# Introduction

Louis Braille’s creation changed and continues to change the lives of people who are blind or have low vision. More than just a code, braille makes literacy possible for thousands of people with sight loss in Canada and around the world. And literacy is essential to economic and academic success, and social inclusion, particularly for people with print disabilities. Unfortunately, the World Braille Union estimates that 90 percent of published works are not available to people with print disabilities and calls this the “book famine”

CELA was established to ensure that people with print disabilities have equitable access to reading materials which meet their specific needs. One of the key services we provide is access to braille materials in physical and digital formats. In 2023, CELA launched a braille study to learn more about our users, their needs, preferences, and priorities. It is essential that users have direct input into the services they receive from CELA. We will use the feedback generated from this study to inform and shape both our services going forward and the role we play as an advocate for equitable access to reading for all people with print disabilities.

Is Braille still relevant?

Braille is important for literacy: Braille is the written language for people who are blind or who have low vision. It makes it possible to express and exchange ideas. It’s crucial for independent daily living. Technology, while impressive, will not negate the value of braille.

Braille is important for accessibility: From elevator buttons to labels to ballots and books, braille allows braille readers to access information, spaces, and opportunities independently.

Braille is important for equity: Literacy impacts health, education, and employment. For those with vision loss, braille opens opportunities. According to a study published in the Journal of Blindness Innovation and Research “Those who read Braille on a daily or weekly basis are employed at a significantly higher rate than those who do not, and Braille readers also earn on average $11,000 more than non-Braille readers. “(Bell and Mino 2013 https://nfb.org/images/nfb/publications/jbir/jbir13/jbir030101.html)

Braille literacy impacts the ability to live independently, to pursue education and to actively participate in community.

# CELA’s Braille Study

In 2023, CELA undertook a study to assess the needs of our braille users, and how our collection and services were meeting those needs. Our goal was to better understand the braille landscape in Canada and our place within it, and to use the information we gathered to inform and improve CELA’s braille services in the future.

CELA’s current braille collection includes 1,600 printbraille titles (picture books with a clear braille overlay), 24,000 contracted and 1,700 uncontracted braille titles. Materials are available for readers of all ages and a growing number of materials are available in French and other languages. Users can access braille electronically or through single use embossed braille, which is produced on demand and can be kept or recycled when the reader is finished. The vast majority of CELA’s braille titles are human transcribed braille. Bookshare, which is available through CELA, offers an additional 1.1 million titles in contracted braille to CELA users. Bookshare’s braille collection is computer generated and not human transcribed.

# Process

The study included gathering information from organizations whose mandates included braille literacy, braille education and training, and library services related to print disabilities and by surveying current CELA braille users, those who support people who may use CELA braille including teachers or parents of blind children, and those who read braille but choose not to use CELA braille.

The English survey received 142 respondents, and the French survey had 7 for a total of 149 completed or partially completed surveys. Of those, 25 were completed by phone and 124 were completed through Survey Monkey online.

# Key Findings by audience

## Libraries and other organizations

The following are requests and suggestions gathered from discussions with libraries and other organizations:

* To support braille literacy and braille learners, offer uncontracted braille for middle school ages and adult braille learners, produce materials in double spaced braille, offer more short stories, digest-length texts, and ‘high interest, low vocabulary’ books and provide books that have both print and braille, but not necessarily pictures, which are called interlined books.
* To increase choice and reduce barriers, increase number of embossed braille magazines including ones from other countries or libraries, more magazines for kids and offer music braille.
* Allow users to download newspapers to braille devices.
* Offer in-person and virtual workshops to keep organizations up to date on CELA services and include students or clients.
* Offer electronic braille displays for loan or use as the National Library Service for the Blind and Print Disabled (NLS) in the United States and the Royal National Institute of Blind People (RNIB) in the United Kingdom” .. is doing and RNIB have been able to do.

## Users Survey

**Profile of CELA Braille Users:** The majority of CELA braille users are 30 to 59 years old (46.25%) or 60 to 79 years old (35%) and more than three quarters have used CELA braille for 5 or more years. More than 80 per cent responded that they primarily use CELA braille for their own purposes such as leisure, lifelong learning, school etc. And almost three quarters of CELA braille users also use at least one other CELA format for non-braille reading.

Nearly 70% said that said their needs were extremely well met, (30.77%) or well met (38.46%) by CELA’s collection and braille services.

**When asked about the one most**  important aspect of CELA braille services to them.

* 27.16% prioritized high-quality braille books with few typos and good formatting,
* 25.93% prioritized a broad selection of materials,
* 19.75% prioritized the availability of embossed braille rather than electronic braille,
* 23.46% prioritized the availability of braille books quickly after publication,

### Formats

**Preference in formats:** CELA braille users were asked to choose one preferred format to read braille.

* 55.29% of users chose embossed hard copy braille from CELA,
* 22.35% chose digitally with a refreshable braille display,
* 10.59% chose printbraille.
* 4.71% chose embossed hard copy braille that I emboss myself.
* 7.06% said “other”.

**Satisfaction with braille quality:** CELA braille users were satisfied with the quality of printbraille, embossed hard copy braille and electronic braille. Users were most satisfied with electronic braille and least satisfied with embossed hard copy braille.

#### Embossed braille:

**Embossed braille usage and preferences:** 76.14% of CELA braille users indicated that they use embossed hard copy braille from CELA, with 71.88% of them saying they preferred contracted and 10.94% of those respondents said they preferred uncontracted and 17.19% said they preferred both depending on the purpose of their reading.

**Identified issues with embossed braille:** The most commonly identified issue was related to thequality of the embossing, followed by issues with the binding or paper, errors due to computer generated braille or the table of contents.

**Notes and User Comments**: Users felt the quality of embossed braille was variable. Some examples of issues with the quality of embossing included missing dots, extra dots, dots scrunched together and soft, flatter, or faded braille.

#### Electronic braille

**Electronic braille usage and preferences:** 46.59% of respondents use electronic braille or text formats including BRF, ePub, DAISY Text, and Word formats from CELA, while 53.41% do not. Of those who use electronic braille or text:

* 57.50% use ePub,
* 57.50% use DAISY Text,
* 60.00% use Word, and
* 72.50% use BRF.

**Types of materials read using electronic braille:** Of the 32 respondents that answered 100% said they read books, 25% read magazines, 15.63% read newspapers, and 3.13% answered other, explaining that they read academic materials such as textbooks and journals.

**Contracted versus uncontracted:**

1. 71.79% prefer to read electronic braille in contracted braille,
2. 7.69% prefer uncontracted braille,
3. and 20.52% use both.

**Which technology is used to read electronic braille or text:**

* 88.57% use a refreshable braille display,
* 77.14% use text to speech,
* 11.43% use screen magnification, and
* 8.57% answered other, explaining that they use the Victor Reader Stream, FS Reader, the Braillenote, or a screen reader on the computer.

#### Printbraille

**Printbraille usage:** 28.74% of respondents use printbraille, while 71.26% do not.

**Contracted vs Uncontracted:** Asked if they would use contracted printbraille were it to be offered by CELA, 78.26% answered yes, 13.04% answered no, and 8.70% were unsure, stating that both are useful for teaching or learning braille.

**Satisfaction with CELA’s collection:** While 8.7% were satisfied with CELA’s current printbraille collection many respondents indicated they want more offerings in this category.

* 60.87% wanted more award winners/nominated titles,
* 52.17% wanted basic books about letters, colours, etc. added,
* 47.83% wanted books that showcase characters with diverse abilities,
* 43.48% wanted more titles for specific age ranges,
* 39.13% wanted books that showcase characters from diverse ethnic backgrounds,
* 34.78% wanted books that showcase characters from diverse religious backgrounds,
* 30.43% wanted Indigenous-focused titles,
* 17.39% wanted dual language titles, and
* 43.48% wanted something else, “other”.

Totals exceed 100% as respondents could choose more than one option.

### Access To and Comfort with Technology

This section of the survey assessed asked users to report their level of comfort with various forms of technology.

**Computer usage:**

* 74.73% of respondents use a computer and
* 73.63% use a smartphone and/or tablet.
* 52.75% of respondents use a refreshable braille display.
  + According to respondents, the reasons for not using a refreshable braille display were primarily related to cost or need for training and support.

**Using refreshable braille display:** For those that use a refreshable braille display, 43.24% prefer BRF files to read on it, and 48.65% prefer text formats (ePub, DAISY text, Word). 8.11% do not use a refreshable braille display.

**Comfort with technological activities:** Respondents were asked to rate their comfort with various technological tasks on a scale of 1 to 5, where 1 is "not at all comfortable," and 5 is "extremely comfortable”.

* Browsing the CELA website using your computer, smartphone, and/or tablet. **Weighted average response 4.37.**
* Downloading CELA materials in your preferred format using your computer, smartphone, and/or tablet. **Weighted average 4.24**
* Transferring electronic CELA braille materials from your computer, smartphone, and/or tablet to your refreshable braille display. **Weighted average 3.8**
* Reading CELA BRFs on your refreshable braille display. **Weighted average 3.8**
* Reading CELA ePubs, DAISY text or Word documents on your refreshable braille display. **Weighted average 3.74**
* Requesting and downloading CELA braille materials to an app (such as EasyReader) on your smartphone. **Weighted average 3.82**

### Braille Learners

Respondents were asked if they are a braille learner or if they support a braille learner. 33.72% responded yes (29), and 66.28% responded no (57).

**Which materials would be useful to them or their braille learner?** OF those who answered they do support braille learners 26 patrons answered indicating that one or more of these would be helpful:

* 76.92% wanted high interest, low vocabulary materials,
* 76.92% wanted double-spaced braille,
* 65.38% wanted single-sided braille,
* 65.38% wanted short stories and digest-length texts,
* 69.23% wanted children’s early chapter books,
* 61.54% wanted printbraille,
* 53.85% wanted recipe books.

**Contracted vs Uncontracted for learning braille:** 25.93% responded that they preferred uncontracted, 14.81% preferred contracted, and an overwhelming 59.26% preferred both to support teaching and learning braille.

### General preferences

**Collections development:** When asked, respondents indicated a desire for more braille books in most of CELA’s popular genres include family stories, mysteries, science and technology, award winners, biographies, fiction including historical fiction and romance, and more mysteries.

**Language preferences and interests:** When asked what languages they would be interested in reading in braille, 66 respondents said.

* 7.58% answered they would like Spanish,
* 7.58% would like Arabic.
* 4.55% would be interested in Mandarin and Cantonese.
* 3.03% were interested in Punjabi, and Tagalog.
* 74.24% were not interested in any of the options offered.
* 18.18% (12) chose “other” and were asked to list these languages in a short answer box. Answers included Italian, German, Turkish, Russian, Non-English Braille Instruction (for example, books on how to learn mandarin, for beginners in braille), Armenian, Hebrew, Japanese, Mi'kmaw, Romanian, Hindi, Cree, Inuktitut, and ancient languages (Greek, Latin).

**Barriers to braille reading:** When asked for feedback about barriers to reading braille respondents offered a wide array of responses. Most commonly:

* 10% spoke about the poor quality of embossed braille being a significant barrier to them and
* 7.5% explained that their multiple disabilities were a barrier.
* Other barriers mentioned included technology difficulties, need for additional education and support, more choices in French content, more middle grade level materials.

## Limitations of the Study

While we were able to collect much feedback through this survey, it has its limitations.

* 142 patrons responded to the English survey, but not every patron responded to every question. Results are limited because of who chose to respond to the survey and the questions they chose to respond to.
* We heard from less than half of the braille readers who accessed CELA braille between July 2022 to July 2023.

# What the study reveals.

**Choice matters.**

Like all readers, people with print disabilities must be able to choose the ways they read. The choice of format for blind or low vision readers can be influenced by the purpose of the content, the skills of the reader, and the type and availability of technology.

The study revealed that uncontracted materials are important for those learning braille and for developing literacy skills.

Embossed braille is an essential format used not only for reading for pleasure but also for information or instruction, or for readers with limited access to digital resources or technology. It is also essential for deafblind readers and those without reliable access to the internet or digital technology. More than half the survey respondents would choose embossed braille if limited to one format.

CELA is committed to continuing to offer embossed braille because of its utility for our users and to maintaining a robust and diverse range of formats for our users.

**User input must be included in all areas of decision making about braille services.**

People with print disabilities have unique and important insights into the barriers they face in accessing quality reading. They also expect and deserve quality and accessibility similar to what readers without print disabilities can expect. Respondents to the survey ranked four aspects of CELA’s service as having essentially equitable priority:

* high-quality braille books with few typos and good formatting, (27.16%)
* a broad selection of materials, 25.93%
* availability of braille books quickly after publication, 23.46%
* availability of embossed braille rather than electronic braille, 19.75%

In order to meet the diverse needs of braille readers, decisions about funding, services, formats, processes and content must integrate the feedback from the people they are meant to serve.

**Support for braille reading as a matter of equity and inclusion.**

The World Blind Union estimates that 90 percent of all published works are unavailable to people with print disabilities, For those with low vision or vision loss, access to quality braille is essential for literacy, for academic and economic success and for social inclusion.

Developing quality braille content requires expertise and technology and a commitment to ongoing improvements. CELA users place a high value on high-quality human-transcribed braille, and comments in the survey point to the pitfalls of computer transcription without any human intervention. Braille users should not need to settle for lower quality reading materials or fewer choices than their sighted counterparts would expect. Funding must be directed to programs which strive to address the book famine and provide the same equitable access to content that sighted or non-print disabled readers experience.

**Sustainable funding is crucial.**

Braille readers deserve equitable access to high quality reading materials and to the resources required to read those materials. Money invested in accessible books improves the heath, education, and the opportunity for people with print disabilities to contribute meaningfully to our community through employment and it must be viewed through that lens.

Long term sustainable funding must not only cover the production and distribution of braille reading material. It must also include funding to provide the tools and technology required to read those materials and to support users in learning the technology. For example, respondents in the survey cited cost and the need for training and support as the key reasons they did not use a refreshable braille display. With sustainable funding, we can work towards providing the same equitable access to content that readers without print disabilities experience.

# CELA’s next steps

Feedback gathered from the survey is already influencing the work CELA does. One of our guiding principles is equity. We must innovate and offer new ways of providing accessible reading materials while also honouring format choice for our users. We will integrate the information gathered in this study into our strategic priorities and we are pleased to already be making changes to address what we learned in the study. Specifically:

* We are adding more braille in French thanks to our partnership with Bibliothèque et Archives nationales du Québec (BAnQ) and using international exchanges to expand the languages we can offer.
* We are working with international exchanges to increase both contracted and uncontracted braille in the collection whenever possible.
* We are committed to highlighting existing materials available in braille to make them easier to find.
* We will look for opportunities to target our collection development to address unmet needs identified in the survey, such as materials for adult braille learners.

# Conclusion

Over the years, braille readers have faced numerous barriers to accessing high quality braille. While CELA’s commitment to offering a wide variety of options and a robust collection of reading materials has improved access for braille readers, there is still work to do. This work, including supporting improved access to technology, training, and quality internet service must be done in collaboration with libraries, the book publishing industry and other partners who have the responsibility to ensure braille readers have equitable access to reading. Braille readers must have a place at the table and their lived experiences need to guide the process of providing reading materials in accessible formats. With our users’ input, we can work towards solutions which create an equitable reading experience for all.