies."

"Free access, real educational inclusion, unlimited possibilities through technology"

👁️ SLIDE 6

Here comes the part where I tell you that there are answers, and I present to you my favorite modern solution.

- Reduce costs
- Automate translations
- Simultaneous study
- Any existing tactile material -
image recognition - smartphone

👁 SLIDE 7

Starting from the need for a personal assistant, the lack of tactile educational materials in schools, their production costs, and the frustration of the existing business model, we have created the e-learning platform Tactile Circle.

SLIDE 8

The innovation that Tactile Circle brings comes from facilitating the entire process of working with tactile images.

We intended to make it as simple that a mommy could draw her child a tactile illustration. For a drawing from a schoolbook or a storybook, she goes on the website, uses some clipart, or draw them herself if possible, select areas of interest, add digital explaining texts and then print the images. For offline recognizing the pages, we also provide a Braille title for each tactile plate.

Did I mention that the images don't need so much Braille text anymore? Braille is not an efficient way of explaining tactile images as it takes a lot of space and it takes a long time to read compared to a synthetic voice. We are all for Braille in the context of learning and transmitting text information in a non-digital medium; the Tactile Circle platform is a tool with which you can learn Braille faster. This is why all the explanations on the platform are digital. And the app voices them while you are exploring the given area. It sees your hand position on the image and feeds you the explanation of that specific area.

As another example, a student logs in the digital library. Here he will find thousands of images made accessible, ordered into courses, in many languages with whatever interests him, and then prints his chosen course. Moreover, because we are addressing everyone, we give the opportunity for a visually impaired's helper to easily create a map of the surroundings, that the viewer can explore alone and create a mental map. When he is on the street, he can consult it again, on the spot, just by picking up the phone to assist him like an information torch over his hand exploring the image.

A simple mobile application that behaves like a permanent assistant that tells the user what they have under their fingers can provide independence.

Yes, the innovation brought by Tactile Circle AI can help in education, in orientation, and entertainment.



SLIDE 9:

At the moment we are in the phase where we have created 500 accessible images, we have a functional prototype of the mobile assistant, we are working on the easy drawing software and on the printer that will emboss tactile images ten times cheaper.

Tactile Circle is on its way to create the infrastructure through which visually impaired persons will explore and understand by themselves tactile images. Because we are convinced that such a solution can be useful only if it is free and widely used, we set out to do it, to raise money from sponsorships, donations.

I invite you tomorrow in the lobby to test the platform: editor, library, and app working and to test the new self-described tactile images. Those of you who have iOS devices can also test it now on these tactile images.

Thank You

THANK YOU !

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Tactile Circle AI

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SLIDE 10

Parallel session 2
“Multiple disabilities”

**THE EXAMINATION OF GESTURES OF CHILDREN WITH
MULTIPLE DISABILITIES AND VISUALLY IMPAIRED**

Pinar Safak, Associated Professor / PhD, Gazi University

**Derya Uyar, Teacher of Visually Impairment (TVI) / Teacher / Master
Degree, Mitat Enc School for The Blind**

Children with multiple disabilities and visually impairment (MDVI) have severe problems in their communication skills. However, this does not mean that they cannot communicate. The children with MDVI communicate with gestures, signs, sounds, sentences, behavior problems, etc.

Gestures that are one of them are observable and purposeful body movements. The use of gestures starts in infancy. The use of gesture continues to strengthen communication with verbal language. However, every body movement that is purposeful and observable is not a gesture. For example sign language, reflexes, behavior problems.

There are different types of gestures in the literature. For example Acredolo and Goodwyn (1988), Ekman and Friesen (1969, 1972), Mclean vd. (1991)’s researches says different types of gestures. However, researchers are currently interested in the types of gestures identified by Iverson and Thal (1998). Because Iverson and Thal (1998) categorized the gestures in a broad framework so that any gesture used by children can be evaluated without disregarding. According to Iverson and Thal (1998), there are two gesture types. 1. Deictic gestures and 2. representational gesturers. Each of these gesture types have two gesture types. Accordingly, Deictic gestures have contact and distal gestures. Representational gestures have object-related (symbolic) and culturally defined conventional gestures. Children produce their gesture for the purpose of joint attention, social interaction and behavior regulation.

In researches related to gestures, some researchers examined gesture types (Frame, 2000; Iverson & Goldin-Meadow, 1997; Iverson et al., 2000), and some researchers examined the frequency of use of gestures (Iverson et al., 2000). People with blind and low vision use gestures. However, the gestures they use may be different from the gestures used by people who are not blind. Also their gestures are a bit more limited.

The remarkable point in the literature is that there is no research on the functions of the gestures used by visually impaired people. Research in the literature is often about how visually impaired people use gestures to strengthen verbal communication. Therefore, this research will make a significant contribution to the literature.

The aim of this study is to examine the gestures used by children with MDVI.

For this purpose, the questions to be answered are;

1. What gestures do the children with MDVI use?
2. What are the types of gestures used by children with MDVI?

3. What are the functions of gestures used by children with MDVI?
4. What is the frequency of gestures used by children with MDVI?

Method

Participants

The participants are 4 children with MDVI who are between 8-12 age, cannot speak / do not use sign language / have maximum 10 vocabulary or sign, go to school for the blind in Ankara; their mothers and students teacher who work with the children who have MDVI.

TABLE 1: Participant Information

Chil's Name	Cender	Age	Disabled	Name of The School
Ali	M	12	Totally blind Severely intellectual disabled Physically disabled	Goreneller School for The Blind
Didem	F	8	Totally blind Severely intellectual disabled Physically disabled	Goreneller School for The Blind
Ece	F	9	Totally blind Severely intellectual disabled Physically disabled	Goreneller School for The Blind
Funda	F	12	Totally blind Severely intellectual disabled	Goreneller School for The Blind

The mother of the children with MDVI is between 34 and 47 years old. All the mothers are housewife. Each of the students teacher are fourth year student at TVI depertmant of Gazi University.

Procedure

This research is a case study. The case study was planned with a multiple holistic case study design. Multiple holistic case study design has multiple cases. Each of the cases is examined separately. The cases in this study is four children with MDVI.

Information Form, Interview Form and Gesture Usage Information Form were prepared for collecting the research data. Information Form and Interview Form were prepared to learn the characteristics of the participants. The Gesture Use Information Form prepared to determine the gestures used by children with MDVI.

Data Collection

First, pre-application was made to gain the experience of the researcher and to check the functionality of the data collection forms. And then the research data were collected by observing the method in the home (mother-child interaction) and school (student teacher-student interaction) environments. Each of the interaction videos is at least 15 minutes. Multiple videos were requested for each child in each context.

TABLE 2: Duration of research data

Child's Name	Mother-Child Interaction	Student Teacher-Student Interaction
Ali	74 min	69 min. 30 s.
Didem	89 min. 33 s.	113 min. 08 s.
Ece	71 min. 30 s.	89 min. 09 s.
Funda	74 min. 12 s.	62 min. 23 s.
Total	309 min. 15 s.	334 min. 10 s.

643 min. 35 s.

Coding

Gestures in interaction videos Behavioral coding was done on Gesture Usage Information Form.

Analysis

Descriptive analysis method was used.

Interobserver Reliability

For 20% of the research data, 5 different observers and researchers coded independent but concurrent data. 80% or more agreement was achieved between each observer and the researcher.

Results

Four children with MDVI used 36 different gestures. All children produced gestures in their home and school environment. The children used all types of gestures. They used the most deictic gesture. But each child produced a different number of gesture types.

Tabşe 3: Types of gestures used by children with MDVI

Environment	Time	Deictic Gestures		Representational Gestures	
		Contact Gestures	Distal Gestures	Symbolic Gestures	Culturally Defined Conventional Gestures
Home	309 min. 15 s.	15	11	4	3
Total		26		7	
School	334 min. 10 s.	7	13	1	0
Total		20		1	

Thr children produced gestures for all 3 communication functions. But each child produced a different number of gesture for communication functions.

TABLE 4: Functions of gestures used by children with MDVI

Environment	Time	Joint Attention		Social interaction	Behavior regulation
		Initiation	Answering		
Home	309 min. 15 s.	1	2	8	22
		3			
School	334 min. 10 s.	0	0	4	17
		0			

Each children used gestures different numbers and frequency from each other in each environment. Funda produced the most gestures in the home environment. Ali produced the most frequent gesture in the school environment. Ece is the child who uses at least gestures.

TABLE 5:

Child's Name	Home				School				Total			
	Time	Number of Gestures	Number of Objectives	Frequency	Time	Number of Gestures	Number of Objectives	Frequency	Time	Number of Gestures	Number of Objectives	Frequency

Ali	74 min. 30 s.	6	9	56	69 min. 30 s.	3	5	45	143 min. 30 s.	6	14	101
Didem	89 min. 33 s.	3	3	4	113 min. 08 s.	5	5	17	202 min. 41 s.	7	8	21
Ece	71 min. 30 s.	2	2	3	89 min. 09 s.	6	6	11	160 min. 39 s.	7	7	14
Funda	74 min. 12 s.	22	41	93	62 min. 23 s.	7	11	20	136 min. 35 s.	26	52	113
Total	309 min. 15 s.	28	54	156	334 min. 10 s.	16	26	93	643 min. 25 s.	36	79	249

Discussion

Researchers such as Apple (1972), Carroll (1961), Manly (1980) and Mills (1988) say that the children with visually impaired do not use any gesture (Iverson & Goldin-Meadow, 1997). But gestures are natural communication behavior. Determining that children with MDVI use gestures in this study proves this. However Blaas et al. (1974), Bruce et al. (2007), Frame (2000), Iverson and Goldin-Meadow (1997), Sharkey et al. (2000) observed that blind and blind people use gestures.

In this study, children with MDVI mostly used deictic gestures for nearby objects and people. However Iverson et al. (2000) states that blind children produce gestures for nearby objects and people.

Some researchers have planned their researchs with different gesture types. Blass et al. (1974) and Sharkey et al. (2000) found that blind people do not use illustrators. They say that people who can see mostly use illustrators. Illustrators are nonverbal behaviors that match the speech. For example, when a person asks "Where is the pen?" He moves his hand as he is writing (Ekman & Friesen, 1969; 1972). In this research children with MDVI used at least symbolic gestures. Symbolic gestures and illustrators are similar. Therefore, Blass et al. (1974) and Sharkey et al. (2000)'s findings are parallel with this research.

Having more than one handicap affects children's communication skills. Also the quality of adult behavior affects children's communication behaviors. Accordingly, in this study, children with MDVI produced each other gestures of different types, functions and frequencies. Therefore, some factors affect gesture use. Positive intervention to external factors will increase gesture use.

References

- Acredolo, L., & Goodwyn. S. (1988). Symbolic gesturing in normal infants. *Child Development*, 59, 450-466.
- Blass, T., Freedman, N., & Steingart, I. (1974). Body movement and verbal encoding in the congenitally blind. *Perceptual and Motor Skills*, 39, 279-293.
- Bruce, S. M., Mann, A., Jones, C., & Gavin, M. (2007). Gestures expressed by children who are congenitally deaf-blind: Topography, rate, and function. *Journal of Visual Impairment & Blindness*, 101, 632-657.
- Ekman, P., & Friesen, W. V. (1969). The repertoire of nonverbal behavior: Categories, origins, usage, and coding. *Semiotica*, 1, 49-98.
- Ekman, P., & Friesen, W. V. (1972). Hand movements. *Journal of Communication*, 22, 353-374.
- Frame, M. J. (2000). The relationship between visual impairment and gestures. *Journal of Visual Impairment & Blindness*. 94(3), 155-171.

Iverson, J. M., & Goldin-Meadow, S. (1997). What's communication got to do with it? Gesture in children blind from birth. *Developmental Psychology*, 33(3), 453-467.

Iverson, J. M., Tencer, H. L., Lany, J., & Goldin-Meadow, S. (2000). The relation between gesture and speech in congenitally blind and sighted language-learners. *Journal of Nonverbal Behavior*, 24(2), 105-130.

Iverson, J. M. & Thal, D. (1998). Communicative transitions: There's more to the hand than meets the eye. In A. M. Wetherby, S. Warren & J. Reichle (Eds.), *Transitions in prelinguistic communication* (pp. 59-86). Baltimore: Paul H. Brookes.

Sharkey, W. F., Asamoto, P., Tokunaga, C., Haraguchi, G., & McFaddon-Robar, T. (2000). Hand gestures of visually impaired and sighted interactants. *Journal of Visual Impairment & Blindness*, 94, 549-563.

Developmen on sight language for Multi Disabled Visually impaired children (MDVI) without developed speech or with under developed speech.

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I. Motivation of the study: Although it has been 20 years since in Bulgaria has purposefully worked with MDVI and specifically without developed speech, many parents, newly arrived colleagues, social workers, etc. are still not convinced of the use of sign language in them.

II. Hypothesis: We assume that mastery of sign language is one of the main methods for creating and maintaining the social interaction of the MDVI children without developed speech with other people who communicate with them and is the basis for the cognitive development of the child.

III. Aim of the study: The main objective is to describe a complete system for the development of sign language for MDVI. Demonstrate the urgency of its use by everyone involved in contact with them. Demonstrate the need for teamwork with the child to achieve maximum results in mastering sign language.

IV. Methodology for Sign Language Development:

- Motor sessions - simple game, "Tak-Pack", body recognition system, attention to hands.
- Development of natural gestures - to obtain the desired object children with multiple disabilities, as well as normal children, use some kind of movement.
- Standard Sign Language - Basic Rules. Hand-to-Hand System. How to teach a child to use sign language? Tales in a box. Extra benefits of sign language.

V. Case Study: Mastering Sign Language by ID - 16-year-old young man with mental retardation, without developed speech and complex of learning difficulties, with light perception. Hi is raised in state institutions for children without parents.

Conclusion: Mastery of sign language is one of the main methods for creating and maintaining the social interaction of the Child Protection Act - without developed speech or incompletely developed speech with other people who communicate with them and is the basis for the cognitive development of children.

The education in communication holds an important place in the work with children with special educational needs. The specialized classes in communication started in our school in 2003. Before that we had the chance of getting acquainted with the experience of the more advanced countries in the education of MDVI. At that time our school was visited by communication specialists from Perkins, Boston, USA; Vurburg, Germany; while I attended the classes in Condover Hall School, England and I had the opportunity to get acquainted with the world experience on the last World and European Conferences of the ICEVI / The International Council for the Education of the Visually Impaired / and the DbI /Deaf- Blind International/

We investigated the special literature and especially:

1. Steps of development on communication for MDVI without speech by the Dutch professor Jan Vandike
2. Models on verbal and nonverbal communication in the Miles, L., Riggio, M. `Remarkable conversation`, 1999
3. Perkins activity and resource guide (1992). Perkins school for the blind, Watertown, MA
4. In the books `Movement, Gesture and Sign`, MacWilliam, L., Lee, M. 1995, introduce interactive approach for sight communication for MDVI on the base of which we organize our system.

For the reasons of our investigation we summarized our accumulated experience in working with MDVI and we tried to adapt the world experience to the Bulgarian conditions, as a result of which we came to one well working system for education in communication. The program for communication skill development is designed both for children with visual impairment and without speech or not well developed speech.

The teaching process is carried out not only during specialized classes but in natural circumstances which means that it continues during the whole period of time - both at school and at home. So communication education shouldn't be separated from the other activities carried out by the school.

The communication education builds up of three main elements: communication through real object, tactile symbols or pictures for children who have some vision; communication through sign language and oral speech development for children who are capable of speaking.

As there is the least research on the use of sign language by visually impaired multiply disabled children (MDVI), we will consider its development here as an alternative means of communication.

I. Motivation of the study: Although it has been 20 years since in Bulgaria has deliberately worked with MDVI and specifically without developed speech, many parents, newly arrived colleagues, social workers, etc. are still not convinced of the use of sign language in them. Unidentified people ask, "Why should I use sign language when my child understands me?" And the answer is, "Yes, he or she understands you, but how will he tell a third person that he or she wants to come to you?"

II. Aim of the study: The main objective is to describe a complete system for the development of sign language for MDVI. Demonstrate the urgency of its use by everyone involved in them. Demonstrate the need for teamwork with the child to achieve maximum results in mastering sign language.

- Describe the methodology for the development of sign language from movements - imitations, through natural gestures, standard gestures, to master the overall system of

- communication with sign language.
- Give examples of the different stages of mastering it.
 - To give practical advice on how, taking into account intellectual and health problems, children develop opportunities for communication, which leads to improved social contacts and hence to quality of life.
 - Introducing the added benefits of sign language for speech development.

III. Methodology of development of Sign language

Using the Sign language from early childhood we help the child to understand our speech, because it switches on the centre of movement in the brain and it is another way of information acceptance. We also underlined the most important words, making our speech more elementary and understandable. At the same time the child is aware of the fact that this is an alternative way of communication.

How are the MDVI to be told to use the sign language?

Most of the visually impaired children with additional disabilities make only slight movements that is why the gesture education starts with the so called:

1. Movement sessions:

Our aim is to approach the child, accepting his condition for movement, focusing on what it wants and can do not on what we want to do.

The next step is to concentrate his attention on the movement of the hands, taking out games with them.

During the movement sessions the children learn that:

- the communication is fun and they are capable of participating in the social life;
- movement and gesture have a special meaning;
- they can affect the natural environment;

2. Natural gesture development

After the child has understood he can control the communication his attention is directed to the objects themselves. In order the child to get hold of the desired object, they use a different kind of movement such as pointing out, pulling, shouting, opening and closing mouth as a sign of hunger and imitating the object movement. We sort out those signs and keep on using them in our communication with the child so they are aware that we understand them.

After the child can express himself with 10-15 natural gestures we can pass to the usage of standard sign language.

3. Standard sign language

We use the Bulgarian sign language dictionary as a foundation adapting it to the needs of the MDVI.

How to teach the child to use the sign language:

- A very important requirement is our speech to be accompanied by gestures since early childhood;
- Songs are also a very good education means. For example think of an elementary song where each word is accompanied by gesture and repeat it every day;
- Special exercises for learning the first gestures. They are carried out in work one by one, where the child has the chance of asking for something with a special gesture.

- The best way for the child to learn how to use gestures is their practical usage in each real situation.

IV. The usage of the theme based educational approach.

This approach is the most efficient one for communication skills development. On all subjects and in the individual classes we work like a team on a definite topic for a definite period of time.

We determine the themes at the beginning of the school year. For example: from October 10-th to 20-th the topic is fruits. In the morning circle we talk about the fruits and where they grow. In the communication classes we study the names of the fruits. The children make fruit salad during the useful skills classes. Using this approach we have found out that the children understand the subject better enriching their knowledge and memorizing them better.

V. Tales In Boxes - Tales In Boxes are customized standard fairy tales, for which parsley characters and other materials are placed in a particular box that clearly explains and plays the content, and the action is also explained by gestures. For example, for the tale "The Three Pigs" in the box are placed 3 parsley piglets, one wolf, a straw sticks, wooden sticks and a stone. Thus, if the child cannot understand the words, he or she will be able to touch the objects or understand the gestures. This is especially necessary for blind children who cannot see the pictures. So the story in the box becomes their book. The development of speech and gestures is done as in ordinary fairy tales. The tale has been studied for a long time and can finally be dramatized and presented at a school celebration.

VI. Additional benefits of sign language: Although the purpose of the gesture development program is to offer the child an alternative to oral speech, the use of gestures helps the development of oral speech as well. This is especially important for children who have long been at the level of imitating or using echolalic speech. Oral speech does not always make sense to them. It seems that the exact use of gestures realizes the connection between word and meaning. This is due to the fact that when gesturing, the adult expresses himself more simply and that the child's attention is focused on the gesture of the person in front of him. For example, a child in kindergarten who did not use words but only glee (pa, gu) progressed significantly after using gestures when communicating with him. Initially, it used gestures and oral speech together, and subsequently the gestures were dropped and only oral speech remained as a means of communication.

Case study

I.D. is now a 16 year old young man with mental retardation, without developed speech and complex learning difficulties. He has no sight beyond awareness of light and dark. He is an orphan and lives in the institution for children without parents.

At the age of 7 he came at school as a very frustrated boy, prone to temper tantrums. His ability to communicate was not in doubt, but his understanding and desire to make contact with us far outstripped his limited forms of self expression. This uneven development was reflected in his extreme frustration with life. On the one hand had a good understanding and a desire to joint in with activities around him, on the other hand he had a rather shaky grounding in non verbal communication. He didn't understand that specific gesture could convey meaning and understood by others.

For our joy, his vision couldn't decrease yet and we could count on imitation.

It was decided to return to early movement activities and to his personal, natural gesture. He enjoyed these movement sessions and as the activities development he found his own way of directing the session. We also focused his attention on the movements of the hands, through various games with them and imitation of our movements accompanied by a

song. At the start his self expression was mainly through all body movements and positioning, but gradually he began to use and understand gesture. For example, during one session he was indicating his desire to be bounced up and down on his partner's knees by moving his body. The adult didn't respond immediately, so he tried again- still no response! It was possible to tease him a little in this way since he was confident by now on his own ability to take charge. To make himself quite clear, his next request was a bounce coupled with an arm gesture up and down. From that day on the arm gesture remained his sign for this activity. At the same time we began signing in front of I.D. and working on his personal gestures used in the manipulation of objects. His understanding of his role in the communication process and of the symbolic use of gesture was gradually developing.

I.D. was keen on music and especially enjoyed the drum. He used to knock his fist on the drum in order to make the sound. Whenever the adult asked I.D. if he would like to play on the drum, he knocked with his fist on the table. I.D. quickly made the connection and adapted the gesture as his means of asking for the drum. At the next level, we showed him the standard drum gesture and he quickly picked it up and started using it when he wanted the drum.

We showed him, by adopting his gestures into our own sight vocabulary that they were meaningful to us. For example, one day before noon, he tapped his stomach to show me he was hungry instead of using the standard "eat" gesture. I replied "Oh, you're hungry" and showed him the standard "I'm hungry" gesture, which is the movement of a hand like a knife across the belly. After the end of the class, he met his teacher, with whom he usually dined and immediately showed her the new gesture he had remembered.

I.D. went through a very difficult period at the beginning of puberty - towards the age of 11. He broke everything, was aggressive towards others - adults and children, pushing, hitting and demanding all the attention on himself. At times, he also fell into auto-aggression and banged his head on the floor. At the time, I.D. had a very poor vocabulary and not everyone who communicated with him understood what he wanted, which frustrated him even more.

Today the vision of I.D. decreased significantly. He has made the gestures in air yet, but often liked to have the adult hand there to make the sign. It is his way to make `eye` contact and knowing that the adult are listening.

Over the years I.D. vocabulary has gradually increased and his intense frustration is a thing of the past. He doesn't have a wide vocabulary but he has a clear idea of how to contact others and make his wishes known.

A major change in his life came after he was moved to a family-type accommodation center (FTAC) 3 years ago and we have trained staff how to contact him. Now I.D. knows about 50 gestures that he uses adequately to the situation. He learns when someone does not understand it, to provide additional explanations such as vocalizations or imitation of the activity that is performed on a subject. If he does not know a gesture about an object or activity, he invents his own, which are related to the way the object is used, the place of activity, or an explanation of its condition. In this way, he also demonstrates an interest in being shown the new standard gesture. He uses 2-3 word gestures to express his desires. For example, if he wants to go to a Billa store to buy his favorite salutes, he shows gestures for "shopping", "salutes" and "Billa". The gesture for the Billa shop was invented by himself - it is an open and close automatic door shown by hands. We have accepted this gesture as there is no standard and we show it to him to know that he is understood correctly.

As a result of the enrichment of his vocabulary, his overall cognitive development also improved. It is much easier to use gestures because we have clear feedback. I.D. understands the opposites - big- small, warm-cold, high-low, etc. He can compare in height, width and size, using standard gestures to express it. He implement unrelated two-steps commands. It

can count up to 5 by tapping and showing a specific number with his fingers. Still with help, but understanding the meaning, he can sort items and define categories such as: clothes, cutlery, toys, fruits, etc. related to his daily routine.

As we strive to keep our learning functional, we use I.D.'s favorite activities, such as making tea, cooking, shopping, to train gestures and teach him to socially adequately contact with more and more people at school and beyond it.

He is relatively calm and can make arrangements with him like: 1st we will study and then we will eat. We demonstrate our requirements with gestures and tactile symbols from his program. He is inclined to leave his favorite object: different cups, which he carries constantly, in a certain place, to pick up his symbol for the appropriate lesson and to come to study.

As early as his training began, we started using boxes for the end. Their main purpose is to build temporal ideas. Initially, we put the things we worked on in the communication therapy, carry it to classroom, and the child "tells" another teacher what was the rule in the previous lesson by submitting these items, and the story is accompanied by gestures. Similarly, the symbols of the program of the day can be affixed and an account of what he has done throughout the day. I.D. quickly grasped the idea that he could explain to people what he was doing, and we soon replaced the real objects with pictures, as he still had enough vision and began to recognize them. Currently he has built-up temporal notions of the near past and the future and can tell in gestures what he did the previous hour, and using his symbolic program (with tactile symbols) to explain to us what is next.

I.D. loves the songs very much and has great fun playing gestures and insists that he sing them himself. He can craft a melody and mimic the various sounds of animals and of the environment he uses to support his gestures. He knows his letter of the dactyl, as well as those of his classmates, the class teacher and others teachers. We try to put the first speech sounds as well - He can pronounce vowels and write them in braille, but it is unlikely that oral speech will become a primary means of communication for him. He will probably continue to serve him, hopefully better, as an aid to sign language.

We intend to continue his education by constantly enriching his sign language and including in our work a retelling of short "tales in a box".

Conclusions:

- Every child, regardless of their level of development, needs to communicate, to express their wishes. We, the adults, are the ones who are responsible for understanding him and helping him with his or her means of communication.
- When using gestures, it involves the motor center in the brain, which is another way to perceive and reproduce information easier than a complex oral system. For children with multiple disabilities, it is the gesture that makes the connection between the word and its meaning.
- Facial expressions and gesture are natural means of communication through which a whole language and thinking can be developed. They are suitable for use with MDVI children without developed speech.
- Teamwork with the child by all who are in contact with him is required to achieve maximum results in mastering the sign language. There is no point in teaching a child to use gestures at school and not to use them at home. Educators need to do everything to convince other members of society of advantages of its use.
- Mastery of sign language is one of the main methods for creating and maintaining the social interaction of the MDVI child without developed speech with other people who communicate with them and is the basis for the cognitive development of the child.

Choosing the communication system for the child- pictures, tactile symbols, gestures or oral speech depends mostly on individual capabilities of each child. We grant the child all alternatives for communication so called total communication. It doesn't disturb the child at all, just the opposite. One of the means simply emphasizes the meaning of the other. In case the child can't recognize you by your voice he can do that by your symbol and if that is difficult for him he can do that by the gesture of your name.

References:

Радулов, Вл. Педагогика на зрително затруднените, София, 2004

Цветкова - Арсова, М. Педагогика на деца и ученици с множество увреждания, София, 2015

MacWilliam, L., Lee, M. Movement, Gesture and Sign, 1995

Miles, L., Riggio, M. Remarkable conversation, 1999

Perkins activity and resource guide (1992). Perkins school for the blind, Watertown, MA

EFFECTIVE COMMUNICATION FOR INDIVIDUALS WITH VISION IMPAIRMENT AND MULTIPLE DISABILITIES: THE CASE OF THE PrECIVIM PROJECT

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Abstract

During the past three decades, there has been a dramatic increase in the number of persons with vision impairment and multiple disabilities (MDVI) within the general population of persons with vision impairment. People with MDVI constitute a distinct and heterogeneous group with a unique set of needs and every student with MDVI presents a unique educational challenge. Education of children with MDVI concern the development of: (a) communication and literacy skills, (b) functionality of residual sight, (c) orientation and mobility skills, (d) socio- emotional skills, (e) daily living skills and self-determination. The present paper presents and describes a current Erasmus+ project (i. e. PrECIVIM-Promoting Effective Communication for Individuals with a Vision Impairment and Multiple Disabilities), which focuses on assessment of communication skills of children with MDVI. The first outcomes of the project have already highlighted teachers' and professionals' need in setting effective and valid objectives in communicative skills in children with MDVI. It is expected that the PrECIVIM project will enhance the development of individualized educational approaches, the use of appropriate educational material and play activities to promote the communication skills of students with MDVI.

Introduction

Many studies in the field of the education of children with vision impairment confirm the increasing number of children with vision impairment and multiple disabilities (MDVI) during the past three decades within the general population of children with vision

impairment. For example, Kyriacou, Pronay and Hathazi (2015) in a research conducted by the European Blind Union, found out that in many countries the number of children with MDVI varies between 30% and 70% within the population of persons with vision impairment.

People with MDVI constitute a distinct and heterogeneous group with a unique set of needs, mainly because of the combination of various disabilities such as learning, developmental, or/and sensory (Argyropoulos & Papazafiri, 2017; Chen & Dote-Kwan, 1995; Kyriacou et al., 2015). As a result, every child with MDVI presents a unique educational challenge and teachers need training to conceptualize how these students experience and understand the world (Ajuwon, Meeks, Griffin-Shirley, & Okungu, 2016; Argyropoulos & Papazafiri, 2017; Dammeyer & Larsen, 2016). Many researchers have stressed the importance of education of children with MDVI in different domains such as: (a) communication and literacy skills, (b) functionality of residual sight, (c) orientation and mobility skills, (d) socio-emotional skills (e) daily living skills and self determination (Alsop, 2002; Argyropoulos & Thymakis, 2014; Papazafiri & Argyropoulos, 2018; Rowland, Stillman, & Mar, 2010).

In specific, communication is a fundamental domain of education of children with MDVI since it affects learning and participation in different sectors of life at home, school and broader community level (Suhonen, Nislin, Alijoki, & Sajaniemi, 2015). There is a range of skills, such as receptive, expressive, sensory and motor skills that need to be developed in students with MDVI; for this, student-focused instructional strategies have to be applied by professionals in collaboration with the students' families (Aitken, 2000; Funnell & Wilding, 2011). However, the act of conducting a concise assessment of communicative skills in children with MDVI is challenging because of the great heterogeneity within this population. On the other hand, detailed and concise assessment of communication constitute a critical factor that enable teachers to set realistic goals, develop appropriate learning exercises and address the educational needs of children with MDVI (Rowland, 2009).

The present paper refers to an Erasmus+ project entitled "Promoting Effective Communication for Individuals with a Vision Impairment and Multiple Disabilities" (PrECIVIM) (<http://www.precivim.eu/>) and focuses on teachers' and professionals' training needs who work with children with MDVI regarding assessment and instruction of communication skills. The aim of the PrECIVIM project is to link the act of assessment with the act of intervention, highlighting the importance of individualized educational approaches which would promote the development of communication skills of children with MDVI (Bruce, Janssen, & Bashinski, 2016; Ferrell, Bruce, & Luckner, 2014). More specifically, the PrECIVIM project has the following objectives:

- To describe the needs and challenges of children with MDVI in communication as well as to refer to relevant policies and practices that are implemented in the participating countries of the project (i. e. PrECIVIM partners).
- To enhance the skills and knowledge of the teaching and supportive staff of students with MDVI regarding the development of communication skills.
- To promote the collaboration between different organizations such as universities, schools and associations of individuals with MDVI.
- To point out the best practices and guidelines for the development of effective communication regarding students with MDVI.

The PrECIVIM project

Partners

The PrECIVIM project is a European project which falls under the umbrella of Erasmus+ Programme (Key Action 2). In total ten organizations compose the consortium of

the PrECIVIM project. Three are universities (i. e. the University of Thessaly/Greece which is the coordinator of the project, the Babes-Bolyai University/Romania and the Roehampton University/United Kingdom), four organizations are special schools for the blind and deafblind (i. e. Special School for the Deafblind/Greece, Special High School for the Visually Impaired/Romania, Whitefield Academy Trust/United Kingdom and St. Barnabas School for the Blind/Cyprus), and one is a non-governmental organization (“Amimoni” – Panhellenic Association of Parents and Friends of Visually Impaired People with Additional Handicaps/Greece). Finally, an IT Company (DB-DATABANK/Greece) is involved in the consortium as well as the European Blind Union (EBU) which acts as associated partner of the project with an important contribution to the dissemination of the project results.

Activities and intellectual outputs- partnerships

All the aforementioned partners have built networks within their countries and between them, sharing knowledge and experience in order to meet the goals of the project. This exchange of ideas is feasible through transnational meetings and through the project communication platform (i. e. project portal). A range of outputs is planned to be delivered throughout the project lifetime (i. e. intellectual outputs IOs) and action research is the methodological “umbrella” which is used to shape the activities of the PrECIVIM project. Action research (O’ Hanlon, 1996), considered to be the most appropriate methodology for the main activities of the project as they are described below while a framework of blended training (Martyn, 2003) was adopted for the learning/training events for teachers and professionals from all participating educational settings. In short, the main activities and the IOs of the project are the following:

IO1: Scoping. This intellectual output has been carried out and encapsulates the basics of all preliminary activities of the project. The methodology of the IO1 is based on: a. literature review regarding policies, researches and practices in the field of education of children with MDVI in the participating countries, and b. situation analysis and case studies relevant to the participating educational settings. The final report of IO1 is considered as added value to all participating schools and partners in general because it constitutes an up-to-date current situation about difficulties and challenges that children with MDVI face in a variety of conditions.

IO2: Learning and communication platform (portal). The portal serves different aims such as: a. the communication between the partners, b. the support of the distance learning/training events (IO4), and c. the dissemination of the project’s results.

IO3: Training Material. The training material has been developed and was based on the IO1 coupled with an overview of the development of communication skills of children with MDVI. The major components of IO3 are diagnosis, early intervention, assessment, alternative and augmentative communication, technology, teachers’ competences, functional environment, systems of support and transition based approach. The training material consists of the following modules: a. Conceptual framework of development and characteristics of people with MDVI, b. Development of communication in the context of MDVI, and c. Assessment of communication. An innovative characteristic of IO3, which is worth noting, is the development and validation of methodologies, workshops and patterns of collaboration among associations for and of people with multiple disabilities and vision impairment and universities for designing educational programs and educational material for students with MDVI.

IO4: Mutual learning experience – critical overview. As it was mentioned above, the PrECIVIM project adopts a framework of blended training (Martyn, 2003) with face to face learning/training events in the educational settings of each participating country as well as

distance learning/training events through the Learning and Communication platform of the project (IO2). The research and scientific team of each University is organizing the learning/training events (i. e. face to face, distance synchronous and asynchronous) for the staff of the participating educational settings. All training events are based on the developed training material (IO3) and in turn all teachers and professionals who participate in the project will implement specific activities and components from IO3 and reflect on these interventions through reflective logs. As mentioned above, the implementation component of IO4 is captured by action research methodology following the pattern: design, action, observation, and reflection (O' Hanlon, 1996). IO4 is still in progress and all corresponding activities are expected to be completed by the end of 2019.

IO5: Guide of Best Practices. The pool of data for IO5 will be based on the reflective logs (IO4). The obtained practices will be analyzed in terms of: a. communicative profile of MDVI students who were involved, b. objectives of the intervention, c. methods of instructions and observation, and d. educational material. The Guide of Best Practices and corresponding guidelines will be uploaded as Open Educational Resources in the PrECIVIM portal (IO2).

IO6: Dissemination and Exploitation Activities. In order to ensure the dissemination of the project results, a range of dissemination and exploitation activities (IO6) will take place during the lifetime of the project. Through a range of activities and means – such as presentations, journals, events – all partners in collaboration with the EBU, will communicate the results of the project to a wide target audience including organizations and stakeholders that do not participate in the project.

IO7: Policy Recommendations and Guidelines Report. The last intellectual output of the project will be a brief summative report, which will include recommendations and guidelines for policy makers and stakeholders. The content of this report will be based on the project's outcomes and on important frameworks, action plans and policy documents regarding disability. This output is important for the ones who participate as well as for those who do not participate in the project. It will aim to help policy makers and state departments to become more aware regarding the development of appropriate curricula for MDVI students.

All the aforementioned activities and the IOs of the PrECIVIM project are expected to enhance the development of individualized educational approaches with appropriate educational material and activities to promote the communication skills of students with MDVI. Furthermore, the present project is likely to have a substantial positive impact on the participants' competences. The multidisciplinary character of the PrECIVIM consortium and the involvement of different stakeholders at local, regional, national and/or international level through a range of activities are also expected to contribute to the sustainability of the project results and their impact at individual, educational, scientific and broader social level.

Teachers' and professionals' challenges in promoting communication skills in children with MDVI.

The challenges and professionals' training needs who work with children with MDVI have been a big issue in contemporary relevant research in special education. Great importance has been given in designing and delivering differentiated educational programmes, because of the combination of the disabilities (Akmese & Kayhan, 2016; Argyropoulos & Papazafiri, 2017; Haakma, 2016; Safak, 2016; Westling & Fox, 2009). On the other hand, great emphasis is given to the lack of systematic and structured domain training – such as in communication – in teachers and professionals who are involved in the education of children with MDVI (Akmese & Kayhan; 2016; Martin & Alborz, 2014).

The first outcomes of the project are in line with the above research, underscoring the challenges that teachers and professionals meet in setting effective and valid objectives

regarding the development of communication skills of children with MDVI. So far, the participating professionals through the training events (IO4), have focused on a number of topics such as a. the complicated situation of the co-occurrence of different disabilities (known also as comorbidity), b. the difficulties in setting and using flexible and valid communication methods and educational material for the development of communication skills in children with MDVI, and c. good grasp and knowledge of relevant assistive technology in enhancing or supporting all types of communication.

Conclusion

The PrECIVIM project “Promoting Effective Communication for Individuals with a Vision Impairment and Multiple Disabilities”, aims to strengthen the profiles of the teaching profession of the staff who work with children with MDVI and in specific to enhance the skills and knowledge of the teaching and supportive staff of students with MDVI in the assessment and teaching of communication skills of students with MDVI.

Considering the vital significance of the communication for the access, the interaction and the inclusion of children with MDVI in different environments and sectors of life (Suhonen, Nislin, Alijoki, & Sajaniemi, 2015), the present project is in line with the social agenda of the European Union on non-discrimination and equal opportunities of individuals with disabilities including those with MDVI. Teachers and professionals who work with children with MDVI have a crucial role for the development of communication skills of children with MDVI and it is of great importance to support them to issues of assessment and intervention regarding this domain of the education of children with MDVI.

Finally, it is equally important to note that in order to provide effective communicative, educational, learning and social experiences and opportunities to children with MDVI in a more sustainable way there is a need for a more systematic policy at education and state level which will encourage partnerships, promote similar initiatives and disseminate good practices with the ultimate aim the equal educational opportunities and inclusion of all children including those with MDVI.

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References

- Aitken, S. (2000). Understanding deafblindness. In S. Aitken, M. Bultjens, C. Clark, J. T. Eyre & L. Pease (Eds.), *Teaching children who are deafblind. Contact, communication and learning* (pp. 1-34). London: David Fulton Publishers Ltd.
- Ajuwon, P. M., Meeks, M. K., Griffin-Shirley, N., & Okungu, P. A. (2016). Reflections of teachers of visually impaired students on their assistive technology competencies. *Journal of Visual Impairment and Blindness*, 110, 128–134.
- Akmese, P. P., & Kayhan, N. (2016). An examination of the special education teacher training programs in Turkey and European Union member countries in terms of language development and communication education. *Cypriot Journal of Educational Science*, 11, 185-194.
- Alsop, L. (2002). *Understanding deafblindness: Issues, perspectives and strategies*. Logan, UT: SKI-HI Institute.

- Argyropoulos, V., & Papazafiri, M. (2017). Investigating tactile exploratory procedures of students with multiple disabilities and visual impairment: current trends in education. *Proceedings of ICERI2017* (pp. 2023-2029). Seville, Spain.
- Argyropoulos, V., & Thymakis, P. (2014). Multiple disabilities and visual impairment: an action research project. *Journal of Visual Impairment and Blindness*, 108, 163-167.
- Bruce, S., Janssen, M., & Bashinski M. (2016). Individualizing and personalizing communication and literacy instruction for children who are deafblind. *Journal of Deafblind Studies on Communication*, 2, 73-87.
- Chen, D., & Dote-Kwan, J. (1995). *Starting points: Instructional practices for young children whose multiple disabilities include visual impairment*. Los Angeles, CA: Blind Children's Center.
- Dammeyer, J., & Larsen, F. (2016). Communication and language profiles of children with congenital deafblindness. *British Journal of Visual Impairment*, 34, 214-224.
- Ferrell, K., Bruce, S., & Luckner, J. (2014). *Evidence-based practices for students with sensory impairments*. CEEDAR Document No IC-4. University of Florida, Collaboration for Effective Educator, Development, Accountability and Reform Center website <http://cedar.education.ufl.edu/wp-content/uploads/2014/09/IC-4_FINAL_03-30-15.pdf> (Accessed 2019-09-05).
- Funnell, E., & Wilding J. (2011). Development of a vocabulary of object shapes in a child with a very-early-acquired visual agnosia: A unique case. *The Quarterly Journal of Experimental Psychology*, 64, 261-282.
- Haakma, I., Janssen, M., & Minnaert, A. (2016). Intervening to Improve Teachers' Need-supportive Behaviour Using Self-Determination Theory: Its Effects on Teachers and on the Motivation of Students with Deafblindness. *International Journal of Disability, Development and Education*, 64, 310-327.
- Kyriacou, M., Prónay, B., & Hathazi, A. (2015). "Report of the mapping exercise carried out by the commission of persons with visual impairment and additional disabilities. Working period 2011 – 2015. European Blind Union Internal document. <<https://zapdoc.tips/authors-maria-kyriacou-coordinator-beata-pronay-andrea-hatha.html>> (Accessed 2019-09-5).
- Martin, T., & Alborz, A. (2014). Supporting the education of pupils with profound intellectual and multiple disabilities: the views of teaching assistants regarding their own learning and development needs. *British Journal of Special Education*, 41, 309-327.
- Martyn, M. (2003). The hybrid online model: Good practice. *Educause Quarterly*, 26, 18-23.
- O'Hanlon, C. (1996). Why is action research a valid basis for professional development? In R. McBride (Ed.), *Teacher education policy: Some issues arising from research and practice* (pp.179-191). Falmer Press: London.
- Papazafiri, M., & Argyropoulos, V. (2018). Assistive Technology and special education teachers: the case of students with multiple disabilities and vision impairment. *Proceedings of EDULEARN18 Conference* (pp. 5485-5492). Palma de Mallorca, Spain
- Rowland, C. (2009). *Assessing communication of learning in young children who are deafblind or who have multiple disabilities*. Oregon Health & Science University and U.S. Department of Education Office of Special Education Programs.
- Rowland, C., Stillman, R., & Mar, H. (2010). Current assessment practices for young children who are deaf-blind. *AER Journal: Research and Practice in Visual Impairment and Blindness*, 3, 63-70.
- Safak, P., Yilmaz, H. C., Demiryurek, P., & Dogus, M. (2016). The effect of performance feedback provided to student-teachers working with multiple disabilities. *European Journal of Educational Research*, 5, 109-123.
- Suhonen, E., Nislin, M.A., Alijoki, A., & Sajaniemi, N.K. (2015). Children's play behaviour and social communication in integrated special day-care groups. *European Journal of Special Needs Education*, 30, 287-303.

Westling, D. L., & Fox, L. (2009). *Teaching students with severe disabilities* (4th. ed.). Columbus, OH: Merrill/Prenlice-Hall: Pearson.

DETERMINATION OF THE STRATEGIES USED FOR TEACHING LITERACY TO VISUALLY IMPAIRED CHILDREN WITH MULTIPLE DISABILITIES

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Introduction

It is known that literacy skills are important for individuals with disabilities in matters such as communicating, living independently, and interpreting the environment and the world (Miller and Rush, 2001). It is necessary to teach literacy skills to these students even at a basic level so that they can have an independent life, or in the simplest sense, acquire a skill which they can deal with in their leisure time. However, each student's needs, areas of interest and abilities differ from each other. Due to the characteristics of visually impaired children with multiple disabilities, the adaptations and arrangements they need are increasing and becoming more and more important. For this reason, academic skills such as literacy will provide significant rich experiences to these students when presented with materials and teaching methods adapted to the individual characteristics of visually impaired children with multiple disabilities. Regarding this topic, Browder and Snell (2000) stated that the learning potential of an individual cannot be estimated, and therefore, we should not restrict teaching of academic skills, and it is possible to teach academic skills to individuals with disabilities through necessary environmental, material and teaching arrangements. In this statement, the phrase "environmental, material and teaching arrangements" is noteworthy. Academic skills in the general curriculum are observed to be much more effective when taught with materials and teaching methods that are suitable for the needs of individuals with disabilities. It is possible to minimize the negative effect of sensory loss, which is experienced by individuals due to their disabilities, on learning with suitable materials and different approaches. It is stated that it is not possible to estimate the learning potential of the students, different teaching methods must be considered according to disabilities and needs of the student in teaching academic skills, and the method and materials can be changed if the student fails to gain the skill (Westling and Fox, 2009).

There are different literacy approaches and programs for students who have difficulty in learning literacy skills and have disabilities (Nadem, 2015; Wormsley, 2004). Some of those are the language experience approach, functional literacy approach, skill-based approach, literature-based approach, balanced approach (Nadem, 2015; Rex et al., 1994; Toussaint and Tiger, 2010; Swenson, 1999). In their compilation and meta-analysis study, Browder and Xin (1998) stated that teaching functional reading was effective in the visual word recognition of the individuals with medium and high-level disabilities. In addition, there are different approaches available, where braille writing materials are used for visually impaired students with multiple disabilities. These include the Individualized Meaning-centered Approach to

Braille Literacy Education, Mangold Braille Program (1978) and presentation of the braille alphabet, which is one of older approaches (Mangold, 1978; Rex, Koenig, Wormsley and Baker, 1994; Swenson, 1999; Wormsley 2004).

More than one approach and program are observed in teaching literacy skills. Here, the important point is the realization of teaching through the determination of an approach suitable for the needs of the student. In this context, the biggest task falls on teachers. Teachers are the experts who need to have information about how students learn, what skills they need for literacy and what conditions support learning in the best way. In teaching, they need to select the most suitable method of teaching literacy in the field by specifying the needs and requirements of the student.

An effective literacy program must be implemented so that teachers working with visually impaired students who have additional disabilities can bring these students up to a proficient level. It was seen in the literature that visually impaired children with multiple disabilities could learn reading and writing as a result of the literacy teaching with different approaches in children who could not learn reading and writing (Campbell, 2011; Klenk and Pufpaff, 2011; Rooke-D'Aurizio, 2011). Various studies must be conducted and this literacy topic, which forms the basis of a lot of information and skills, must be investigated more extensively so that visually impaired students with multiple disabilities can acquire this basic academic skill. A different teaching method or program can be used for each student because of the different needs of the visually impaired students with multiple disabilities. In Turkey, there are developments about the education of children with multiple disabilities. It is seen that the importance of academic skills and the needs of teachers have increased in the education of these children. Teachers are the experts who need to have information about how students learn, what skills they need for literacy and what conditions support learning in the best way. It was aimed in the research to determine the approaches used by teachers in Turkey, who were experts in their field, for the literacy education of visually impaired children with multiple disabilities by comparing which approaches they found more effective.

METHOD

Research Model

This research is a qualitative study planned to determine the approaches used by teachers working with visually impaired students who had multiple disabilities for literacy teaching and to evaluate their suggestions. In the process of data collection, semi-structured interview technique, which is used in qualitative researches, will be utilized. The semi-structured interview technique was preferred in line with the purpose because it allowed participants to explain their perceptions with their own thoughts and perspectives (Merriam, 2013).

Participants

Teachers who work in schools educating visually impaired children with multiple disabilities in the Turkey will be selected as participants for the research. Within the scope of the research, it is planned to conduct interviews with minimum 4 and maximum 10 teachers. A preliminary interview will be held with the participants before the interviews related to the collection of research data and the purpose of the research will be explained. It will also be noted that there will be audio recording during the interviews and these records will not be shared with anybody other than the researchers.

Development of the Data Collection Tool

An interview form was prepared in order to determine the approaches used by the teachers working with visually impaired students who had multiple disabilities and to evaluate their suggestions. The interview form consists of two parts which include information such as the

service year and age of the teacher, and information of identification and interview questions. Interview questions are comprised of open-ended questions. The prepared interview questions were examined by two experts to specify the content validity, and interview forms were completed with the edits found necessary by the experts.

Data Analysis

Content analysis will be utilized in the analysis stage of qualitative data. The main purpose of content analysis is to reveal the concepts that can explain the collected data and the relationships between the concepts. In this context, it is tried to understand the data through the content analysis and to reveal the facts that may be hidden within the data. In this sense, the concepts underlying the data and the relationships between these concepts are revealed through coding. The resulting codes and the relationships between these codes (themes) function as the main elements used to explain the phenomenon or theory underlying the data (Yıldırım and Şimşek, 2005). In order to ensure the reliability of the research, two researchers' codes and the categories related to the codes will be compared to confirm whether the codes given under the conceptual category obtained in the study represent these conceptual categories. Once the reliability is provided, the findings will be analyzed according to the themes.

SOCIAL-SEXUAL EDUCATION OF STUDENTS AND YOUTH WITH MULTIPLE DISABILITIES

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Abstract:

A number of authors have discussed the terminology related to socio-sexual development and training, pointing out that this term is far more appropriate and socially acceptable than "sexual development and education" since many people feel uncomfortable when it comes to "Sexual development". It is important to remember that children, adolescents and adults with multiple disabilities, like all other people, have sexual needs Their sexuality is something which they definitely share with people without disabilities, so as parents and teachers we have a responsibility to meet their needs to become sexually competent. We need to get to know their needs in this area and provide them with the support and instructions they need.

Care for the sexual health of a child or an adolescent with multiple disabilities is important. Parents and teachers should turn it into a focal point for instructions and interventions aimed at children with multiple disabilities. Parents, specialists, and other caregivers should also discuss their concerns with the adolescent's physician and plan the child's needs now and in the future.

Keywords: social-sexual, education, development, multiple disabilities.

A number of authors have discussed the terminology related to socio-sexual development and training, pointing out that this term is far more appropriate and socially

acceptable than "sexual development and education" since many people feel uncomfortable when it comes to "Sexual development".

We generally feel uncomfortable about sexuality and our society often gives mixed messages. Nowadays, we see sexual messages everywhere. They are used to sell cars, food, clothing, entertainment and phones. Even with children in fashion and behavior, there is a disguised desire to be "sexy", there are messages everywhere that reinforce the power of sexuality. At the same time, it is difficult for us to have candid conversations with each other and with our children about appropriate sexual behavior. We often don't call our reproductive organs by name, but instead we use witty (and not so much) jargon. As a society, we do not feel comfortable about sexuality and disability.

There are many myths and misconceptions related to the sexuality and socio-sexual development of people with disabilities (**Tsvetkova-Arsova, 2015**). According to some of them: these are asexual persons; if students with multiple disabilities have socio-sexual problems, they are the result of their disabilities; socio-sexual training is considered only when a problem with behaviors related to socio-sexual development arises; for students with multiple disabilities, problems related to sexuality occur later than usual. It is important to remember that children, adolescents and adults with multiple disabilities, like all other people, have sexual needs. Much of the future of this group of children may be uncertain, but what is certain is that they will always be man or woman. Their sexuality is something which they definitely share with people without disabilities, so as parents and teachers we have a responsibility to meet their needs to become sexually competent. We need to get to know their needs in this area and provide them with the support and instructions they need.

The essence and elements of the program for social and sexual education in children and students with multiple disabilities:

- Understanding one's body: body parts, body language, feelings, self-control, physical development, gender;
- Understanding the functions of the body: toilet, personal hygiene, menstruation;
- Understanding of individual differences: uniqueness, puberty, body image, positive attitude towards oneself;
- Understanding the need to respect ourselves and others: personal space, self-image, assertion of personal right;
- Understanding relationships with others - family, friends, strangers, dates, decision-making skills, avoidance of abuse and exploitation;
- Understanding the life of adults - not married, married, parenting, cohabiting;
- Understanding the medical aspects of sexuality - conception, birth control, STDs, prevention;
- Understanding the signs (signs) of sexuality - body parts, actions.

Clear rules, specific guidelines for instruction and intervention, and appropriate hands-on training for staff and family are all very important in providing sexual training for a child with multiple disabilities and significant intellectual disabilities. They help prevent confusion and reduce conflict between staff and the families of these children. Good school policies and guidelines reduce the risk of genuine abuse and suspicion. A holistic approach to sex education may take longer, but it provides success in providing sex education to this group of children. This type of program could be included in Useful Skills lessons for students with visual and multiple disabilities, as well as in Social Skills classes for students with intellectual disabilities and additional disabilities.

Table 1:

The process of developing a sexual education program (Blaha & Moss, 2000):

1. Try to motivate the team preparing the PMI (Individual Curriculum) to anticipate the process of developing an appropriate sex education curriculum.
2. Try to get the team to review and collect information materials related to the provision of sexual education for children with multiple disabilities.
3. Try to get the team to develop a draft policy and guidelines for instructions and interventions for review by staff and families.
4. Share the draft policy with all parents of students with multiple disabilities, the staff working with those students and the necessary representatives of the school administration.
5. Have parents and staff, especially those involved in the provision of sex education, to complete a needs assessment for blind and deaf students.
6. Revise and finalize instruction and intervention policies and guidelines based on needs assessments and feedback from administrators, parents, and staff who had reviewed the documents.
7. Create permission declarations and have parents sign them before providing instructions.
8. Provide up-to-date and ongoing sexual education training for parents and staff.
9. Develop a IEP for students with multiple disabilities to clearly define the specific goals of the sexual education instructions and tasks for each year.

Table 2:

Sample form for parental permission for sexual education from an educational institution	
<p>✓ I reviewed the policy and guidelines for sexual education at... (name of educational institution). I discussed all the issues I have with these documents with the school staff. I hereby give permission for my child to receive sexual education in accordance with my child's school and IEP policies.</p> <p>✓ Note: The following are issues that have not been addressed with my child at this time. I would like to be notified immediately if any of them occur accidentally:</p> <p>_____</p>	
<p>✓ I do not allow my son / daughter to receive sexual education from the staff.</p>	
Parent's signature:	Date:

Sample topics on socio-sexual education (Blaha & Moss, 2000):

Topic 1: Decency: Society has broadly standardized and highly ritualized rules about decency: regarding the how, when, where and why of public exposure of certain parts of the body.

- Problems with the well-being of children with multiple disabilities;
- The rules of giving thanks cannot be learned by accident;
- The children in this group are very naive of their bodies;
- Often lack environmental awareness;
- Caregivers do not always respect the decency of the child;
- Naive behavior can be seen as strange or threatening.

Guidelines for instructions and intervention:

- ✓ Set rules and identify behaviors that are appropriate
- ✓ Show respect for the decency of the child;
- ✓ Model respect for decency;
- ✓ Require comments to be respectful;
- ✓ Expect problems and learn strategies to deal with them;
- ✓ Be aware of environmental stressors;
- ✓ Think about comfort. Sometimes elaborate clothes can help;
- ✓ Use calendars to teach your child the concept of "waiting"
- ✓ Learn the concepts of "personal" and "alone"
- ✓ Develop routine actions that build decency.

Table 3:

DECENCY LESSON:
1. Some places are personal and some are not personal.
2. Changing and adjusting your clothes can only be done in private places and you have to wait until you are in such a place to do these things.
3. Community and home places have personal areas.
4. Instruction activities: - Have the student draw a picture at home and make a book; - Use recurring real-world opportunities to teach the concept and focus on the "personal" sign: ▪ Go to a grocery store for a few things and visit the toilet to put on a blouse that fits. ▪ Go to a restaurant for lunch or dinner and visit the restroom. ▪ Go shopping for clothes and dress up in the dressing room.
5. Seek opportunities for learning to emphasize the concept of privacy at school, at home and in the community. Use these "shameful moments" as opportunities for instruction. Stay calm, talk privately and take your child to a private area to deal with the problem.

Theme 2: Proper touch and personal boundaries: As a society, we have strict and often complex rules on this topic. However, these rules vary across cultures, families and personalities. Most of these rules are taught primarily through what people see and hear, and also through the way they experience touch.

- Touching and personal boundary problems in children with multiple disabilities:
Touching rules and personal boundaries are difficult to learn by chance;
Distance is the "enemy" for the blind deaf child - unfortunately, they are always at risk of innocently violating privacy rules;
- Blind children with intellectual disabilities may perceive the touch differently from their typical peers, and the child may find it difficult to understand what is acceptable, especially regarding touch and personal boundaries;
- Appropriate and innocent touch can be interpreted sexually.
- Directions for instruction and intervention:
 - ✓ Respect the learning style of the child;
 - ✓ Use greeting rituals;
 - ✓ Learn appropriate ways to get attention and ask for permission before touching;
 - ✓ Learn appropriate touch through a role model;
 - ✓ Focus on conceptual development - it is important to learn basic concepts and a vocabulary that will allow your child to ask for additional sensory information that he or she needs, such as "I want to touch", "I want to see", "I want to smell, "etc;
 - ✓ Use routines. Ask others to use appropriate touch and to respect personal boundaries;
 - ✓ Be an "ambassador" and intervene to set personal boundaries and appropriate touch.

Table 4

SAMPLE LESSON ON TOUCH AND PERSONAL BOUNDARIES:
Research concepts:
1. Names of major body parts, including breasts and genitals, as well as "near", "far" and "moving".
2. Touching another person on the arm, shoulder or palm to get his or her attention.
3. Request permission before touching someone in a place other than the palm, arm or shoulder.
4. Some parts of the body are touched only in a secluded location and with permission.
5. A proper personal boundary means being at least one arm away most of the time.
6. Use recurring life situations to teach and reinforce concepts of touch and personal boundaries.

Sexual health care - Regular attention to the sexual health needs of a child or adolescent is important. Parents and teachers should turn it into a focus for instruction and intervention for a child with multiple disabilities. Parents, rehabilitation staff and other caregivers should be aware of legislation related to managing sexual health problems, ensuring birth control, pursuing surgical sterilization, and addressing pregnancy. They should discuss their concerns with the adolescent or girl doctor and plan his or her needs now and in the future. When making choices about their child's sexuality, parents can take advantage of discussing their concerns with other parents and professionals in the medical, legal, and educational communities. They must fight for quality health education programs and for the child's right to have good sexual health care.

In the socio-sexual training of students with multiple disabilities and the deafblindness, we can resort to some basic techniques that are used in the formation of appropriate behavior **(Miller, 1994; 1999):**

- ✓ Role games that recreate real life situations;
- ✓ Video materials allow repetition of appropriate behavior;
- ✓ Pictures, photos, drawings, enables communication through a known communication system;
- ✓ Models (dummies) allow demonstration of appropriate menstrual or erection behavior;
- ✓ Behavioral techniques;
- ✓ Braille books, audio recordings also help parents become aware of this issue;
- ✓ Assistance groups - weekend seminars for adolescents;
- ✓ Genuine training and counseling - for graduates who have higher levels of functioning;
- ✓ Instant education - it is also necessary to happen at home to students with deep disabilities.

The levels of socio-sexual education and upbringing are **(Tsvetkova - Arsova, 2015):**

- ✓ High - training, counseling;
- ✓ Secondary - training of the moment;
- ✓ Low behavioral (demonstrations).

It is important to remember that for a high-level student, genuine teaching and training on these issues is possible. But for students with multiple disabilities, the learning will be low, with a focus mainly on demonstrating appropriate behavior and using specific situations to form desired skills and avoid inappropriate behaviors.

Conclusions:

1. Children with deafblindness and multiple disabilities have difficulties in adjusting their behaviors. It is generally very difficult to change the behavior of these children than it is to determine the appropriate behavior initially. Parents and professionals need to consider how the student's behavior will be tolerated when he or she is an adult. It may be better to start teaching handshake as a greeting, and hugs as a way to show affection for family and friends.
2. Touch is one of the main learning channels for most deafblind students. This often creates problems for them when learning about sexual issues because the child is used to people touching it. Specialists direct them to touch them by physically guiding them and communicating with many of these students and youths in this way. This makes learning the right and inappropriate touch a lot harder.
3. Students with deafblindness and multiple disabilities misunderstand behaviors. Sometimes we try to prevent students with severe disabilities or intellectual

disabilities from raising sexual issues. However, sexual problems do not disappear. The lack of instruction can become an instruction in itself when it comes to sexuality. Ignoring sexual behavior and allowing the child to use inappropriate touch teaches him or her that the behavior is appropriate and that there are no social consequences.

4. Lack of training on sexuality and on how to express natural needs safely and appropriately can be dangerous for students and youths with multiple disabilities and deafblindness. Lack of knowledge makes them vulnerable to child molesters or other unsavory individuals who would take advantage of it. We cannot expect that the child will learn about sexuality by accident. Therefore, instruction should be provided in an organized manner. Instructions should start at an early age to prevent problems during puberty and the transition to adulthood.

Литература:

1. *Стойнова Д., Добрева К., Кангалова Г.* Ръководство за обучение на зрително затруднени деца с допълнителни увреждания, АРДНЗ,С., 2006
2. *Цветкова-Арсова М.,* Обучение на зрително затруднени с множество увреждания и на сляпоглухи, Екопринт, С., 2002
3. *Цветкова-Арсова М.,* Педагогика на деца и ученици с множество увреждания, ИК Феномен, С., 2015
4. *Blaha & Moss,* Introduction to sexual education for the deafblind and for people with significant intellectual disabilities, Texas School for the blind, 2000
5. *Miller T.,* Social/sex education for the deafblind. New Brunswick, Canada, 1994
6. *Miller T.,* Social/sex education for children and youth who are deafblind. Toronto, Canada, University of Toronto Press, 1999
7. *Schwier, K.M., & Hingsburger, D.* Sexuality: Your sons and daughters with intellectual disabilities. Baltimore, Maryland. Paul H. Brooks Publishing, 2000

A NEW WEBSITE IN TURKEY

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The education of children with multiple disabilities and visually impaired (MDVI) / deafblind (DB) is a new topic in Turkey. Teachers and families need information about this. Many parents say their children do not communicate. We want to help teachers and families for the education of children with MDVI /DB.

In the developing and changing world, internet is the most common and easy way to access information quickly. We thought that the internet would be effective for reaching many people. Therefore, we created a website.

Website address: www.cokengelsiz.com

This website is for easy access to information about the education of the children with MDVI/DB. Also, it is the first website about education of the children with MDVI / DB in Turkey. So, our website caught the attention of people.

The target audience of the website is teachers, parents and student teachers of the children with MDVI / DB in Turkey. Goal; to keep the knowledge of teachers / parents / student teachers up-to-date about education of the children with MDVI / DB, to propose solutions to their problems, to help them to follow the improvements in the world, to become a team in order to improve the quality of education in this field.

The website has been prepared in a format in which everyone can easily navigate through the website. A logo is designed for easy access to the website.

Website Logo



This logo has the name of the website and hydrangea flower. This logo has a meaning.

What Does the Logo Mean?

The name of the website has two words. "COK" and "ENGELSIZ"

The first letter of the second word and hydrangea flower are reversed. This symbolizes that children with MDVI/DB have different characteristics from each other,

Why did we choose the hydrangea flower?

Hydrangea flower has a wide range of colors. The color of the hydrangea can be changed. Water and soil affect the color of the hydrangea flower. For example, if you give acidic water, the color of the flower is blue. This represents that qualified behavior for children increases positive change in children. Therefore, this reminds us that every child can learn.

Also, we chose blue color for our logo. Because blue color means freedom and serenity. So, this color symbolizes the importance of the independence of children with MDVI/DB.

We share some articles about materials, activities, development of children with MDVI / DB, evaluation process, IEP, academic - communication skills etc. on the website. Accordingly, videos and documents are also added to the website.

The following are taken into consideration when deciding on issues to be published on the website.

- Problems and needs of parents, teachers and students' teachers of the children with MDVI / DB
- Important dates and developments about the children with MDVI / DB such as Helen Keller's Birthday, CVI awareness month.
- Actual activities and news in the world and in Turkey (congresses, conferences, exchange law, etc.).

We share the articles with only Turkish language on the website. A simple language is used for teachers and parents. In the future, we are going to share English articles.

In order to reach more people, the website linked facebook and instagram pages have been prepared.

We created a Facebook page and an Instagram pages for on the website. Because we think we will reach more people.

Facebook: Çok Engelsiz <https://www.facebook.com/cokengelsiz/>

Instagram: cokengelsiz

The Future Plan of The Website

In the 2019 - 2020 school year, a model class project will be carried out for children with MDVI at Mitat Enc School for The Blind in Ankara. This project was won at the Perkins School for The Blind in the 2019 ELP program as a Shark Tank Project. Theoretical and practical training will be given to teachers and students teacher in this model classroom. In this process, practical information and practices on how to prepare a classroom and in-class activities will be shared on this website.

The experiences of different teachers and parents will also be featured on this website. For example, how do teachers conduct activities in their classrooms? What do parents do at home? Thus, active participation will make a significant contribution to education of the children with MDVI / DB.

We believe that we will do wonderful things by sharing our knowledge and experience on the website.

A SOCIOMETRIC ANALYSIS OF PEER RELATIONSHIPS BETWEEN STUDENTS WITH VISUAL IMPAIRMENTS AND AND SIGHTED STUDENTS ATTENDING INCLUSIVE EDUCATION

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One of the most important elements of inclusion programs is children without disabilities. The negative attitudes of the peers affect the success, social and emotional status of the child with disability, classroom behaviors, and attitudes towards school and self. If their peers interact with an individual with disabilities, they both become models for them and help them learn from time to time and play an active role in the implementation of inclusion (Sucuoğlu and Kargin, 2012). When the inclusion aiming at the integration of individuals with disabilities into the society is made as it should be, it provides significant contributions to both the normal peers and the quality of education (Varol, 1996).

Peer acceptance and interaction are important elements for a succesful inclusion. Individuals with disabilities stated that normal people's feelings towards themselves are

decisive in order to survive and live in harmony in society. Individuals with disabilities stated that the attitudes of normal individuals shaped their adaptation behaviors to society. Therefore, changing negative attitudes towards individuals with disabilities is important for these people to live humanly (Özyürek, 2005).

While it is very important for the visually impaired individuals to be accepted in the society and to adapt to the society, the studies conducted in the literature have shown that individuals with visual impairment have problems in interacting with their peers, are not included in the popular groups and are excluded from the groups (Peterson & McConnell ,1993; Rosenblum, 2000; Huurre, 2000; Kef, 1999).

Researchs in the world, it reviews that peer relationships of individuals with visual impairment, but no such research has been found in Turkey. For this reason, it is aimed to examine the peer relationships of students with visual impairment and students with inclusion education.

1.2.1. What are the situations in which the visually impaired and sighted students prefer to prefer each other as a friend in which they sit together, spend time together, study together?

1.2.2. What are the visually impaired and sighted students' preference of each other as friends in the list rating form?

1.2.3. Is there a significant difference between the visually impaired and sighted students' preference of each other as a friend in the list rating form according to the schools, class levels and gender in various districts?

Methods

Data Source

In this study, sociometric data collection tools were used to examine the peer relationships of students with visual impairment and sighted students attended inclusion education.

The study group consisted of students with visual impairments and sighted students who were same classes with students with visual impairments. In the study, three schools from different districts of different socioeconomic levels, in which visually impaired students continue, were selected. From three high schools, determined with the random assignment method, a total of 355 students, whose ages changed between 14 and 18 and who consisted of 10 male and 14 female students who were affected from a visual impairment and 148 male and 207 female sighted students, were taken. The personal information form and sociometry application was made to all students in the research group.

Sociometry was performed with two different sociometry tools; peer preference form and list rating scale.

In the peer preference form, the students who participated in the application were asked to write down the names of their three friends who they wanted to sit / study together / spend time with. In the list rating form, the name of each student in the class was placed on the list and the students were asked to give their opinions about their classmates. They were told to tick one of the boxes next to the names I want / I don't / I want some.

In the study, while applying the peer preference form, it was examined who would write to the first three preferences of the students, how the preferences of the visually impaired and visually impaired students would be. In both groups, the first three people were considered to be their closest friends and wondered what they thought of the remaining students. Therefore, in the list rating scale applied, it was determined whether each student was a desirable / unwanted student in the classroom.

Data Analysis

With the data obtained from the sociometry tests, first matrices and then sociograms were created. In addition, the level of the students' acceptance threshold was examined with the Chi-Square analysis by using an SPSS package program with the data, obtained from the sociometry tests and the list rating scale.

39 sociograms were obtained from the data obtained from the peer preference form. With the data obtained from the list rating form, it was examined whether different districts, class levels and gender variables affect the acceptance level.

Results

Sighted students, according to the number of people given to students with visual impairment, entered the first three preferences. In the ranking, the most visually impaired students preferred sighted students to be their companions. Then this sequence was followed by studying together.

In some cases, visually impaired students prefer sighted students, while in some cases visually impaired students prefer visually impaired students. The fact that the visually impaired students chose to study the visually impaired students was lower than that of the sighted students. This is the opposite of spending time together. The visually impaired students preferred the visually impaired students more than the sighted students in the question of spending time together.

Sighted students, in the preference section, showed ignore behavior for visually impaired student substantially. On the other hand, sighted students that preferred visually impaired students, were students who were not popular in the classroom or were left alone. The sighted students did not prefer visually impaired students in non-preference section substantially.

In the peer preference form which is one of the sociometry tests, while the visually impaired students chose the most their sighted friends as their friends they wanted to sit and study with, the acceptance behavior of the sighted students to request the visually impaired students remained very low or they did not want at all. The visually impaired students wanted to spend time with both of their friends with and without a visual impairment at the same rate. On the other hand, sighted students tend not to want half of the visually impaired students. While the visually impaired group was more positive than the visually impaired group, the sighted group was more negative than the visually impaired group.

In the data obtained from the list rating form of the sociometry tests, when the sighted students and the students with visual impairments were asked whether they would like to see each other as friends, 12 students with visual impairments and the sighted students in their classroom gave views contrasting each other, and the students with visual impairments marked the option of "I would like to" or completely opposite opinions were also given. Only 5 visually impaired students and the students who were in their classes had the same peer acceptance behavior about each other at the same rate. In addition, when the data obtained from the list rating form were compared by using the SPSS package program, it was found that their acceptance statuses differed according to schools, classes and gender.

In the first of the schools in different districts, the difference between the students' desire for each other was found to be significant (χ^2 (sd = 2, n = 134) = 6.50, p <.05.). In the second school, the difference between students' desire for each other was found to be significant (χ^2 (sd = 2, n = 858) = 17.34, p <.05.). However, in the third school, this difference was not significant (χ^2 (sd = 2, n = 196) = 4.63, p <.05.).

When the grade variable was examined, it was found that the difference between the acceptance levels of the students in the ninth grade was not significant (χ^2 (sd = 2, n = 473) = 4.41, $p < .05$).

When the tenth grade was examined, it was found that the difference between students' acceptance levels was significant (χ^2 (sd = 2, n = 250) = 26.02, $p < .05$).

When the eleventh grade was examined, it was found that the difference between the levels of acceptance of each other was not significant (χ^2 (sd = 2, n = 389) = .764, $p < .05$).

When the gender is examined, it is seen that the percentage of sighted female and male students, the female sighted students want visually impaired students more than male sighted students (χ^2 (sd = 2, n = 527) = 19.2, $p < .05$).

Discussion

It is seen that visually impaired students prefer sighted students mostly for need help, for example; sitting together and studying together. Visually impaired students preferred visually impaired students more than sighted students for spending time together mostly.

Sighted students, in the preference section, showed ignore behavior for visually impaired student substantially. On the other hand, sighted students that preferred visually impaired students, were students who were not popular in the classroom or were left alone. The sighted students did not prefer visually impaired students in non-preference section substantially.

The small size of the class made them aware of each other. According to this, it is seen that students know each other better and establish friendship relationships in the classrooms which are less available. It is thought that the low level of friendship relations in crowded classrooms is due to the inadequate preparation by the teachers and that the communication of the students with their peers with their peers is not supported sufficiently.

According to the results, it is seen that the students with visual impairment have a more positive attitude towards sighted friends, but the sighted students have a more negative or indifferent attitude towards the visually impaired students.