

# Unified English Braille: International training and research initiatives

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**RIDBC Renwick Centre**  
For Research and Professional Education



# Presentation overview

- UEB Online for sighted learners –Aims
  - System requirements & technology “nuts & bolts”
  - Program content
  - Uptake by users
  - The next challenge – An accessible version
- Perkins SMART Braille Project
  - Background
  - Case study aims, participants, highlights

# UEB Online for sighted learners

- UEB Online - <http://uebonline.org>



The screenshot shows the homepage of the UEB Online website. At the top left is the logo "UEB Online" with the tagline "Braille training for sighted learners". To the right of the logo are links for "Administrator", "Back to lesson", "My Account", and "Logout". Below this is a red navigation bar with links for "Home", "About", "Getting Started", "Resources", and "Contact Us". The main content area features a decorative background of blue Braille characters. A central text box lists key features: "Fully online braille training program", "No need for a braille machine", "Sequenced print to braille exerciser", and "Self-paced learning from your computer". Below this is a section titled "Introducing UEB Online" with a paragraph explaining the program's purpose and a paragraph acknowledging the support from the Royal Institute for Deaf and Blind Children, the Round Table on Information Access for People with Print Disabilities, and the Australian Braille Authority. At the bottom, there are logos for the Royal Institute for Deaf and Blind Children, RIDBC Renwick Centre, and The University of Newcastle Australia, along with a "Privacy Policy" link.

**UEB Online**  
Braille training for sighted learners

Administrator Back to lesson My Account Logout

Home About Getting Started Resources Contact Us

**Fully online braille training program**  
**No need for a braille machine**  
**Sequenced print to braille exerciser**  
**Self-paced learning from your computer**

**Introducing UEB Online**

UEB Online is a training program for sighted people to learn Unified English Braille (UEB). Unified English Braille has been adopted by many countries and replaces standard english braille. This program is the first online UEB training tool. The program is suitable for classroom and specialist teachers, parents, teacher aides and other professionals supporting children and adults with vision impairment.

This program has been created by the Royal Institute for Deaf and Blind Children's [Renwick Centre](#). We acknowledge the support and permission from the [Round Table on Information Access for People with Print Disabilities](#) and [Australian Braille Authority](#) for the adaptation of content from the *Unified English Braille: Australian Training Manual, 2013* (edited by Howse, J., Riessen, K., & Holloway, L.).

Royal Institute for Deaf and Blind Children  
RIDBC Renwick Centre  
For Research and Professional Education  
THE UNIVERSITY OF NEWCASTLE AUSTRALIA  
Privacy Policy

# UEB Online - Aims

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- To offer braille training to any sighted person who has access to a computer and the internet, regardless of his/her location or financial circumstances
- To promote braille literacy globally

# UEB Online – System requirements & technology “nuts and bolts”

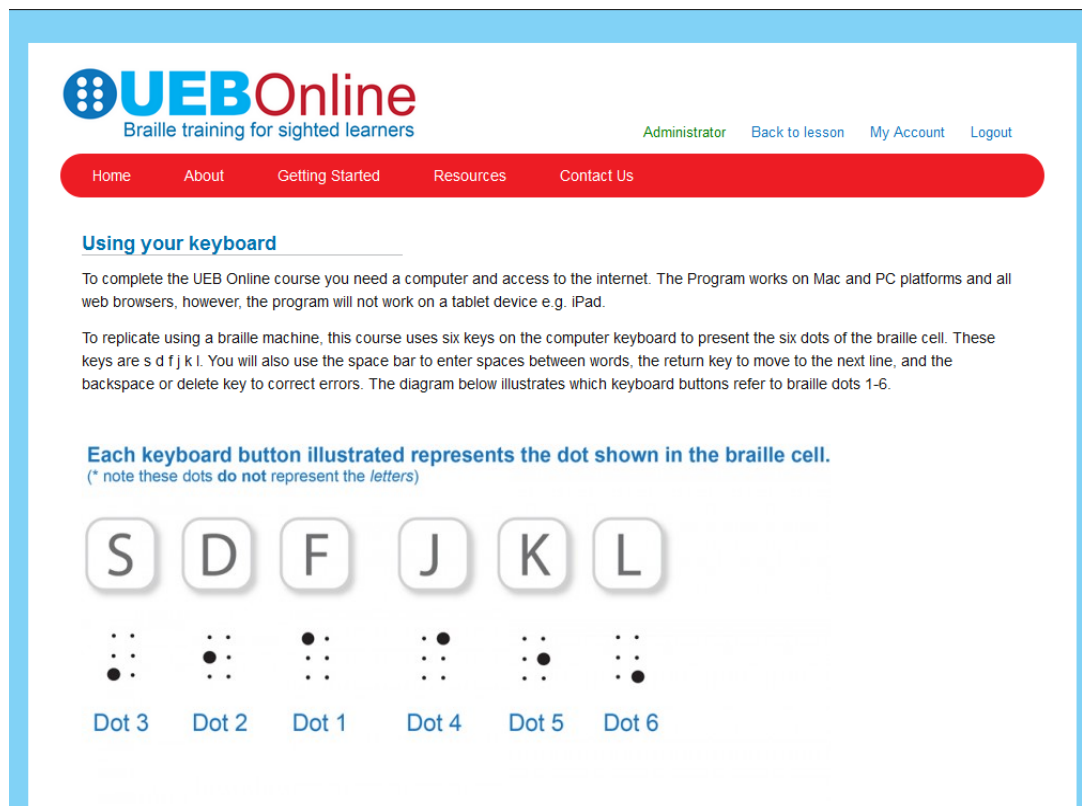
- Program users need:
  - (1) Mac or PC computer;
  - (2) any web browser (e.g. Safara, Internet Explorer, Firefox, Google Chrome),
  - (3) computer keyboard (6-key entry)
- Program’s underlying technology:
  - Standard website technology, including PHP (Server Side Scripting), MySQL database, Javascript (Client Side Scripting), HTML/CSS (for page display); Braille font designed by Peppacode

# UEB Online - Content

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- Home
- About
- Getting started
- Lessons (30)
- Resources
- Contact us

# Getting started



**UEBOnline**  
Braille training for sighted learners

[Administrator](#) [Back to lesson](#) [My Account](#) [Logout](#)







[Home](#) [About](#) [Getting Started](#) [Resources](#) [Contact Us](#)

## Using your keyboard

To complete the UEB Online course you need a computer and access to the internet. The Program works on Mac and PC platforms and all web browsers, however, the program will not work on a tablet device e.g. iPad.

To replicate using a braille machine, this course uses six keys on the computer keyboard to present the six dots of the braille cell. These keys are s d f j k l. You will also use the space bar to enter spaces between words, the return key to move to the next line, and the backspace or delete key to correct errors. The diagram below illustrates which keyboard buttons refer to braille dots 1-6.

**Each keyboard button illustrated represents the dot shown in the braille cell.**  
(\* note these dots **do not** represent the *letters*)

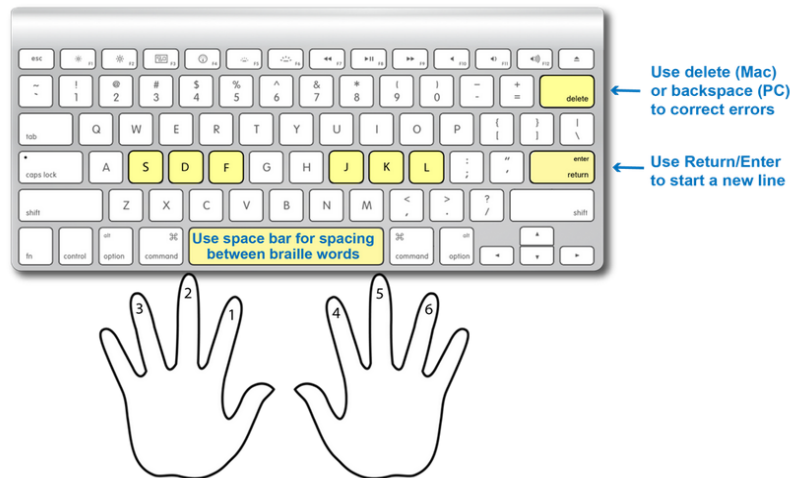
S	D	F	J	K	L
					
Dot 3	Dot 2	Dot 1	Dot 4	Dot 5	Dot 6

# Getting started section (cont.)

## Keyboard finger placement

The images below show a computer keyboard and the buttons you will be using, and the positioning of the hands and fingers. The left hand index finger will use letter F for dot 1 of the braille cell, with 2nd and 3rd fingers of the left hand using letters D and S for dots 2 and 3. The right hand index finger will use letter J for dot 4, with 2nd and 3rd fingers of the right hand using letters K and L for dots 5 and 6.

The 6 keys will be pressed in different combinations to produce the braille letters, contractions and punctuation required to complete all lessons in this course. View the video demonstration of how to enter braille on the [video resources](#) page.





# Lessons

- 30 lessons presented in 2 modules
- Based upon 2013 UEB Australia Training Manual (Howse, Riessen & Holloway)



The screenshot shows the UEBOnline website interface. At the top left is the logo "UEBOnline" with the tagline "Braille training for sighted learners". To the right of the logo are links for "Administrator", "Back to lesson", "My Account", and "Logout". Below this is a red navigation bar with links for "Home", "About", "Getting Started", "Resources", and "Contact Us". The main content area is divided into two columns. The left column has two sections: "Module 1 Lessons 4 to 14" and "Module 2 Lessons 15 to 31". The right column has a section titled "All Lessons" with the following text: "Thank you for volunteering to help enter data for the UEB Online site. Please use the links at the left to edit the exercises(s) with the Lessons that you have been allocated. If you have any issues then please contact uebonline@ridbc.org.au". At the bottom of the page, there are logos for the "Royal Institute for Deaf and Blind Children", "RIDBC Renwick Centre For Research and Professional Education", and "THE UNIVERSITY OF NEWCASTLE AUSTRALIA", along with a "Privacy Policy" link.

# Lesson 1



Braille training for sighted learners

[Administrator](#) [Back to lesson](#) [My Account](#) [Logout](#)

[Home](#) [About](#) [Getting Started](#) [Resources](#) [Contact Us](#)

## Module 1 Lessons 4 to 14

- Lesson 1  
Letters a-j, Numerals, Capital Indicator, Full Stop
- Lesson 2  
Letters k-t, Comma
- Lesson 3  
Letters u-z and w
- Lesson 4  
Alphabetic Wordsigns
- Lesson 5  
Strong Wordsigns, and, for, of, the, with, Semicolon
- Lesson 6  
Strong Groupsigns, and, for, of, the, with, Exclamation Mark, Question Mark
- Lesson 7  
ch, gh, sh, th, wh, Wordsigns, Apostrophe
- Lesson 8  
ed, er, ou, ow, Wordsign, Colon, Quotation Marks
- Lesson 9  
st, ar, ing, Wordsign, Hyphen, Compound Words
- Lesson 10  
be, con, dis, Dash, Shortforms
- Lesson 11  
ea, bb, cc, ff, gg, Round Bracket or Parentheses
- Lesson 12  
en, in, Lower Sign Rule
- Lesson 13  
Lower Wordsigns, Shortforms
- Lesson 14  
Summary of Lower Signs, Shortforms

## Lesson 1: Letters a-j, Numerals, Capital Indicator, Full Stop

### Letters a-j, Numerals

a	b	c	d	e	f	g	h	i	j
⠁	⠃	⠉	⠙	⠑	⠖	⠗	⠎	⠊	⠚

a	dot 1	b	dots 1 2
c	dots 1 and 4	d	dots 1 and 4 5
e	dots 1 and 5	f	dots 1 2 and 4
g	dots 1 2 and 4 5	h	dots 1 2 and 5
i	dots 2 and 4	j	dots 2 and 4 5

### Capital Letter Indicator

Capital letter indicator ⠠ dot 6

A capital letter is preceded immediately by a capital letter indicator.

Examples:

Dad ⠠⠙⠗⠙  
Big Cage ⠠⠃⠊⠑ ⠠⠉⠒⠑

### Full Stop

Search

## Exercise 1.1

Translate Exercise 1.1 into braille. Save your progress regularly using the 'save' button below.

abide acid adage bad beef bide cadge cab  
cage decide deface die egg fade fife fee  
fig gab gibe hide idea ice jade jig jag.  
I hid a badge. I add. I beg Dad dig.  
A big gaff. I bid Dad hide. Bad ice.  
I deface a big badge. Haji did decide.  
He hid a dice face. Dad did beg a cab.  
He did decide. He did a jig. Bad bid.  
If Di did cadge beef. A big bad idea.

⚡ Back to Top

## Exercise 1.2

Translate Exercise 1.2 into braille. Save your progress regularly using the 'save' button below.

# UEB Online - Resources

- UEB Australian Training Manual 2013 by Josie Howse, Kathy Riessen & Leona Holloway
- Braille references
- Cheat sheets
- Books and articles
- Video resources
- Useful links

# Video resources: How to enter braille in UEB Online

## How to enter braille in UEB Online

Video examples of how to use your keyboard to enter braille in UEB Online. Visit [using your keyboard](#) for further explanation.

**UEB online using your keyboard**

To complete the UEB Online course you need a computer and access to the internet. The Program works on Mac and PC platforms and all web browsers, however, the program will not work on a tablet device (e.g. iPad).

To replicate using a braille machine, this course uses six keys on the computer keyboard to produce the six dots of the braille cell. These keys are s, d, f, j, k, l. You will also use the space bar to enter spaces between words, the return key to move to the next line, and the backspace or delete key to correct errors. The diagram below illustrates which keyboard buttons refer to braille dots 1-6.

Each keyboard button illustrated represents the dot shown in the braille cell.  
(\* Note these dots do not represent the letters)

S	D	F	J	K	L
---	---	---	---	---	---

Dot 3    Dot 2    Dot 1    Dot

**Keyboard finger placement**

The images below show a computer keyboard and the buttons you will be using, and the positioning of the hands and fingers. The left hand index finger will use letter F for dot 1 of the braille cell, with 2nd and 3rd fingers of the left hand using letters D and S for dots 2 and 3. The right hand index finger will use letter J for dot 4, with 2nd and 3rd fingers of the right hand using letters K and L for dots 5 and 6. The 6 keys will be pressed in different combinations to produce the braille letters, contractions and punctuation required to complete all lessons in this course.

Use delete (Mac) or backspace (PC) to correct errors.  
Use Return/Enter to start a new line.

0:00 / 1:42

**How to enter braille in UEB online**

**Exercise 1.1**

Translate Exercise 1.1 into braille. Save your progress regularly using the 'save' button below.

```

1.1  acid adage had beef hide nudge oah
      ceph decide deface die egg fade file fee
      fig gab gibe hide idea ice jade jig jag.
      I hid a badge, I hid, I beg Dad dig.
      A big gear, I hid Dad hide, had ice.
      I deface a big badge, had I did decid.
      He hid a dice face, Dad did beg a ca.
      He did decide, he did a jig, had bid
      IF Di did nudge beef, A big bad idea

```

0:00 / 1:42

# Video resources: How to fix errors

## Unexpected space error message

Demonstration of how to correct an unexpected space error.



## Wrong word error message

How to correct the wrong word error.



# Video resources: Reading braille and loading paper into a Perkins Braille

## Reading braille example video

This video demonstrates an accomplished braille reader reading an extract from Harry Potter aloud.



## Loading paper into a Perkins Braille

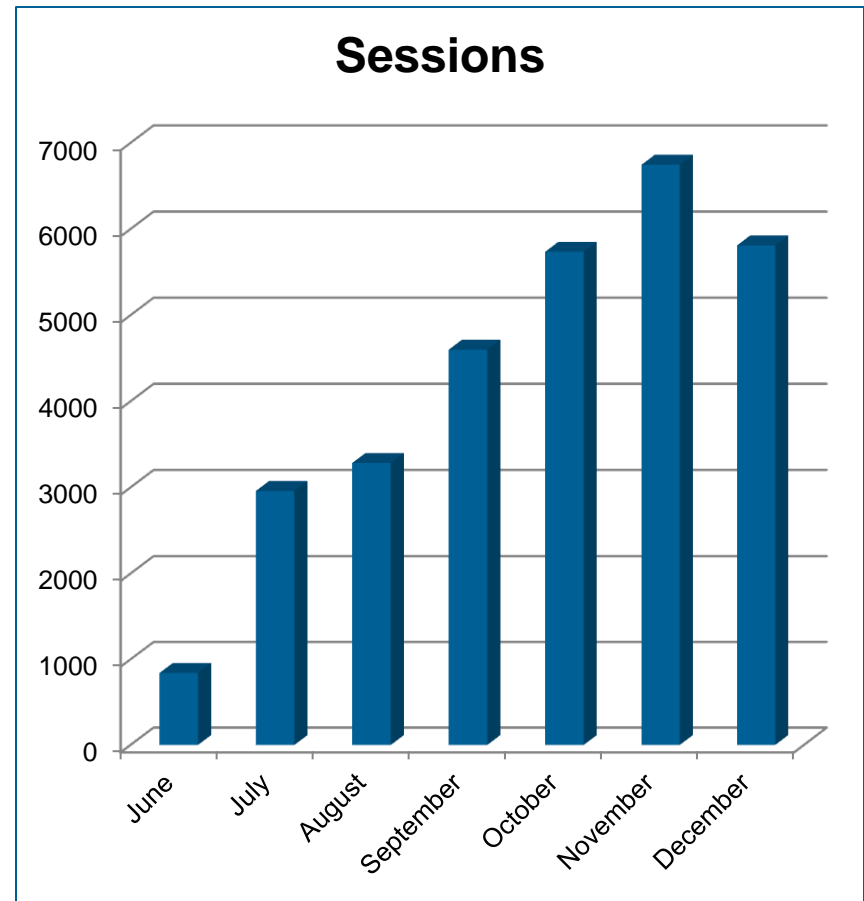
An instructional video of how to load paper into a Perkins Braille machine.



# Uptake by program users, July-Dec14

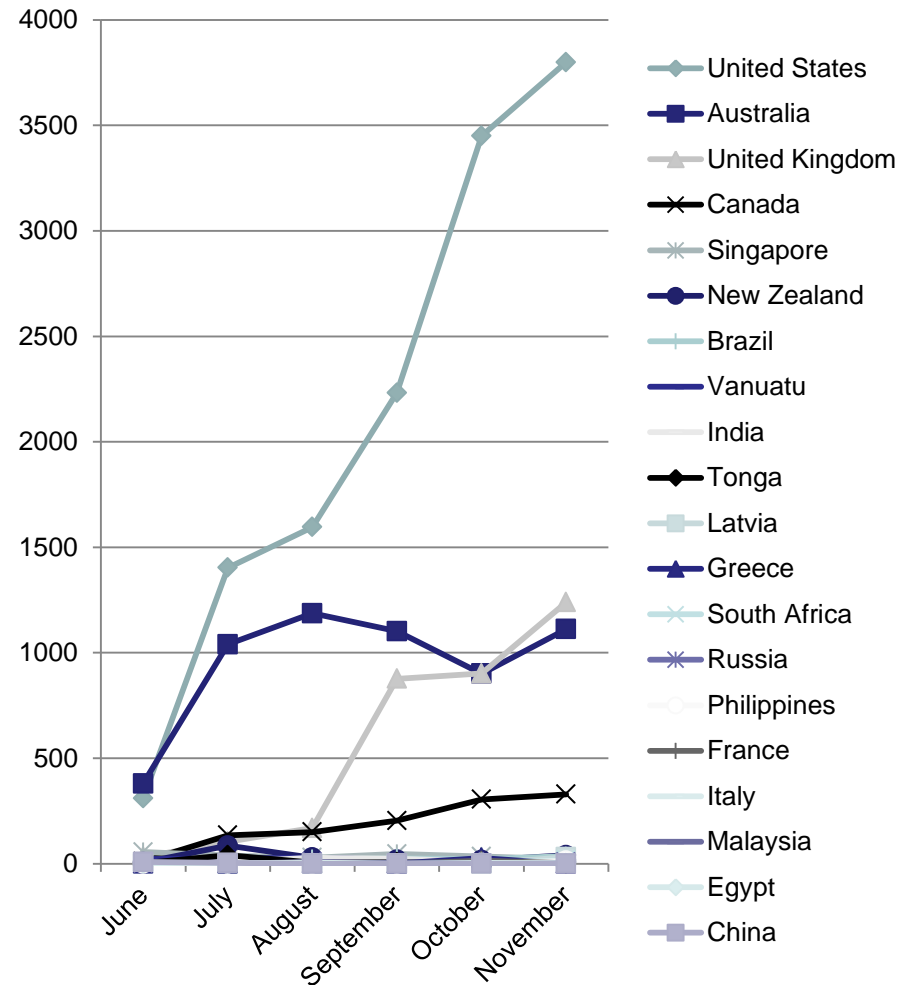
## ■ Overall number of sessions

- July 2959
- August 3284
- September 4599
- October 5735
- November 6746
- December 5809
- TOTAL = 29955



# Location of program users (Dec14)

- 53.7% United States (UEB)
- 21.5% Australia (UEB)
- 13.9% United Kingdom (UEB)
- 5.9% Canada (UEB)
- 5% from 83 other countries (non-UEB)
  
- Other UEB countries
  - 0.79% New Zealand
  - 0.10% South Africa





# The next challenge

- To develop a fully accessible version of UEB Online for people with vision impairment and print disabilities
- Planning to date:
  - Google Chrome (has inbuilt speech synthesiser), plus
  - Screen reader (NVDA, JAWS, Apple Voice Over)
- Funding needed for development

# Acknowledgements

- Philanthropic support
  - Baxter Family Foundation for Children
  - James N. Kirby Foundation
  - Hargrove Foundation
  - Royal Institute for Deaf and Blind Children
- Program design team
  - Teresa Williamson, Cathy Yu, Ben Clare, Tricia d'Apice, Josie Howse
  - Craig Cashmore, Peppacode Website & App Development

Case Study Research Project

# **PERKINS SMART BRAILLER PROJECT**

# Background

- Perkins Products (Massachusetts, USA) introducing SMART braille to Australia
  - Opportunity to trial its introduction to young braille learners
- 3 research partners:
  - (1) RIDBC Renwick Centre; (2) NSW Department of Education & Communities (DEC); & (3) Perkins Products, Perkins School for the Blind
- Ethics approval:
  - (1) Human Research Ethics Committee (HREC), University of Newcastle; (2) NSW State Education Research Applications Process (SERAP)

# Perkins Smart Braille attributes

- Similar in operation to Perkins Classic braille
- Video screen displays SimBraille & large print
- Audio feedback
- Ability to edit, save & transfer documents via USB
- Multiple language platforms
- Patterns Kindergarten exercises for braille learners (non-UEB at present)



# Case study research project, 2014

## ■ Aims:

- To document use of the Classic & Smart Brailleurs by a small group of NSW braille learners aged 3-8 years (including dual media learners)
- To seek the perspectives of each child's vision support teacher, preschool/school teacher, & parents/carers regarding:
  - the relative merits of the Classic & Smart brailleurs, &
  - whether or not the additional Smart braille features promote greater learner interaction with teachers and sighted classmates

# Participants

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- 12 “cases”, each case consisting of the following individuals:
  - Child with a vision impairment
  - Child’s parents/guardian
  - Child’s vision support teacher
  - Child’s class teacher (preschool or K-Yr 2)

# Participant diversity

- Enrolment:
  - 6 enrolled in RIDBC VisionEd programs
  - 6 enrolled in NSW DEC schools
- Gender: 8 girls, 4 boys
- Location:
  - 8 metropolitan Sydney, 4 non-metropolitan and country regions
- Age & Year level:
  - 6 aged 3-5 yrs – in home-based early learning and preschool programs
  - 6 aged 5 – 8 years in Kindergarten to Year 2



# Research phases

## Pre-implementation

- Information Statements
- Consent forms
- Online professional learning from Perkins School

## Round 1

- Baseline assessment
- 5 wks Braille instruction
- Weekly data collection by vision support teachers

## Round 2

- Changeover of braille machines
- Mid-point assessment
- 5 wks braille writing instruction
- Weekly data collection

## End of project assessment

- Assessment of children's braille writing skills
- Questionnaires: Vision support teachers, class teachers, parents/guardians

# Data collection instruments

## Checklists for teaching braille writing

Braille Learner Profile

Observations of  
Braille Writing  
Behaviours

Checklists of Perkins  
Classic & Smart  
brailier skills

Weekly Observation of  
Learner's Braille  
Writing

Questionnaires:  
Braille learner,  
parents/guardian,  
vision support teacher,  
class teacher

Anecdotal notes

# Project limitations

- Limited number of Smart Brailers on loan from Perkins Products → Limited number of “cases”
- Diversity of children’s backgrounds, abilities, ages & writing abilities → emphasis on “within-case” rather than “across-case” comparisons of children's development of braille writing skills and interaction with teachers and classmates during writing lessons

# Project highlights to date

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- Great enthusiasm and positive feedback from class teachers, participating children & classmates
- Project provided first exposure to braille equipment for parents enrolled in RIDBC's early learning VI program
- Development & trialling of braille writing checklists

# Project outcomes to date

- Project to be extended to Term 3, 2015 due to the following:
  - Technical issues with some of the Smart brailers (e.g. US-Aust adaptors & battery; glitches with displays)
  - Time delays in communication and shipping between RIDBC & NSW DEC (Sydney) and Perkins Products (Boston)
  - Implementation interrupted for some participating children due to illness or overseas travel
  - More professional learning time needed for vision teachers who were new to the Smart brailer

# References

- Board of Studies NSW. (2012). *English K-10 syllabus, Volume 1. NSW Syllabus for the Australian curriculum*. Sydney, Board of Studies New South Wales.
- 
- Howse, J., Riessen, K., & Holloway, L. (2013). *UEB Australia training manual 2013*. Tasmania: Round Table on Information Access for People with Print Disabilities and the Australian Braille Authority.
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**THANK YOU**