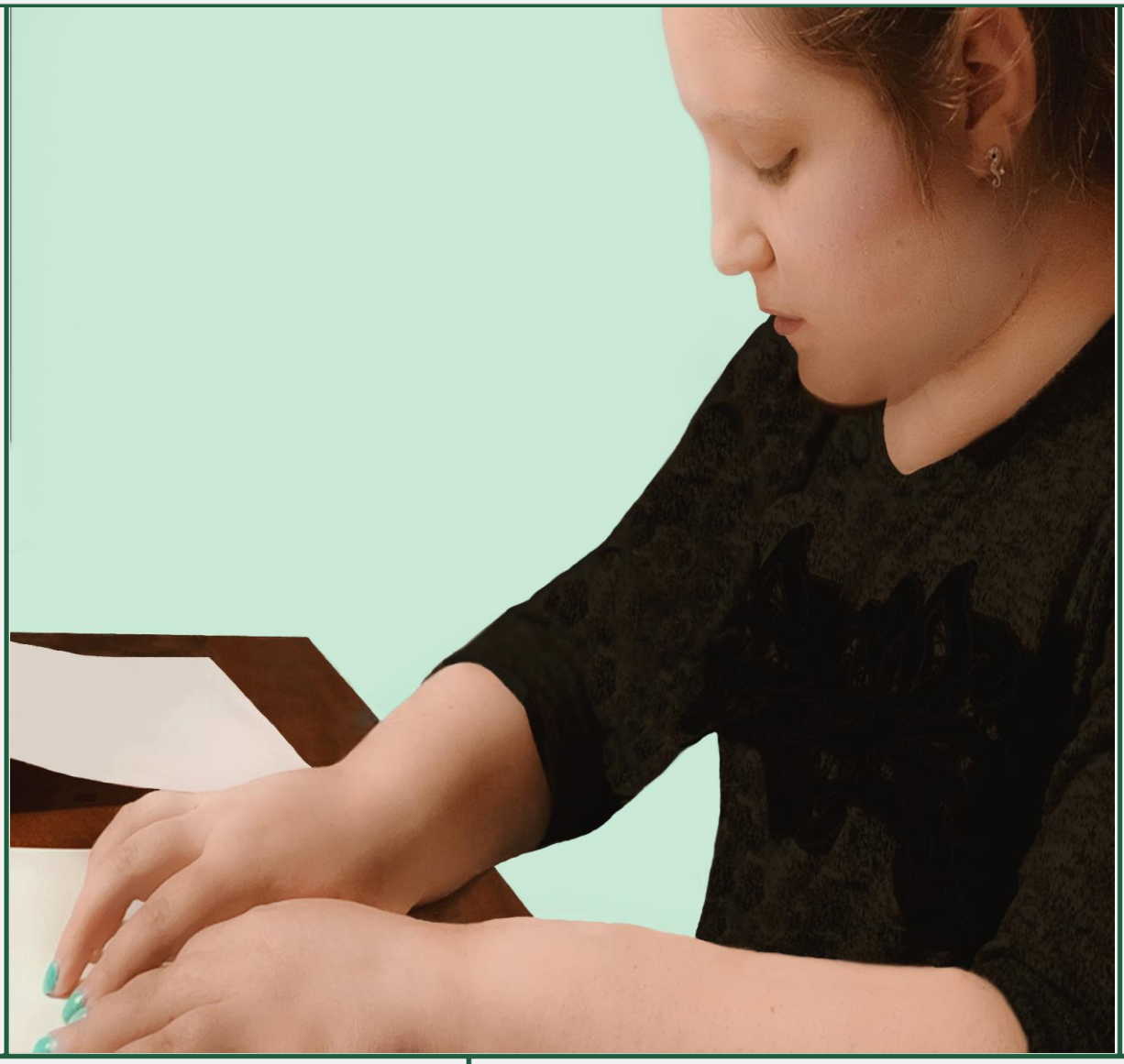
The Educator

Braille Literacy

Volume 39– Issue 1 – January 2025



A Publication of

ICEVI
INTERNATIONAL COUNCIL FOR EDUCATION OF PEOPLE WITH VISUAL IMPAIRMENT

International Partners

ONCE

OVERBROOK SCHOOL FOR THE BLIND

Sightsavers

RNIB
See differently

The Educator Volume 39, Issue 1, January 2025

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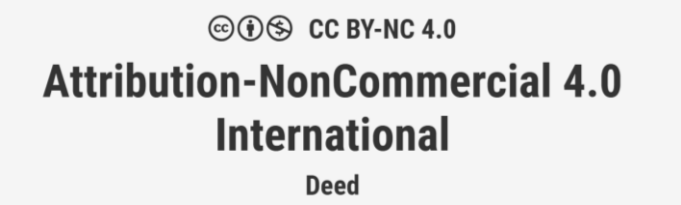

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Image on the front cover: Child seated at a table reading braille. With permission.

Contents

The Educator Volume 39, Issue 1, January 2025 2

About ICEVI and The Educator 5

President's Message 6

Editor's Message 8

Celebrating 200 Years of Braille 10

World Braille Day, 4th January 2025 – Dr Praveena Sukhraj-Ely 10

Braille 200 Years Later – Modern, Beautiful and Still Practical – Martine Able-Williamson 11

Perspectives of Braille Users and Parents 13

Perspectives: An introduction - Susan LaVenture 13

Braille Writing and Me: A Life Story – Komivi AYASSOU 14

Braille Literacy: My Life with Braille – Gwen Isaac 15

My New Perspective on Life: Braille Experience – Dr. Birendra Raj Pokharel 18

Braille Literacy: A Path to Equal Opportunity in Trinidad - Kenneth Suratt 23

Blind Parents and the Dilemma of Storytelling – Dr Judit Gombás 25

Embracing Braille Literacy: A Parent's Journey to Equal Access in Reading – Rob Harris 26

Resolution for Inclusion of Braille in the United Nations Educational, Scientific and Cultural Organization (UNESCO) List of Intangible Cultural Heritage 29

The International Council on English Braille: Celebrating 200 Years of Innovation – Dr Natalie Martiniello, CVRT 31

Braille200: European Blind Union Celebrates Braille on Each Day of 2025 – Dr Judit Gombás 33

Braille Research 33

Pedagogical Strategies that Support the Sustained Development of Braille Literacy in a Mainstream Classroom – Karen Croake 33

Braille, Publishing and Language Rights – Jodie Lea Martire 38

Assessing the Impact of Braille Literacy on Quality of Life for People with Blindness or Low Vision: A Protocol – Aasha Rose 40

Initial Literacy in Blind Children: Contributions to the Teaching of the Braille System in Argentina – Prof. Jimena Soledad Sajama 46

Technology 57

DAISY: Bridging Braille with Digital Information System – Dipendra Manocha 57

News from Around the World 58

Commitment and Innovation in the Application and Promotion of Braille in China – YANG Yang, LIU Liying, LI Jing, BAO Guohong, and WO Shuping 58

Braille Without Barriers: Unlocking Literacy with NextSense UEB Online – Frances Gentle and Trudy Smith 67

Breaking Barriers: How Accessible Books are Transforming Education for Blind Students in Ethiopia – Secretariat, WIPO Accessible Books Consortium 70

Educational and therapeutic programming for students with brain-based dual sensory impairment – Todd Reeves, JD/MS, Overbrook School for the Blind 74

News from Deafblind International (DbI) – Mirko Baur 76

Unlock Your Potential: Apply for a WBU Scholarship Today! – World Blind Union . 77

Improving Access to ICEVI Training Materials for Quality and Inclusive Education of People with Visual Impairment in Africa: A Partnership between CBM International and ICEVI Africa – Martin Kieti 78

Announcing ONCE “Much to See” campaign in Spain – Fernando Riaño Riaño 80

Invitation to Contribute to Future Issues 81

Themes and submission deadlines for upcoming issues 81

Submission Guidelines 81

Introducing the ICEVI Executive Board, 2025-2028 82

ICEVI Secretariat Contact details 83

About ICEVI and The Educator

The International Council for Education of People with Visual Impairment (ICEVI) is a global non-profit membership network committed to promoting inclusive, equitable, and high-quality education for individuals with visual impairment, including those with low vision, blindness, deafblindness, and multiple or additional disabilities.

Since 1952, ICEVI has been a leader in convening stakeholders worldwide, fostering collaboration, and driving meaningful change in the field of visual impairment.

ICEVI's flagship publication, *The Educator*, is a key platform for sharing insights, research, and advancements in the education of individuals with visual impairment. Published twice a year, *The Educator* is available for download from the ICEVI website: https://icevi.org/.

Acknowledgements

ICEVI acknowledges the contributions of the Editor and Editorial Committee:

Dr Frances Gentle (Editor)

Ms Gertrude Oforiwa Fefoame

Dr. Judit Gombás

Ms Susan LaVenture

Dr Shawn Piantoni

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Disclaimer

This publication features contributions from individuals worldwide, sharing their ideas, experiences, and practices. The views expressed are those of the authors and do not necessarily reflect ICEVI's stance. References to products, services, organisations, or individuals are for information only and not endorsements. Readers should use their own judgment when applying the information.

President's Message

Dear Readers,

ICEVI has a long and distinguished history of advocating for inclusive, equitable, and quality education for individuals with visual impairment, and I am committed to working closely with our dedicated members, partners, and stakeholders to advance this mission.

The General Assembly in Ahmedabad, Gujarat, India was held in conjunction with the highly successful ICEVI World Conference, a landmark event that brought together experts, educators, researchers, policymakers, and individuals with visual impairment from around the world. This gathering was made possible through the exceptional efforts of our hosts—the Blind People's Association and Sense International India—in collaboration with Dr. Babasaheb Ambedkar Open University (BAOU) in Ahmedabad. Their dedication, hard work, and hospitality created an enriching environment for knowledge sharing, collaboration, and strategic discussions on strengthening education for learners with visual impairment. On behalf of ICEVI, I extend my appreciation to the organisers and all those who contributed to making this event such a resounding success.

As we embark on the new quadrennium, we do so with a strong foundation built on the recommendations of the 2023 strategic review. This review provided us with valuable insights into the evolving challenges and opportunities in the field of education for individuals with visual impairment. It underscored the importance of fostering greater collaboration among governments, non-governmental organisations, academia, and the private sector to ensure that education systems worldwide become more inclusive and accessible.

Advocacy remains at the heart of ICEVI's work, and we will continue to engage with national, continental and international policymakers to influence education policies that uphold the rights of individuals with visual impairment. By aligning our efforts with global frameworks such as the United Nations' Convention on the Rights of Persons with Disabilities (CRPD) and the Sustainable Development Goals (SDGs), we will advocate for education systems that prioritise equity and inclusion.

Collaboration has always been a cornerstone of ICEVI's success, and I look forward to working closely with our members and partners. Together, we can amplify our collective impact and drive meaningful change in education for people with visual impairment. As we move forward, I invite all stakeholders to actively engage with ICEVI's initiatives, share best practices, and contribute to our shared vision of a world where every learner, regardless of visual disability, has access to quality education. Let us build on the momentum generated at the World Conference and

the General Assembly and translate our commitments into tangible actions that transform lives.

I am deeply honoured to serve as the President of ICEVI and excited about the journey ahead with the following elected Principal Officers:

- First Vice President: Ms. Susan Laventure
- Second Vice President: Mr. Akhil Paul
- Treasurer: Dr. Praveena Sukhraj-Ely
- Immediate Past President: Dr. Frances Gentle

I also take the opportunity to once again welcome Dr. Shawn Piantoni to the position of Secretary General.

With collaboration, dedication, and a shared commitment to inclusivity, we can make a lasting impact in the lives of individuals with visual impairment worldwide. I look forward to working with all of you as we strive to create a future where education is truly accessible to all.

In closing, I welcome you to our edition of The Educator with the theme: Braille Literacy.

Mrs Gertrude Oforiwa Fefoame

President.

Editor’s Message

Welcome to Volume 39, Issue 1 of *The Educator*, the flagship publication of the International Council for Education of People with Visual Impairment (ICEVI). This edition celebrates an extraordinary milestone—200 years of Braille. As we mark this bicentennial, we reflect on its profound impact on literacy, education, and independence for people with blindness, low vision and deafblindness worldwide.

The significance of Braille as a transformative tool for literacy cannot be overstated. Dr Praveena Sukhraj-Ely opens this issue by honouring World Braille Day, celebrated annually on 4th January, emphasising its role in raising awareness and advocating for equal access to information. Martine Abel-Williamson explores the evolution of Braille over two centuries, highlighting its continued relevance, beauty, and practicality in modern times.

Personal narratives provide powerful insights into Braille’s transformative role in individuals' lives. Susan LaVenture sets the stage with an insightful introduction to these narratives. Komivi Ayassou shares his life story shaped by Braille literacy, while Gwen Isaac reflects on how Braille has been integral to her education and career. Dr Birendra Raj Pokharel offers a moving account of how learning Braille changed his perspective on life, fostering independence and confidence, and Kenneth Suratt examines how Braille literacy can serve as a critical pathway to equal opportunity in Trinidad.

Beyond individual experiences, Braille fosters connection across generations and cultures. Dr Judit Gombás discusses the unique challenges blind parents face when storytelling to their children, while Rob Harris shares a parent's perspective on the journey to ensuring equal access to reading for their child. Another significant development is the ICEVI resolution advocating for Braille’s inclusion in the UNESCO List of Intangible Cultural Heritage, reinforcing the global significance of Braille and the need for its continued promotion.

As we celebrate this milestone, Dr Natalie Martiniello highlights the contributions of the International Council on English Braille (ICEB), which has played a key role in Braille’s ongoing innovation. Meanwhile, across Europe, *Braille200* celebrations of the European Blind Union will take place throughout the year, as outlined by Dr Judit Gombás, ensuring Braille’s legacy continues to inspire future generations.

The sustained development of Braille literacy in education is vital for future generations. This issue features research that examines effective pedagogical strategies in mainstream classrooms, presented by Karen Croake, while Jodie Lea Martire delves into the relationship between Braille, publishing, and language rights. Aasha Rose introduces an insightful research protocol assessing the impact of

Braille literacy on the quality of life for individuals with blindness or low vision. Meanwhile, Prof. Jimena Soledad Sajama provides a perspective from Argentina, contributing valuable insights into early Braille literacy and teaching methodologies.

Technological advancements continue to expand Braille's accessibility. Dipendra Manocha of the DAISY Consortium explores how technology bridges Braille with digital information systems, ensuring that individuals can seamlessly access information in an increasingly digital world.

Innovation and advocacy for Braille literacy continue to thrive globally. This issue brings you stories from China, where a commitment to Braille application and promotion is making a significant impact. In Australia, *NextSense UEB Online* is unlocking literacy for learners through accessible Braille instruction. The Secretariat of the WIPO Accessible Books Consortium highlights how accessible books are transforming education for blind students in Ethiopia, while Todd Reeves examines the intersection of education and therapeutic programming for students with brain-based dual sensory impairment.

Education and accessibility remain focal points. Todd Reeves of Overbrook School for the Blind (USA) discusses educational and therapeutic programming for students with brain-based dual sensory impairment. Further, this issue includes updates from Deafblind International (DbI), providing a perspective on their ongoing initiatives, and the World Blind Union (WBU) invites applicants to unlock their potential through WBU scholarships. Lastly, we highlight a vital partnership between CBM International and ICEVI Africa, focusing on improving access to training materials to ensure inclusive and quality education for individuals with visual impairment in Africa.

Additionally, we feature an article by Fernando Riaño Riaño, Director of Institutional Relations and Sustainability of the ONCE Social Group, announcing ONCE's *Much to See* campaign in Spain. This initiative highlights the importance of accessibility, inclusion, and awareness-raising efforts to enhance opportunities for individuals with visual impairment in Spain and beyond.

As we commemorate 200 years of Braille, we celebrate its enduring significance in literacy and empowerment. This milestone serves as a reminder of the progress made and the ongoing need to advocate for Braille accessibility and education. We extend our appreciation to all contributors for sharing their insights, experiences and research. We hope this edition of *The Educator* informs and inspires, reaffirming the importance of Braille in shaping an inclusive future for all.

Dr Frances Gentle, Editor.

CELEBRATING 200 YEARS OF BRAILLE

World Braille Day, 4th January 2025 – Dr Praveena Sukhraj-Ely

Principal Officer and Treasurer, International Council for Education of People with Visual Impairment (ICEVI)

[Transcript of speech delivered by Praveena on World Braille Day 2025]

On behalf of the ICEVI, I am proud to be a visually impaired person who uses braille extensively. On this 200th anniversary of the invention of the braille code, I want to reaffirm the significance of braille in empowering blind people. I was fortunate to have learned how to read and write braille at a time when there was no or minimal assistive technology, accessible textbooks or writing devices available to blind people in South Africa. My usage of braille acted as an enabler for me to obtain my Bachelor of Social Science degree, my Bachelor of Law degree, my master's degree in political science Cum Laude and my Doctorate on Inclusive Education.

As ICEVI, we are concerned that in many countries across the world, children with visual impairment are not given the opportunity to learn how to read and write using the medium of braille. Braille is imperative for the foundations of literacy, sentence construction, and spelling. STEM subjects in many countries are not offered or taught to blind children because educators are not experienced and do not have the knowledge on how to teach these subjects to children with visual impairment using braille. This severely limits the visually impaired child's development, progress in education, employment opportunities, and their overall social, emotional, and cultural well-being and development. This in turn limits them from being included in various spheres of life and therefore leaves many children with visual impairment, children with visual impairment and multiple disabilities and children with deafblindness far behind.

As we celebrate World Braille Day, I cannot but appreciate the inventor of Braille, Louis Braille, who was a visually impaired person himself. For the central role braille has played in my life through school, through my tertiary education at university, as I advanced in my career as an advocate in The High Court of South Africa, and to the point of being a senior manager in the presidency in the Country, and most importantly, as I present this tribute to you on World Braille Day. We appreciate the fact that the world is evolving technologically. But we must be cognizant of the fact that technology is not always affordable or accessible to many countries and to many blind people across the world. Further, it must be stressed that technology and innovation is of great importance; however, it should not be used to substitute, but should be used to supplement and complement braille, and not be used as a

replacement thereof. The ICEVI strongly encourages all countries to promote and implement the teaching, learning, usage, and access of Braille. For visually impaired people to enhance their empowerment, equity, equality, and overall inclusion. Thank you.

Dr Praveena Sukhraj-Ely's talk is available on YouTube: https://www.youtube.com/watch?v=xM8B7OSqXlw

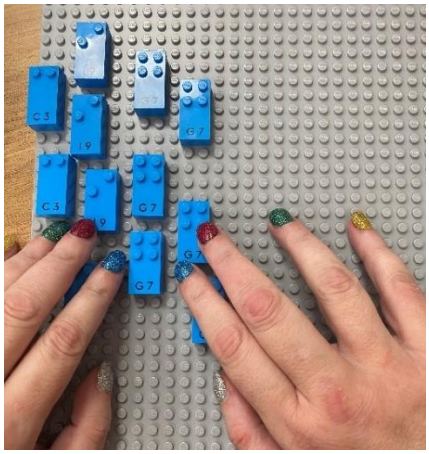
Braille 200 Years Later – Modern, Beautiful and Still Practical – Martine Able-Williamson

President, World Blind Union

On 16 and 17 January this year, an Australian and New Zealand delegation had the honour of starting training to become Braille Bricks Ambassadors. This opportunity was sponsored and facilitated by the Lego Foundation, who guides and trains people from all over the world so that those ambassadors can then teach blind, low vision and Deafblind children Braille in a fun way.

I and many others are of the opinion that older students, as well as adults could benefit from starting their Braille learning journey in this fun and dynamic way – who amongst us do not remember something better if we experience and get to know something through play? I participated in this course so that I, in my role as World Blind Union (WBU) president, can promote colleagues internationally to become involved in these kinds of projects. The WBU represents the approximate 253 million blind persons world-wide, facilitating capacity building, advocacy efforts and sharing of information to empower blind people to live the lives they choose.

It shows a figurine at the top of a steep slope. In the ambassador course we were asked to build, using a small number of Lego bricks, something that personifies ourselves in the moment in time. To me what I built shows that, after reaching certain points in my life, I now need to venture into the unknown, thus I experienced some struggles along the way, and it is now time to jump, having faith that I can deal with what lies ahead.



Martine Able-Williamson's two hands are resting on a Lego board and braille Lego tiles.

But back to Braille: apart from the possibility of learning it in a fun and modern way, Braille keeps up with the times, in that one can find it on clothing and also jewellery. The fact that Braille is also now a “wearable art”, proves to us the beauty of Braille. Braille can help us to store fond memories whilst remaining practical. And, receiving gifts with Braille on, or giving those, still remains a lovely surprise. The WBU had coasters made to honour its 40th anniversary, as well as celebrating the existence of Braille for 2 centuries.

Martine is holding a glass coaster with both hands. The coaster has the following words on it in Braille: 40 years with WBU, Braille 200.

Martine is holding a pottery cup in both hands. The cup is blue in colour and has the following braille embossed Haiku:

“Liquid meadow sweet

lives the mellow evening tones

sips soothing to sleep”.

Isn’t it amazing that Braille was invented by a blind teenage student, who did not experience education in what we’ll today call a healthy and inclusive environment? Hopefully this could set a great example to blind teenagers today to encourage them to let their imagination flow, and not to ever think they’re not clever or “grown-up” enough to change the world.

Haiku honouring Braille:
Liberating code
Tactile gift expanding world
The dots connecting

PERSPECTIVES OF BRAILLE USERS AND PARENTS

Perspectives: An introduction - Susan LaVenture

President, the International Association of Parents of Children with Visual Impairments, (IAPVI)

We are very excited that ICEVI recognizes the significant voice of parents and families of children with visual impairments. The Educator has designated space in each issue for “Parents’ Perspectives”, for us to express our opinions and stories. In this issue we are focusing on Braille Literacy. We have several articles written by Braille users and parents sharing their life stories of struggles and successes from different perspectives that others can relate to. We know their stories will be of great encouragement and we hope you can share them with your friends and community. The diverse stories depicted range from a Blind mother of a sighted child and how

she creatively found ways and resources to read with her son; a sighted father's journey raising his blind child and ensuring she had equal access in reading; an amazing story of a man who became blind when he was a young adult and how he courageously adjusted to being blind and grasping to learn Braille to keep his independence; and a blind woman sharing about her life with Braille with a wealth of practical tips and available resources.

All these stories are inspirational, and we hope they encourage you.

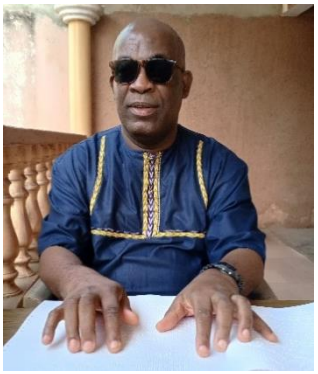
The reality is that in the world there are not always Braille resources readily available, or specialized teachers of visually impaired students who can instruct the learning of Braille, or schools that can provide these services.

One story I would like to share is about a very proactive mother living in the Caribbean Region who was able to advocate for her blind daughter to be one of the first blind children to be included in a mainstream school setting. This is a victory. Unfortunately, the implementation of accessible educational services and provision of appropriate instruction in Braille by a teacher of visually impaired students and Braille books for her daughter to practice reading is lacking, and as a result, it has been a struggle for the school personnel, the mother and the child. Sadly, there are many similar stories around the world of visually impaired children not receiving adequate accommodations that enable an accessible education. There is more work and knowledge sharing that needs to be done. As stated in ICEVI's values, we aim towards the "Provision of accessible educational materials, enhanced technology, and teaching methods and programs that are of a high standard and conform to the best practices." Together, let us continue to share our knowledge, resources and stories, as some of our authors who are Braille users and Parents have shared in this issue to encourage Braille Literacy.

Braille Writing and Me: A Life Story – Komivi AYASSOU

President, ICEVI Africa
Email germayass@gmail.com

As the international community continues to celebrate 200 years of Braille, I join millions of blind and partially sighted people around the world in expressing my gratitude and paying tribute to Louis Braille, its inventor.



Indeed, losing one's sight is often synonymous with losing hope for both the person concerned and his family. This was also the case for me. I lost my sight in the prime of my life in my first year of high school. Neither my family nor I knew that a blind person could have access to education. For my mother and my brothers and sisters, since I was orphaned by

my father at a very young age, the only way out was to have my sight restored, which never came after several attempts.

My first contact with Braille writing was through a specialist teacher who made me touch a paper written in Braille. I was totally confused because I wondered if it was really a writing that could be read and written because it looked like grains of sand on a paper. Where are the lines? Where are the letters? Where does the sentence begin and where does it end? So many questions in me.

The fear of the unknown gradually dissipated and I decided to go to the school for the blind where this teacher came from, the first school for the blind in Togo against my mother's wishes. There, at the boarding school during the first week of the school year, the young blind friends introduced me to the alphabet on the graph. I assimilated it very quickly and the training continued in class. It was 1989. I was very passionate about it and I spent hours and hours in the library reading books. I ended up forgetting that I could not see because I have the ability to read as when I could see.

Thanks to this writing, I was able to be in school with sighted people and get my master's degree in law at the university and have a job in the civil service. Today, I am head of the division for the promotion of disabled people at the Togolese Ministry of Social Action, Solidarity and the Promotion of Women. Braille allowed me to regain my dignity, my autonomy to the point where one of my brothers once declared "thanks to Braille writing, our blind brother holds the stick for us sighted people to lead us". Louis Braille gave back light to the multitude of blind people including myself. Even if I currently use computers in my profession, Braille writing and I, it's a life story. I will never abandon it and I will always defend its promotion.

Louis Braille, be happy in the abode of the living dead.

Braille Literacy: My Life with Braille – Gwen Isaac

Braille user and member of Blind Citizens Australia

Braille is the most revolutionary method of reading and writing for people who are blind. Invented by the Frenchman Louis Braille over 200 years ago it is used in most countries with codes in many languages.

I shall now demonstrate how Braille has enhanced my life and the importance of teaching Braille to children who are blind. All children who were born blind at the time of my birth learned Braille.

My Braille lessons began in kindergarten when my teacher produced a box of plastic Braille letters which one joined together to form words. This was a tedious task but I succeeded after much effort from me and cajoling from my teacher. I attempted the hand frame and stylus but I found that awkward writing the letters back to front.

In Grade 1, I started using the Perkins Brailler. This amazing machine with only six keys could write the alphabet, punctuation marks, numbers and music. I started with the alphabet, learning the letters by heart – A dot 1, B dots 1 2 and so on till I learned all the letters using the six keys. I could then write simple words and sentences and read children's stories.

I learned the numbers using the numeral sign and A for 1, B for 2, A J for ten and so on. Once I learned the numbers and the mathematical signs, I could do all the maths operations, work with fractions and do geometry, logarithms and algebra in high school.

Braille occupies much space on a page; therefore, contractions were developed. There were many rules to learn when using Braille contractions such as only use the "ea" contraction in the middle of a word and not to put two lower contractions together. There were abbreviated words such as child, shall, this, which and him among others. Braille readers must learn everything twice – to learn to spell every word in full as well as using contractions and abbreviations. Once I mastered all the contractions, I could read more difficult books and write more complex sentences and stories.

Learning music was the next big step. I began my piano playing, learning scales, exercises and simple pieces by ear, listening to my teacher and playing after her. Then I was introduced to Braille music. A blind person can't play and read music at the same time. One must read the music, remember and play. In Braille music, D is C a quaver, E is D with I for note A and J for note B. I learned these notes as crotchets, minims and semi breves. I also learned octave signs, finger signs and key and time signatures. The challenge was to read both hands, remember them and put them together and play as the composer intended. Later in my music theory I learned to write simple melodies and rhythms.

I was integrated into a mainstream high school where neither my teachers nor my school friends knew Braille, therefore, I learned to type my work to present to my teachers. My textbooks were transcribed into Braille, and I used my Perkins Brailler in class sometimes. Learning French meant writing uncontracted Braille and the challenge was not to use contractions in their language except for the accents such as the grave and circumflex which used the English Braille contractions.

On leaving school I used Braille to read novels, magazines and recipes. I have been around the world and through history reading novels and have read interesting and controversial articles in magazines.

I have enjoyed many games in Braille such as Snakes and Ladders, Scrabble, dominoes and cards. In Snakes & Ladders the instructions, boards, dice and markers were all in Braille and I could play that game independently. The Scrabble board and letters were all in Braille and I fit letters together on the board to make

words. Any card game can be played using the standard pack of playing cards. We played Monopoly at home and we Brailled the money for easy identification.

There are other pieces of equipment which have been made into Braille such as watches, rulers, tape measures, egg timers, Dymo labelling machines and coloured tags to sew on clothing, all of which have given me more independence. With my Dymo labelling machine, I labelled toothbrushes, bottles of cream, cassettes and CD's.

When I started working, I had my extension list for the switchboard transcribed into Braille. I put Braille Dymo labels over the original list to make changes. I put Braille Dymo labels on the card files of the careers counsellors in the reception area where I worked which enabled me to place the correct card in the correct file.

The most recent change to my Braille life is the coming of Unified English Braille. All the Braille authorities around the English-speaking world have come together to devise one Braille code both for unity throughout the English-speaking world and to be as near as possible to print. This is aimed at making production cheaper and quicker. I have had to learn again some of my Braille because some of the traditional contractions have been abolished and many new signs have been added to be similar to print.

Children who are blind are now integrated into mainstream education at primary level, but I think they still need to learn to read and write Braille. Reading and writing teach the child to spell correctly, to use punctuation and stimulate the imagination. Through reading, one can create characters and story settings in the head rather than listening or watching where everything is put in front of them. Even as adults, many prefer reading over listening to audio for the same reasons.

Braille has enhanced my life in many ways – challenging me through learning reading, writing, Mathematics and music. Braille has given me pleasure through reading novels and magazines and writing my creative works. Braille has given me independence with watches, Dymo labelers and coloured tags for clothing and Braille has given me fun through playing Braille games.

My hope is for more young people who are blind to learn Braille and for more skilled adults to teach them, for Braille to remain relevant and continue being used well into the future.

My New Perspective on Life: Braille Experience – Dr. Birendra Raj Pokharel

ICEVI Regional President, West Asia

Email Birendra.abilis@gmail.com

I never thought I would have to learn to read again. At 26, I had already built a life filled with written words—books, text messages and handwritten notes. But when optic atrophy caused my sightlessness, all of that disappeared in an instant. The familiar black letters on a white page were now unreachable, leaving me in a world where communication in visual cues felt foreign and inaccessible.

My Experiences with Intimidation and Frustration

At first, the frustration was overwhelming. I would instinctively attempt to grab my books, panic and realize I couldn't see the letters. Handwritten notes sat unread, facial conversations moved on without me, and the independence I once took for granted seemed to slip away. The thought of not relying on the script designed for the sighted individual felt both intimidating and frustrating. I had always been quick to adapt to new technology and script, but this wasn't just another piece of tech—it was a lifeline.

The Words That Changed Everything, when Khagendra Bahadur Shrestha, my family doctor advised to generate enthusiasm for coping with blindness due to bilateral optic atrophy and learning Braille as a path to new achievements. During one of my follow up visits, he sat across from me, listening to my struggles. I had expected a new solution for bringing my eyesight back, with a few comforting words, but instead, he offered something more valuable—a challenge. "You still have a full life ahead of you," he said gently but firmly. "Losing your sight doesn't mean losing your ability to learn, to grow, or to achieve. Technology is advancing every day, and Braille is more than just a tool—it's your gateway back to independence. It won't be easy, but if you're willing to take the first step, you'll see how much you can still accomplish". I left that appointment feeling conflicted. A part of me wanted to reject the idea—Braille? Technology for the blind? It felt like admitting defeat, like embracing a world I wasn't ready for. But another part of me, the one that had always thrived on challenges, couldn't ignore his words.

Transforming Frustration into Enthusiasm

My Frustration transferred into Determination when my first introduction to Braille script was met when I visited Nepal Association for the Welfare of the Blind, Mr. Homnath Aryal introduced me Braille slate and the stylus. The embossed papers in front of me felt like an alien object, its tiny dots shifting under my fingers in a pattern I couldn't yet understand. "You'll get used to it," he said. But at that moment, it felt impossible. My fingers, once so capable, struggled to distinguish the subtle patterns.

Reading was no longer an effortless act but a slow, deliberate process that tested my patience. I wanted to quit more times than I could count. Every time I misread a word or struggled to type a simple sentence, the frustration threatened to take over. But my doctor's words echoed in my mind—"if you're willing to take the first step..." I had taken that step, and I couldn't turn back now.

Braille Technology Became My Bridge

With persistence, something remarkable happened. The once random dots began to form words, then sentences. My fingers, once clumsy, started recognizing patterns with increasing ease. Then came the moment I'll never forget—the first time I sent a text message using my Braille display. It was a simple "Hello", but to me, it was a victory. Slowly, technology became my bridge to the world I thought I had lost. With screen readers, Braille displays, and assistive software, I could read books again, send emails, and even navigate the internet. The world was still there, it had just transformed, waiting for me to discover it in a new way.

What once felt like an impossible challenge became a journey of resilience, where frustration gave way to empowerment. I wasn't just learning Braille; I was reclaiming my independence. My journey with Braille and accessible technology is far from over, but one thing is clear, I am no longer afraid of the darkness. I am learning to navigate it, one dot at a time.

Understanding the Concept of Braille

Braille is a tactile system of reading and writing the script that uses raised dots arranged in a grid of 6 positions (2 columns and 3 rows). Each combination of dots represents a letter, number, or punctuation mark. To begin, the individual should be introduced to the basic concept of Braille, so they can appreciate its structure and design.

After becoming familiar with the letters, numbers (1 9) are introduced in a similar manner, along with punctuation marks. In Braille, numbers are represented by the first ten letters of the alphabet, with the number symbol used to distinguish them.

Like any new skill, consistent practice is essential when learning Braille. Starting with small goals (e.g., mastering a few letters at a time) and gradually expanding to words and sentences can help build confidence. Frequent practice, especially reading and writing short Braille passages, allows the learner to internalize the Braille system. In the beginning, the focus should be on becoming comfortable with the Braille system, rather than speed. With consistent practice, fluency will naturally develop, and reading speed will increase.

It's important to be patient and to celebrate small milestones along the way. This helps individuals feel more confident and motivated to continue learning Braille.

My experience of Braille learning

Being an adventitious Blind person, I experienced that someone with acquired blindness, learning both Levels will require time, patience, and practice. The learning process can be broken down into several manageable steps.

I began with the uncontracted Braille alphabet (A Z). Each letter in Level 1 Braille corresponds to a unique combination of raised dots, and I needed to practice identifying and remembering these. I needed to adjust to using my sense of touch instead of visual character alphabets. It was essential for Building tactile sensitivity through Braille flashcards, tactile games, and other tools which helped me to learn Braille quickly.

Initially, I focused on recognizing the Braille characters (dots) and writing simple words and sentences using the Braille alphabet in English language. Along with the alphabet, I learned gradually the numbers and punctuation marks in Braille that allowed me to read and write numbers and basic punctuation.

My ability of reading and writing level 1 (uncontracted) braille allowed me to progress to Level 2 Braille. It is obvious that the individual once is comfortable with uncontracted Braille, they can begin learning contracted Braille. This typically involves learning contractions for common words (like "the," "and", "for," etc.) and letter combinations.

I found level 2 (contracted) braille is more complex than Level 1, because the contracted Braille introduces rules for combining dots to represent words or syllables. Learning requires more effort and memorization.

Braille Learning by Person with Adventitious Blindness

A person with adventitious blindness (blindness acquired later in life) may face some unique challenges when learning Braille, though it's definitely achievable. The degree of difficulty can vary depending on individual factors such as the age at which the person became blind, prior literacy skills, and the availability of appropriate support and resources. My experience with Braille embraced me learning some potential challenges that most of the adventitious Blind persons might face, that include the following.

Loss of Visual Memory

Since adventitious blindness typically occurs after a person has had visual experiences, they may have difficulty adjusting to the tactile nature of Braille. Reading by touch is fundamentally different from reading by sight, and the person may need time to adjust to relying on the sense of touch alone. They may also have a strong visual memory of letters and words, which could initially make it difficult to adapt to the tactile alphabet.

Muscle Memory and Sensitivity

Braille requires fine motor skills and a high level of tactile sensitivity. People who lose their sight later in life might not have developed the necessary sensitivity in their fingertips to distinguish the small, raised dots. Developing this sense of touch takes time, and those with adventitious blindness might initially struggle with learning the correct finger movements and dot recognition. Simple exercises such as feeling various textures or using tactile games can improve fingertip sensitivity, which is crucial for distinguishing the small, raised dots of Braille.

Learning how to position the fingers correctly is key. Braille is read by moving one's fingers across the dots in a pattern, often with the index fingers of both hands. Training exercises can involve feeling the differences between dot patterns and identifying them.

Orientation and Cognitive Transition

Braille characters are arranged in a grid of cells, and the individual must learn to orient themselves to the position of each character within a word. This can be a challenge, especially if they previously relied on visual cues for organization and orientation in text.

For someone who has been able to read and write visually, the switch to a fully tactile form of literacy can involve a significant cognitive transition. This includes shifting from a fast, visual mode of reading to a slower tactile mode, which may feel less efficient at first. However, with practice, many people find they can read Braille fluently and quickly.

Motivation and Confidence

Depending on the person's mental and emotional adjustment to blindness, they might face psychological barriers to learning Braille. If they feel a sense of loss or frustration over their blindness, they might struggle with motivation to learn new skills. On the other hand, some individuals might be highly motivated to learn Braille as part of their journey to maintain independence.

Age Related Factors

Older individuals might experience difficulties with fine motor control, tactile sensitivity, and learning new skills. However, with proper instruction and practice, many older individuals successfully learn Braille.

Access to Resources and Instruction

The availability of appropriate Braille instruction is crucial. Skilled teachers, technology, and tools can make a significant difference. If these resources are limited, the learning process might be more challenging.

Patience and Consistency

Regular practice and repetition are essential in building tactile sensitivity and muscle memory. Like any new skill, consistent practice is essential when learning Braille. Starting with small goals (e.g., mastering a few letters at a time) and gradually expanding to words and sentences can help build confidence. Frequent practice, especially reading and writing short Braille passages, allows the learner to internalize the Braille system.

Support Systems

Working with a trained Braille instructor or using technology like Braille E-readers or learning apps can help speed up the process. A trained Braille instructor, preferably one experienced with teaching individuals with acquired visual impairments, can offer structured lessons to teach Braille. Instruction should be tailored to the individual's needs, and lessons should progress slowly from basic to more complex Braille skills.

Adaptive Strategies

In some cases, individuals might benefit from a combination of strategies, such as pairing Braille learning with auditory support. For example, an audio recording could describe how to feel a particular Braille character, helping the learner connect tactile experience with auditory reinforcement. Regularly engaging in both reading and writing Braille reinforces learning. Writing Braille with tools like a Perkins brailler or a slate and stylus helps the learner connect the process of writing with the process of reading Braille.

For someone who has acquired blindness, combining tactile learning with audio (such as Braille books or audio guides) can aid comprehension and retention.

Fluency over Speed and Building Confidence

In the beginning, the focus should be on becoming comfortable with the Braille system, rather than speed. With consistent practice, fluency will naturally develop, and reading speed will increase. It's important to be patient and to celebrate small milestones along the way. This helps individuals feel more confident and motivated to continue learning Braille.

Gradual Transition from Visual Literacy to Tactile Literacy

For individuals who previously read print text, it may help to create a bridge between their former visual literacy skills and Braille. For example, they could start with large print materials (if they still have some usable vision) and slowly transition to tactile materials. Some people even use a combination of both visual aids and Braille, particularly if they have partial vision.

For a person with acquired visual impairment, understanding and learning Braille requires patience, practice, and the use of tactile techniques that reinforce their motor and sensory skills. Support from instructors, technology, and Braille resources are all critical elements to the learning process. Over time, many people adapt successfully and gain greater independence through the use of Braille.

Conclusion

Being ready to learn Braille, I generated patience, dedication, and a positive mindset. It helped me to develop strong tactile sensitivity with fingertips. Additionally, having a structured learning approach applying technology through self-study material, I am embraced with assistive technology, has developed my enthusiasm, motivation and consistent engagement in education. Most importantly, embracing my journey with curiosity and perseverance has made learning Braille an enriching and rewarding experience.

Finally, learning Braille with the support of accessible technology has been a transformative journey, empowering me to overcome the challenges of visual impairment. This experience has not only enriched my education but also opened doors to global networking, allowing me to connect, communicate, and thrive in an increasingly digital world. Through perseverance and the right tools, I have gained independence and confidence, proving that barriers can be turned into opportunities for growth and success.

Braille Literacy: A Path to Equal Opportunity in Trinidad – Kenneth Suratt

Executive Officer, Trinidad and Tobago Blind Welfare Association

As a child, one of my greatest joys was reading books. For me, the magic of stories didn’t come from the printed words on a page, but from the voices of others reading aloud, weaving vibrant worlds of imagination and wonder. As a blind child, I discovered the world of books through sound, and it was through the spoken word that my love for stories truly blossomed. This passion, which only grew as I got older, would not have been possible without my early introduction to Braille. This tactile, touch-based system of reading empowered me, and countless other individuals who are blind or visually impaired, to access the same knowledge, education, and joy that sighted people experience through print.

In Trinidad, as in many parts of the world, Braille literacy is not just a tool for communication. It is a lifeline to independence, self-expression, and equal opportunity. For those of us who are blind, the ability to read and write in Braille opens doors that would otherwise remain closed. It opens doors to education, career opportunities, and full participation in society. In schools, Braille serves as the

cornerstone of learning, enabling students to study textbooks, complete assignments, and cultivate critical thinking skills.

Despite Braille's profound impact, its use has declined in recent years due to technological advancements. The days of learning Braille with slate and stylus or dedicating entire shelves to Braille books are fading. Today, while traditional Braille machines are still in use, refreshable Braille displays have emerged, allowing Braille to coexist seamlessly with modern technology. While accessibility challenges remain, efforts to improve the integration of Braille with technology are making significant strides.

One such effort is the Marrakesh Treaty, an international agreement that aims to level the playing field for blind, visually impaired, and print-disabled individuals across the globe. Under this international agreement, NALIS (National Library and Information System Authority) was designated as the “authorized entity,” empowering blind, visually impaired, and print-disabled individuals to access published works in accessible formats. Administered by the World Intellectual Property Organization (WIPO), the Marrakesh Treaty has created a global framework for better access to knowledge, and it’s having a profound impact right here in Trinidad and Tobago. Through a partnership initiated in September 2019 between NALIS and the Trinidad and Tobago Blind Welfare Association (TTBWA), efforts are underway to increase the availability of Braille and other accessible formats.

The Marrakesh Treaty aims to expand access to print materials in various formats, including Braille, large print, and specialized audio files. NALIS and TTBWA are playing pivotal roles in converting essential books and materials into these accessible formats, helping bridge the literacy gap for visually impaired individuals. But these efforts are about more than just providing access to books. They are about giving people the tools to unlock their potential, gain independence, and engage with the world on a deeper level. They are about ensuring that no one is left behind in the pursuit of knowledge.

At the heart of this movement is the idea that accessibility should be a right, not a privilege. The reality is that in many parts of the world, including Trinidad, the visually impaired community continues to face significant barriers in accessing educational materials, resources, and even everyday information. Imagine trying to navigate life without the ability to read a menu, follow a sign, or explore the world of literature at the same pace as everyone else. Braille opens up the world, allowing us to be not just passive recipients of information, but active participants in society, education, and culture.

Yet, it’s important to remember that Braille is not just about education and learning. It’s about personal growth, self-discovery, and the ability to fully participate in the cultural, social, and professional spheres. When we have access to the same

information, we have the opportunity to shape our own lives, pursue our passions, and contribute to society in meaningful ways. The ability to read and write in Braille is not just about overcoming limitations; it's about achieving equality and autonomy.

While we've made significant strides, there's much more to be done. The continued collaboration of organizations, individuals, and governments is crucial to ensuring that Braille, and other accessible formats, are available to everyone who needs them. It's not just about making things easier; it's about building a world where everyone can reach their full potential, and where literacy is not just a privilege for the few, but a universal right for all.

Blind Parents and the Dilemma of Storytelling – Dr Judit Gombás

ELTE Bárczi Gusztáv Faculty of Special Needs Education
Hungarian Federation for the Blind and Visually Impaired

I now think back with nostalgia to the years - and it wasn't actually so long ago - when I used to read storybooks to my little boy. For sighted parents, this is perhaps one of the easiest things to do together, as the shops are full of beautiful, colourful storybooks.

I am a blind mom. I was born with a severe visual impairment. I was still able to read print, when my teachers introduced braille to me. They assumed that my eyesight would deteriorate, which soon happened. Thanks to my teachers for their expertise, I learnt braille at an early enough age to become a fluent and avid braille reader.

Although as a child I saw very little, I have fantastic memories of reading books together with my parents and grandparents. I was sitting on their lap, they read the story, and described to me in detail all the pictures I could only in part see. I suppose, most blind parents have our fears and challenges. For me, to find a way for storytelling, was one of these challenges. But thanks to my childhood memories, I insisted on finding a solution so that my child could have similar memories with me.

I have always envied creative adults. Many parents with a visual impairment have exceptional imagination and are able to improvise stories.

So, there are those enviable, creative parents out there. Sadly, I am not one of them. In my work I often write factual, dry texts for the sole purpose of sharing knowledge. But there are no talking animals or superheroes on a World saving adventure.

I was the happiest and ever most grateful mom to learn, soon after his birth, that my son could most probably see perfectly. This raised another question: how could the two of us, the seeing baby and his blind mother, enjoy together picture books. So, I started surfing the internet. I found the solution here: https://www.seedlings.org/.

Seedlings is an NGO, based in the United States of America. Its aim is to provide people with blindness or visual impairment access to books in Braille at affordable prices.

This in itself would perhaps not make the initiative so exceptional. However, Seedlings sells a large number of colourful picture storybooks with text in print, and with the same text in Braille, glued to the print page on transparent film. Needless to say, I ordered a stack of books from them. The idea is very simple, yet great. From America, of course, we only had books written in English. We are a Hungarian speaking family, so the next step was searching for volunteers to make some Hungarian books accessible for us. I managed to get in touch with two brilliant students to be qualified teachers for VI. They not only transcribed the text but also glued one-word Braille captions right on the pictures with the same transparent film. So, I could confidently show the toddler where the sun or the cat was in the picture.

Since a braille character is much bigger than an average character in print, the amount of Braille text that fits a printed page is quite limited. When my son was old enough for longer stories, we had to say goodbye to the colourful Braille books and started borrowing books from the braille library of the Hungarian Federation of the Blind and Visually Impaired. In the shop of the Federation, we could also buy accessible (colourful and tactile) boardgames and card games, to provide me and my son fun free time activities.

As electronic solutions for providing blind people access to texts are gaining ground, a growing number of people all over the World doubt if learning braille is important or necessary. Of course, many of our daily tasks can indeed be carried out with technology. However, to me and my son, nothing but braille could give those unforgettable hours of getting to know books together.

Embracing Braille Literacy: A Parent’s Journey to Equal Access in Reading – Rob Harris

#AdvocateDad

Child’s hands reading a page of hard copy braille.

When my child was first diagnosed as blind, I worried about many things—but literacy was at the top of my list. How would they learn to read, take notes in class, or write a story of their own? I quickly discovered that braille wasn't just an option; it was a necessity. As a parent of a child who is blind, I have witnessed firsthand the transformative power of literacy. Reading is more than decoding words; it is a gateway to imagination, knowledge, and independence. For children like mine, braille is not just an alternative—it is a right. It is the key to ensuring they have the same opportunities to engage with literature, education, and the world around them as their sighted peers.

Why Braille Matters

Braille literacy is far more than a method of reading—it is a critical tool for success. Research consistently shows that children who learn braille early develop stronger literacy skills, better academic outcomes, and greater career opportunities. A study by the National Federation of the Blind found that over 80% of employed blind adults are braille readers, compared to only 33% of those who rely solely on audio tools. Literacy matters. Braille provides:

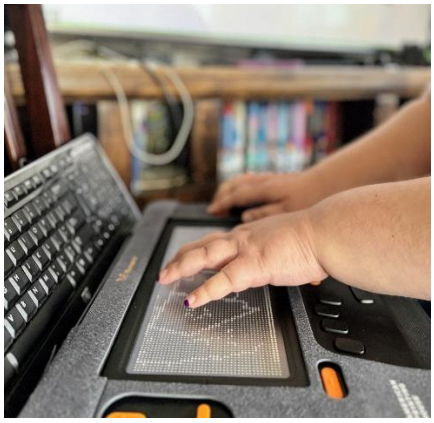
- Independence and Academic Success: Braille allows children to access written materials without assistance, fostering self-sufficiency in school and life. Unlike audio tools, braille enables direct engagement with subjects like math and science that require spatial representation.
- Confidence and Self-Esteem: Mastering braille instils a sense of pride and achievement, reinforcing self-worth and capability.
- Equal Educational Access: Literacy is a fundamental right, and braille ensures that children who are blind are not left behind in the classroom.

A Personal Journey to Braille Advocacy

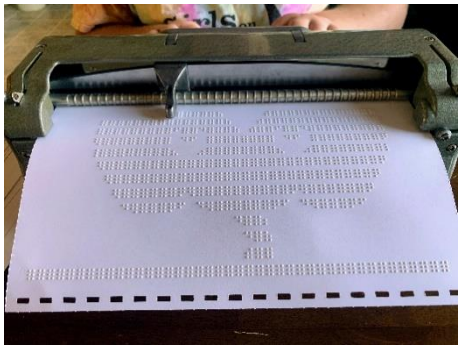
I watched my child struggle to keep up in class, their fingers fumbling over the smooth surface of a tablet. Digital tools provided access, but something was missing—the ability to truly engage with text. That night, I made a decision: We needed braille.

The journey was not always easy. I had to fight to ensure my child received proper braille instruction and access to materials. I had to challenge misconceptions that braille was outdated or unnecessary in a digital world. But the results spoke for themselves: improved comprehension, greater independence, and a newfound love for reading.

Braille is not just about accessing text—it is about having the dignity to read a menu, jot down a note, or engage with written language in a tactile, personal way. Every dot my child reads represents determination, progress, and a limitless future.



Child's hands on an electoral map of USA using a Monarch braille display



Braille pumpkin being created on a Perkins classic brailler.

Taking Action: What Parents and Educators Can Do

Braille literacy does not happen by chance. It requires advocacy, education, and access to resources. Here are five actionable steps to ensure every child has the opportunity to learn braille:

1. Start Early: Advocate for Braille in the IEP – The earlier children are exposed to braille, the stronger their literacy skills become. Ask your child's educators about braille instruction and ensure it is included in their Individualized Education Program (IEP).
2. Insist on Proper Assessments – A Functional Vision Evaluation (FVE) and a Learning Media Assessment (LMA) are critical in determining if a child needs braille instruction. Do not let outdated assumptions about residual vision limit access to braille education.
3. Make Braille a Daily Habit – Label household items, incorporate braille in playtime, and provide braille books at home. Everyday exposure reinforces learning and normalizes braille as a natural part of life.
4. Connect with Experts and Support Networks – Partner with organizations dedicated to braille literacy, such as the American Printing House for the

Blind, National Federation of the Blind, and ICEVI. Their resources and advocacy can strengthen your child's educational path.

5. Be a Voice in the Community – Braille literacy is a human rights issue. Work with your school district, legislators, and community organizations to push for policies that protect and expand braille education.

Looking to the Future

The fight for braille literacy is not just about individual success—it is about systemic change. We must ensure that all children who are blind or have low vision receive the same educational opportunities as their sighted peers. Schools must recognize that literacy is non-negotiable.

When we prioritize braille literacy, we are not just teaching children to read—we are empowering them to lead. Let us commit to a future where accessibility is woven into the fabric of our education system, where no child is left behind due to lack of resources, and where braille is recognized for what it truly is: a pathway to independence, achievement, and inclusion.

As parents, educators, and advocates, we have a responsibility to champion braille literacy. The journey may be challenging, but every step forward is a victory—not just for our children, but for the generations that follow. Braille literacy is not just about education—it is about dignity, opportunity, and independence. If we commit to ensuring every child has access to it, we are not just changing their future; we are shaping a more just and equitable world for all.

Resolution for Inclusion of Braille in the United Nations Educational, Scientific and Cultural Organization (UNESCO) List of Intangible Cultural Heritage

Sponsors: International Council for the Education of People with Visual Impairment (ICEVI) Global, ICEVI Africa, ICEVI East Asia, ICEVI Europe, ICEVI Latin America, ICEVI North American/Caribbean, ICEVI Pacific, and ICEVI West Asia

CELEBRATING that in 2025, the Braille code will mark the 200th anniversary of its creation in 1825.

ACKNOWLEDGING that the United Nations Convention on the Rights of Persons with Disabilities acknowledges Braille as a form of communication and calls upon States Parties to adopt appropriate measures to safeguard its use, including: the use of Braille signage in buildings and other facilities open to the public; accepting and facilitating the use of Braille to ensure freedom of expression and opinion and access to information; facilitating the learning of Braille by people with visual impairment to guarantee full and equal participation in education and as members of the

community; and employing teachers qualified in Braille to help ensure the realization of the right to education;

RECALLING that Braille is a unique tactile system developed for people who are blind or partially sighted and that it allows people with sight loss to develop essential reading and writing skills.

UNDERLINING the vital importance of Braille in ensuring full and equal access to the written word for people who are visually impaired.

HIGHLIGHTING that Louis Braille, the inventor of the code, stated that “braille literacy is equal to print literacy, and literacy is what makes people equal”.

UPHOLDING that studies have shown how braille literacy is directly correlated with academic achievement and employment among people who are blind or partially sighted.

WELCOMING the current campaign undertaken by organizations from the visually impaired community, including the French Federation of the Blind and Partially Sighted, the German Federation of Blind and Partially Sighted People (DBSV), the Spanish National Organization of the Blind (ONCE) and the European Blind Union (EBU) to promote the inclusion of Braille on the UNESCO List of Intangible Cultural Heritage.

The ICEVI General Assembly meeting in Ahmedabad, India on Sunday November 17th, 2024, hereby resolved:

That ICEVI firmly and unequivocally supports the campaign for Braille to be recognized by UNESCO as an example of intangible cultural heritage by:

1. Offering its full support to the campaign;
2. Encouraging all States Parties to the Convention for the Safeguarding of the Intangible Cultural Heritage (2003) to nominate Braille for inscription on the UNESCO List of Intangible Cultural Heritage; and
3. Calling upon UNESCO to consider such nominations positively and include Braille on its List of Intangible Cultural Heritage.

The International Council on English Braille: Celebrating 200 Years of Innovation – Dr Natalie Martiniello, CVRT

Chair of Research, International Council on English Braille

info@iceb.org | www.iceb.org

Introduced 200 years ago, braille signifies equitable access to information and literacy for millions of blind individuals globally. Its presence extends across household labels to novels and magazines, from classrooms to workplaces, in the hands of musicians, on signage, and on refreshable braille displays. Access to braille should not be a privilege, but a fundamental right.

Established in 1991, the International Council on English Braille (ICEB) coordinates standards in English braille across English-speaking countries. Membership includes braille authorities in Australia, Canada, Ireland, Nepal, New Zealand, South Africa, the United Kingdom and the United States.

Eighth General Assembly

In May 2024, ICEB held its 8th General Assembly in Auckland, New Zealand, where members approved resolutions to guide future work and shared updates on braille initiatives taking place across different countries. These discussions included developments in teaching the reading of tactile graphics, initiatives to promote and celebrate music braille, developments in braille translation software, and updates on electronic braille access and multiline braille displays. All papers and presentations are available on the ICEB website.

Update of the UEB Rulebook

ICEB has released the third edition of *The Rules of Unified English Braille*, superseding the 2013 second edition. This introduces new features, including a comprehensive index. Download the Rulebook at https://www.iceb.org/ueb.html in PDF or BRF formats.

Braille Wikipedia Initiative

ICEB's Braille Research Committee is reviewing and updating Wikipedia pages that mention braille to correct misconceptions and inaccuracies. The main braille Wikipedia page now includes information on new technologies, adult braille use, and how to interpret braille literacy rates as reflected in recent published literature.

Adult Braille Learning Resources

There is a growing need to ensure that adults across English-speaking countries have access to tools and resources to learn braille. ICEB has collated adult braille learning resources across English-speaking countries, including websites, courses, and regional organizations. This document on the ICEB website (that will continue to

be updated as new resources come to our attention) may also benefit educators working with adolescents.

Braille Types and Files

The Braille Technology Committee monitors developments related to the use of UEB on electronic devices and in braille translation software and intervenes as needed to ensure high quality access to braille. A recently released resource on the ICEB website provides an overview of braille types and files and explains terminology related to different braille codes, how computers process braille, document formats, and resources to learn more.

Music

Following Resolution 2024-3, the ICEB Music Braille Committee is creating a reference document describing how music scores are transcribed across member countries. This aims to reduce barriers to international exchange of braille music by collecting examples of transcription differences in various musical formats. The committee has compiled resources showing how Braille Music and UEB can be used together, including teaching materials updated to incorporate UEB. For more information, visit https://www.iceb.org/music.html.

Braille Codes in Other Languages

Although ICEB focuses on standards related to English braille, braille authorities in English-speaking countries occasionally receive questions about developing braille codes for other languages. ICEB has published best practices for developing braille codes for other languages, emphasizing the importance of including braille users in the process.

Calls to Action

ICEB celebrates 200 years of braille while working to advance current priorities outlined in the 2024 Resolutions. Here's how you can help:

- Join the ICEB-Announce Listserv for future newsletters
- Consider joining an ICEB committee
- Follow ICEB as @ICEBbraille on Mastodon, Facebook or X
- Connect with your country's braille authority and consider joining local committees
- The Public Relations committee shares updates through press releases, social media, and a quarterly newsletter. Those interested in contributing can write to info@iceb.org.

Braille200: European Blind Union Celebrates Braille on Each Day of 2025 – Dr Judit Gombás

ELTE Bárczi Gusztáv Faculty of Special Needs Education

Hungarian Federation for the Blind and Visually Impaired

2025 marks the 200th anniversary of the invention of the braille code. The European Blind Union (EBU) has launched the Braille 200 campaign, to celebrate Louis Braille and his code that has ever since given individuals with visual impairment access to information and knowledge. The goal of the campaign is to collect innovative ideas of using braille in any creative way from all over Europe. Submissions are posted every day on the livingbraille.eu webpage, which is the official platform of EBU to share all braille-related information.

The call for submissions and every day's innovative braille-related idea can be found here: https://www.livingbraille.eu/topic/braille-200/

EBU invites anyone (braille users, teachers, artists) to share their teaching methods, pieces of artwork, personal accounts which celebrate the importance of braille. Each month members of the EBU braille working group choose and prize the submission of the month they find the most outstanding. A very wide range of ideas for using braille has been submitted since January 1st, and we have many months to come. Enjoy surfing the braille-related ideas and get inspired!

BRAILLE RESEARCH

Pedagogical Strategies that Support the Sustained Development of Braille Literacy in a Mainstream Classroom – Karen Croake

PhD Candidate, University of Newcastle, Australia

In Australia, students with disability have the right to enrol in their local school on the same basis as their peers (Australian Government, 2005). Most students who are blind or have low vision with no other disabilities, or mild disabilities, attend mainstream schools in Australia. Mainstream teachers are supported by teachers of students with vision impairment (TSVI) who visit students in their schools and by education assistants (paraprofessionals) who provide in-class support. TSVI and mainstream teachers share the responsibility of teaching braille literacy to braille users. However, there are no guidelines or recommended pedagogy endorsed by the various education authorities in Australia to support class teachers, TSVI or education assistants to ensure the sustained development of braille literacy in a mainstream classroom.

Scoping Review (Croake et al., 2024)

A scoping review following the PRISMA-ScR guidelines was conducted with the research question; What evidence-based pedagogy exists to support teaching beginning braille readers in a mainstream setting?

To be included in this scoping review, the following selection criteria were used:

- peer reviewed research
- peer reviewed literature reviews
- articles published from 1975 – 2022 (Legislation in Australia and USA changed in 1975 to include a structure for integration of students with disability in mainstream schools following the United Nations Declaration on Rights of Disabled Persons, 1975.)
- research involving the pedagogy of teaching reading and writing to beginning readers who are braille readers
- research participants are students in Kindergarten - Year 4 in the early literacy development stages and their teachers
- students who are blind or have low vision without other disabilities
- braille is used as the primary medium
- participants are enrolled in a mainstream school
- participants use English as a first language

The exclusion criteria were:

- co-morbidity of disability
- students who are dual media readers
- research focused on braille Maths
- research focused on braille Music
- students older than Year 4
- participants attending schools for students who are blind or have low vision

In total, 889 full-text, peer reviewed articles were identified. After screening the articles for duplicates and eligibility according to the inclusion criteria, 10 full text articles were identified for the scoping review.

A thematic analysis was conducted on the 10 journal articles identified for the scoping review. Braun et al. (2019) recommend the use of themes to identify

patterns of shared meaning, uniting data that may not initially appear connected. The overarching theme was Evidence-based Pedagogy, with the sub-themes, Uncontracted and Contracted Braille, the Learning Environment of the Classroom and Reading Instruction.

Uncontracted and Contracted Braille

This scoping review investigated the role learning uncontracted or contracted braille plays in the level of success braille readers have in reading, writing and spelling. Emerson, Holbrook et al. (2009) concluded from their longitudinal ABC Braille Study conducted over five years, that the early introduction of contracted braille was associated with higher literacy performance. Despite this, Emerson, Holbrook et al. (2009) also expressed concern that after Grade 2, students demonstrated difficulties acquiring higher-order decoding skills and their literacy levels fell behind their print reading peers. The reason for this is not clear. Many variables could impact these findings. However, the findings of Emerson, Holbrook et al. (2009) are significant and suggest that further research needs to investigate why beginning braille readers are falling behind their peers when more complex reading skills are required for them to be successful readers.

The Learning Environment of the Classroom

Emerson, Sitar et al. (2009) suggested that it is the educational environment that is crucial to braille readers' success. The mainstream classroom's learning environment is important for braille readers' success. Holbrook (2008), Roe et al. (2014) and Swenson (2008) believe it is important for braille readers to fully participate in the mainstream classroom by completing the same tasks as their peers. Holbrook (2008) and Swenson (2008) believe that teaching braille cannot be separated from teaching reading. It is in the mainstream classroom that braille readers will learn more than simply the braille code, but the skills necessary to become highly skilled readers.

Reading Instruction

The conclusions of Barclay et al. (2010) resonated with others researching braille literacy. They found that a balanced approach to reading, where students participated in one-on-one lessons with the TSVI and participated in the mainstream classroom literacy lessons, was most beneficial. This supports the recommendations of Holbrook (2008), Roe et al. (2014) and Swenson (2008). Barclay et al. (2010) observed that the TSVI did not separate learning the braille code from learning reading skills, which Holbrook (2008) and Swenson (2008) agree is vital for the success of students learning the skills of braille literacy.

When teaching reading, mainstream teachers design a reading program to meet the diverse needs of the students in the class. Day et al. (2008) agree with Barclay et al. (2010) and Swenson (2008) that using the same reading program as the mainstream

print reading students ensures important reading skills are taught to the beginning braille reader, not just the braille code.

Research Question

The scoping review identified key concepts that are important to consider when teaching beginning readers braille. However, investigators were unable to identify in this scoping review research-based pedagogical strategies that could be used by TSVI, class teachers and education assistants. This was an important gap in the research that needed to be investigated. Therefore, my research question is: Which pedagogical strategies support the sustained development of braille literacy in a mainstream classroom?

Research Methodology

A Delphi study is underway to answer the research question. A Delphi study is designed to seek consensus on ideas through a series of structured questionnaires. Keeney et al. (2010) suggest that “the purpose of the technique is to achieve consensus among a group of experts on a certain issue where no agreement previously existed” (p. 4). It is useful for forming guidelines in educational settings as a panel of experts participates (Green, 2014). It is also now regarded as a valuable technique in academic research (Barrios et al., 2021).

There are three groups of experts participating in this research,

- Internationally recognised experts
- Australian Teachers of Students with Vision Impairment (TSVI)
- Australian adult braille users.

The first round involved participants identifying pedagogical strategies essential when teaching braille users in a mainstream classroom. The responses were coded, and a thematic analysis was conducted using the framework of Braun et al. (2019). Round 2 questions were written from these themes, and a survey was sent to each participant. The participants have been asked to rate their agreement with each question using the Likert Scale and then explain their response. When these responses are analysed, Round 3 questions will be written, and participants will receive a summary of the responses from the other participants, which may prompt them to change their Round 3 responses as the group works towards consensus.

Future Framework

The most significant finding made by Emerson, Holbrook et al. (2009) is also the most concerning. The reading skills of braille users do not continue to develop at the same rate as their sighted peers after Grade 2. When this research is completed, the aim is to use the results to create a framework to support TSVI, mainstream classroom teachers and education assistants to use research-based pedagogical

strategies to ensure beginning braille users can learn the complex skills of reading at the same rate as their print reading peers and achieve the same high academic outcomes.

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Braille, Publishing and Language Rights – Jodie Lea Martire

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I'd like to share a brief report on my doctoral research, which considers the importance of braille and the publishing processes which bring it into the world. My research is titled "Language rights and minority-language publishing in Australia", and for one case study I am researching the production of braille materials as an example of publishing in a minority writing system. My research sits at the intersection of minority-language publishing, community publishing and language rights. Some quick definitions: a minority language is one which is dominated numerically or politically by another (Carré & Thierry, 2020), as braille is dominated in the print-centric world; community publishing is the production of books by and for communities to meet their information needs (Mathieu et al., 2012), and language rights are the rights of an individual or community to use their language fully and freely in public and in private (United Nations Special Rapporteur on Minority Issues, 2017). I have proposed elsewhere that braille – as a writing system – comes under the umbrella of language rights, and therefore braille users deserve the same protections and guarantees as the users of other languages (Martire, 2024).

This research is related to braille literacy in that I am trying to expand the notion of why blind and low-vision (BLV) people must be ensured access to braille, and to learn how braille publishing helps that access. First, literacy itself can be expanded beyond reading, writing and education, instead holding its rightful place as a tool for empowerment and, indeed, of liberation: it allows readers to access the world and its meaning/s (Freire & Macedo, 2005). When access to braille is considered a language right, braille enables the communication rights of braille users: "the importance of communication rights goes beyond just enabling freedom of opinion, expression and language. Once these rights are realised, people are more readily able to realise other human rights" (McLeod, 2018, p. 4). By researching publishing in braille – the production of books, magazines and other materials – I am therefore seeking to discover the relationship between braille books and the rights and empowerment of BLV people.

This work is being completed in partnership with Brisbane-based organisation Braille House (https://www.braillehouse.org.au/), which has been in existence for 128 years this year. We made a reciprocal arrangement where I would volunteer with Braille House – offering my publishing and library skills where feasible – while conducting ethnographic research at the same time. On-site research took place between February and December 2024 in Braille House's premises and at community events

it organised. In this way I came to understand how braille books and magazines were produced from beginning to end of the publishing process, from a manuscript to the touch reader. This research was approved by the ethical review process of The University of Queensland.

Before I began my volunteering/ethnography, I completed the Braille for Print Users Course which Braille House runs once or twice each year. Between August and November 2023, I learned to sight-read and produce physical braille. In 2024, I volunteered one or two mornings a week, moving from the bindery to the library to transcription. I learned basic Duxbury skills and worked on three braille titles. From October 2024, I began the semi-structured interviews which would enhance my practical fieldwork. I have completed 15 interviews to date with management, staff, volunteers and users of Braille House in order to understand what having and making braille books means to them. Pending one interview and two planned visits to the organisation in 2025, my data collection with Braille House is complete. My doctorate is due for completion in mid-2027.

Please don't hesitate to get in touch if you would like further information on this research.

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Assessing the Impact of Braille Literacy on Quality of Life for People with Blindness or Low Vision: A Protocol – Aasha Rose

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Introduction

The global education system is filled with robust, valid, and reliable measures of literacy for students with vision who access print as their medium of learning (Baker & Street, 1994; Cope & Kalantzis, 2000; Stromquist, 2009, p. 52). In addition, international research shows direct links between print literacy and numerous positive life outcomes, including Quality of Life (QoL) (Axelsson et al., 2007; Cai et al., 2021; Eiser & Morse, 2001; Fusar-Poli et al., 2020; Muhammed & Abubakar, 2022; World Health Organisation (WHO), 1995). In this way, people with higher print literacy skills have higher QoL, and vice versa. This thesis will focus on undertaking three linked studies to understand if a similar situation exists for students with blindness or low vision (BLV) who are braille users within the Australian context. The underpinning hypothesis is that since increasing print literacy is linked to increasing QoL, we ought to see the same for students with BLV who use braille. Finding this link would provide evidence for equity in outcomes for people with BLV.

The candidate worked as a teacher with students with blindness/low vision for more than 20 years. In working with students in mainstream and specialist schools, she has unfortunately known many students who graduate from high school and do not go on to further study, work or volunteering, independent living, or partnership etc. Graduates do not always indicate that they have a good quality of life. For many years now there has been concerns of the lack of evidence-based methodology used to teach braille to students in mainstream schools and the negative lifelong outcomes that may be contributed to low braille literacy levels (Caton & Rankin Earl, 1980; Clunies-Ross, 2005; Erin & Sumranveth, 1995; Farnsworth Jr, 2007; Holbrook, 2008; Roe et al., 2014; Wormsley, 2011b; Zago, 1996). Through the completion of this PhD, the candidate wants to add new knowledge to the field through rigorous, robust, valid, and reliable studies.

Aims and Objectives

The aim of the research is to explore and identify potential correlations between braille literacy and quality of life for people with BLV who learned braille while at school in Australia. By examining these relationships, the study aims to provide evidence-based insights that could inform policy development, education practices, and support service delivery, ultimately contributing to improved quality of life for people with BLV.

The objectives of the study are:

- Study 1: to analyse oral history interviews will describe the historical perspective of the development of braille literacy and its influences on QoL for people with BLV.
- Study 2: to develop and test a psychometric tool to assess braille literacy utilising a collaborative research approach and an independent expert panel.
- Study 3: to measure the relationship between braille literacy and QoL with a follow up qualitative study with adult participants who use braille to investigate, understand, and interpret the contextual factors and personal experiences that shape a person's braille learning and the way this impacts Quality of Life (QoL).

Results of the scoping review

The purpose of the review was to determine whether braille literacy levels impact self-measured QoL. This was reflected in the review questions:

1. How is braille literacy defined, conceptualised, and measured?
2. Does braille literacy lead to better QoL outcomes?

A scoping review, rather than systematic review or meta-analysis, was chosen as it mapped the breadth of evidence already known on the particular topic of braille literacy irrespective of the source (Munn et al., 2022). This scoping review followed the PRISMA-ScR (Preferred Reporting Items for Systematic reviews and Meta-Analyses extension for Scoping Reviews) guidelines (Tricco et al., 2018).This scoping review offered a broader and more encompassing perspective to address the review questions compared to the typically narrower focus of traditional systematic reviews that concentrate on effectiveness or qualitative evidence. A search of published and registered reviews (systematic or scoping) in PROSPERO and Open Science Framework was undertaken and no reviews relating to Braille and QoL were found. The scoping review broadened understanding and awareness, established new areas and fields of research and highlighted research gaps that can argue for new primary research (Haddaway et al., 2022).

The scoping review did not identify measures for assessing braille literacy, nor was there any evidence for links between braille literacy and QoL. A key result was that little is known about valid and reliable measures of braille literacy, and if braille literacy is linked to QoL outcomes. Even though literacy is a fundamental human right, there is a lack of conceptualisation of braille literacy (Englebretson et al., 2023; Holbrook, 2009; Wormsley, 2011a) and there are no valid measures to assess braille literacy in the global literature so teachers are relying on what they have always

done to teach braille. Literature found through the scoping review found little justification to explain the data or the goals of the research.

In addition, some studies, including those by Ryles (1996); and Schroeder (1989), indicate braille literacy may impact life outcomes for people with BLV, however, a validated tool for measuring QoL of braille users was not found within a review of the literature. The scoping review is currently submitted and awaiting review in a high-quality journal and I look forward to presenting the findings in more details at the 10th ICEVI European Conference in Padova, Italy in May 2025.

Study 1

A secondary analysis of existing interviews with braille-using adults will be undertaken (from a study about the oral histories of people with BLV in Australia. The paper was located during the scoping review process, and it documents the experiences of people who, as children, lived at The Royal Victorian Institute for the Blind (RVIB) Nursery in the 1930s and 1940s. The candidate expects to better understand their narratives on why, and how braille shaped their QoL through a secondary analysis of the interviews. This lived experience and historical viewpoint will deepen my understanding of the contextual influences when learning braille literacy and relationships to QoL. This secondary analysis will form a paper that will be submitted to an academic journal.

Study 2

The key findings from the scoping review alongside themes from the secondary qualitative analysis will support the identification, testing, and prototype of a valid measure of braille literacy that can be used globally. A tool to measure braille literacy does not exist, therefore one needs to be developed. An international expert panel will be recruited to compile the gold standard braille assessment suite that will become a proxy self-report for use in this PhD. To achieve this an ‘ideal’ measure will be created (an assessment that involves a teacher assessing the components of literacy). This would be the gold standard, however, a self-report proxy for the gold standard will be developed and tested with an expert panel to assess how well it measures braille literacy when compared with the validated tool (gold standard). If the two correlate, then although the validated tool is gold standard, for the purposes of this PhD the self-reporting survey will be used. This will allow an increased number of participants to take part in the research, thus providing stronger, more reliable and generalisable results with smaller margins of error and lower standards of deviation as more reliable conclusions can be drawn from having more participants. This self-report survey of braille literacy will be used alongside a validated Quality-of-Life survey. Participants who learned braille while at school will be recruited in all states and territories of Australia to increase the sample size.

Study 3

Finally, a cross-sectional survey design will be implemented to examine the relationship between braille literacy and QoL in Australian braille-using adults. It will build on the survey findings by undertaking interviews with people with BLV, to understand in-depth why and in what contexts braille literacy impacts certain QoL domains, for instance: general health, mobility and independence, stress, anxiety, resilience, social inclusions, relationships, stigma, access to education, financial independence and employment, support systems and environmental factors, and agency and social contribution.

Concluding remarks

This study has the potential to change policy and practice in the braille education of students with BLV if it can be shown that improving education and opportunity for braille learning increases educational outcomes and QoL.

Measuring the relationship between braille literacy and QoL and providing a deep understanding of the contextual factors that shape braille literacy through the secondary analysis of oral history interviews and the new interviews with adults helps educators to understanding the factors that impact a student's ability to develop braille literacy. Having a valid tool to measure braille literacy enables researchers and educators to accurately assess the proficiency of students with BLV, thereby facilitating targeted interventions and support to improve literacy outcomes and QoL (Hoskin et al., 2024). Knowing whether braille literacy positively impacts a person's QoL will provide evidence to stakeholders in their decision-making regarding learning media.

Current literature reveals that there is no evidence-based guide for braille literacy instruction that meets the needs of braille users learning in mainstream classrooms, nor is there a definition, concept, or measure of braille literacy that is valid and reliable (Croake et al., 2024; D'Andrea, 1996). Addressing these issues requires a concerted effort from researchers, educators, and policymakers. By tackling these challenges, we can better support students with BLV and enhance their educational and life outcomes.

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Initial Literacy in Blind Children: Contributions to the Teaching of the Braille System in Argentina – Prof. Jimena Soledad Sajama

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Abstract

This paper presents the main contributions to the initial literacy of blind children based on bibliographic research and review. The main aim is to systematize and analyze current conceptions, contents, and resources that are prioritized and used in planning the teaching of reading and writing in the Braille system, ultimately contributing to current practice in Argentina.

Keywords: Teaching the Braille System to Blind Children – School Content for Braille System Instruction – Resources Used for Initial Literacy – Current Conception of Initial Literacy in Argentina – Initial Literacy in Blind Children in Argentina

Introduction

This paper presents the conclusions written for the Master's Final Project in the online master's degree in Integration of People with Disabilities at the University of Salamanca, academic year 2017/2018. It takes the form of a bibliographic review on the initial literacy of blind students, aligned with the current approach to initial literacy in Argentina, focusing on what, how, and when to teach the Braille system.

Reading and writing as social practices enable access to written culture and constitute a right that different states must guarantee. Considering what is taught when teaching reading and writing involves reflecting on two aspects: the learner and the object of instruction. Therefore, it is essential to integrate the cognitive processes that students engage in to acquire these social practices with the existing conceptions of reading and writing in order to create literacy-rich environments.

When applied to the learning and teaching of reading and writing for blind students, this issue presents a challenge, given the particular ways in which this population processes information.

Planning instruction in the early stages of a child's life regarding initial literacy is crucial. Curricular diversification should be the contribution of specialists in visual impairment to guide an inclusive education approach.

Objectives

- Systematize and analyze the existing literature on the teaching of the Braille system to contribute to the current practice of initial literacy for blind children in Argentina.

- Identify what, how, and when to teach the Braille system in the initial literacy process of blind students.

Methodology

This bibliographic review was organized based on the following keywords that guided the information search: Teaching the Braille System to Blind Children, School Content for Braille System Instruction, Resources Used for Initial Literacy in Blind Children, Current Conception of Initial Literacy in Argentina, and Initial Literacy in Blind Children in Argentina.

The research of information was conducted according to the following criteria: identification of keywords, accessibility to websites (institutions with extensive experience in research and studies on visual impairment, institutional repositories), availability of local libraries, and access to regulatory frameworks that guide initial literacy teaching practices in Argentina.

The keyword-driven search yielded a variety of sources, including books, manuals, seminar proceedings, ministerial resolutions, and product catalogs.

Below is a list of the keywords and consulted sources.

1. Keywords: Teaching the braille system to blind children:

- Ana Isabel Ruiz López & Reyes Lluch Rodríguez. (2015). The Didactics of Braille Beyond the Code. New Perspectives on the Literacy of Students with Visual Impairments. (1st Ed.). Manuals – Spanish Braille Commission (CBE) & National Organization of the Blind of Spain (ONCE), Madrid, Spain. (Book)
- González, E. & Boudet, A. (1994). Systemic Approach to the Education of Children with Visual Impairment. Volume II: The Blind Child. (1st Ed.). Actilibro: Buenos Aires, Argentina. (Book)
- Fernández, I. & Mercado, A.M. (1999). Visual Impairment. Learning Materials. Suggestions for Selection, Adaptation, and Use. ICEVI & DARK Y LIGHT: Córdoba, Spain. (Book)
- Bautista, Rafael (Coord.). (1994). Visual Impairment. Psycho-evolutionary and Educational Aspects. (1st Ed.). Aljibe: Málaga, Spain. (Book)
- Espejo de la Fuente, Begoña. (1993). Braille in School. A Practical Guide for Teaching Braille. ONCE: Spain. (Book)
- Various Authors. (2016). Reading and Writing in Students with Blindness or Severe Visual Impairment. FOAL – Spanish Cooperation: Uruguay. (Seminar Proceedings)
- Ana Isabel Ruiz López & Reyes Lluch Rodríguez. (2015). The Didactics of Braille Beyond the Code. New Perspectives on the Literacy of Students with

Visual Impairments. (1st Ed.). Manuals – CBE & ONCE: Madrid, Spain. (Book)

2. Keywords: School Content for Braille System Instruction

- Ministry of Education of Buenos Aires Province. (2017). Curriculum Guidelines. Specific Areas of Special Education. Annex: Braille. Buenos Aires, Guide.
- Ana Isabel Ruiz López & Reyes Lluch Rodríguez. (2015). The Didactics of Braille Beyond the Code. New Perspectives on the Literacy of Students with Visual Impairments. (1st Ed.). Manuals – CBE & ONCE: Madrid, Spain. (Book)

3. Keywords: Resources Used for Initial Literacy in Blind Children

- Bautista, Rafael (Coord.), Martín, V., Gaspar, J., & Sánchez González, J. P. (1994). Visual Impairment. Psycho-evolutionary and Educational Aspects. (1st Ed.). Aljibe: Málaga, Spain. (Book)
- Ana Isabel Ruiz López & Reyes Lluch Rodríguez. (2015). The Didactics of Braille Beyond the Code. New Perspectives on the Literacy of Students with Visual Impairments. (1st Ed.). Manuals – CBE & ONCE: Madrid, Spain. (Book)
- ftp://ftp.once.es/pub/utt/bibliotecnia/11_Miscelanea/Braillin/Nota_Muñeca_Braillin.doc. (2004). Didactic Guide for Using the Braillín. ONCE & Toy Technology Institute (AIJU): Spain. (Guide)
- Espejo de la Fuente, Begoña. (1993). Braille in School. A Practical Guide for Teaching Braille. ONCE: Spain. (Book)
- Martínez, Ismael & Polo Chacón, Liébana Delfina. (2004). Didactic Guide for Braille Literacy. ONCE: Spain. (Book)
- São Paulo State Research Foundation – FAPESP. (2016). Tece Catalog. TECE – Educational Technology & Science Ltd. São Paulo, Brazil. (Catalogue)
- Kaufman, Ana M. & Lerner, Delia. (2015). Literacy in the Pedagogical Unit – Higher Level Teaching Specialization. Transversal Document No. 1: Initial Literacy. Ministry of Education – Presidency of the Nation. Buenos Aires, Argentina. (Book)
- Ministry of Education of Argentina. (2012). Resolution No. 174/12 CFE. Buenos Aires, Argentina. (Regulation)

4. Key words: Initial Literacy in Blind Children in Argentina

- Crespo, Susana. (1981). The School and the Blind Child. Practical Manual. Graficart: Córdoba, Argentina. (Book)
- Ana María Moyano (Coord.). (2011). Contributions to Literacy in Special Education for Blind and Visually Impaired Students and Those with Hearing Loss. 1st Ed. Ministry of Education of Argentina: Buenos Aires, Argentina. (Guide)
- Ministry of Education of Buenos Aires Province. (2015). Technical Circular No. 1. Buenos Aires, Argentina. (Regulation)

Personal analysis and conclusions

The theoretical construction on the initial literacy of the blind child is the result of research and practices that raised questions about what the best pedagogical conditions for teaching the braille system would be, considering not only the ways this child learns and appropriates the writing system but also the particularities of the braille code.

By reviewing the contributions of various authors, the analysis is framed to address the study's topic from three aspects: how, when, and what to teach the braille system. Although the formulation is the starting point of any pedagogical proposal, it has nuances when the specific object of teaching is reading and writing in the braille code.

Regarding "how to teach the braille system," the following conclusions can be drawn:

- There is broad agreement that for teaching the braille system, it is necessary to select a literacy method that responds to the particularities of the system and the student's conditions.
- There is also consensus that it is essential to systematize and sequence the teaching of the braille system based on developing certain prior notions related to the internal structure of braille. Authors use different terms such as skills (González, E. and Boudet, A., 1994; Corbacho Piñero, Oliva Quero, and Rodríguez Díaz, 1994), notions (Fernández, I. and Mercado A.M., 1999), basic spatial and attitudinal concepts (Espejo de la Fuente, B., 1993), sensory skills (FOAL, 2016), and pre-braille skills (CBE and ONCE, 2015) to explain what the blind child must develop to later appropriate braille as a reading and writing code.
- On the other hand, the consideration that learning the braille system is a right (CBE and ONCE, 2015; FOAL, 2016) and a process (CBE and ONCE, 2015) provides the foundation for thinking that braille literacy is much more than the appropriation of the braille code—it also serves as the means of access to written culture for blind people, giving meaning to the social practices of

reading and writing.

To make visible “how” to teach the braille code by reviewing the consulted authors (Crespo, 1981; González and Boudet, 1994; Corbacho Piñero and Rodríguez Díaz, 1994; FOAL, 2016; CBE and ONCE, 2015), it is affirmed that they consider it necessary to select a teaching method that responds to the conditions of the blind student’s learning and the particularities of the code. Among the methods, we find the generative word method or “tactile-audio-motor-gnostic method,” the analytic method, psychogenesis, Six Points, Almazara, Tomillo, and others, all of which describe the systematization and sequencing in presenting the braille code for both reading and writing.

It is common for authors to use the term "literacy" when referring to teaching reading and writing. This paper aims to surpass this idea and consider that reading and writing are different processes that are related but not necessarily consequent, as inferred from the use of the term “literacy.”

The pedagogical stance held here is that to teach to read and write in the braille system, one must go beyond the instrumental teaching of the code and frame it in situations of reading and writing as social practices.

It is necessary to rethink the teaching of braille not as a method to follow, but as a proposal that considers the learning conditions of the blind child, the available resources in the context, and the political curriculum framework for literacy.

In this logic, it is proposed that an educational proposal is possible that provides the didactic conditions for teaching reading and writing in braille, based on the conviction that “reading is learned by reading” and “writing is learned by writing,” as stated by Kaufman, A. M. and Lerner, D. (2015).

This proposal is considered possible only by overcoming the idea of method and thinking about literacy from a balanced or socio-constructivist approach that includes the resources available in the environment to promote literacy in the braille system ”or the blind child.

Thus, the initiative arises to propose an alternative that considers using the chalkboard positively when the braille machine is not available as an educational resource. The benefits of using the braille machine in the initiation of teaching the braille system are well-founded, but there are also places in Argentina where the economic access to that resource is prohibitive.

Therefore, it is possible to consider teaching using the chalkboard positively, which has the advantage of respecting the directionality of reading and writing in the braille system.

Regarding “when to teach the braille system,” the following reflections are made:

- The various consulted sources (Fernández, I. and Mercado A.M., 1999; Corbacho Piñero, Oliva Quero and Rodríguez Díaz, 1994; Espejo de la Fuente, B., 1993; FOAL, 2016; Crespo, S., 1981; Ruiz López and Lluch Rodríguez, 2015) agree that braille teaching begins at an early age, emphasizing how the environment (family, support teams in special schools) must foster access to braille-printed material so that from a young age, the blind child can recognize the existence of the code.
- It can be inferred that only two authors venture to give a concrete starting age for teaching the braille system. Crespo, S. (1981) suggests a preparatory grade between kindergarten and first grade to teach the braille system, and Espejo de la Fuente, B. (1993) states that the formal age to begin learning the braille system is between 4 and 5 years old.
- Finally, the proposal from CBE and ONCE (2015) prefers to talk about stages or moments of teaching the braille system, considering the internal logic of the system and the learning conditions of the blind child at each stage of their development.

  Most authors (Fernández and Mercado, 1999; Corbacho Piñero and Rodríguez Díaz, 1994; Espejo de la Fuente, 1993; FOAL, 2016; Crespo, 1981; Ruiz López and Lluch Rodríguez, 2015) agree that braille code teaching begins at an early age. It is essential to familiarize the blind child with the writing system and create a literacy environment to bring written culture closer, which they cannot access spontaneously due to their visual condition.

  Facilitating a literacy space from early ages will be a systematic intervention from support teams to minimize and, in the best cases, eliminate the learning and participation barriers imposed by the context, which does not spontaneously provide texts in the aforementioned code.
  Regarding the aspects where differences exist among authors, it pertains to the formal starting point for teaching the braille system, understood as the way to present the systematic and sequenced contents of the internal structure of the braille code.

  In this regard, Crespo (1981) proposes the Preparatory Grade as the intermediate level between kindergarten and first grade to dedicate a time of the school calendar to the systematic teaching of braille; Begoña de la Fuente (1993) suggests that between 4 and 5 years old is the right time to begin the

systematic and sequenced structuring of the braille system; contributions from the Ministry of Education of the Nation Argentina (2011) and Resolution 174/12 of CFE establish coherence between the mandatory levels of the educational system and the initiation of teaching braille; and finally, CBE and ONCE (2015) propose stages or moments to consider in the process of teaching the braille code, related to the specificity of the code itself.

From these contributions, it is proposed to make an integrative synthesis that considers both the mandatory levels of the Argentine educational system and the specific stages of teaching the braille code. Below is a proposal that responds to "when" to teach the braille code in Argentina:

Table 1. When to teach the braille system in the Argentine educational system

Stages of Teaching the Braille System (CBE and ONCE, 2015)	Levels of the Argentine Educational System (National Education Law No. 26206, Resolution No. 174/12 of the Federal Council of Education)
Previous Skills	Initial Level: Covers attention to early childhood, attention to children, and 4-year-old class, from birth to approximately 4 years of age.
Pre-Braille	Initial Level: Includes the 5-year-old class, from approximately 5 years to 6 years old, until graduation from the level.
Formal Braille	Primary Level: Includes the first cycle from 1st to 3rd grade of Primary Education, from approximately 6 years old.
Braille as a Tool	Primary and Secondary Levels: Starts in the second cycle of Primary Education, from 4th to 7th grade, and continues at the Secondary Level.

To conclude the analysis, it is necessary to focus on the "what" to teach in the initial literacy in the Braille system. For this, the contributions from CBE and ONCE (2015) are revisited when they propose the stages of teaching, from which the contents to be taught in each stage can be inferred, relating them to the available resources for this purpose and the existing regulations in Argentina.

The following is a table that aims to synthesize the three questions raised regarding initial literacy in blind children and provide a contribution that gathers the variables considered key for its teaching.

Table 2. Proposal of when, what, and how to teach the Braille system in the Argentine educational system

When	What		How	
Stages	**Reading**	**Writing**	**Resources**	**Strategies**
Preliminary skills	Body schema and laterality Psychomotor coordination Sensory perception Spatial organization Haptic development (perception, memory) Auditory development Motor skills (strength, tone): classify, match, and arrange objects of different sizes, shapes, and textures Spatial and temporal orientation		Accessible texts: in braille and print Real objects Three-dimensional objects Braillin	Reading and writing of texts through the teacher/adult as a mediator of written culture. Facilitate the learning of the braille system to people in the child's environment. Guide tactile, auditory, oral, and haptic exploration with meaning.
Pre braille	Two-dimensional space: the page. The page: boundaries, location, and references. Front and back. Margins (right, left, top, and bottom). Coordinated use of hands: practice in turning pages, using the appropriate hands and fingers (pinch).		Accessible texts: in Braille and print. Paper with different textures up to the conventional use (cardboard).	Intensify reading and writing of texts through the teacher/adult as a mediator of written culture.

	Simultaneous use of both hands. Tracking and directions: hand movements from left to right. Spatial orientation: discrimination of point positions. Generative sign. Reading of points. Gradual change in the size of the generative sign (from three-dimensional to two-dimensional). Macro braille. Lines of points of varying lengths and directions. Discrimination of similarities and differences in raised lines. Tracking of signs. Similarities and differences between signs. Discrimination within a Braille line of identical or different signs, gaps, etc. Bimanual reading (guide and companion fingers).	Generative sign. Writing the positions of the generative sign in different sizes. Writing the points of the generative sign. Digital dissociation. Use of fingers. Use of the stylus. Parts of the Braille machine. Placing the paper. Using the keys with the appropriate fingers.	Accessible texts: in Braille and in ink. Braillín. Box divided into 6 compartments. Egg carton. Pre-reading and pre-writing board. Braille machine. Negative slate and stylus. Positive slate and stylus.	Spontaneous writing using the Braille machine or slate (conventional or positive). Reading and writing independently using different writing resources. For example, writing the name. Promote a literacy space in the Braille system. Spaced writing (leaving a line in between). Contextualized teaching. Always start with a text, then move on to teaching smaller units of written language.

Formal Braile	Present the content corresponding to the level. Specific signs: number, uppercase, accented vowels.	Specific content for the level.	- Braille texts respecting line spacing with every other line blank up to the 3rd year of Primary Education.	Work on reflection situations about language: mirror letters (e/i, f/d, h/j).
Braille as a tool	Braille shorthand (end of Primary Education and Secondary Level) Reading techniques		Braille texts	Facilitate reading and writing comprehension and effectiveness.

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TECHNOLOGY

DAISY: Bridging Braille with Digital Information System – Dipendra Manocha

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Committed to accessible digital content, the DAISY Consortium is setting standards for accessible books. Its focus on navigability and reading with the eyes, ears, and fingers ensures that content is accessible to those who cannot read standard print. Braille remains an essential medium for individuals with print disabilities. As such, the DAISY Consortium is undertaking various initiatives to support the production, distribution, and reading of braille, providing a rich reading experience.

1. E-Braille

Increasingly, braille is being read on Refreshable Braille Displays (RBDs). The most common digital braille document formats readable on RBDs include BRF, BRA, BRL, and PEF. However, these files have limited formatting information. Elements such as headings and tables are stored as plain braille text, making them indistinguishable from the rest of the content. Consequently, navigation and searching capabilities are lost.

To address this issue, the DAISY Consortium is developing a new braille file format called e-braille. These documents will provide an enriched reading experience on Refreshable Braille Displays. Led by the DAISY Consortium's board member, the American Printing House (APH), this project involves a working group of 100 braille experts from 20 countries. The e-braille specifications are being developed as a standard, with the final version expected to be released in June 2025.

The DAISY Consortium is collaborating with screen reading software, braille translation software, RBDs, and book reading apps and device-producing companies to support the production and reading of e-braille files. Some examples of these products include Duxbury, Sao Mai Braille, NVDA, JAWS, Narrator, Dolphin Easy Reader, Refreshable Braille Displays, and notetakers. E-braille will enable full navigation command support in braille documents, such as jumping to the next or previous rows or columns in a table, or moving to the next or previous chapter, subsection, paragraph, or sentence while reading on a digital device.

To learn more about e-braille, please visit https://daisy.org/activities/projects/ebraille/.

2. Standardization of Braille Codes in Developing Countries

Over the past five years, the DAISY Consortium has conducted 76 capacity-building training sessions and provided technical support in 41 developing countries in Asia, Africa, and Latin America. One of the training modules focuses on converting accessible digital books to braille, utilizing the features of accessible digital books to enhance the efficiency of braille production. Techniques include automatic image descriptions, generating tables of contents, and reformatting tables to be readable on a braille page.

Interactions with braille producers in developing countries have revealed a lack of standardized braille codes for their languages. Many developing countries do not have organizations, committees, or groups specifying the applicable braille code. Even in 2024, many countries using English as the language of instruction in schools and colleges had not heard about Unified English Braille (UEB).

The DAISY Consortium is raising awareness about the importance of braille code standardization and assisting in adding support for local languages in basic braille translation systems such as Liblouis and Duxbury. Collaboration with international organizations like ICEVI and WBU is essential to address this issue comprehensively. Standardization of braille codes, incorporating local language tables in Liblouis, and adopting UEB are foundational steps to ensure availability and usability of braille and making it compatible with new age requirements.

NEWS FROM AROUND THE WORLD

Commitment and Innovation in the Application and Promotion of Braille in China – YANG Yang, LIU Liying, LI Jing, BAO Guohong, and WO Shuping

China Braille Press

In December 1953, based on the "New Braille Scheme" (i.e., the "Current Braille System"), the first Braille book *Who Are the Most Lovely People* and the first Braille periodical *The Blind's Monthly* were officially published, marking the beginning of the Braille publishing in People's Republic of China. Today, as the only comprehensive nonprofit publishing house in China that provides various types of reading materials for the 17 million blind and visually impaired people nationwide, the China Braille Press（CBP）has been committed to publishing braille materials for over 70 years, with an annual output of 900 titles of books nowadays. The rapid development of information technology gives rise to a diversity of ways in which the blind access knowledge and communicate. However, Braille is indispensable for their learning of cultural knowledge, study of professional content, and written communication. And therefore, CBP continues to prioritize the research of Braille, development of Braille-related technology, and

collaborating with China Braille Library (CBL) to promote application of Braille. The goal is to ensure that Braille as an integral part of China's national language system, plays a good part in supporting the blind community better integrated into society.

I. Improving the Braille System and Expanding Research Frontiers

Chinese Common Braille Scheme was officially implemented in 2018. In 2021, the *Second Phase of the National Action Plan for Standardizing Sign Language and Braille (2021-2025)* clearly emphasized the need to "investigate the usage of Braille, address existing issues, and to develop all-around Braille standards to strengthen its promotion and application." In response, China Braille Press has actively carried out research and standardization work to improve the common Braille system.

1.1 Advancing Common Braille Research

In 2021, Chinese Common Braille Research and Promotion Center was established by China Braille Press. With support from the China Disabled Persons' Federation, CBP has conducted research on the classification and grading of common Braille mathematical and scientific codes. Sponsored by major projects of the National Social Science Fund, CBP also delves into the development of common Braille rules. Empirical research has been conducted based on braille corpora, systematically explored Chinese braille segmentation rules. This academic endeavour leads to the establishment of key domain-specific guidelines for common braille segmentation, along with lexicon entry inclusion criteria for braille word databases. These efforts have yielded over ten peer-reviewed academic papers, collectively contributing to the continuous refinement of Chinese common braille system.

1.2 Steady Progress in Establishing Braille Application Standards

China Braille Press has led or participated in the drafting of several national standards related to Braille, which have been promulgated and implemented as followed:

- GB/T 37105-2018 *Packaging — Braille on Packaging for Medicinal Products* standardizes braille requirements for pharmaceutical labelling.
- GB/T 38640-2020 *Digital Publishing Format for the Visually Impaired People* unifies electronic braille text specifications.
- GB/T 39758-2021 *Accessible Design — Application of Braille on Signage, Equipment, and Appliances* defines braille implementation criteria for public facilities.
- GB/T 41182-2021 *General Specification for the Braille Display* regulates braille display device technologies.
- GB/T 44725-2024 *The Format of Braille Publication* specifies formatting standards for braille publications.

Additionally, the Chinese Common Braille Scheme for the National Anthem of the People's Republic of China is scheduled for imminent implementation, while

the Holographic Storage Standard for Chinese Common Braille are under active development. Revision work for GB/T 16431-2008 Chinese Braille Music Signs and GB/T 18028-2010 Mathematical, Physical and Chemical Symbols of Chinese Braille will commence in 2025.

II. Exploring Braille Publishing and Diversifying Reading Formats

In 2020, China Braille Press completed its transition to adopt Chinese Common Braille in publishing, with its publications encompassing thematic publications, primary and secondary school textbooks and teaching materials, specialized massage curriculum resources, supplementary readings, and literary classics. These serve various needs critical to the blind community, including education, rehabilitation, employment, cultural engagement.

2.1 Targeted and Demand-Driven Braille Publishing

By aligning immediate needs with long-term development goals for the blind community, China Braille Press prioritizes user-centric services through in-depth research into the diverse demands in education, employment, intellectual growth, and cultural engagement. Multiple specialized braille publishing projects have been meticulously implemented, alongside the publishing of various braille journals enrich publication categories. Furthermore, online resources such as the "20-Lecture Micro-Course on Chinese Common Braille" and the "Self-Guided Manual for Chinese Common Braille" have been launched on digital platforms, facilitating accessible remote learning for the blind.

Image 1. Various targeted published braille books.

2.2 Actively Exploring Integrated Braille Publishing

To address varied reading preferences, China Braille Press has focused on pioneering a "one-title-multiple-format" integrated publishing model that combines tactile, auditory, and residual visual elements within single publications. For instance, *Together Towards the Future: Our 2022* integrates digitally produced audiovisual content with QR-code-

enabled playback, offering multimodal reading options. Titles like *Uncle Kai's Classical Poetry for Children* and *Xiao Yang Shang Shan Chinese Leveled Reading* feature large-print/braille parallel formats and have enhanced accessibility for readers with differing visual capabilities while supporting parent-child and inclusive group reading. Notably, *The Dragon's Library* was selected for the 2025 IBBY Outstanding Books for Young People with Disabilities list, underscoring global recognition of these innovations.

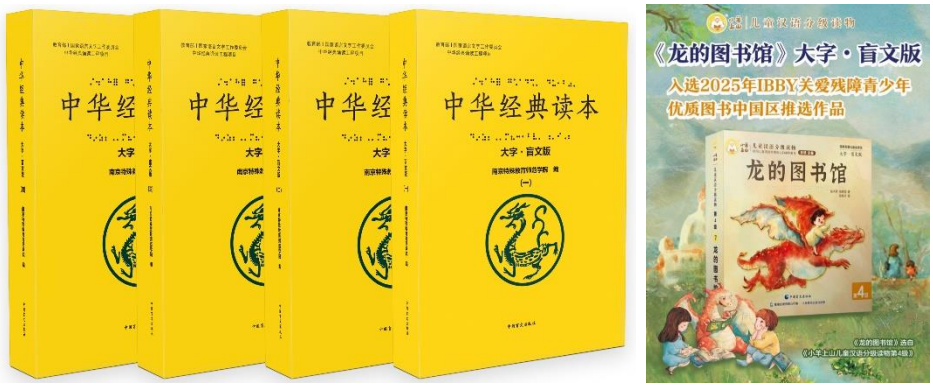

Image 2. Large print/braille books.

2.3 Technological Breakthroughs in Braille Production

To Address historical challenges in traditional braille books—such as missing braille spines, tactile-unfriendly bindings, and error-prone embossing, China Braille Press has adopted modern solutions include:

- Solid braille was applied on the spines and covers by using digital printing and UV-based 3D moulding technologies.
- Enhanced binding methods employing A3 sheet duplex printing with fold-and-stitch techniques.
- AI-driven quality control via pre-trained model algorithms for braille recognition and embossing verification systems.

Image 3. Hard-cover braille books.

III. Focusing on Technological Development to Drive Braille-Related Product Upgrades

Braille publishing technology development at China Braille Press originated in early mechanized production reforms, advanced through the multifaceted empowerment of information accessibility technologies, and achieved breakthroughs via deep integration with internet and digital innovations. Today, adhering to the principle of "synergizing technology with culture, balancing R&D with production services," CBP continues to integrate cutting-edge technologies such as AI to propel braille products and related services forward.

3.1 Comprehensive Development of Chinese-Braille Translation Platforms

Chinese braille, as a phonetic script requiring strict adherence to national linguistic norms, presents unique translation challenges in word segmentation and tone marking. To address these, China Braille Press has synthesized advancements in machine learning, human-computer interaction, and natural language processing (NLP) to develop multiple Chinese-to-braille automated translation algorithms. Efforts are continuously made to upgrade the Braille compiler client-side software. As a result, the Chinese-Braille Mutual-Translation Service Platform has been developed based on large language models (LLMs), Chinese-Braille parallel corpus and online braille editing and typesetting tools, offering translation, formatting, and online reading functionalities.

3.2 Accelerated Advancement in Braille Digital Terminals

Leveraging piezoelectric ceramic braille cells, multiple braille digital devices have been developed by China Braille Press, including 40-cell braille displays (BD-40 and BD-40S), Braille computer BC-1,20-cell smart braille notepad BM20 and braille display BM20S. In current collaboration with Tsinghua University, a large-format portable braille e-display featuring electromagnetic actuation mechanisms is on its way. Such a product demonstrates superior performance in rendering braille graphics, tables, and musical notations while achieving cost-effective production, which fulfills long-standing demands within the blind community for versatile tactile-digital integration.

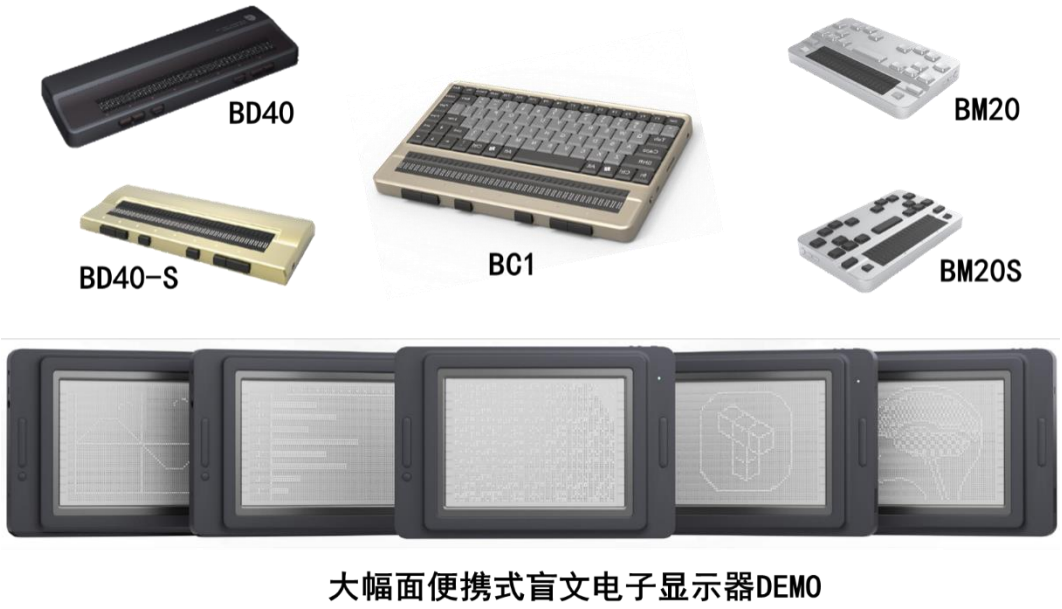

Image 4. Demos of portable braille e-displays.

3.3 Redesigned Braille Writing Slates

China Braille Press has redesigned braille writing slates as traditional braille slates employ a dual leaf hinged design, requiring repeated paper removal for tactile reading, which separates writing from immediate feedback and risks misalignment errors. Without changing the loading and writing process, the innovative flip-style braille slate adopts a Z-shaped tri-layer structure that enables real-time tactile verification without paper removal. During use, braille paper is secured between the top and middle layers for writing. After writing, one can flip the upper and middle layers over the base plate, which reveals the embossed content through cutouts in the middle layer, achieving seamless integration of writing and tactile review.

Image 5. Patterns and use of flipping-style braille writing slate.

3.4 Dedicated to Developing Braille Learning App

China Braille Press has developed a specialized App for mastering Chinses Common Braille, WenXing Braille Learning Assistant, to offer tutorials on basic character recognition, braille cell memorization, and rule-based learning. It gamified challenges and personalized learning plans to reinforce braille literacy, and offers online

access to digital braille books, serving as a comprehensive platform for enhancing braille proficiency through structured, interactive pedagogy.

IV. Expanding Braille Applications and Optimizing Outreach

In 2021, the *14th Five-Year Plan for Disability Protection and Development (2021–2025) in China* mandates accelerated research and promotion of Chinese Common Braille. Therefore, China Braille Press has implemented multi-stakeholder initiatives to advance braille adoption.

4.1 Competitions to Enhance Braille Proficiency

Under the guidance of ***National Sign Language and Braille Standardization Action Plan***, China Braille Press holds annual training programs targeting blind associations, special education schools, and public libraries, and has cultivated over **2,000 braille specialists. Chinese Common Braille Skills Invitational Tournament has been held** for two consecutive years, featuring individual and team categories for blind students, teachers, and sighted educators, which evaluates braille mastery through written and rapid-response tests.

Image 6. 2024 Chinese Common Braille training program.

Image 7. Chinese Common Braille Skills Invitational Tournament.

4.2 Scaling Braille Literacy Initiatives

Digital braille resources from routine publications of China Braille Press are freely accessible via Ting Hai (www. tinghai.org.cn) and the Digital China Braille Library (www.cbl.org.cn). China Braille Library also offers free Braille resources and digital reading equipment for circulation at over 400 branch libraries across China. Since 2017, the *Digital Reading Promotion Initiative for the Blind* has distributed 758 braille computers BC-1 and 90 braille displays BD-40S to 82 educational institutions, directly supporting braille literacy among students.

Image 8. Blind students delivered a speech on the launching ceremony of Digital Reading Promotion Initiative for the Blind.

4.3 Broadening Braille Application Scenarios

With the implementation of the *Barrier-free Environment Creation Law of the People's Republic of China*, China Braille Press has played a good part in Chinese Common Braille promotion and application in public spaces. These include:

- **Beijing 2022 Winter Paralympics** issued large-print/braille parallel format service manuals and spectator guides;
- Civil registration offices now provide braille/large-print parallel format marriage documents, with braille-embossed marriage certificates forthcoming;
- The Ministry of Education has supplied braille version of national college entrance exam for **11 consecutive years**, benefiting nearly 100 blind examinees;
- In 2024, the **National People's Congress** produced braille documents for blind delegates—a historic milestone.

Additionally, various promotional methods and channels have been employed by China Braille Press to continuously raise public awareness and attention towards Braille. These efforts not only make life more convenient for the blind and the visual impaired but also lay the foundation for creating an inclusive and supportive social atmosphere.

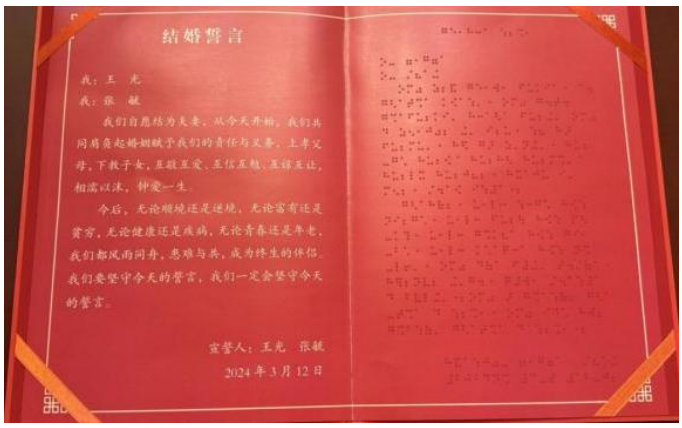

Image 9. Braille/large-print format wedding vows.

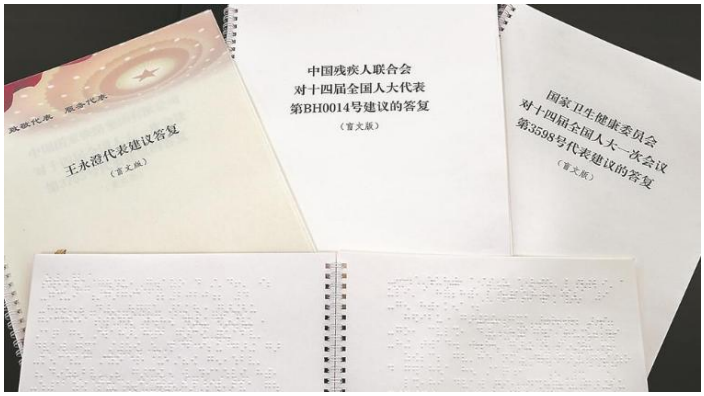

Image 10. Braille version of legislative documents for the 14th National People's Congress.

4.4 Global Collaboration in Braille Advocacy

A philanthropic collaboration between China Braille Press and **LEGO Group to promote Chinese Common Braille was implemented since** 2021, which has donated **7,000 braille kits** to 140+ institutions, conducted 600+ training sessions to teach braille through play. CBP organizes case presentations and activities under specialized research projects supported by the China Disabled Persons' Federation, thereby facilitating visually impaired children to learn Braille.

Image 11. LEGO Braille kits teaching case activities

After Marrakesh Treaty entered into force in China, CBP and CBL became authorized entities, partnering with the World Intellectual Property Organization (WIPO) to join the Accessible Books Consortium (ABC), sharing Chinese Braille electronic resources with the blind readers worldwide.

V. Conclusion

China Braille Press remains committed to advancing braille accessibility through common braille research, innovative publishing, technological R&D, and global collaborations**.** In the future, CBP will continue to deepen braille applications across education, social services, and cultural needs, strengthen policy frameworks for braille promotion and accessible technology, and to enhance international cooperation. As societal awareness grows, braille will increasingly serve as both a gateway to knowledge for the blind and visually impaired and a bridge fostering inclusive communities. Through sustained innovation and collaboration, braille's transformative potential will continue to empower individuals and redefine accessibility paradigms worldwide.

Braille Without Barriers: Unlocking Literacy with NextSense UEB Online – Frances Gentle and Trudy Smith

NextSense (Australia)

Website: https://www.nextsense.org.au/about

Email contact: trudy.smith@nextsense.org.au

The Importance of Braille

Braille is more than just a system of reading and writing—it is a gateway to literacy, independence, and equal opportunity for people who are blind. For over 165 years, NextSense has been committed to supporting individuals with sensory disability, recognising that literacy is the foundation of education and personal development. Braille enables children who are blind to develop essential literacy skills, engage with their studies on an equal basis to sighted peers, and pursue academic and vocational goals with confidence.

With advancements in braille technology, braille remains a critical tool for literacy. Studies show that children who learn braille are more likely to achieve academic success, develop strong spelling and grammar skills, and have greater opportunities for employment in adulthood.

Understanding the importance of braille literacy, NextSense has long been a leader in braille education. Throughout the 1990s and 2000s, the organisation provided specialised braille training for teachers and university students. Recognising the need for accessible, flexible learning options, NextSense transitioned its braille training to an online format in 2014, launching the open-access UEB Online platform, https://uebonline.org/. This initiative enables educators, families, and professionals to access high-quality braille

instruction, free of charge, breaking down geographical and financial barriers to learning braille.

Online Course Offerings in UEB Literacy and Mathematics

NextSense offers a range of online courses in Unified English Braille (UEB) Literary and Mathematics. The courses provide structured, accessible training for learners at various levels, allowing them to develop proficiency in braille reading and print-to-braille transcription.

1. UEB Literacy Course

The UEB Literacy course is divided into two modules, covering a total of 30 lessons that include both braille-to-print and print-to-braille exercises.

- **Module 1 (Lessons 1–14):** Introduces the fundamentals of the Unified English Braille code, including the alphabet, basic punctuation, and common word and group signs.
- **Module 2 (Lessons 15–30):** Expands into more advanced topics, such as two-cell contractions, short forms, numbers, capitalisation, and complex punctuation.

2. UEB Mathematics Courses

The UEB Mathematics program consists of three sequential courses, each containing ten lessons focused on transcribing mathematical expressions from print to braille.

- **Introductory Mathematics:** Covers fundamental mathematical symbols and expressions encountered in primary education.
- **Advanced Mathematics:** Introduces symbols and expressions commonly used in junior secondary education.
- **Extension Mathematics:** Explores more complex mathematical symbols and concepts relevant to senior secondary education.

Each course includes a series of lesson and interactive exercises that must be completed with 100% accuracy before progressing to the next lesson. Learners receive immediate automated feedback, allowing them to track their progress effectively. Upon successfully completing all lessons in a course, learners may choose to purchase a certificate of completion for a nominal fee, serving as formal recognition of their UEB knowledge.

3. Foundations of Braille Literacy course

In 2024, NextSense introduced a Foundations of Braille Literacy course, consisting of nine video-recorded presentations and quizzes that are designed to enhance understanding of braille literacy instruction. Course content includes research-based teaching approaches, learning media, braille literacy assessment methods, and the developmental stages of braille literacy.

Assessment and Certification: A Pathway to Opportunity

For many individuals, mastering braille is more than just an academic achievement—it is a crucial skill that can open doors to career advancement, higher education, and greater independence. In response to growing requests from educators, professionals, and braille users, NextSense has expanded its offerings to include formal competency examinations in Unified English Braille. These assessments provide a recognised certification that supports employment opportunities, career progression, and success in disability-related fields, where braille competency is essential.

The open-book UEB examinations are designed to be rigorous yet supportive, recognising the real-world application of braille skills. The UEB Literary exam requires candidates to complete a 1,000-word translation from print to braille and answer multiple-choice questions, while the UEB Mathematics exams—spanning primary to senior secondary school content—assess the ability to accurately transcribe mathematical expressions into braille. By allowing open-book access, the exams encourage candidates to engage with resources, reinforcing the idea that braille literacy is a lifelong learning process rather than a simple test of memorisation.

Earning a Certificate of Competency in UEB is not just a personal achievement; it is a testament to an individual's dedication to accessible communication and inclusive education. Whether supporting a touch learner in the classroom, developing accessible learning materials, or pursuing a career in disability services, certification provides both confidence and credibility. Through these assessments, NextSense continues to foster a world where braille literacy is valued, recognised, and celebrated as a fundamental right for all.

Accessibility and Learning Modes

NextSense offers flexible learning modes to ensure that every learner can engage with the material in a way that best supports their individual visual requirements. The **Visual Access Mode** is designed for individuals who can read standard print, presenting information in a typical visual format. For individuals with low vision, the **High Contrast Mode** offers customisable settings, allowing adjustments to font size, background colour, and text colour to enhance readability. The **Non-Visual Access Mode** is optimised for screen reader users and refreshable braille displays, ensuring that all content is accessible without relying on visual cues.

System Requirements and Registration

To register and complete the UEB Online courses, learners need a computer with an internet connection. To get started, go to the UEB Online website, https://uebonline.org/, and create a personal account with a secure password. This enables each learner to access their account from any computer to study at their own pace and return to their lessons at any time. A keyboard check ensures that the computer's keyboard can support the necessary 6-key combinations required for print-braille transcription.

It is important to note that the training courses and competency exams are not compatible with iPads, smartphones, or other handheld devices, as they require the pressing of combinations of keys to represent the 6-cell nature of braille characters.

Braille Music Notation Training Program

An exciting initiative in 2025 is the development of online, fully accessible training programs for braille music notation using the International Braille Music Code. NextSense plans to launch an introductory program in 2025, followed by an advanced program in 2026.

This initiative has brought together braille musicians and music teachers from Australia and New Zealand to form an advisory group. They will provide guidance and support in developing content and will also pilot the lessons to ensure full accessibility.

Conclusion

The NextSense online braille courses are designed to remove geographical and economic barriers, making braille education accessible to anyone who wishes to learn, including those in regions where in-person braille instruction is limited or unavailable. By providing structured, high-quality training, free of charge, NextSense empowers educators, families, and professionals to support braille literacy development for children and adults who are blind or transitioning from print to braille due to progressive vision loss.

The introduction of competency examinations further enhances opportunities for individuals to gain formal recognition of their braille skills, supporting career progression and accessibility efforts. Additionally, the platform's inclusivity—through multiple access modes—ensures that learners of all abilities can engage with the material in a way that meets their unique requirements. Through these initiatives, NextSense continues to foster a world where braille literacy is valued, accessible, and celebrated as a fundamental right for education and independence.

Breaking Barriers: How Accessible Books are Transforming Education for Blind Students in Ethiopia – Secretariat, WIPO Accessible Books Consortium

Website: https://www.accessiblebooksconsortium.org/en/

For many students in Ethiopia, obtaining textbooks in a usable format has been a barrier to education. Until recent years, students with visual impairments have long faced this challenge. Thanks to the Accessible Books Consortium (ABC) and its partnership with the Ethiopian National Association of the Blind (ENAB), these students were able to obtain a wider range of educational materials, empowering them to pursue their dreams.

Between 2019 and 2021, ENAB received training in how to produce accessible books, as well as funding to produce 706 accessible-format copies of educational titles, including

EPUB3 digital books, embossed braille materials, and audiobooks. The training and funding was provided by ABC, a public private partnership led by the World Intellectual Property Organization, a U.N. specialized agency located in Geneva, Switzerland. These resources have changed the lives of hundreds of students across Ethiopia, providing them with the tools they need to learn, grow, and aspire to greater heights.

Here, we revisit the inspiring journeys of three individuals who benefited from this initiative.

Mikias: The Aspiring Law Lecturer Advocating for Change

Mikias with a white cane standing in front of greenery and trees.

Photo credit: Ethiopian National Association of the Blind (ENAB)

“I want the world to change its view of the capabilities of persons with disabilities.”

Mikias, who was a preparatory school student in Addis Ababa at the time of the initiative, had always been passionate about reading novels and dreamed of becoming a law lecturer. His journey was not easy—he lost his sight in 2015 due to an optical nerve condition, forcing him to take a two-year break from school to learn braille.

Despite these challenges, Mikias persevered. Before the ABC-ENAB initiative, finding accessible educational materials was a struggle, with a limited supply of braille books and recorded materials. After, thanks to the availability of digitally accessible formats, he no longer had to rely solely on braille books.

Mikias envisioned a future where people recognize the abilities of individuals with disabilities.

Now, as he continues his academic and professional journey, Mikas remains committed to giving back to his community and reshaping societal perceptions of people with visual impairments.

Teshager: A Tech Enthusiast Overcoming Barriers in STEM

Teshager in a striped shirt sitting at a desk in front of a computer.

Photo credit: Ethiopian National Association of the Blind (ENAB)

“We need to familiarize persons with disabilities with technology.”

For Teshager, technology was more than just a subject—it was his passion. Having lost his eyesight due to measles at the age of three, he had to navigate a world where resources for visually impaired students in STEM fields are scarce.

An exceptional student who consistently ranked at the top of his class, Teshager was an active committee member of his school's special needs club and an advocate for inclusive education. Before ABC and ENAB provided accessible books, he relied on YouTube tutorials to learn programming. After, with the availability of structured educational materials, he could deepen his understanding of emerging technologies.

Teshager’s story highlights the importance of making STEM education more inclusive for students with disabilities.

Mulu: From Student to Entrepreneurial Dreamer

Mulu, in a yellow suit, sitting on a chair.

Photo credit: Ethiopian National Association of the Blind (ENAB)

“We can do anything we set our minds to and achieve great things.”

Mulu, a student in Debre Birhan, Ethiopia, had a vision for the future—literally and figuratively. After losing part of her vision in an accident, she remained determined to pursue her education and build a successful business.

Mulu faced considerable challenges throughout her education. She struggled to find learning materials that suited her needs. Large print books and audio materials were scarce, and her school lacked the necessary technological tools to support students like her.

“I used to rely on MP3 players for audiobooks and read large print books whenever possible,” Mulu recalled. “But without a proper screen reader or digital accessibility tools, I often felt left behind.”

That began to change when ABC and ENAB introduced a program aimed at improving the availability of educational materials for students with visual impairments. Through this initiative, her school received training and technical support, including the installation of screen reader software on computers. Mulu had the opportunity to engage with digital books and improve her learning experience.

Despite the challenges, Mulu remained steadfast in her pursuit of education. She credited her perseverance as her greatest achievement, a testament to her resilience and ambition. In addition to her studies, she enjoyed cooking and decorating—skills she hoped to turn into a successful business in the future.

“Ten years from now, I see myself running my own business and building a family,” she said. “I want people to know that we can do anything we set our minds to and achieve great things.”

The Future of Inclusive Education

These stories highlight the importance of inclusive education and the need for ongoing support to ensure that students with disabilities have equal access to learning opportunities. The work of organizations like ABC and ENAB is crucial in creating an environment where all students, regardless of their physical limitations, can thrive.

For educators and policymakers, stories like these serve as a powerful reminder of why investment in accessibility matters. With the right tools and support, students like Mikias, Teshager, and Mulu can pursue their dreams, break barriers, and shape a more inclusive future.

About ABC

The Accessible Books Consortium (ABC) is a public-private partnership led by WIPO that, together with its many partners around the world, has had real impact over the past decade. Since its inception, the ABC Global Book Service catalogue has quadrupled in size to over one million titles thanks to the inclusion of the collections of participating authorized entities. ABC delivered a total of 225,000 accessible digital files from the ABC catalogue to persons with print disabilities through its authorized entities in 2024. In addition, through ABC’s training and technical assistance partners, more than 22,000 textbooks have been made accessible in over 40 low-income countries, improving access to education for thousands of young people. ABC was established in June 2014 to implement the goals of the Marrakesh Treaty. ICEVI has a permanent seat on the ABC Advisory Board.

Subscribe to receive regular ABC news updates via email

Educational and therapeutic programming for students with brain-based dual sensory impairment – Todd Reeves, JD/MS, Overbrook School for the Blind

Overbrook School for the Blind, Philadelphia, USA
E: todd.reeves@obs.org W: www.obs.org

The Overbrook School for the Blind (OSB) welcomes the input of the international community to develop educational and therapeutic programming for students with brain-based dual sensory impairment. OSB is currently exploring the viability of establishing programming for students with a dual diagnosis of Cerebral Visual Impairment (CVI) and Auditory Processing Disorder (APD).

OSB plans to initiate this program despite limited applied research in this arena or established programs modelling best practices. A preliminary review of existing research

on brain-based dual sensory impairment reveals that much of it does not directly inform program development. OSB is therefore reaching out to the international community and interested individuals who would like to contribute ideas for program design, participate in active research efforts, or otherwise expand the knowledge base on this topic.

Once our programming is established, OSB is prepared to share information gained with the international community. Through the generous support of the Sid Rosenblatt Family, newly constructed classrooms have been outfitted with audio and recording capabilities so instructional practices can be observed in real time or recorded and preserved for review and distribution. Thus, OSB anticipates employing a “Lab School” approach to programming.

A core team of OSB staff members possesses the expertise needed to design and launch this program while also facilitating and assessing student progress. The program’s lead author has over 20 years’ experience overseeing schools dedicated to either blind or Deaf students. As both a teacher of the deaf and clinical audiologist, he was present in the operating room when the first student at a school for the deaf in the United States received a cochlear implant. The follow-up interventions for the 11-year-old student, combined with the findings of other cochlear implant surgeries for congenitally Deaf students, spotlighted the importance of early brain development in the form of auditory encoding as a predictor of successful outcomes.

The Superintendent of OSB will oversee the program and has substantial experience assessing and recommending educational programming for students with CVI. She presented and facilitated a panel presentation at the 5th World Congress of Paediatric Ophthalmology and Strabismus this past summer in Kuala Lumpur. Additionally, an experienced OSB speech pathologist assigned to the program received her graduate training at Gallaudet University, a renowned training ground for Deaf professionals and those working in the field of deafness. Another veteran staff member possesses Certificates of Clinical Competence in both speech language pathology and audiology.

OSB invites you to share your own expertise, and together, contribute to the collective knowledge of children with brain-based dual sensory impairment. Helen Keller’s often cited quotation once again fits this occasion: “Alone can do so little; together we can do so much.” All comments and ideas are welcome and will receive a response. Please send them to the email address noted in the introduction. Thank you in advance for your contributions to this effort.

News from Deafblind International (DbI) – Mirko Baur

DbI President

Dear ICEVI colleagues,

As I write this on behalf of DbI, we are just two days away from the opening of our 1st Regional Conference in Asia. As you may know, DbI has a long tradition of world and regional conferences, which take place a little like the Olympic and World Championships, in alternating years and at intervals of about four years. Until recently, regional conferences were always held in Europe. We changed that in 2022 with the 1st DbI Africa Conference, a wonderful conference that, among other things, led to the establishment of a dedicated DbI network for Africa, the Deafblind Africa Network.

Now our conference is taking place in Asia, in Pokhara, the official tourism capital of Nepal. We expect more than 300 participants with and without their lived experience, most of them from Nepal and the other countries in the region, but also from South East Asia and even from around the world.

The conference focuses on “Innovative Deafblind Inclusion” which is of course an invitation to action. People with deafblindness experience the exact opposite in many countries around the world: exclusion and violation of their human rights.

The right to education is one of those key rights and also the centre of our Global Education Campaign, run in close collaboration with the World Federation of Deafblind WFDB, the World Blind Union and ICEVI. According to the data of WFDB’s 2nd Global Report just 14% of children with deafblindness are enrolled in education across 36 countries all over the world. That is obviously a disaster and a scandal.

The campaign also invests in a Research Initiative that provides scientific and financial support for 30 research projects on the education of children with deafblindness, with a focus on Africa, Asia and Latin America. The results will be presented at the next joint World Conference of DbI and WFDB in Davos, Switzerland in July 2027.

The newly completed core sets for deafblindness within the framework of the International Classification of Functioning, Disability and Health (ICF) will certainly support us on this path to guaranteed rights and change. They describe the most important aspects of deafblindness, can serve as a common language and will prove helpful in standardising quality measures for the provision of services for people with deafblindness. You can access the Core Sets here: ICF RESEARCH BRANCH - ICF Core Sets for Deafblindness

The development of the ICF Core Sets for Deafblindness is also a global collaborative project. And this is indeed characteristic for DbI. As the global point of connection in deafblindness we “Connect to Act”. In this, our partnership with ICEVI was, is and remains important. A big thank you for that!

Warm regards, Mirko

World Blind Union
Union Mondiale des Aveugles
Unión Mundial de Ciegos

Unlock Your Potential: Apply for a WBU Scholarship Today! – World Blind Union

Dear Friends,

Are you, or someone you know, a blind or partially sighted individual with big dreams to further your education or build leadership skills? The World Blind Union is excited to offer five scholarships that can help turn those dreams into reality—especially for individuals from developing countries.

Explore Our Scholarships:

- **Barbara Marjeram Braille Literacy Scholarship** – For blind women and girls (ages 14–30) in developing countries, with a focus on Braille literacy.
- **Gerald Dirks Scholarship** – For blind and partially sighted individuals (ages 18–35) pursuing post-secondary education or Braille literacy.
- **Mary Hochhausen Prize for Music and Braille Literacy** – For individuals (ages 18–35) or organizations supporting music and Braille literacy.
- **Pedro Zurita Youth Fund** – For blind and partially sighted individuals (ages 15–30) looking to make a difference.
- **Hermione Grant Calhoun Fund** – For blind and partially sighted women and girls (ages 16+) studying in their home country.

Visit our website to learn more about each scholarship

How to Apply:
Applying is easy! We've made it simple with just one application form, and applications are accepted year-round. Applications are reviewed after April 30th each year.

Send your application to: scholarships@wbu.ngo before April 30.
This is an amazing opportunity to invest in your future. If you have any questions or need help with the application, don't hesitate to reach out!

Best wishes,
The World Blind Union

Improving Access to ICEVI Training Materials for Quality and Inclusive Education of People with Visual Impairment in Africa: A Partnership between CBM International and ICEVI Africa – Martin Kieti

Secretary-General, ICEVI Africa

Email: m.kieti@iceviafrica.org

In 2023, ICEVI Africa and CBM entered into a three-year partnership to improve access to quality education for people with visual impairment including those with blindness, low vision, deafblindness and those with additional disabilities, in Africa, a shared vision of both organisations. Under this partnership, CBM would support and strengthen the work of ICEVI Africa by improving training materials and resources for teachers and other people that serve learners with visual impairment. The partnership focusses on meeting the capacity development needs of educators, CBM partners and other organizations working in the area of education.

This partnership was motivated by a survey carried out by CBM among its partners on their utilisation of ICEVI training and capacity development resources. The survey revealed very low levels of utilisation and, indeed, knowledge of these resources, particularly among partners in Africa, even though CBM had been a long-serving International Partner Member of ICEVI. With CBM's increased priority for Africa and ICEVI's focus on strengthening the work and reach in Africa, this partnership became mutually beneficial to all parties.

Through this partnership, ICEVI Africa would develop six online training modules for teachers and other people that work with or support learners with visual impairment. The modules would then be piloted with CBM partners in Kenya as a model and replicated in one or two francophone countries of CBM operations by the end of the third year. ICEVI Africa would also enhance access to additional training materials and information resources for teachers by improving the structure and accessibility of its website.

In order to determine the capacity development priorities and learning media preferences for the teachers, ICEVI Africa conducted a voluntary online survey with teachers, with respondents coming from Burkina Faso, Kenya, Malawi and Nigeria. The respondents of the survey were largely teachers from regular schools and with teaching experience of between 5-10 years. Over 90% of the respondents reported owning a personal digital device such as a computer, tablet or smartphone. In addition, over 80% of the respondents reported use of the internet for research and capacity development activities.

The survey highlighted the lack of suitable teacher development resources as the biggest challenge faced by teachers. It also identified the capacity development areas prioritized by teachers, namely, Inclusion of learners with visual impairment in mainstream schools, teaching of mathematics and sciences and working with learners with low vision, among

others. Finally, the survey identified online interactive and downloadable course materials as the teachers' most preferred learning media. The findings of the teacher survey provided useful insights on the most optimal approaches to ensure that the materials developed meet the capacity development needs of the teachers.

Today, the first set of two modules had been completed. The two modules are packaged into a single course titled: Supporting Learners with Low Vision in Class. Developed with technical assistance from CBM Low Vision specialists, the course has now been translated into French and both English and French versions of the course have been uploaded onto the newly designed ICEVI Africa Learning Management System (LMS). The English version of the course was piloted with 65 teachers in Kenya in September 2024 and the French version is scheduled to be piloted in one francophone country in early 2025. The course can be taken by any person interested in low vision and requires between twelve and twenty-four hours to complete.

Kenya teachers who are piloting the ICEVI Africa Online Courses posing for a photo after an induction workshop in August 2024.

In the meantime, the next set of modules are in the process of development and will be available on the LMS in the course of 2025. The next course to be published is on educational technologies for learners with visual impairment and will seek to introduce teachers and other personnel to a range of technologies that can be used in the teaching of learners with visual impairment.

All the courses will be available for free on the ICEVI Africa website: www.iceviafrica.org or directly on the ICEVI Africa LMS: www.lms.iceviafrica.org. They will be self-paced, and, upon successful completion, the participant will receive a personalized automated certificate from ICEVI Africa that is verifiable online.

Retired CBM Inclusive Education Advisor Sian Tesni and ICEVI Africa Secretary-General, Martin Keiti, making a joint presentation on the ICEVI Africa Online Courses at the ICEVI World Conference, Ahmedabad, India, in November 2024.

In addition to the online courses, and through the CBM partnership, ICEVI Africa is increasing access to information and resources on visual impairment through its website. The structure and accessibility of the website have been improved and new information pages added. These A Resources page provides links to useful resources while Forums page offers opportunities for visitors to join online forums of their choice where they can initiate, contribute to or follow discussions on issues relating to the education of learners with visual impairment. In addition, a Blog page provides regular updates and interest stories on the education of people with visual impairment in Africa and around the world, and a Membership page allows interested individuals and organisation to apply for membership to ICEVI Africa.

Announcing ONCE “Much to See” campaign in Spain – Fernando Riaño Riaño

Director of Institutional Relations and Sustainability of the ONCE Social Group

ONCE has launched a campaign throughout Spain titled "Mucho que Ver" (Much to See). This audiovisual series features a group of blind or visually impaired friends who gather at their local café to share their daily lives and everyday reality. The campaign is to influence, defend rights, and raise awareness (from an entertaining and educational perspective) about everything related to disability in general and blind people in particular. In eleven episodes, our colleagues share anecdotes and personal experiences that help viewers understand the reality of being blind and help them reflect on how we relate to them.

In its work for the inclusion of blind and visually impaired people, ONCE is launching this audio-visual series with the aim of raising awareness and highlighting the need for all sectors of society, as well as institutions and businesses, to "be aware of how to interact with a person with a visual impairment and the different needs in their daily lives, whether

it's getting around our cities, using public transport, going to a health center, or even something as simple as shopping."

The series explores everyday situations that blind people, like the rest of the population, face in order to achieve personal autonomy: going to the doctor and knowing when it's your turn; going out to dinner and being able to see the world at ease; using public transport and going where you want; going to the market and not buying juice when you want milk; taking a pleasant walk (if you're lucky and it doesn't turn into a jungle); walking with a friendly passerby, even if you don't want to; or being at work and not knowing who's arrived.

The videos are audio-described and subtitled in English. They are also available in Spanish.

Please see the show in the following link:
https://ydray.com/get/t/u17418580338677bNtr400e07038180fl

INVITATION TO CONTRIBUTE TO FUTURE ISSUES

The Educator is published biannually to foster “connection” within the global disability community—facilitating knowledge exchange, resource sharing, and emotional connections through case studies and personal stories. The Publications Committee welcomes submissions of articles, reports, reviews, and position papers, as well as contributions on VI education programs and models. These submissions are intended to engage ICEVI members and partners, parents and caregivers, leaders and administrators, researchers and higher education students, technology suppliers and consumers, and practitioners in the education, health, and rehabilitation sectors.

Themes and submission deadlines for upcoming issues

July 2025 issue: The Girl Child – submissions due by June 30, 2025

January 2026 issue: Physical Activity (including O&M, sports, recreation, etc.) – submissions due by December 31, 2025

July 2026 issue: Technology and AI – submissions due by June 30, 2026

Submission Guidelines

Please send your submissions to Publications@icevi.org or secretarygeneral@icevi.org.

- Your submission must not have been published before, either in print or online.
- Language: English.
- Your name, title, country location, contact email and/or internet address.

- Format: MS Word, Arial 12-point font, double line spacing, left-aligned paragraphs, numbered and labelled figures and tables.
- Avoid complex jargon; define acronyms, abbreviations and technical terms.
- Scholarly manuscripts: 5000 words or less, with compliance to ethics requirements for original research. permission to use the material.
- Reports, reviews, programs, and position papers: Approximately 600 words
- Images: Black and white or greyscale, with Alt Text descriptions

INTRODUCING THE ICEVI EXECUTIVE BOARD, 2025-2028

With commencement of the 2025-2-28 quadrennium, we are pleased to introduce the global Executive Board of ICEVI. For contact details, and the details of the seven ICEVI regional Boards, please visit the ICEVI website, https://icevi.org/.

Ms Gertrude Oforiwa Fefoame - President

Ms Susan LaVenture - First Vice President

Mr Akhil Paul - Second Vice President

Dr Frances Gentle - Immediate Past President

Dr Praveena Sukhraj-Ely - Treasurer

Ms Ana Peláez - ONCE (Spanish National Organization of the Blind)

Mr Todd Reeves - Overbrook School for the Blind

Mr Craig Brown – Royal National Institute of Blind People (RNIB)

Mr Andrew Griffiths - Sightsavers

Mr Mirko Baur – Deafblind International

Ms Diana Stentoft – World Blind Union

Mr Peter Holland – International Agency for the Prevention of Blindness (IAPB)

Mr Komivi Ayassou - President, ICEVI Africa

Mr Silatul Rahim Bin Dahman – President, ICEVI East Asia

Dr John Ravenscroft – President, ICEVI Europe

Mr Julio Cesar Canizalez – President, ICEVI Latin America

Dr Michael Bina – President, ICEVI North America and the Caribbean

Dr Emily White – President, ICEVI Pacific

Dr Birendra Raj Pokharel – President, ICEVI West Asia

ICEVI SECRETARIAT CONTACT DETAILS

Please contact the ICEVI Secretariat for information about membership, publications, and initiatives of ICEVI.

Dr Shawn Piantoni, Secretary General,

Secretariat, International Council for Education of People with Visual Impairment (ICEVI)

Appelstraat 7 2564EA, The Hague, The Netherlands

Email: secretarygeneral@icevi.org