International Council for Education and Re/habilitation of People with Visual Impairment



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The 10th ICEVI European Conference in Padova, Italy. Registration is Open!

The 10th ICEVI European Conference in Padova, Italy.

"Supporting children and young adults with visual impairment:

What can we do? What can be done?"



Registration is now open for the **tenth ICEVI European Conference**, which will be held in **Padua (Italy) from 15 to 17 May 2025**!

This international Conference is **jointly organised by ICEVI-Europe and the Robert Hollman Foundation**, thanks to the support of the Municipality of Padua and the University of Padua, and the patronage of the Veneto Region, the Padua Hospital Trust and Ulss6 Euganea.

It will bring together **more than 300 professionals** from all over the world, institutions and associations from across Europe, and will focus on how, through a multidisciplinary and a person-centred approach, holistic support can enhance the quality of life for blind or visually impaired children and young adults.

The Conference will be opened in the ancient Aula Magna of Palazzo Bo, founded in 1222 and where figures such as Galileo Galilei and Nicolaus Copernicus taught and studied, and will continue at various iconic locations throughout Padua, reflecting the city's rich culture and history.

Over three intense days, plenary and parallel sessions, workshops and networking opportunities will alternate.

Two **keynote speakers** will set the stage for the Conference, offering insightful presentations on the current state and future perspectives, both nationally and internationally, on supporting children and young adults with visual impairments. Thirteen distinguished speakers will then open parallel sessions focused on **four key**

areas of interest: individual development and assessment; education and learning; habilitation and rehabilitation; access, participation, and engagement in society. With **230 contributions received**, the presentations by Conference participants will provide valuable opportunities to share knowledge, experiences and professional practices.

Additionally, **four workshops** on Braille & Digital Literacies, Tactile Books, Cerebral Visual Impairment and Physical Activity will enrich the participants' experience with hands-on activities.

The "Key Principles", results of the Conference

During the Conference, a document on **"Key principles for supporting children and young adults with visual impairment"** will be shared. The aim of the document is to provide a common framework for European professionals and a set of fundamental principles underlying the work of all those who engage with children and young adults with visual impairments, both in educational and clinical settings. The document was drafted by a multidisciplinary team of European experts in the field of visual impairment and, through a co-participatory process, involved hundreds of professionals in its definition.

Individualized intervention programs, a multidisciplinary approach, collaboration between professionals and caregivers, and the enhancement of the individual child's and young adult's strengths have inspired the document, as they represent essential



elements for promoting a positive attitude within families and care environments, fostering development, well-being, independence, and self-confidence.

The Conference will therefore be the occasion to launch a broad dissemination of the document at European level, to raise awareness among policymakers on the adoption of these "Key Principles" in national and European guidelines of Centres and Institutions working in the field of visual impairment, and to promote the cross-sectional application of these principles in the educational and clinical practice of professionals.

An inclusive framework: the Padova SensoriAbile Days

On the occasion of the ICEVI-European Conference, it was decided to create **an extensive inclusive environment**, to further contribute to a greater understanding of visual impairment and promoting social acceptance, especially through the positivity of relationships. Therefore, an additional event will enrich the Conference framework: the **"Padova SensoriAbile Days" which will take place from May 10 to 18**, promoted and organized by the Robert Hollman Foundation, Uici (Italian Blind Union) Padua section, Municipality of Padua, University of Padua, and Aniomap (National Association of Orientation, Mobility, and Personal Autonomy Instructors). The inspiration for these Days comes from the experience of **the experimental project "SensoriAbile anch'io"**, which throughout 2024, provided experiential training to the operators of twelve public and private citizen services in the city of Padua.

In May 2025, a widespread calendar of activities will be proposed in various locations across Padua and shared by dozens of social organizations that will offer events, exhibitions, workshops, meetings and enriching experiences, accessible to all, with or without visual impairments.

There will be, for example, inclusive readings, guided tours of the main historical sites from a multisensory perspective, a dinner in the dark, a baseball game for everyone... and the **multisensory exhibition "Stories on the Fingers. Trees",** designed by the National Federation of Institutions for the Blind, and displayed in collaboration with the Robert Hollman Foundation and the Department of Culture of the Municipality of Padua. The exhibition will be open from May 12 to 18 at the balconies of the San Gaetano Cultural Center, which will also host the final plenary session of the ICEVI-Europe Conference on Saturday, May 17.

The 10th ICEVI-Europe Conference combined with the Padova SensoriAbile Days represent an important example of social innovation, as the planned multisensory and inclusive experiences will show a way to make concrete the objectives and contents developed by the international professionals gathered in Padova. In this way, we try to reach everyone: from professionals to institutions, from the world of education to families and caregivers, from children to adults, with or without visual impairments, to engage the entire civil community and demonstrate how inclusion can be achieved through relationships and encounters.

Registration:

Since places are limited, we encourage you to secure your spot and be part of this prestigious event, by registering as soon as possible.

- **Registration link :** <u>https://icevieurope2025-hollman.it/registration/</u>
- Registration Deadline: February 28, 2025



Subject to availability of places after the deadline, late registration at an increased fee will remain open until April 30, 2025.

For more information, please visit the conference website: <u>https://icevieurope2025-</u> hollman.it/ or contact us directly at lc@lccongressi.it. We look forward to welcoming you to Padova!

Insights

For further information on the Conference: www.icevieurope2025-hollman.it PadovaSensoriAbile: www.padovasensoriabile.it ICEVI-Europe: www.icevi-europe.org Robert Hollman Foundation: www.fondazioneroberthollman.it



World Recognition from ICEVI for Prof. Vladimir Radoulov from Bulgaria

Mira Tzvetkova-Arsova

Margarita Tomova

Between 14-17 November 2024 in the city of Ahmedabad in India the ICEVI World Conference took place. It gathered together 450 participants from 62 countries around the globe.

During the World Conference Prof. Dsc. Vladimir Radoulov from Bulgaria was awarded a prize for his life-long contribution in creating equal opportunities for the education and inclusion of children and students with vision impairments in Europe and in Bulgaria.

Prof. Vladimir Radoulov has spent over 30 years of his professional career teaching at the Sofia University, Saint Kliment Ohridski, in the field of the education of students with vision impairments. He designed many university courses and wrote many of the key textbooks in this field in Bulgaria. To date, he is the author of over 300 publications in the field of education of students with vision impairments in Bulgarian and in other languages. He has been invited as a guest lecturer at universities in many countries including Belgium, Turkey, Serbia, Northern Macedonia and Ukraine. Before joining Sofia University, he was the vice president of the Union of the Blind in Bulgaria.



He is the pioner of integrated education for vision impaired students in Bulgaria, a development he started in 1984.

In 1992 he founded the Bulgarian Association for the Education of Visually Impaired Children and chaired it until 2024. This NGO has been very active over the years on a national level and has participated in many national and international projects.

Prof. Vladimir Radoulov has been an active member of ICEVI since 1972. Over the years he has been a member of the board of ICEVI-Europe and between 2000-2005 was the vice president of ICEVI-Europe. He has attended almost all of the ICEVI European and World conferences held since 1972. In 2019 under he coordinated the latest ICEVI Balkan conference which was held in Sofia, Bulgaria.

His whole career has been dedicated to the education and rehabilitation of people with vision impairment in Bulgaria, the Balkans and in Europe. In recognition of his dedicated work he was also awarded the highest award of Sofia University in 2018.



Photo: Prof. Radoulov receiving his award during the ICEVI World conference in India.



Announcement of ICEVI European Awards 2025



The Board of ICEVI-Europe is proudly maintaining the tradition of presenting an award to individuals or organizations that have made a significant improvement in the quality of life of people with visual impairment.

Two awards will be given at the upcoming General Assembly of the Association, **one award to an Individual and one award to**

an Organization. Recipients of the awards are individuals or organizations of recognized prestige in the field of education and re/habilitation of people with visual impairment. The intention of the awards is to recognize the work of those individuals or organizations whose contributions, efforts, research, best practices, innovation or cooperation have had an impact in Europe in the field of visual impairment. ICEVI Europe Members, National Representatives and Board Members are kindly invited to submit to the Awards Committee nominees who they feel meet the following criteria:

- 1. Awards Nominees must be or must have been active in the field of Visual Impairment.
- 2. There will be two areas in which awards may be made: Past Experience and Innovation.
- 3. Only Individuals and Organizations within Europe will be considered for awards. Complete the nomination form though this Google form

https://forms.gle/J2hsP6s6vveWy8LK7 link by March 22nd 2025, the deadline for Submission of Nominations.

We look forward to receiving your nominations! Sincerely,

The ICEVI-Europe Awards Committee



A Bulgarian national project: "Exploring 3D Technologies to Support the Learning Process and Lives of the Visually Impaired"

Exploring 3D Technologies to Support the Learning Process and Lives of the Visually Impaired"

> By Margarita Tomova and Mira Tzvetkova-Arsova

A collaborative national project between the **Institute of Information and Communication Technologies at the Bulgarian Academy of Sciences (BAS)** and **Sofia University Saint Kliment Ohridski (Bulgaria), Faculty of Educational Studies and the Arts, Department of Special Education** funded by the **National Science Fund** under the **'COMPETITION FOR FINANCIAL SUPPORT FOR BASIC RESEARCH PROJECTS'** started in early 2025 and will last for the next 3 years.



NUMBER OF STREET

ИНСТИТУТ ПО ИНФОРМАЦИОННИ И КОМУНИКАЦИОННИ ТЕХНОЛОГИИ

The project delves into the potential of 3D technologies to enhance the educational experience and quality of life of individuals with vision impairments. By integrating research in special and inclusive education with advancements in 3D printing, it seeks to address the unique challenges faced by those with vision impairment and provide solutions tailored to their needs.

The rapid development of 3D technologies has made them more accessible and affordable, opening new opportunities beyond traditional industrial applications. This project leverages these advancements to create practical, tactile tools that vision impaired individuals can use in their education, cultural engagement, and daily activities. By focusing on the design, production, and evaluation of 3D printed objects, the research aims to identify optimal features and best practices for their effective use.



The project will involve a collaborative effort between the Institute of Information and Communication Technologies at BAS and Sofia University Saint Kliment Ohridski, Faculty of Educational Studies and the Arts, Department of Special Education. These organizations will bring together experts in technology, education, and accessibility to achieve the project's objectives.

A range of 3D objects will be produced including:

- educational materials
- art-oriented items, culturally significant artifacts, and models of public buildings and architectural landmarks
- household devices
- leisure time materials

Particular attention will be given to designing objects that accommodate the specific tactile perceptions of visually impaired users. Each object will be meticulously tested by individuals with vision impairments to gather insights into their preferences and assess the practical benefits of these 3D materials.

Objectives and Activities: The project's primary objective is to explore how 3D technologies can support the learning process and improve the daily lives of individuals with vision impairment. To achieve this, the following activities are planned:

1.Development of 3D Printed Objects:

- A range of objects will be designed and produced to serve different purposes, including supporting education, art, cultural heritage, leisure time and everyday activities.
- Special emphasis will be placed on optimizing the tactile properties of objects considering factors such as materials, size, texture and resistance.

2. Testing and Feedback Collection:

- The 3D printed objects will be tested with vision impaired individuals to evaluate their usability and effectiveness.
- Feedback will be gathered on various aspects, such as the preferred size, material, and surface texture, as well as the inclusion of braille captions where needed.

3. Creation of a Database and Repository:

- A comprehensive database of 3D models and their specifications will be developed to guide future production efforts.
- This database will be accessible through the project website, offering open access to researchers, educators, and practitioners.



Impact and Significance: Through this research, the project aims to provide actionable recommendations and establish guidelines for the effective use of 3D technologies in supporting vision impaired individuals. The findings will contribute to the creation of tactile, user-friendly tools that can be seamlessly integrated into educational programs and everyday life.

In addition, the project will promote inclusivity and accessibility by offering open access to its findings and resources. The dedicated website will serve as a hub for sharing knowledge, featuring a library of optimized 3D materials and models designed to meet the needs of visually impaired users. By making these resources widely available, the initiative seeks to empower educators, researchers, and practitioners to further explore and expand the applications of 3D technologies in this field.

Ultimately, this project aspires to make a meaningful difference in the lives of visually impaired individuals by enhancing their access to education, culture, and independent living. By combining cutting-edge technology with a deep understanding of their needs, it seeks to pave the way for a more inclusive and supportive future.



Photo of some of the project participants.

Meeting the Specific Needs of Children who are Deafblind in the Veljko Ramadanovic School for the Visually Impaired in (Zemun) Belgrade

INTRODUCTION

Before my retirement, I taught English language, typing and Latin at the Veliko Ramadanovic School (VLS). I also started my education there over seventy years ago.

The school has a very long tradition in educating blind children. Today it is an inclusive education and resource centre. The School will be celebrating its 108th anniversary this year on December 13th.



The world of the Deafblind is still full of challenges for professionals working in this field and contributions to the body of knowledge supporting the education of Deafblind children are to be welcomed.

The text that follows is the story of some of the educational experiences of myself and my Deafblind school friend Milan Chucuranovicc. He was born in a village near the Town of Krushevac in Serbia. The story is presented in a qualitative descriptive style rather than a scientific one.

I have decided to share our experiences with the professional public in order to support the experts working in education of the deaf blind.

I first came to the school in Zemun when I was four years old. Milan joined the school when I was in the third year of my preschool period and I was involved with Milan until the fourth year of primary school. I was in a group of four pupils who shared a dormitory with Milan. I was in the bed next to his and I am going to describe the support we gave to Milan.

Everybody has heard of the achievements of the deafblind Soviet scientist Olga Skorohodov and Helen Keller. In terms of his achievements in education, Milan is a Serbian success on a par with them and I believe Milan could have been even more successful if the school had had enough financial resources to support his education further.

I visited Milan at home five years before he died and I was delighted to see how happy he was, he led a happy family life and was integrated into the community.

MILAN'S STORY

I wasn't the only school friend engaged in supporting Milan. There were four of us. I was nearly seven when we started our friendship. Milan was one or two years older. His only channels of communication were his palm and fingers. I didn't know all the principles of finger signing, but I understood it enough to help him and make signs on his hand. I was the one who made most contacts with Milan.

For example, when he awoke at night, he'd made noises like BRR, BRR! This would wake me up and I would start communicating with him. First I'd show him the potty under his bed. He might give me the sign of refusal and then I'd offer him a bottle of water. If he refused that, we would go to the bathroom. These kinds of communication exchanges ran very quickly. Sometimes he would skip something, so we could go directly to what he wanted. I was, and I still am very proud of supporting Milan this way. Another task given to me by his teacher, Mr. Petar Vukas, was to take Milan to meals when the meal bell rang. Milan used to walk along the wooden rail around the playground. When I heard the meal bell, I would go to the rail and wait for Milan to come. I would offer him my arm, and we'd go to the dining room together. After Breakfast, I used to take Milan to his classroom where his teacher was waiting for him eagerly. Children got used to his way of communication. He answered many questions related to school subjects especially to the literature assignments. At school Milan learnt to read and write braille fluently and accurately. He could use tactile signing very proficiently. He could also read German in its written form. He learnt two vocational crafts: brush making and



basketry. He developed perfect hygiene habits and eating manners. He lived with his brother's family when not at school.

Milan's main teacher was Peter Vukas. Later on Peter became the principal of the school for blind physiotherapists in Belgrade. He taught me psychology and his wife taught me history and geography. Peter kept an interest in my progress until I started my studies of English in the Town of Skopje, the capital of the Northern Macedonia.

Five years ago I met the secretary of local organization of the blind in the Town of Krushevac to arrange a visit to Milan. She organized it, and one afternoon we found ourselves in his garden. His brother and Milan's sister-inlaw were with us.

Milan met us with great pleasure. He was very pleased to see us. He seemed to recognise me. He was delighted with the braille book that I had brought him from the braille printing department.

I asked his brother to sit between me and Milan.

I discovered that Milan had lost his sight in very early childhood from encephalitis.

I started asking him questions and his sister in law told us "When I told him about your coming, he started cleaning his teeth, washing is hair, shaving and changing his clothes£.

I learnt that Milan's workshop was across a rather busy street. To cross the street, Milan would put his hand on a window. He could tell if there was traffic coming by feeling the vibrations in the glass.

I also learnt that he liked to drink an occasional glass of wine. He had once tried a bottle of rakija. He smelled it and drank a bit of it then he threw it to the ground, smashing the bottle to pieces. The message was clear!

He still liked reading braille books. Milan enjoyed living with his brother's family. He had balanced emotions and knew what he wanted.

I was deeply impressed. Sadly Milan is now dead and I am left to tell you his story.

Three deaf blind pupils started at the Veljko Ramadanovic school this school year. Our school decided to decided to ask for the helping hand of the institutions in Romania. A Romanian delegation made a three day visit to VRS during September 2024 which included a one day conference in Belgrade. The programme of the meeting is provided in the Appendix 2 below. I decided to share the story of Milan at the meeting.

Representatives from Romania included visitors from the Konstantin Putin School in Timisaora See Appendix 1 for details of the school.

This conference was useful to the both sides: The Romanians shared their experiences, while the VRS professionals received feedback on the latest results from their work with these children.

APPENDIX 1



The Konstantin Pufan Centre

Our story began in September 1992, when, on str. Odobescu no. 25 from Timişoara, children with hearing impairments from Timiş, Caraş-Severin, Arad counties come together to form two kindergarten groups and a first year class.

In September 1997, by the decision of the School Inspectorate of Timiş County, the primary and secondary education classes, together with the kindergarten for the hearing impaired, formed a new school unit under the name "School for the hearing impaired" with Mrs. Prof. Doina Ziegler.

Between September 1998 and April 2007, the director of the institution was Prof. Drăgan Gabriela – Liliana. During this period of time, the educational unit changed its name to "School with cls I-VIII Constantin Pufan" (September 1998), respectively the School Center for Inclusive Education "Constantin Pufan" (March 2007) the name kept by which it is currently known .

From April 2007 to September 2013, the director of the School Center was Prof. Pătruțescu Carmen.Mrs. Prof. Bălăngean Laura - Ionela is currently the director of the "Constantin Pufan" School Center for Inclusive Education, a position held since September 2013.

In recent years, our services have diversified, so that the beneficiaries of our school have also become students with associated disabilities and multiple sensory dimpairment, children with Down Syndrome, children within the the autistic spectrum, other developmental needs.

Currently, the school unit has a well-developed material base, with a young and enthusiastic team of teaching staff with competences in education in the education, compensation and therapy of hearing impairment and multiple sensory impairments, as well as in the education and therapy of students with autism, learning difficulties, Down syndrome, and other complex needs.

The competencies of the multidisciplinary team of teachers and therapists cover services for early intervention, auditory perceptual education, psychodiagnosis, speech therapy, cognitive stimulation, occupational therapy, psychomotor therapy, physical therapy, play therapy, art therapy, school and professional guidance and family counseling.

The auxiliary teaching and non-teaching staff consis of social assistants, education instructors, night supervisors, medical staff, secretary, a financial and patrimony administrator, kitchen and maintenance worker and carers. The staff are centered on the children, getting involved with great care and affection in their education and welfare.

The center has classrooms equipped with video projectors, interactive whiteboards and computers suitable for the instructional-educational and recovery process. The specific therapy offices are equipped with interactive whiteboards, computers and educational software specific to several types of disabilities.

In the school unit there are spaces for pre-professional activities, a computer network, a gym, a recreational room, a physical therapy room, polysensory room, parents' counseling room, dining room, bedrooms for boys and girls and a playground and sports field.



The enrichment of the material base was made possible through the help of different sponsors from abroad and financial resources from the state budget through the Timiş County Council. The "Constantin Pufan" School Center for Inclusive Education is an inexhaustible source for inclusive education through the material base at its disposal, through the professionalism of the team of teachers and through the management anchored to the needs of the community.

APPENDIX 2

"Support Without Limits" Round Table Program:

1. Opening speech - directors of both institutions

2. Lecturer: Gabriela Gianu, early intervention specialist, speech therapist at the Center for Inclusive Education "Konstantin Pufan", Timisoara, Romania

"Therapeutic and educational intervention for children with hearing and vision impairment and severe multiple disabilities"

3. Lecturer: Miruna Pletea, early intervention specialist, psychopedagogue at the Center for Inclusive Education "Konstantin Pufan", Timisoara, Romania

"Application of the TacPac method in children with multiple sensory impairments"

4. Lecturer: Ljiljana Mitrović Aranđelović, typhologist, psychomotor reeducator and PFV at the Veljko Ramadanovic School for the Visually Impaired

"Application of the Callier-Azusa scale in the assessment of deaf-blind and severely multiply-disabled children - analysis of the results

5. Lecturer: Danijela Korićanac, typhologist in the early intervention Departmentof Veljko Ramadanović School for the Visually Impaired

"The early intervention In Veljko Ramadanović school"

6. My lecture: Tihomir Nikolić, ,m.a. in English literature and English teacher in Veljko Ramadanovic School for the Visually impaired: My Experience with my Deafblind school friend Milan Chukuranovic.

An Orientation and Mobility Instructor Course for Individuals with Blindness or Visual Impairment: post-graduate training course for an international audience in English

By Beáta Prónay, Judit Gombás Dr., Ágnes Somorjai

ELTE Bárczi Gusztáv Faculty of Special Needs Education (Budapest) is starting a 2semester, post-graduate course for Orientation and Mobility instructors of individuals with blindness or vision impairment in September 2025. The course consists of a theoretical module delivered online, and practical face to face training in Budapest.



A short survey showed that over sixteen institutions in different European countries were interested in an O&M training due to the lack of qualified professionals in their own regions. Across Europe there are very few instructor training institutions and training opportunities in this field.

The aim of the programme is to prepare professionals to teach indoor and outdoor orientation and mobility skills to adolescents and adults with blindness or visual impairment.

Study areas include: the causes and incidence of visual impairment; the assessment and development of functional vision; the priciples amd practice of optical rehabilitation and understanding the psychological effects of visual impairment (whether congenital or acquired later in life). Basic knowledge of the principles of equal access is also essential. As a facilitator, the professional must be aware of the role of the specialist, the social processes affecting individuals with blindness or visual impairment, and the legal frameworks, including the principles and regulations prescribed in ratified international documents.

Practical instruction is carried out under blindfold, and is built on simulation. Study areas include sighted guide and cane techniques, and practice via teaching back. The course ends with practical placements and supervision, which both take place in students' home country. Students are expected to write a thesis based around a case study.

The training course is scheduled as follows:

Autumn semester:

Online lessons during September and November (8 X 5 lessons on Friday afternoon or Saturday morning),

On-site lessons in October from Friday to next Saturday (no lessons on Saturday afternoon and Sunday).

Spring semester:

Online lessons during February and April (5 X 5 lessons on Friday afternoon or Saturday morning),

On-site lessons in March from Friday to next Saturday (no lessons on Saturday afternoon and Sunday).

For further details, visit

https://barczi.elte.hu/content/orientation-and-mobility-instructor-for-individualswith-blindness-or-visual-impairment.t.3542

Should you have any questions, contact Dr. Judit Gombás at gombas.judit@barczi.elte.hu

Beáta Prónay, Judit Gombás Dr., Ágnes Somorjai



The Adaptation of Mathematics Textbooks into a Digital Form Suitable for Reading on a Braille Display

By Anja Ponikvar, Centre IRIS - Centre for Education, Rehabilitation, Inclusion and Counselling for the Blind and Partially Sighted, Slovenia

Providing adapted mathematics textbooks (and textbooks in general) for blind pupils is one of the fundamental conditions for supporting successful inclusion and ensuring opportunities for blind pupils that are comparable to those for sighted pupils.

In Slovenia, the Equalisation of Opportunities for Persons with Disabilities Act (2010) stipulates that blind pupils have the right to appropriate adaptations in school, which includes the adaptation of teaching materials. In Slovenia, schools lend teaching materials to pupils using the Textbook Fund. The Textbook Fund covers all school textbooks and workbooks for the first educational period and those that are adapted for pupils with special need (Rules on management of Textbook Funds, 2020). Only approved textbooks from the Catalogue of Approved Textbooks are covered by the Textbook Fund. The loan of these textbooks is free of charge. Adapted textbooks, along with tactile image attachments, are included in the COBISS - Cooperative Online Bibliographic System and Services. This allows for quick lending throughout Slovenia.

To ensure equal opportunities for all, selected textbooks are being adapted for blind pupils as well. The goal is for all textbooks and workbooks used by blind pupils to be adapted, which would place them on an equal footing with sighted pupils in this area. At the Centre IRIS - Centre for Education, Rehabilitation, Inclusion and Counselling for the Blind and Partially Sighted, we have, in accordance with legislation, systematized work protocols for adapting textbooks, learning materials and aids in line with the Order on Norms and Standards for Education of Children with Special Needs (2024).

Mathematics textbooks are adapted by a team of three experts. At least one of the team is a mathematics teacher, one is a designer with expertise in digital material design, and one is a tactile image designer. This ensures appropriate expertise is available for the proper adaptation of mathematics learning materials.

In Slovenia, we have unified the rules for the design of mathematical materials, which are in use in all schools where blind pupils are educated. Based on these unified rules, all external exams and school competitions that blind pupils in Slovenia take part in are also adapted. Experts from the Centre IRIS collaborate with the National Examination Centre and competition committees that prepare school competitions.

Adaptation of mathematics textbooks in digital form

Up to the 5th grade, pupils use textbooks adapted and printed in Braille for mathematics lessons. In the fifth grade, they gradually transition to textbooks adapted in digital format. From this grade onwards, they only use textbooks in digital format, which are adapted based on linear mathematical notation.

What is linear mathematical notation?



Linear mathematical notation, abbreviated as LMN*, is a notation where all mathematical notations, forms, expressions and symbols are written in linear form. This format allows reading on a Braille display. LMN has been in use in Slovenia since 2019. It is based on the LaTeX notation, but it is adapted to the Slovenian language and simplified to the extent that it enables blind pupils to follow lessons and the teacher's explanation more easily (Hribar, Jenčič, Knific and Ponikvar, 2019). The notations are designed according to simple rules, which pupils gradually build upon throughout their education.

The LMN rules are publicly available and published on the Centre IRIS website. The Centre IRIS provides annual training for teachers, introducing them to linear notation and the basic rules for formatting. This also enables teachers in mainstream schools who teach blind pupils to independently adapt materials for quizzes, exams, and worksheets in appropriate formats.

 \ast For better understanding, the abbreviation is translated into English. In Slovenia, the abbreviation LMZ is used.

What does a pupil need to work in class?

To access digital materials, a blind pupil needs the appropriate adaptive equipment eg:

- A computer (desktop or laptop)
- Screen reader
- Braille display

Blind pupils need to learn the skills of using adaptive technology independently during lessons. These skills are obtained through additional specialized support, which is provided by experts from the Centre IRIS.

How are textbooks adapted in digital format?

All adapted textbooks are based on approved textbooks. This means that the material must be obtained from publishers, and permission must be granted for adaptation into a form suitable for blind pupils. The adapted textbooks contain all the basic information about the original textbook and a note stating that the textbook has been adapted for blind pupils and the author of the adaptation.

The textbooks are adapted in a Word files, which enables good accessibility and easy navigation within the text. This format enables the pupils to solve mathematical tasks directly. The screen image and the screen reader also allow teachers to easily monitor the pupils' progress, guide them through the solving process, point out possible mistakes, monitor the speed of solving and the correctness of the pupils' writing.

The content of the mathematics textbook is adapted according to LMN rules to ensure the content of the original textbook is not interfered with, and is followed as closely as possible.

The design of the digital textbook is carried out according to the basic instructions, which enable the most independent and simple use of the adapted material:

- the text is left aligned,
- the characters used are defined in the code table for eight-point Braille,



- excess formatting is removed,
- capital letters are used for headings and emphasized words

(Professional support for teachers of visually impaired pupils in mainstream schools 2021).

To make it easier to follow the work in class, the page numbers of the original textbook are included in the adapted version. The page number is written first, followed by the adapted content that corresponds to the content on that page in the original textbook. For example: When the teacher instructs pupils to open the textbook to page 41, the blind pupil can use shortcut keys to navigate to the page with the tasks assigned by the teacher. After typing "Page 41", the cursor will move to the top of the content on page 41.

If there are tactile images in the adapted materials, they are marked in the text as, for example, "Tactile Image 41/1", where the first number refers to the page where the image is located, and the second number refers to the image's sequential number on that page. Tactile images are printed on microcapsule paper and designed for tactile exploration by blind pupils. Tactile images are available in a separate attachment to the digital textbook and are lent to pupils together with the textbook.

If there is a task in the textbook that is adapted in such a way that its solution procedure is different from the procedure for sighted pupils, this is recorded as "Adapter's Note".

The adapted textbooks are designed to provide the blind pupils with as much independence as possible. However, for effective use, it is important that the adapted materials are reviewed by all teachers and other professionals working with the blind pupil. This way they can tailor their explanation of the subject matter in the most inclusive manner for the blind pupil.

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Draw Along, a Learning Pathway to Teach Children who are Blind to Draw

Ans Withagen, Noortje Opsteegh, Brenda Zwijnenburg & Miranda Zwijgers

"Draw Along," developed by Royal Dutch Visio in collaboration with Bartiméus, is a structured learning path designed to teach blind children how to draw. Such a learning path was previously unavailable, meaning children were dependent on the support of a guide or teacher and/or the availability of drawing materials at school when it came to learning these skills.

Introduction

Education today is highly visual, filled with illustrations and images that are essential for understanding. Children who are blind can also be provided with tactile versions of key visuals. However, both in mainstream and special education, these images often present a challenge—many are simply too complex for them to interpret. At this point, children are expected to extract vital information, but this proves to be much harder than anticipated.

This challenge led to the creation of the 3D-2D learning pathway¹. Through this approach, blind students are taught to connect the 3D world around them with its 2D representations. During the development of this method, workshops revealed a crucial insight: the drawing skills of both blind children and adults were minimal. What became clear is that actively drawing an object—such as the outline of a hand—greatly enhances one's understanding of it. By creating the drawing themselves, students form a stronger connection and can better replicate what they've learned.

Furthermore, drawing strengthens concept development and self-expression. However, many blind students are not given the opportunity to experience drawing, often because their teachers may not know how to incorporate drawing or what tools to use.

This was the motivation to write an application to develop a learning pathway to teach blind children to draw.

Purpose of the Pathway

The project has two main objectives:

A. To systematically teach drawing skills, focusing on both technical and creative abilities. The Learning Pathway also aims to foster spatial understanding by helping blind children connect a drawing to the physical object it represents.

B. To equip children with new means of expression. This not only brings satisfaction to the children themselves but also offers valuable insights to VI teachers and others working with them. By observing how the children depict various objects, teachers

¹ The Learning Pathway 3D-2D was earlier developed int the Netherlands by Royal Dutch Visio in collaboration with Bartiméus. You can find information about this project on <u>1. Welkom en introductie - eduVIP</u>



gain a deeper understanding of the students' conceptual thinking. For example, how do children interpret a tree? How do they draw a large oak tree, especially when they can't see or explore it from root to crown? Or how do they represent a car?

In essence, this Learning Pathway provides children with the skills and tools to share their unique experiences, allowing us a glimpse into their world.

Multimodal Learning &the Basic Set

One of the core principles of the project is recognizing that every child learns in their own unique way and has a preferred learning style. For instance, one child may absorb information best through hearing (such as through a rhyme or song), another through touch (by feeling or exploring an example), and yet another through large motor movements (experiencing the lesson with their entire body).

New information is most effectively processed and retained when it engages multiple senses and channels. This approach, known as 'multimodal learning,' works because it activates different parts of the brain, resulting in better and longer-lasting memory. This principle guided the development of the Basic Set, where new concepts like lines are taught through a variety of methods: verbal support (songs, rhymes), tactile exploration, auditory cues, and movement repetition.

The Basic Set forms the foundation (as the word itself suggests) of the entire learning pathway

Based on the analysis, eight basic lines and three fundamental shapes were selected, which can be used to draw any image in the surrounding world (see Figure 1). This creates a visual language that children can independently apply in their drawings, making them recognizable both visually and non-visually.



Figure 1 Analysis of the lines & Shapes + Lines in Basic set.



With these lines and shapes (and their combinations), the visual world can be represented and discussed with the student, but the student can also transfer their tactile or auditory experiences onto paper. These lines can depict a house as we see it visually, and they can also represent a house as perceived through touch. By combining these lines and shapes, students can form any letter of the alphabet and even learn to write their own name. For a blind student, drawings are created by making movements on a material, leaving a tangible line behind. We considered it essential to focus on this process when teaching the lines—not the visual aspect, but the movement used to create each line. When discussing these lines and shapes together—one based on sight, the other based on touch—an equal conversation can emerge. These lines and shapes are revisited in lessons across different levels and drawing areas.

Level structure lesson set

The learning pathway has a build-up in difficulty. It is connected to the 3D-2D Learning Pathway and distinguishes between the same three different levels, namely:

- Preparatory level: age indication 4-7 years.
- Initial level: age indication 7-10 years.
- Advanced level: age indication from 11 years

Within each level lessons are structured around five key drawing areas:

- 1 Lines and shapes
- 2 Techniques/tools
- 3 Spatial concepts and distribution
- 4 Drawing and Copying
- 5 Human figure

In the setup we work according to the following principles:

- From discovery and experience (experimentation) to more concrete implementation (targeted application).
- We work from gross to fine motor tasks
- In the Learning Pathway, we move from a concrete to a more abstract level
- The tasks and drawings are initially simple and gradually build in difficulty.

Where are we now?

All the lessons have been written out and materials boxes have been developed with specific materials. All VI schools in the Netherlands have the material box with set lessons and the first findings are very positive. The students are very enthusiastic, which you can see in the work and drawings here at the bottom of the article.

All information about Draw Along will soon be on <u>https://www.eduvip.nl/onderwerp/themas/</u> in both Dutch and English. There you will find all the lessons and download files.

Are you curious about this Learning Path?



Then attend a workshop on <u>https://icevieurope2025-hollman.it/welcome/</u> or <u>Home |</u> <u>Tactile Reading & Graphics 2025</u>. Our project tgroup will be giving presentations on both conferences.

Want more information? Please send an email to <u>Answithagen@visio.org</u>











NewWorkTech

IBOS - The Danish Institute for Visual Impairment is a partner in an ambitious new international research project.

NewWorkTech (From the Margins to the Masses: Standard Practices and Innovative Uses of Technology in Augmenting Different Abilities of People in Worklife) is a Horizon-Europe funded project that engages in the research-based enhancement of the work-related capacities of a) people with disabilities and b) the general workforce, with particular focus on technologically mediated tasks and interaction. The project covers the entire arc of development, from empirical research into how people with disabilities – as forerunners of technology use – perform tasks and interact at work, to theoretical innovation regarding the nature of socio-material factors, as well as what constitutes technology, to policy recommendations, and to the development of new technological solutions, including AI-based technologies.

We consider people with disabilities to be experts in using technical systems to improve their work performance, and through an analysis of a variety of user case studies, will identify elements of successful use, as well as the barriers to interaction or the performance of tasks.

People with disabilities will be engaged in NewWorkTech in line with the principle "nothing about us without us". NGO partners will be actively involved as facilitators in the empirical research and as drivers of application and dissemination. Through our own technological development efforts, attention to the ethical use of technologies, and the dissemination of the knowledge we generate, the results will feed into improved usage methods and functionality of work-related technologies, as well as knowledge about the requisite skills. The smart use of technology thus achieved will help create employment opportunities for people with disabilities, improving their quality of life and reducing inequalities while also helping alleviate the current shortage of labour in Europe, and opening possibilities for more efficient and creative use of technology by everyone, whether they have physical or cognitive limitations or not.

Objectives

The main objectives of the NewWorkTech project are to:

Generate new empirical knowledge of work practices, the related technology usages, and work-related skills by people with disabilities and functional limitations.

Identify improvements to the design and usage of existing and future assistive technologies on the basis of accurate, directly observed first-hand knowledge of user needs.

Widen the perspective through the identification of new opportunities and skills for using assistive technologies and the consequent dissemination of technologies and usage methods to wider user groups among the general population.

Provide new/revised theoretical modelling of technology and human-technology interaction, and a new methodological approach to the empirical study of work practices.

Partners



The project is led by Tampere University (Finland), and is implemented together with nine other universities and organisations:

European Platform for Rehabilitation (EPR) (Belgium)

The University of Oulu (Finland)

The University of Copenhagen (Denmark)

The University of Warwick (UK)

The National Research Council of Italy (Italy)

Autism Foundation Finland (Finland)

The Italian Down Syndrome Association (Italy)

Be My Eyes (Denmark)

IBOS - The Danish Institute for Visual Impairment (Denmark)

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Read more about the project (link): <u>EU project wins major grant to improve</u> <u>accessibility in workplaces | EPR</u>

Using Tactile Images to Understand 3D-Subjects

By Dorine in 't Veld 31-1-2025

With still only 5 months to work before I retire, I feel an urge to tell you about the importance of orthogonal projection in teaching blind students: a method to explain quite precisely to blind students what 3D-subjects look like, how they work, what position they have in space. The principles are simple enough: you create a top view, a front view and a side view, always under a right angle, without perspective. Perspective deforms angles and lengths of lines and thus makes it impossible for the fingers to perceive the correct shape of an object.

While explaining or exploring a tactile image with orthogonal projection, imagine that the object is in front of you. Add hand movements as if you are actually exploring the 3D-object from the front, from above, from the side(s). It is easy to understand that this method both **respects touch** and **trains spatial thinking**. It uses one's own body and position as a point of reference, which is essential when you work with people who are blind.

A description alone hardly ever allows a blind person to build a correct and precise mental representation of an object. Supporting or illustrating the description with a well-designed tactile image however, does. For well trained 'readers' it often makes 3D models redundant, and Hey: that's practical! Good 3D models are not always at hand or easy to obtain!

It is not a new method. In the years 1980-2000 a lot of research was done. In 1996 a LEGO-kit was developed and tested at several schools for the VI. It proved that even VI children with mild cognitive disabilities could learn to 'read' these images



(that always have an accompanying explanation). The kit is still available through: <u>https://ldqr.org/catalogue/des-dessin-pour-construire/</u>. It has accompanying explanations in English and French.

Why was orthogonal projection not universally or enthusiastically embraced? Is it in the name? Orthogonal = at a right angle, projection = 'depicted flatly', like a photo, slide, or drawing. Should we reconsider the terminology? Or is it because it is not intuitive for sighted persons? Indeed you have to learn and practise it, like you have to learn and practise reading text or a new language, but it opens up worlds of possibilities to gain and enjoy knowledge and understanding.

Both at the ICEVI-congress in Padua and at the Tactile Reading Congress in Amsterdam you can learn a lot about this method. There is opportunity to learn, discuss and experience tactile images with orthogonal projection – and even to join groups of interested professionals working together to further develop the terminology, use and availability. I hope to meet you there!

Dorine in 't Veld, Product manager Tactile Reading, Dedicon, The Netherlands

The Tacticos Project: Developing Tactile Books to Empower Children with Visual Impairments



The Tacticos project, a three-year Erasmus+ initiative, has reached significant milestones in advancing tactile reading for children with visual impairments (VI). This project aims to bridge the gap between sighted and visually impaired children by creating comprehensive guidelines for producing tactile books and graphics. These resources are designed to support educators, printing houses, publishers, parents, and professionals working with children aged 1-12, ensuring that VI students can experience the same educational opportunities as their sighted peers.

This year, the Tacticos project completed its core objective: the development of the **"Guidelines for Tactile Books and Tactile Graphics for Children with Visual Impairment, Age 1-12 Years."** These guidelines serve as an essential resource for anyone involved in creating or using tactile books, offering practical strategies for designing tactile illustrations and understanding the pedagogy behind tactile learning. The guidelines emphasize the importance of tactile books in promoting literacy, concept development, and social connection through joint reading activities with carers and peers.

One of the project's key innovations is the creation of two tactile books that explore the concept of climate change. These books not only introduce environmental education but also demonstrate how tactile images can convey complex concepts to VI students. The first book, *A Long Journey*, is designed for younger children (4-7 years old) and provides an accessible introduction to climate change. The story



focuses on interconnected themes like friendship, courage, hope and what we all can do to keep nature beautiful.

The second book, Roundy, is aimed at older children (9-12 years old) and delves deeper into the topic while at the same time demonstrating to professionals, parents and designers how tactile graphics can be used to give VI children access to knowledge about the world around them. Not only concepts connected to climate change, but also concepts like different types of tactile graphics and how to read them are explained.

The process of designing these books involved close collaboration between experts from various fields, including education, printing, accessibility, and design, as well as feedback from children who tested the books. This collaborative approach ensures that the books are not only engaging but also cost-effective, making tactile learning more accessible to a wider audience.

These two example books serve as models for how tactile images and accompanying explanations can be used to build mental representations and explain abstract concepts. They demonstrate the power of tactile graphics in helping children understand complex topics, fostering creativity and imagination, and offering a new, inclusive way of learning.

The Tacticos project will continue to refine and expand on these guidelines and resources through the end of 2025, helping to shape the future of tactile literacy and education for children with visual impairments. By promoting the use of tactile books, we hope to empower children with the skills and knowledge they need to thrive academically and socially, ensuring they have equal access to information and educational opportunities.

For more information about the Tacticos project and the guidelines, please visit our website www.tacticos.eu. Together, we can continue to make strides in providing inclusive education for all children, regardless of visual ability.

Partners in the project are:







Contact: aukjesnijders@visio.org

Together for Braille – A Model and Roadmap for Effective Braille Programs, A National Danish Collaboration Project

A National Danish Collaboration Project

At the end of 2024 Synscenter Refsnæs (the Danish National Resource and Knowledge Center for Children and Youth with Visual Impairment and Blindness) and DTHS (the Danish Speech, Hearing and Vision Institutions) concluded the one-year national collaboration project Together for Braille.



Background and Purpose

The project was initiated in response to a directive from the Danish Authority of Social Services and Housing announced in September 2022, which expressed concern about insufficient coordination and collaboration regarding highly specialized Braille interventions for children and youth throughout the country.

The Danish Ministry of Children and Education funded the project. The project scope was to identify and describe exemplary programs, and to pinpoint the necessary organization, coordination, and collaboration that is required in Braille learning initiatives aimed at children and young people who require Braille interventions.

Organization, Method and Data

The project has been structured with a steering group, an advisory group, and a validation group. Members of these groups include professionals with regulatory and advisory responsibilities in the social and disability sector, as well as representatives from relevant user organizations. The groups have contributed by supporting, validating, qualifying, and peer-reviewing the project's outputs while ensuring its geographical and institutional scope and relevance for practice.

The project's data are based on qualitative interviews with municipal and regional vision consultants, teachers, educators, pedagogical-psychological advisory (PPR) staff, parents, and young people who have experienced well-functioning Braille learning programs.

The project is theoretically grounded in research from comparable countries.

Outcomes

The Project culminated in the publication of the guide *Model, køreplan og handlingsanvisende vejledning til det gode punktskriftsforløb for børn og unge med alvorlig synsnedsættelse, herunder blindhed, 0-17 år* (Together for Braille: Model, Roadmap, and Actionable Guidelines for Effective Braille Programs).

This guide is aimed at parents, leadership and professionals in daycare facilities and schools as well as caseworkers, Educational-Psychological Advisory Services (PPR), and other key authorities involved in Braille programs for the target group.

The purpose of the guide is to outline the relevant and necessary organization, coordination, collaboration and interventions required for exemplary Braille learning programs for children and young people aged 0-17 years. These exemplary interventions are in the guide visualized in a roadmap that a municipality can follow nationwide, independent of the child's/youth's municipality of residence or school placement.

Together for Braille has been published in both print and an accessible digital version, both of which can be ordered free of charge at Synscenter Refsnæs: <u>www.synref.dk</u>.

For further information on the project, please contact

Berit Houmølle

Head of school and special counselling, Synsnter Refsnæs (the Danish National Resource and Knowledge Center for Children and Youth with Visual Impairment and Blindness)



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Sammen om punktskrift

Model, køreplan og handlingsanvisende vejledning til det gode punktskriftforløb for børn og unge med synsnedsættelse herunder blindhed 0-17 år

Book Announcement: All Children Play

Authors: Ans van Eijden, Ellen van den Broek & Paula Sterkenburg

Playing together with your child is fun. You have fun, you enjoy being together, there is interaction. From the very beginning you have contact with your child. Touching, looking, 'talking' and making sounds creates a 'question-and-answer game', a subtle interaction: your child makes a sound, you respond by imitating the sound. Your child



feels confirmed by this: what I do is fun, they see me, they understand me. Your child also responds to you; looks at you, listens, laughs, makes movements that make you feel affirmed too.

This is how the attachment, the emotional bond between your child and yourself grows; the basis for further development. If your child has a visual impairment, the interaction between you and your child, the playful contact, can be less obvious in the beginning. This book provides all kinds of tips with which you can join in your child's game and make it even more fun.

In English: https://bartimeus.nl/alle-publicaties/all-children-play

In Dutch: https://bartimeus.nl/alle-publicaties/spelen-natuurlijk

In German: https://bartimeus.nl/alle-publicaties/buch-spielen-naturlich

The book can be ordered or can be downloaded without charge.

19th Biennial CVRS Conference - Join Us in Zagreb!

https://cvrs2025.org/

The **19th Biennial Meeting of the Child Vision Research Society (CVRS)** will take place from **July 7th to 9th, 2025, in Zagreb, Croatia**.

The **Child Vision Research Society (CVRS)** is an international society of researchers dedicated to understanding vision development in infancy and early childhood. Every two years, CVRS organizes a **scientific meeting** to facilitate the exchange of new ideas and findings between basic scientists and clinicians working in this field.

This year's conference, **"ENGAGED SCIENCE IN CHILD VISION RESEARCH,"** will provide a unique platform for interdisciplinary collaboration across **ophthalmology**, **neurology**, **psychology**, **pediatrics**, **education**, **rehabilitation**, **and related fields**. Participants will have the opportunity to present research through oral presentations and posters, engaging in discussions on innovative approaches to vision science and visual impairment.

Whether you are a returning participant or joining for the first time, we welcome **all researchers, clinicians, and professionals interested in vision and child development** to contribute to and benefit from this engaging event.

- ◇ Abstract Submission Deadline: February 15th, 2025
- ◇ Early Bird Registration Deadline: March 1st, 2025

For more information on registration, abstract submission, and travel details, visit: https://cvrs2025.org/