



**Special Education Technology  
British Columbia**

**Emerging Braille Literacy Project  
2001 - 2002**

SET-BC is pleased to announce the Emerging Braille Literacy Project for 2001 – 2002. This project will provide timely educational and technological support for Braille-using students who need to develop reading and writing skills in the primary grades. BC vision teachers will be able to request the long-term loan of Mountbatten Brailers from SET-BC for these students, starting in the fall of 2001.

This project follows a 2-year investigation of the use of the Mountbatten Brailer as a tool for Braille literacy development. The results of this study (see attached summary), which included 16 primary age students, show that this technology is an effective teaching and learning tool for literacy development.

**What is the Mountbatten Brailer?**

The Mountbatten Brailer is an electronic Braille notetaker and embosser with features that include an ergonomic keyboard, memory, speech feedback and forward and backward print/print translation. A qwerty keyboard can be connected to the Mountbatten to produce contracted or uncontracted Braille and a printer can be connected to produce a print translation of Braille output.



The current version, the MB Pro, now has both digitized and synthetic speech providing a multi-sensory approach to learning Braille. You can combine typing and touching Braille with the audio reinforcement of real speech confirming the letters or dot combinations you have Brailled. The synthetic speech features enable a student to create an assignment, edit text, modify, delete, block text and then produce a copy of the assignment in Braille.

**Which students might benefit from using the Mountbatten Brailer?**

Consider the following descriptors to determine whether a student might benefit from use of a Mountbatten Brailer:

- Primary age students, including students entering kindergarten in September 2001, who have emerging Braille literacy needs
- Students who, due to changes in their visual function, may need to learn Braille as a supplementary reading modality
- Students who are learning to use Braille for functional literacy activities (to accomplish daily tasks in home, school or community settings).
- Students who receive direct instruction from a vision teacher for Braille literacy development

## **How do students participate in the Emerging Braille Literacy Project?**

BC school districts may put forward students for this project as part of SET-BC's Cycle 1 in the fall of 2001. The process of requesting an MB Pro for a student will follow the normal SET-BC process, with the addition of a CAP supplement form designed for the project.

- With consultation from SET-BC regional staff as needed, BC vision teachers, SET-BC district partners and district planning/screening teams will determine which students will be put forward for the Emerging Braille Literacy Project.
- Districts will obtain Request for Service forms from SET-BC Regional Centres for these students.
- As this is a special project, these Requests for Service will be in addition to each district's usual allocation for SET-BC services.
- School-based teams will hold Collaborative Action Plan (CAP) meetings for students, completing a special CAP Supplement form to provide details on student need for this technology.
- A small screening committee, made up of SET-BC staff and BC vision teachers, will review all requests for this project.
- Training and resources that support the classroom use of the MB Pro will be provided for participating teams in the fall of 2001 – dates and locations to be announced in September.

## **Emerging Braille Literacy Research Project 1998 - 2000 Summary of Results**

Over the past two years Special Education Technology – British Columbia (SET-BC), the Provincial Resource Centre for the Visually Impaired (PRCVI) and the University of British Columbia's Program for Visual Impairment have collaborated on a research project to investigate and evaluate the impact of the Mountbatten Braille on literacy development and inclusion.

Sixteen primary age students, who are learning to use Braille as their primary or secondary literacy medium, and their teachers participated in the project. Results demonstrate that the Mountbatten Braille positively affects the development of reading and writing skills in Braille. Based on these findings it is proposed that the Mountbatten Braille be made available on a broader basis to all students in British Columbia who can benefit from this technology.

### **The Mountbatten Braille**

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### **Project Description**

Five beginning Braille readers and their vision teachers from across British Columbia were selected to participate in the research project in the fall of 1998. Positive preliminary findings and a demand to expand the project resulted in SET –BC accessing additional funding to add a further 11 primary-age students to the project in the fall of 1999.

All the students attend their neighbourhood school and have regular support from a teacher of students with visual impairments. Eleven of the students have little or no useful vision and use Braille as their primary literacy medium. Five of the students have varying degrees of useful vision and are learning to read and write in both Braille and print. Three of these students have additional physical and/or learning disabilities.

Vision teachers and other support personnel were trained in the operation of the Mountbatten Braille. They also learned implementation strategies to enhance the development of Braille literacy and arithmetic skills. Students in the project were brought together several times to share their experiences, demonstrate their expertise, learn some new skills, and provide feedback.

## **Results of the Emerging Braille Literacy Investigation 1998 - 2000**

Vision teachers and students provided feedback via surveys, questionnaires and focused discussion groups. Findings are summarized as follows:

### **1. Impact on Literacy Development – Writing**

Teachers reported that their students made better progress in the acquisition of Braille writing skills because of the Mountbatten Braille. They noted that beginning Braille readers often do not have adequate finger strength to produce readable dots on a manual Braille writer. When using the Mountbatten Braille, these children can produce well-defined, raised, Braille dots that they can tactually discriminate and read. Students were more motivated to write for longer periods of time when using the Mountbatten Braille, compared to a manual Braille writer. The speech feedback feature is not only very helpful for students who require multi-sensory feedback, but also reinforces learning new Braille contractions. It made writing more “fun” for most students.

### **2. Impact on Literacy Development – Reading**

The Mountbatten Braille contributed to improved progress in the development of Braille reading skills in 15 of the 16 students involved in the project. Students were better able to tactually discriminate and read the well-defined, consistent, raised dot output of the Mountbatten. The “hard copy” Braille output provides immediate tactile feedback and facilitates editing on the spot. The print-to-Braille translator provides students with increased access to “on the fly”; classroom teacher developed reading materials in Braille.

### **3. Impact on Inclusion**

Most of the vision teachers and students reported that the Mountbatten Braille provided more opportunities to be included in a wider range of classroom activities. Sighted primary age classmates are drawn to the “user friendly” appearance of the Mountbatten. Using the qwerty keyboard and the Mountbatten’s print-to-Braille and print-to-print translation features, cooperative group writing projects can be composed simultaneously in Braille and print.

In addition, the use of regular paper makes Braille less “different” and more readily accepted. The print-to-print translation feature and the Braille visual display allow the regular classroom teacher to have instant access to the student’s Brailled work. In some classroom settings, however, the embossing and beeper noise from the Mountbatten was found to be disruptive from time to time.

### **4. Impact on Development of Basic Technology Skills**

In general, teachers report that the technology-related skills their students develop while using a Mountbatten Braille can serve as a foundation for learning more complex technologies, such as Braille notetakers and computers. These basic skills can be taught to young students who are still at a concrete level of reasoning, as the Mountbatten produces immediate and “real” hard copy Braille.