

# Ceitidh, the Gaelic Computer Voice

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# Curriculum for Excellence



'Our aspiration is to enable all children to develop their capacities as successful learners, confident individuals, responsible citizens and effective contributors to society.'



A Curriculum for Excellence: The Curriculum Review Group (2004).

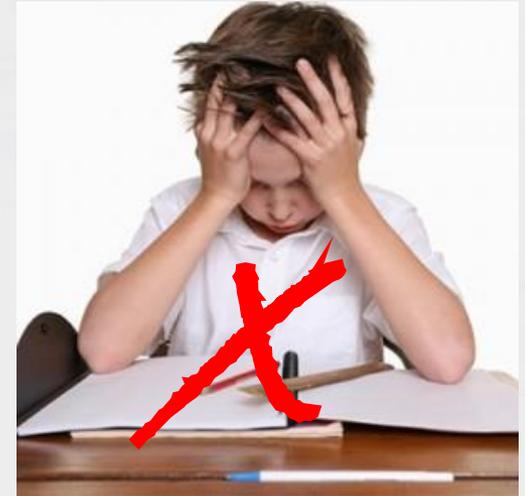
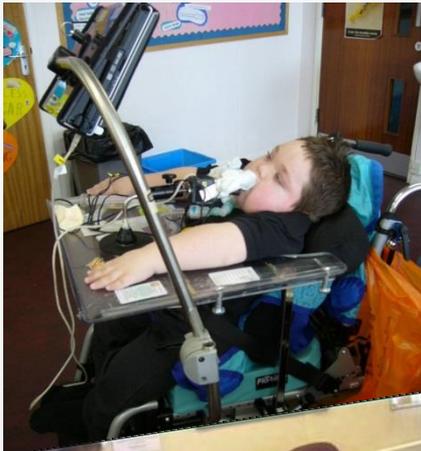
# Curriculum for Excellence



*How can you be a:*

- **Successful learner** - if you can't read books and learning materials?
- **Confident individual** - if you depend on others to read to you, write for you or talk for you?
- **Responsible citizen** - if you don't have access to information?
- **An effective contributor** - if you can't speak, write or communicate?

# Use Assistive and Communication Technology!

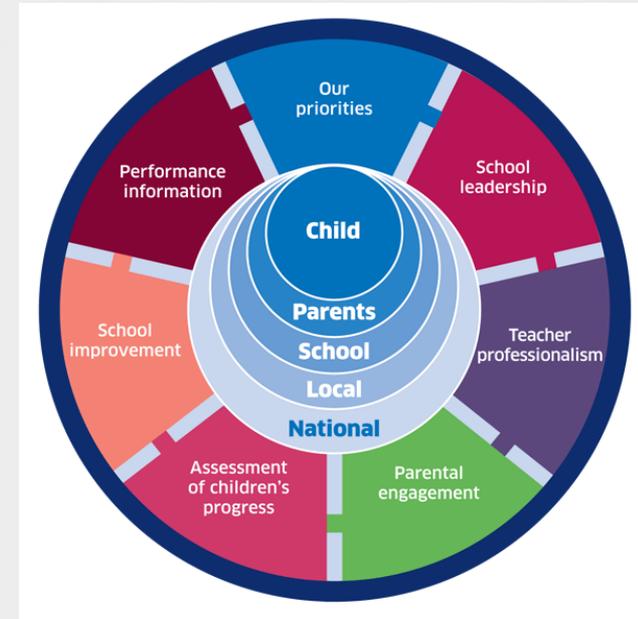


# National Improvement Framework



## Our vision:

- **Excellence through raising attainment:** ensuring that **every** child achieves the highest standards in literacy and numeracy, set out within Curriculum for Excellence levels, and the right range of skills, qualifications and achievements to allow them to succeed; and
- **Achieving equity:** ensuring **every** child has the same opportunity to succeed, with a particular focus on closing the poverty-related attainment gap.



# International Council of Education Advisers



# Impact of Assistive Technologies



*"The use of assistive technology to support the needs of special education students has been a revelation and has begun a small revolution in student achievement, so that many students are now able to access, develop and display what they know in ways that have never been possible for them before.*

*Assistive technologies, the results of this study show, can increase participation, enhance inclusion, develop positive identity and self-confidence and raise achievement in the community of students with special educational needs. They can also enhance, extend and engage learning among all students."*

Hargreaves, A. & Braun, H. (2012). Leading for all: Final report of the review of the development of essential for some, good for all: Ontario's strategy for special education reform devised by the Council of Directors of Education. p. 53, Toronto, Ontario: Council of Directors of Education

# Hargreaves & Braun, 2012



*Assistive technology is not simply a device such as a laptop or a piece of software. Nor is it a single investment in time and resources. It is as an interconnected system that encompasses planning, professional development, personnel, and equipment.*

# On your computer or device you need a Text Reader And you also need a computer voice.



**Ceitidh**, the Scottish Gaelic computer voice

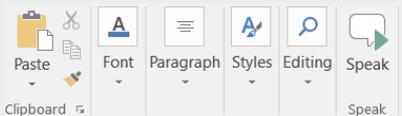


Free from <http://www.thescottishvoice.org.uk/home/>

## Computer text readers

See

<http://www.callscotland.org.uk/info+rmation/text-to-speech/>

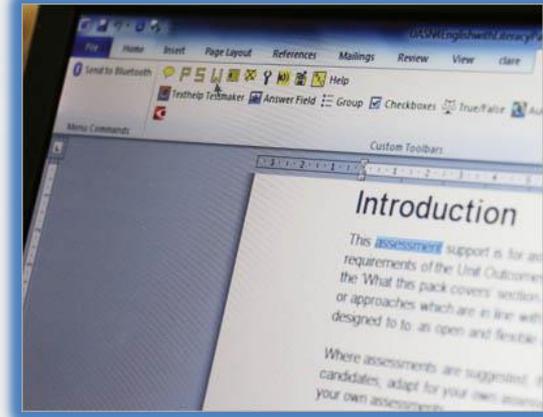


- WordTalk, free  
<http://www.wordtalk.org.uk/>
- NaturalReader 13, free  
<http://www.callscotland.org.uk/common-assets/cm-files/files/naturalreader.exe>
- Orato, free  
<http://www.callscotland.org.uk/information/text-to-speech/orato/>
- Ivona MiniReader, free. (No longer available but installed on many school computers already.)
- Microsoft Office Speak Button, free  
<http://www.callscotland.org.uk/blog/speak-text-in-microsoft-word-2010/>
- Learning Tools for OneNote, free  
<https://www.onenote.com/learningtools>

# Why use a Computer Text Reader?



- To access the curriculum.
- Computer readers can provide struggling readers with a method to access text. (Young, G. [Assistive Technology for Students with Learning Disabilities](#))
- Learners can use text readers to access
  - web sites;
  - curriculum resources from staff;
  - textbooks for the [Books for All Scotland Database](#)



# Why computer readers?



- “Paul uses iVona MiniReader across the school. He loves it, especially when he is doing research. As well as helping him with his reading, he feels that it makes writing easier for him.”
- “Gemma also enjoys using iVona MiniReader, which she also uses at home a lot. Gemma usually only selects the individual words she does not know, and has them read back to her. She doesn’t normally have the entire passage read out to her.”

[Using Technology in Literacy: Case Study from Denny High School](#)

# Why computer readers?



- *“Watching the pupils use the software was fascinating. They all used it to read the passage of text and I saw several of them go back and highlight specific words or sentences multiple times. They also used the software to read each question individually and they seemed far more focused than usual when answering these questions.”*
- *“In terms of results, the class as a whole did answer more questions correctly when using iVona MiniReader than when doing the same type of work on paper. What iVona MiniReader offered was confidence for pupils who often lack it, and the ability for pupils to truly think about the structure and presentation of their work.”*

[Using Technology in Literacy: Case Study from Denny High School](#)



# Why use a Computer Text Reader?

- To improve performance in literacy assessments and examinations by using a computer reader.
- Learners cannot use a human reader in National 3 or 4 Literacy assessments of English or Gàidhlig, but computer readers can be used. (SQA <http://www.sqa.org.uk/sqa/68873.html>)
- Learners with significant reading difficulties may require computer readers to achieve the standards.

# Computer readers make inaccessible texts accessible



**NARA II**  
Neale Analysis of Reading Ability -  
Second Revised British Edition

**Individual Record Form 1**

Name: [redacted] School: [redacted] Language(s) at home: [redacted]

Date of birth: 2/2/14 Date of testing: 23/1/14 Age at testing: 1-7 Yrs | Mths: 1-7 Yrs | Mths

Year group: 6 Class teacher: [redacted]

Test administrator: [redacted]

| Passage                 | Maximum score | ACCURACY         |                | COMPREHENSION | Number of words | RATE |
|-------------------------|---------------|------------------|----------------|---------------|-----------------|------|
|                         |               | Number of errors | Accuracy score |               |                 |      |
| Level 1 Kitten          | 16            | 0                | 16             | 4             | [26]            |      |
| Level 2 Surprise Parcel | 16            | 1                | 15             | 3             | [93]            |      |
| Level 3 Ali             | 16            | 2                | 14             | 3             | [96]            |      |
| Level 4 Jan             | 16            | 0                | 16             | 3             | [117]           |      |
| Level 5 The Fox         | 16            | 0                | 16             | 3             | [141]           |      |
| Level 6 Migration       | 20            | 0                | 20             | 10            | [117]           |      |
| <b>TOTAL RAW SCORES</b> |               |                  |                |               |                 |      |

Words per minute =  $\frac{\text{Total number of words}}{\text{Total time}} \times 60$

Words per minute actually read by the child =  $\frac{\text{Total number of words actually read}}{\text{Total time}} \times 60$

**STANDARDIZED SCORE SUMMARY**

READING AGE: [redacted]

ACCURACY: 6.02

COMPREHENSION: 6.09

**NARA II**  
Neale Analysis of Reading Ability -  
Second Revised British Edition

**Individual Record Form 2**

Name: [redacted] School: [redacted] Language(s) at home: [redacted]

Date of birth: 3/3/14 Date of testing: 23/1/14 Age at testing: 1-7 Yrs | Mths: 1-7 Yrs | Mths

Year group: 6 Class teacher: [redacted]

Test administrator: [redacted]

USED (VONA)

| Passage                 | Maximum Score | ACCURACY         |                | COMPREHENSION | Number of words | RATE |
|-------------------------|---------------|------------------|----------------|---------------|-----------------|------|
|                         |               | Number of errors | Accuracy score |               |                 |      |
| Level 1 Kitten          | 16            | 0                | 16             | 4             | [26]            |      |
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| Level 3 Ali             | 16            | 2                | 14             | 3             | [96]            |      |
| Level 4 Jan             | 16            | 0                | 16             | 3             | [117]           |      |
| Level 5 The Fox         | 16            | 0                | 16             | 3             | [141]           |      |
| Level 6 Migration       | 20            | 0                | 20             | 10            | [117]           |      |
| <b>TOTAL RAW SCORES</b> |               |                  |                |               |                 |      |

Words per minute =  $\frac{\text{Total number of words}}{\text{Total time}} \times 60$

Words per minute actually read by the child =  $\frac{\text{Total number of words actually read}}{\text{Total time}} \times 60$

**STANDARDIZED SCORE SUMMARY**

READING AGE: [redacted]

ACCURACY: [redacted]

COMPREHENSION: 13+

**ERROR COUNT**

| Error count (through forward) | Mispronunciations | Substitutions | Refusals | Additions | Omissions | Reversals | Total count |
|-------------------------------|-------------------|---------------|----------|-----------|-----------|-----------|-------------|
| 0                             | 0                 | 0             | 0        | 0         | 0         | 0         | 0           |

% of total count\* =  $\frac{\text{Error count}}{\text{Total count}} \times 100$

Reading age assessed using the Neale Analysis with and without text-to-speech. Reading herself, the learner's comprehension age was 6 years 9 months. With text-to-speech, comprehension was 13+ years.

# Why use a Computer Reader?



To improve writing by:

- proofreading with the computer reader;
- supporting spelling with word banks (Clicker 7);
- supporting spelling with word prediction (Penfriend XL).

# Why computer readers?



- *"One of the most interesting things for me involved how the pupils used iVona MiniReader in conjunction with their own answers. Spelling and sentence construction have been significant issues for many pupils in this class, but I watched them use it to read back their own typed answers. On several occasions pupils listened to the software read their own words to them, realised that something sounded wrong, and went back to make changes. The ability to hear their own writing read back to them in real time allowed pupils to actively correct their own work."*

[Using Technology in Literacy: Case Study from Denny High School](#)

# Writing Support with Ceitidh



## Penfriend XL

Word predictor, computer reader and spellchecker.



- Penfriend XL, from £95 single, £400 primary, £600 secondary site <http://www.penfriend.biz/pf-addition.html>
- Gaelic lexicons from <http://www.penfriend.biz/download-lexicons.html>

## Clicker 7 literacy toolkit.

Word processor, mind-mapper, spellchecker, computer reader, word prediction, interactive activities.



- Clicker 7 £250 single; various licences available. <http://www.cricksoft.com/uk/products/clicker/>

# Scottish Government Guidance



**Planning improvements  
for disabled pupils' access  
to education**

**Guidance for education  
authorities, independent  
and grant-aided schools**

September 2014



This guidance describes “the requirements the [Equality] Act places on education authorities and schools to work to improve the education of disabled learners and to help ensure that they are properly included in, and able to benefit fully from, their school education.”

[Planning improvements for disabled pupils' access to education, 2014](#)

# Appendix D - Checklist for use in planning ICT



## Appendix D - Checklist for use in planning ICT

1. Tools in this Appendix are not intended to be comprehensive but to provide a sample of practical functions which disabled pupils may require in order to access the curriculum. ICT managers, commissioning staff involved in procurement functions and schools can use the first tool to review whether certain reasonable adjustments are in place.

### ICT Accessibility Checklist

|   |      |
|---|------|
| Access to ICT and Assistive Technology (AT)   | Tick |
| The school or local authority's stock of shared netbooks, laptops or tablets can be booked out by pupils with disabilities for specific learning tasks. Some or all of the stock includes the requisite accessibility improvements described in Appendix E. |      |
| The school or local authority has a pathway or procedure and staff with expertise to:<br>Identify pupils who require ICT and/or AT to access the curriculum.<br>Assess and provide appropriate ICT and/or AT.   |      |
| Accessibility of school computers and ICT   |      |
| All school computers have text-to-speech (TTS) software installed for reading documents and web pages [1].  |      |
| All school computers accessed by pupils have the free Heather and Stuart voices installed [2].  |      |
| Headphones are available for use with TTS where required.   |      |
| Control Panel settings can be easily and quickly changed to enable access for each disabled pupil, including where needed facility for Right click functionality. Such adjustments can be saved with the user's profile. [3]                                |      |

“Tools in this Appendix are not intended to be comprehensive but to provide a sample of practical functions which disabled pupils may require in order to access the curriculum.

ICT managers, commissioning staff involved in procurement functions and schools can use the first tool to review whether certain reasonable adjustments are in place.”

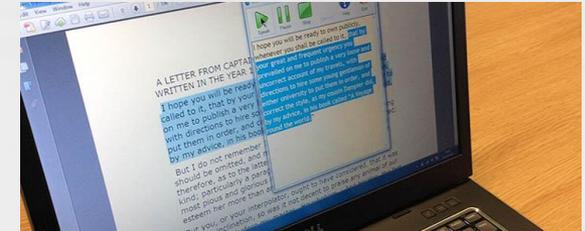
# Reasonable adjustments

- Accessibility Software

Accessibility  
Software /  
hardware



- “All school computers have [text reader](#) software installed for reading documents and web pages.”
- “All school computers accessed by pupils have the free [Heather and Stuart voices](#) installed.”
- “Headphones are available for use with TTS where required.”



[Planning improvements for disabled pupils' access to education: Guidance for education authorities, independent and grant-aided schools](#) October 2014

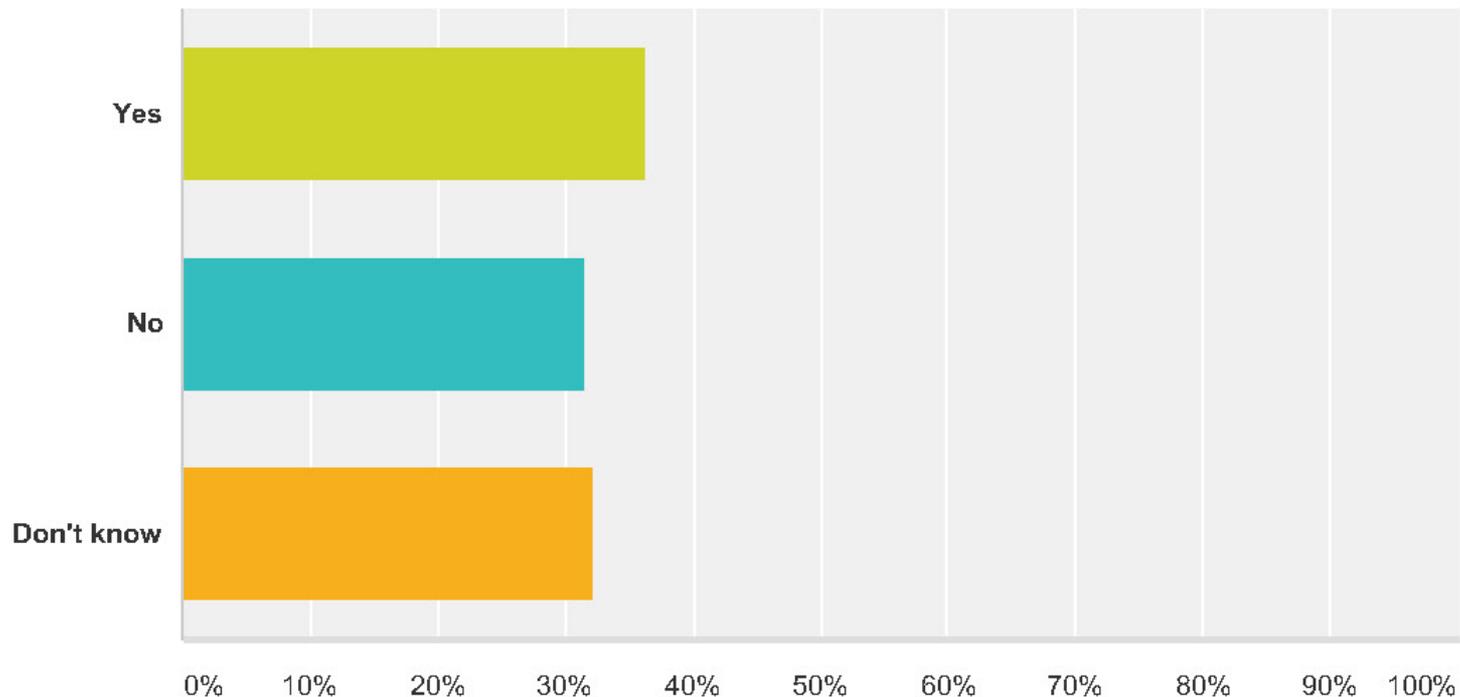
# How are we doing with this?

## Room for improvement!



**Q10 All your school computers have Text-to-Speech (TTS) software installed for reading documents and web pages.**

Answered: 143 Skipped: 42



# Reasonable adjustments

## - Digital Resources



Accessible  
resources



Learning resources (e.g. textbooks, reading books, teacher-generated materials, assessments, homework) can be provided in a format that learners can access, such as Digital, Audio, Large Print, on Coloured paper, Braille, etc.

[Planning improvements for disabled pupils' access to education: Guidance for education authorities, independent and grant-aided schools](#) October 2014

# Books for All Scotland Database



Search Database

[Advanced Search](#)

Database of Accessible Books for Students with ASN

|                                       |
|---------------------------------------|
| <a href="#">Home</a>                  |
| <a href="#">About</a>                 |
| <a href="#">Log In</a>                |
| <a href="#">Copyright</a>             |
| <a href="#">Using Books</a> »         |
| <a href="#">News</a>                  |
| <a href="#">CPD</a>                   |
| <a href="#">Advanced Search</a>       |
| <a href="#">Books for All Website</a> |
| <a href="#">Feedback</a>              |
| <a href="#">Blog</a>                  |
| <a href="#">Digital Exams website</a> |

Welcome Paul Nisbet

Home

Books for All provides accessible books to support pupils who have difficulty with ordinary printed text, including those with dyslexia, who have a physical disability or who are blind or partially sighted. Books should be downloaded by staff - not pupils - to comply with copyright terms and conditions.

## 1. Search for and download book(s) you need:

To **search** for a book, type the author or title into the 'Search Database' box and press the Enter key, or click **Go**. If you want to narrow down your search (say to look for books only in Large Print, or from a particular publisher), click on [Advanced Search](#).

## 2. Read the books:

For advice on reading and accessing the books, see the [Using Books](#) pages at the left side of the page.

The Books for All Database is managed by [CALL Scotland](#) and funded by the Scottish Government. The database is maintained by Scran.

*"I find this site invaluable because we can download on to iPads and then the screen and fonts can be adapted for dyslexic students and students with sight issues." (Secondary school teacher, Moray)*

## LATEST NEWS

**17 August 2016**

New audio short story:

- [The Painter - from the Red Door: the Complete English Stories 1949-76](#)

BfAS  [Log Out](#)  
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[Edit this page \(1086\)](#)

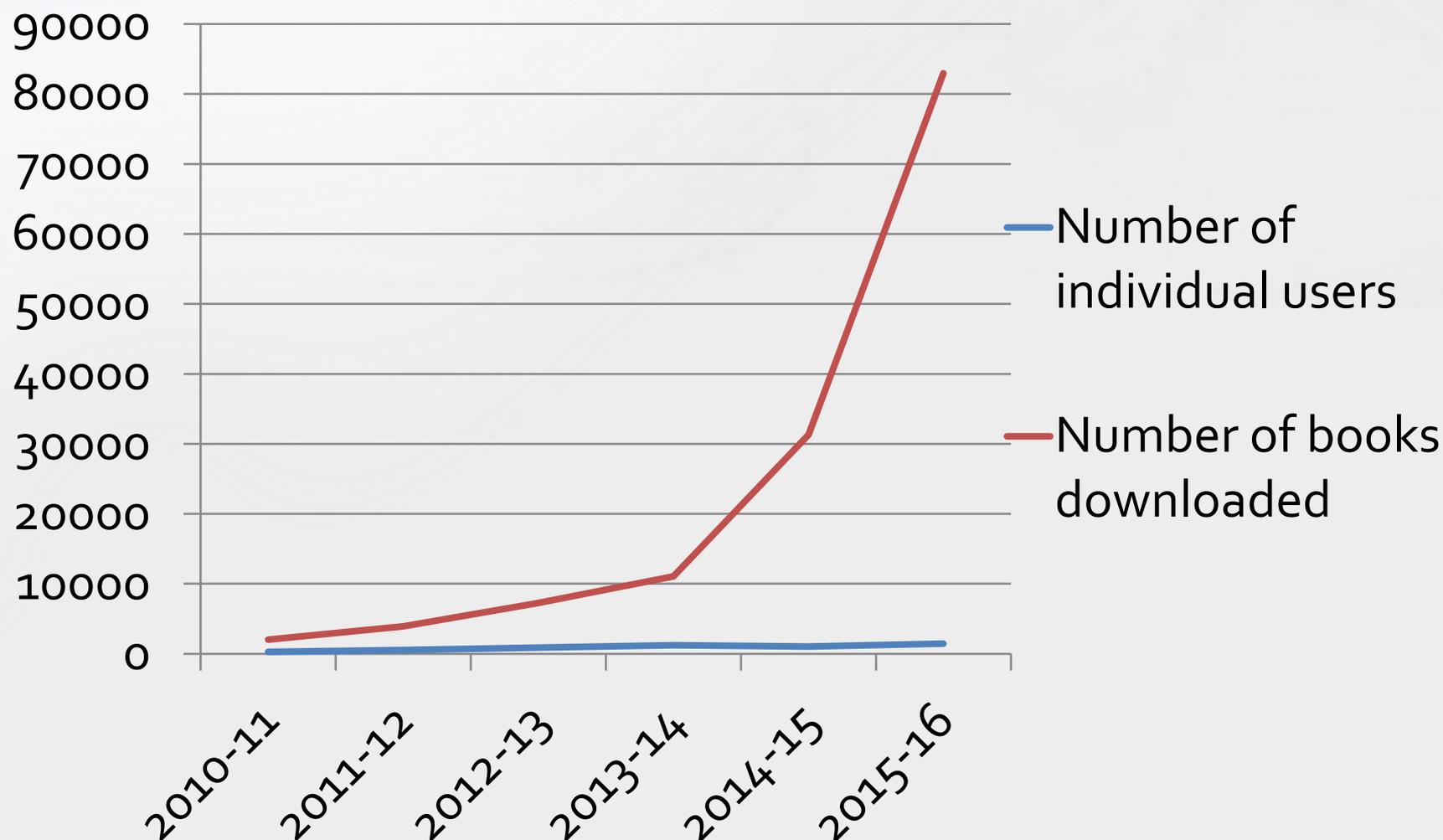
[Object editor](#)

[Homepage editor](#)

[Website file management](#)

[/internal/](#)

# Books for All Scotland Database downloads



# Supporting Writing Difficulties

## A practical guide from CALL Scotland

### Who could help?

- Consult school ICT Coordinator, and colleagues.
- Consult local authority ICT SFL / ASH specialist.
- Check for contact details in your area: [www.ictsls.org.uk/Contacts/](http://www.ictsls.org.uk/Contacts/)

- Refer to local SFL / ASH Guidance Document(s).
- Involve SFL / ASH team.
- Consult 'Addressing Dyslexia Toolkit'.
- Consider consulting OT, PT, SLT, Visual Impairment service as needed.

What do writing difficulties arise from?

- Dyslexia / specific learning difficulties with language, reading, spelling?
- Vision or visual processing - acuity, visual field, tracking?
- Cognition - learning, comprehension?
- Physical causes - poor coordination, pencil grip, seating, positioning?

The pupil's writing takes excessive time and effort?

The quality of writing output is poor; legibility, spelling, letter shape, length of writing etc?

Is there a difference in quality between what the pupil can write and what they can verbalise, i.e. dictating to a scribe?

The pupil appears reluctant to write?

Poor writing is not because a pupil is lazy or stupid.

- A different size or style of pencil / pen?
- A pencil or pen grip?
- A writing slope?
- Different or better positioning; chair / table / lighting etc?
- One of more of the above in combination?
- Using appropriate writing technology?

Staff who 'don't do computers' is not a valid reason for the pupil not using technology! Hand writing is a life skill - true - but the physical process must be separated from producing content - language and ideas. Pupils must be prepared for a digital future.



I have a pupil with writing difficulties.  
What could help?

Formulate an action plan for Next Steps, including list of possible technology(ies).

Clarify / launch procedures for obtaining technology needed.

Ensure child's views are taken into account.

Share with parents.

Take account of training and support implications.

Establish or expand the Child's Plan, as per LA procedures.

Touchscreen.

Different mouse/large rollerball/trackball.

A joystick with different handle adaptations (T-bar, large foam ball).

A Glidepad or a laptop mouse track-pad.

A switch access system (interface box plus one or two switches) - which scans rows, columns etc.

Positioning for one or all of the above - keyboard risers, mats to prevent slipping etc.

Try to borrow to trial before buying, locally or from CALL Scotland (2 - 3 months only).

Check what is available in school, contact local specialist for further advice.

Word banks - topic dictionaries, sometimes support with pictures and / or text-to-speech.

Mind mapping to visually help plan and organise thoughts and ideas.

Audio: voice recording, often directly into the application (which can be saved for evidence).

Speech recognition - talking to a computer, speech is converted to text.

One of more of the above used in combination with each other, e.g. Clicker, Co:Writer, Texthelp Read@Write, Penfriend, Textease, WriteOnline etc.

Supportive software can include:

Picture or symbol support.

Text-to-speech - speech feedback, text is read aloud.

Word prediction - words are predicted in context after the first or second keypress - sometimes supported with pictures and text-to-speech.

Spell checking - phonetic, audio or symbol supported options are available. Support also available with homophones. Remember hand-held talking spell checkers, digital scanning pens etc.

If staff are not familiar with such software, training should be requested. Check local CPD calendar: Contact CALL Scotland.

Will a classroom computer suffice, or might the pupil need a personal, portable device?

There are different types of keyboards.

e.g. bigger, smaller, high contrast, upper, lower case, keyboard stickers.

Touch screen keyboards; on-screen keyboards controlled by a mouse pointer or external joystick.

If the pupil can't use a keyboard, why not?

Is the keyboard too big, too small, too high and / or wrong size, wrongly positioned?

Is the pupil unfamiliar with the keyboard, e.g. layout, upper case letters?

Do the computer settings need to be personalised?

Does the pupil require additional software to improve typing speed and accuracy?

Does the pupil require an alternative method to input text?

There are many accessories for keyboards.

Keyguards which fit over the keyboard to prevent errors.

Keyboard mounts / risers to aid hand / arm / head positioning.

Dycem mats to prevent keyboard slipping / movement.

Customising the screen can make all the difference, e.g. changing font style, size, background colour etc.

Have you considered adapting the built-in accessibility options such as FilterKeys, StickyKeys, large cursor etc?

If these options are 'locked down' or the pupil is unable to customise their personal settings i.e. make reasonable adjustments, the school could be breaching disability discrimination legislation.

Is the pupil doing appropriate keyboarding tasks? Is copying or typing notes into a word processor really worthwhile? Touch typing is NOT feasible for some pupils so 'keyboard familiarity' practice might be more useful.

# Addressing Reading Difficulties

## A practical Guide from CALL Scotland

**Who could help?**

- Consult school Support for Learning teachers, librarian and colleagues
- Consult local authority ICT/ASN Specialist
- Check for contact details in your area - [www.ictsls.org](http://www.ictsls.org)

**I have a pupil with reading difficulties. What could help?**

**1 Identifying the problems, gathering information, team approach**

Refer to local SfL/ASN guidance Document(s). Involve SfL/ASN Team. Consult Addressing Dyslexia Toolkit. Consider consulting VI/ Dyslexia/Assistive Technology Service.

**1.1 What do the difficulties arise from?**

- Seeing or understanding the text, due to dyslexia/specific learning difficulties with language, reading, spelling
- Understanding the text due to learning disability
- Holding the book or turning pages, due to physical difficulties
- Understanding the text, due to language impairment or as a result of hearing impairment
- Seeing the book, due to vision or visual processing, acuity, visual field tracking

**2 Have you addressed these difficulties with reading interventions?**

- Reading comprehension
- Paired reading
- Reciprocal reading
- Precision reading
- Phonological awareness

**3 Have you tried adaptations?**

- Coloured overlays or lenses
- Magnifiers
- Book stands

**4 Have you tried other types of reading materials?**

- Graphic novels
- Age-Appropriate books eg. Barrington Stoke, Rising Stars

**5 Have you tried digital books?**

- Kindle & Amazon
- iPad & iBook Store
- Google Books
- Commerical eBooks
  - WH Smith, Waterstones
- Free eBooks
  - Books for All Scotland Database
  - The Seeing Ear
  - Load2Learn
  - Project Gutenberg
  - Public libraries
- Devices
  - Kindle
  - iPad
  - Windows
  - Android
  - MacOS
  - Nook, Kobo etc

**6 Techniques for reading digital books**

- Font
- Font and colour backgrounds
- Font size, line spacing, character spacing
- Physical access
- Navigating the book

**8 Have you tried audio books?**

- Free/low cost audio books
  - Calibre
  - Public libraries
  - Project Gutenberg
  - Load2Learn
  - Listening books
  - RNIB
- Commercial audio books
  - Audible.co.uk
  - Amazon
  - iBook Store

**7 Have you tried text-to-speech (TTS)?**

- iOS
  - Built-in
    - Speak Selection, Speak Screen, VoiceOver
  - Apps with TTS
    - eg ClaroPDF, Co:Writer, Voice Dream, iReadWrite
- Windows
  - TTS Programs
    - WordTalk for Microsoft Word
    - Free eg Balabolka, Orato, Minireader, Natural Reader
    - eg ClaroRead, Co:Writer, Penfriend, Read & Write Gold
- MacOS
  - Scottish Computer Voices
- Kindle
- Android
  - Apps eg. Easy Text to Speech, Voice Read Aloud
  - Voices eg. Cereproc, Ivona

**11 Next Steps**

- Source books in required format
- Identify tools/features needed to support reading
- Identify device(s) and software apps
- Provide device software and books
- Teach learner

**10 Have you tried making accessible formats?**

- Copyright
- Audio
- Braille
- eBook formats
- Large Print
- PDF
- Scanning Paper Books
- Word

**9 Have you tried other alternative formats?**

- Large Print
- Braille
- 'Easy Read'
- Symbol-supported

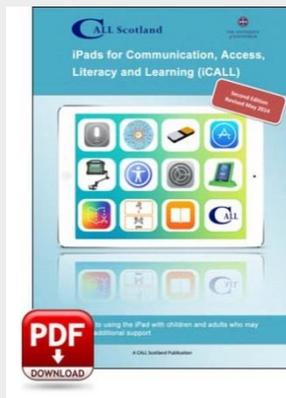
- Does it highlight the text as it reads?
- What programs can it read from?
- Does it come with good voices?
- Does it have other features (word prediction etc)?

Use the *Protocol for Accomodations in Reading* to Compare TTS with unaided reading (De Coste and Wilson, 2012)

# iPad apps for dyslexia



- CALL's [Wheel of Apps](#) for Learners with [Dyslexia](#)
- [iCALL](#): iPads for Communication Access Literacy and Learning



### iPad Apps for Learners with Dyslexia/ Reading and Writing Difficulties

Many iPad apps are available to support learners with reading and writing difficulties. This 'Wheel of Apps' is not comprehensive, but attempts to identify relevant, useful apps and to categorise them according to some of the difficulties faced by people with dyslexia. Note that some apps address a range of difficulties. In order to save space, we have decided not to place individual apps into multiple categories, but have placed them according to a single category that is particularly relevant to the app. Links on the electronic version are 'clickable'.

A more comprehensive guide to Apps to Support Literacy Difficulties is included in CALL Scotland's *Paths for Communication, Access, Literacy and Learning Tools*, available as a printed book and as a free download from: <http://www.callscotland.org.uk/Publications/Books/>

This 'Wheel of Apps' for dyslexia is inspired by previous visual app representations:

- 1. 'The Technological Wheel' - Allan Cunningham
- 2. 'The Wheel of Technology & the Pathways Wheel' - Cherie Pickering & Amanda Pickering
- 3. 'The Wheel of Technology & the Pathways Wheel' - Cherie Pickering & Amanda Pickering

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<http://www.callscotland.org.uk/Publications/Books/>



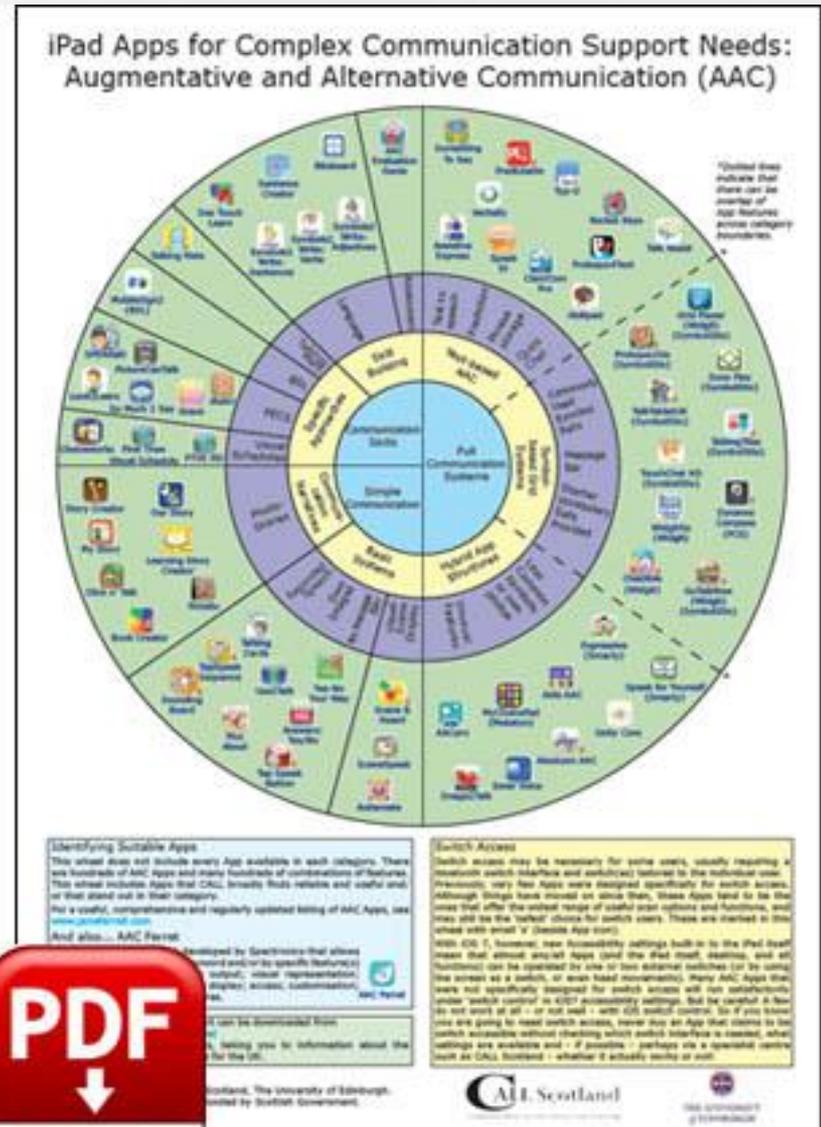
# Apps for communication



- [AAC Scotland Online Learning](#)



- [How do I communicate?](#)
- CALL's [Wheel of Apps for AAC](#)



# Apps for creativity



CALL's [Apps to Support Creativity](#)