

ANNUAL REPORT

1 August 2022 – 31 July 2023

CALL Scotland

Moray House School of Education
and Sport

The University of Edinburgh

National Support for Learning
through

Assistive Technology (AT)

and

Augmentative and Alternative
Communication (AAC)



THE UNIVERSITY *of* EDINBURGH

2022 - 2023



CALL Scotland's Vision

Every child/young person in Scotland with a disability or additional support needs has the curriculum materials, the Assistive Technologies and/or Augmentative and Alternative Communication tools they may need - and the support to use them effectively – to participate effectively and fulfil their potential through learning and achievement.



CALL Scotland's Mission

To help children and young people to overcome disability and barriers to learning created by their environment, and to fulfil their potential, CALL Scotland provides pupils and families, local authorities and professionals with -

- Free Assistive Technology resources.
- Assistive Technology Assessment and Support.
- Professional Learning and Training.
- Information and advice.
- Equipment Loans and Technical Services.
- Strategic Leadership.
- Knowledge Transfer, research and development.



National Outcomes

CALL Scotland's services and products contribute to delivery of the National Outcomes and to improve outcomes for children and young people:

- Children and Young People: we grow up loved, safe and respected so that we realise our full potential.
- Education: we are well educated, skilled and able to contribute to society.
- Health; we are healthy and active.
- Human Rights: we respect, protect and fulfil human rights and live free from discrimination.



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Summary

Introduction

CALL Scotland was founded in 1983 and to celebrate this 40th anniversary we have used a ruby colour scheme. The report covers the period from 1 August 2022 to 31 July 2023.

It's been another extremely busy and productive year for the CALL Scotland team amidst a turbulent and challenging time for everyone in Scottish education, from national and local government, to teachers and practitioners and of course learners and parents and carers.

CALL has received core grant funding from Scottish Government education since 1991, and although the grant has not increased since 2011 (a 30% reduction in real terms), we have been successful in generating income from other sources to keep the team together.

We are extremely pleased that Scottish Government confirmed today (6th September) that our grant has been extended for October 2023 to March 2024.

National Inclusive Digital Learning Resources

The Books for All website which provides accessible digital textbooks and Bookbug picture books continues to be a valuable resource although the number of downloads has fallen since schools returned following Covid lockdowns. Our strategy for the service is to focus on specialist accessible formats rather than the more common formats that are available through RNIB Bookshare.

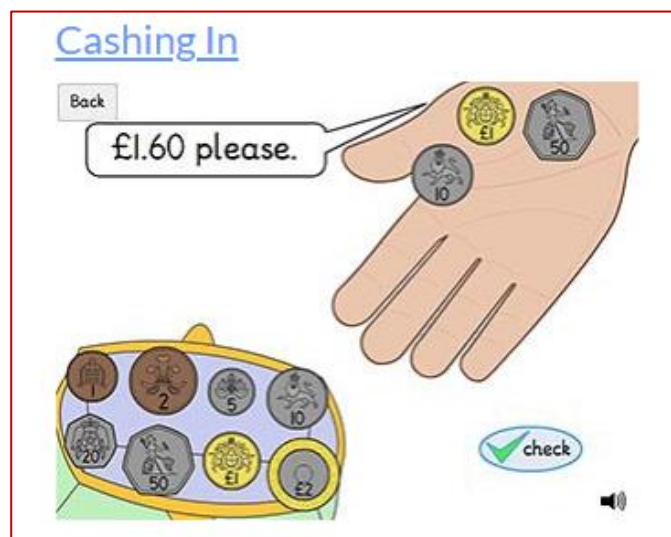
The partnership with Scottish Book Trust to create and distribute accessible versions of Bookbug books continued and Claire, Joanna and Gillian again developed learning resources in Grid and Clicker digital formats for learners with more complex additional support needs. The Symbols for All website and resources have been updated and the Symbols for All Core Word Kit has been popular with practitioners.

The Scottish computer voices and free text readers continue to be downloaded and made available as school computers running the Windows OS are refreshed. We have worked with Texthelp and as a result, Scottish and Gaelic voices are now available in [OrbitNote](#) and will be added to [Read&Write](#), for Chromebooks. However, these products are not licenced in all local authorities and we will continue to explore options for making the voices widely available.

The charitable trust that created and maintains the very successful and popular [Doorway Online](#) interactive and accessible



Figure 1: Reading a digital Bookbug book using an eye-gaze device



online learning activities have asked if CALL could take on management of the resource. This has involved considerable legal and financial discussion with the Trust and the University of Edinburgh (mainly by Sarah), and we hope that the transfer will go through in 2023. Doorway is used by thousands of young people in Scotland and across the world.

National Information and Advice

We again responded to a wide range of calls and emails and communications from hundreds of staff, parents and disabled people. Access to free, open and independent advice can be extremely valuable for many people who are trying to find out about or make best use of assistive technology. The report contains examples of the type of assistance that people require and illustrates the value of this specialist advice service for disabled people, parents and carers, volunteers, educators and health and social work staff.

The web site views are approaching **1 million**, while resources downloads almost reached 100,000. Our reach on Facebook and Twitter (now 'X') grew significantly. More blog posts were published and new posters and videos created.

Professional Learning

The Professional Learning programme, coordinated by Shirley Lawson, has again been extremely successful. A record 2,463 people participated in CALL courses, Insets, webinars, lectures and the ASL Technology conference.

We were particularly pleased to contribute to four Moray House courses in response to actions detailed in the ASL Action Plan.

The 10 week [Technology to Support ASN in Education](#) was attended by 32 participants while the new 5 week [Technology to Support Dyslexia in Education](#) had 23 attendees.

Craig's four [online Learning Modules](#) have now been monetised at a reasonable price of £20 per module. We now have an excellent range of professional learning offers across different topics, learning styles, depth and cost that is unique in Scotland.



Assistive Technology Loans and Support

Evaluation of technology is a vital part of the assessment and support process and the number of loans increased by 42% compared to the previous year, as a result of schools being fully open. Purchasing some of the more specialised assistive technology is a challenge due to limited funding, but some suppliers have provided us with equipment on loan-term loan for assessments.

Strategic Relationships and Collaboration

We continued to work with colleagues in Scottish Government, Education Scotland, SQA, local authorities and Regional Improvement Collaboratives and third sector agencies such as Dyslexia Scotland and Enquire.

The final report from the National Discussion states that “*digital learning must be at the core of Scottish education*”; digital technology is also central to the review of qualifications and assessment, and of course the government is committed to provision of a digital device for every learner. Given this commitment to digital learning, we would like to see digital learning featuring more prominently in the ASL Action Plan: this is discussed in the report and in Paul’s [blog post](#)¹.

Progress on National Strategic Commissioning continues and a report from [Humanly](#) into research of provision for learners with complex additional support needs will be published in autumn 2023.

In many parts of Scotland, every pupil in late primary and secondary has been provided with a personal iPad, Chromebook or laptop, and this 1:1 provision has enormous potential for pupils with additional support needs. However, our experience, and feedback from practitioners, parents and learners suggests that the [devices are not always accessible](#) for learners with disabilities or additional support needs, and this must be addressed.

One example of this situation is the use of iPads or Chromebooks for digital assessment arrangements. Our [research for SQA](#) revealed that very few students were able to use their personal iPad or Chromebook for examinations in 2022 or 2023, for a range of reasons. We are working with colleagues in SQA and local authorities to develop practical solutions to this problem.

Assessment and Support

A vital component of CALL’s work is the assessment and support that we provide for individual learners and we offer some examples in Assistive Technology Assessment and Support. Working directly with learners and practitioners underpins much of our research, development, knowledge exchange and professional learning: by endeavouring to “**Get It Right For One Child**” we identify and develop generalised solutions and products which can be distributed to help educators to “**Get It Right For Every Child**”.



Figure 3: Evaluating eye-gaze for communication and writing

¹ Nisbet, P. (2023) Why is digital learning not considered in the ASL action plan?
<https://www.callscotland.org.uk/blog/why-is-digital-learning-not-considered-in-the-asl-action-plan/>

Funding

CALL is funded entirely through grants and contracts with around 65% of the annual income provided as a core grant (£367,177) from the Scottish Government Learning Directorate. SQA funds our partnership and development work around use of technology in examinations and assessments. We do not receive direct funding from the University of Edinburgh but the University does provide considerable support in terms of accommodation and professional services.

Assessment and support of individual pupils in schools is funded by partnership agreements with local authorities. We also generate income through delivery of professional learning from CALL and on site in schools and now online. Total income from these other sources in 2022-2023 was £148,000.

The core grant has remained static since 2011, while inflation has run at 30% to 2022. We increased income from other sources over this time but the funding situation is not sustainable and we continue to discuss with colleagues in Scottish Government and the University, and the CALL Steering Group to plan a way forward for CALL.

Staffing

Gillian McNeill, Specialist Speech and Language Therapist, retired at the end of August 2023. Gillian has worked with us since 2011 and has made a huge contribution to CALL's work. Gillian was our lead AAC specialist for our partnerships with Shetland, Highland, Argyll and Bute and so was an experienced Scotland-wide traveller. She also worked with the Scottish Government Assisted Communication Team and ACiP:S to implement the 2016 legislation on provision of communication aids and support.

[Shirley Lawson](#), our Assistive Technology and Additional Support Needs Teacher who also coordinates our professional learning programme, will retire at the end of 2023. She has also made an enormous contribution to CALL's and to Scottish education and we will also miss her. Fortunately, we have been joined by [Kirsteen Steven](#), a very experienced and dynamic teacher, who will be taking on Shirley's responsibilities.

[Sarah Marjoribanks](#), CALL Office Manager, will also retire at the end of December 2023 after starting in CALL in 1999. As many of you will know, Sarah is much more than an office manager and has developed into an extremely effective leader, taking responsibility across a huge range of CALL's activities. When Esther had to resign in March 2022, Sarah has taken on many of her responsibilities. Sarah is involved with and core to almost everything that we do, and we will miss her energy and indefatigable ability to get things done.

The 'new Sarah' is Paula Twigg, who joined us on 28th August and we are looking forward to working with her as she brings her own unique skills and talents to the CALL team.

Both Kirsteen and Paula left permanent posts in education to come and work with us, despite the uncertainty over funding. We appreciate their confidence and will try to ensure that their faith will be rewarded.

University of Edinburgh

CALL has been part of the University of Edinburgh since Phil Odor founded the centre in 1983. For most of the past 40 years, we have been funded completely through external grants and income. This has provided us with opportunities to be involved with research and teaching, and a great freedom to innovate and to develop new technologies, strategies and resources. We are grateful for the accommodation, technical infrastructure, and professional, financial, human resources and

administrative janitorial and cleaning support from our colleagues in Moray House and the University.

Development Priorities 2023-24

Our priorities for 2023-2024 are to:

- Liaise with colleagues in Scottish Government and the University of Edinburgh to sustain the unique impact that CALL has had in Scottish education, and beyond, over the past 40 years.
- Continue to support local authorities, practitioners, parents and learners through assessment, support, information, advice, provision of free resources, loans of equipment and professional learning.
- Work with Scottish Government and colleagues in local authorities and schools to:
 - progress National Strategic Commissioning following the Doran Review and 10 year Strategy;
 - assist with implementation of the AAC legislation;
 - take forward updated actions from the ASL Review;
 - ensure that personal digital technologies provided through 1:1 programmes are accessible for learners with ASN;
 - optimise access to the new National Standardised Assessments for learners with ASN;
 - work with SQA to ensure that SQA digital question papers and digital assessment arrangements are accessible for learners with ASN regardless of which devices are used.
- Align CALL's strategic aims, objectives, structures and processes in response to Scottish education policies and priorities, including the ASL action plan; emerging models and procedures for Commissioning of National Services; and legislation on provision of Communication Equipment.
- Continue to support colleagues in local authorities and ATLAS (Assistive Technology for Learning Across Scotland), while raising awareness of the need for Assistive Technology services.

Paul Nisbet, Director.

CALL Staff Team 2022 - 2023

Claire Harrison (1.0 FTE)	Assistive Technology and Complex Additional Support Needs Teacher
Craig Mill (1.0 FTE)	Assistive Technology Advisor
Gillian McNeill (0.8 FTE)	Specialist Speech and Language Therapist
Joanna Courtney (0.8 FTE)	Specialist Speech and Language Therapist
Kirsteen Steven (0.8 FTE from 1 August 2023)	Assistive Technology and Additional Support Needs Teacher
Paul Nisbet (1.0 FTE)	Director, Engineer and Educational Technologist
Paul Twigg (1.0 FTE from 28 August 2023)	Office Manager
Robert Stewart (0.9 FTE)	Technology Resources, Web Designer & Manager
Sarah Marjoribanks (0.8 FTE)	Office Manager
Shirley Lawson (0.8 FTE)	Assistive Technology and Additional Support Needs Teacher & Professional Learning Coordinator



Figure 4. From left to right – Sarah, Gillian, Paul, Joanna, Craig, Robert, Claire, Shirley.

CALL Steering Group 2022 - 2023

We are grateful to the CALL Scotland Steering Group for advice, encouragement and wisdom and particularly to Dr Mike Gibson, Chair, who has been and continues to be a great friend and supporter. Mike will be retiring as Chair in October 2023, after chairing the group for nine years.

I am personally extremely grateful for Mike's sage advice and wisdom and support, and for the many hours of time that he has given to supporting the work of CALL. We are extremely appreciative.

We are however also very pleased that Cheryl Burnett has agreed to take over as Chair of the group. Cheryl is Chair of National Parent Forum Scotland is a member of several Scottish government working groups.

Dr Mike Gibson	Chair of Steering Group
Robert Eckhart	Senior Policy Officer, Supporting Learners Team, Support and Wellbeing Unit, Learning Directorate, Scottish Government
Lucinda Fass	Policy Officer, Supporting Learners Team, Support and Wellbeing Unit, Learning Directorate, Scottish Government
Heather Palmer	AAC Policy Manager, Assisted Communication Team, The Scottish Government
Donna Baillie	Quality Improvement Officer, Glasgow City Council (ASLO representative)
Cheryl Burnett	Chair, National Parent Forum of Scotland
Fiona Buttle	Head Teacher, Langlee Special Nursery, Scottish Borders Council (from 09/18)
Fran Foreman	Senior Education Officer, Inclusion, Education Scotland (from 02/20)
Dr Rachel O'Neill	Senior Lecturer in Deaf Education, Moray House School of Education, University of Edinburgh
Katie Radke	Parent
Dr Kirstie Rees	Depute Principal Educational Psychologist, East Renfrewshire (ASPEP Representative)
Professor Sheila Riddell	Moray House School of Education, University of Edinburgh
Jackie Swan	ASN Service Manager, East Dunbartonshire Council (ADES / ASLO Representative)

Section 1. Outcomes funded through Scottish Government Core Funding



National Provision of Inclusive Digital Learning Resources

Objective

To provide free Inclusive Digital Technologies and resources to help local authorities and schools meet obligations under Accessibility, Equality and Children’s Rights legislation and to support Universal Design for Learning (UDL).

Expected outcomes

Include provision of:

- accessible curriculum resources for learners (Books for All);
- free Scottish computer voices and readers;
- free symbol resources (Symbols for All);
- greater awareness and expertise in schools; schools and local authorities report that they are better able to meet Accessibility and Equality Act obligations.



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Books for All

Funded by: Scottish Government Learning Directorate Core Grant

Books for All website

The Books for All website with our database of downloadable accessible textbooks received 117,231 page views in 2022-23 compared to 116,492 the previous year. 1,270 new accounts were created on the web site and 5,515 books were downloaded. The number of downloads has fallen since 2019-20, when many schools were closed and teachers took advantage of the web site to provide learners with textbooks at home. Some of the PDFs of secondary textbooks are now out of date because of changes in the curriculum, but we feel that there is little value for us to approach publishers for files, given that almost all modern textbooks are now available from [RNIB Bookshare](#). However, discussion with stakeholders indicates that there is still a need for Books for All as a platform for distributing books in alternative formats such as Large Print, and particularly resources in specialised accessible formats, such as [Grid 3](#).

Table 1: Books for All web site

New Books for All web site	2018-19	2019-2020	2020-2021	2021-2022	2022-2023
Number of page views	102,107	190,977	153,197	116,492	117,231
Number of user accounts	-	3,535	5,507	6,888	8,158
Number of books downloaded	-	11,144	7,380	5,728	5,515

Scottish Book Awards Accessible Books and resources

We again worked with the [Scottish Book Trust](#), publishers and authors to create [accessible digital versions](#) of the P1 Bookbug Picture Book Prize books and the Scottish Teenage Prize shortlist, for pupils who find it hard to read the standard print books. Learners can read the books and so take part in the awards along with their peers in the classroom. Bookbug books are provided free to [every P1 learner](#) in Scotland each year by Scottish Book Trust.

In 2022-2023 the accessible digital Bookbug books were made available in:

- PowerPoint recorded narration and switch prompt versions;
- Keynote format for the iPad;
- Grid 3 files, designed particularly for learners who use eye-gaze technology;
- Grid for iPad files, for learners who use iPads.



Figure 5: The Bookbug Books



Figure 6: Reading a book using eye-gaze



Figure 7: A new interactive poster was created with quick links to the books in all the formats

Joanna, Claire and Gillian created [symbolised resources](#) for each of the Bookbug books. These enable children to participate when reading the books and to talk and vote for their favourite. The resources consist of:

- overlays that can be used with the *GoTalk 9+* communication aid, or as low-tech symbol boards;
- switch tops for *Big Mack* and *Step by Step* communication aids;
- digital app boards for the free *Sounding Board* communication app for iPad;
- overlays for teaching activities related to the books;
- accessible digital versions of the books and communication resources, together with teaching activities in Grid 3 format for use on Windows and iPad devices.



Figure 8: Soundingboard digital communication board

Since 2020-21, we have developed literacy activities for learners to communicate and write about the books in both Clicker and Grid formats and following positive feedback we repeated the exercise for the 2023 Bookbug books.

The [Clicker](#) resources can be used on Windows, iPad and Chromebook while the [Grid resources](#) are for Windows and iPads. The resources provide children with a means of writing about the story using vocabulary from the communication resources and reviewing the book content.



Figure 9: Scaredy Bat book on Grid 3

Clicker and the ClickerWriter app are very effective tools for supporting children’s early literacy providing accessibility features such as text-to-speech and large keyboards for learners with physical access needs.

Grid 3 is a communication, computer control and curriculum access environment and is particularly suitable for students with complex access needs who use eye-gaze or switches.

The resources provide a complete toolkit for teachers to include young children so that they can access the books, participate in learning, and join in with voting.

222 digital books were downloaded this year, as well as 2292 Bookbug P1 files and 1398 Bookbug Explorer files from Symbols for All and Scottish Book Trust’s website.

The 2022-2023 symbolised Bookbug Picture Book Prize resources, as well as our range of Explorer Bag symbolised resources for nursery age children, are all available on the Symbols for All website at www.symbolsforall.org.uk/bookbug.

A further development this year was that Joanna delivered a workshop at Scottish Book Trust’s ‘Sharing Sensory Stories Authors Lab’ in April 2023, which provided hands-on opportunities for authors to try out the symbol resources and accessible books.

The session was very positively received and we have since had requests for more information and to explore the development of further accessible books and symbolised resources. This also raised awareness of the wide range of CALL Scotland Bookbug resources available.

We plan to develop our Bookbug work further in the coming year by working with the University of Edinburgh’s BSL team to create BSL translated versions of the Bookbug Books, to add to our library of accessible versions on [Books for All](#).



Figure 10: ‘Stuck Inside’ Grid 3 writing activity



Figure 11: Writing a book review with Clicker Writer



Figure 12: CALL’s Bookbug Authors workshop



A pilot BSL Translated version of *Gorilla Loves Vanilla*, which we have already created, is being trialled with deaf children in Scotland and we look forward to the feedback and being involved in the development of future videos.



Figure 13: BSL Pilot Video

Table 2: Bookbug books and resources downloaded

Bookbug books and resources	2018-2019	2019-2020	2020-2021	2021-2022	2022-2023
Number of books downloaded	374	399	249	217	222
Number of symbol resources downloaded	6,576	3,310	3,313	3,029	3,690

Feedback

“Good practical tips and ideas for the nuts and bolts of running sessions and introduction to so many resources/potential props. Had no idea of the amount of digital resources.”

(Participant at SBT Authors’ Bookbug workshop)

“As a Speech and Language Therapist working regularly with children who use AAC, at a preschool age and throughout the school age years, CALL Scotland's Bookbug resources and accessible books are a key component of my toolkit. I find them to be extremely flexible, in that I can model vocabulary on the Sounding Board app for one child, while also support a child in the same group, to join in with the story using a fun word on their switch, with relevant symbol included.”

(NHS SLT)

“Angus loves having access to the books on the iPad. It means he is able to participate in nursery when they are reading a story as he automatically has the relevant vocabulary available to him, making it quicker and easier for him to join in. He absolutely adores ‘Shark In The Park on a Windy Day’ and this has been a gateway to different activities as well including making and decorating a telescope with his nursery friends.”

(Parent)

“As SLTs working with AAC users, we must ensure access to literacy is a core part of our therapy planning. CALL's Bookbug resources provide me with a time efficient, effective way of achieving this; I love that I can download the resources quickly and use them straight away. As they link with books that are freely available to children in Scotland, they are also very accessible for families to use.”

(SLT)

“Having the resources already prepared has been great for our learners and fabulous for planning lessons. I was able to adapt the resources to meet the needs of PMLD, SLD and MLD learners.”

(Teacher who found the resources on the website)

Symbols for All

The Symbols for All website provides free symbolised curricular resources organised around the eight Curriculum for Excellence areas and includes materials for use in symbolising the environment and for engineering communication activities across the curriculum.

Research² and practice demonstrates that symbols and symbolised resources can support learners through:

- improving engagement, motivation & behaviour;
- accessing the curriculum;
- understanding new vocabulary and concepts across the curriculum;
- communication and inclusion;
- sharing their understanding of a concept or idea.

Find printable and interactive curricular resources

All symbol sets ▾

Search

Do you have a copy of Boardmaker or InPrint3 and want to edit and personalise the resources?
 Download zip files of the [Boardmaker PCS resources](#) (22Mb of .bm2 files) or the [InPrint Widgit resources](#) (5Mb of .ipdoc files)

Showing 73 result(s)

🗨️ [Door Labels.pdf](#)
 A4 labels for symbolising the environment.
Classroom & Whole School Organisation - Environmental Labels

🗨️ [Area Labels.pdf](#)
 Labels for symbolising the environment.
Classroom & Whole School Organisation - Environmental Labels

🗨️ [Door Labels.pdf](#)
 A4 labels for symbolising an environment for older learners.
Classroom & Whole School Organisation - Classroom Organisers

🗨️ [Colours Bingo Game.pdf](#)
 A colours themed bingo game for 4 players plus bingo caller.
Expressive Arts - Art

The site provides resources for primary learners created with Boardmaker Picture Communication Symbols (PCS) and secondary resources made with Widgit symbols.

🗨️ At the weekend I _____

went horse riding	went to a party	watched TV
went swimming	used the computer	rode my bike
went shopping	played computer games	was trampolining
went to a park	played on the tablet	played in the garden
went to a restaurant	watched a DVD	did my homework
went to a cafe	stayed at home	saw friends
went to the cinema	read books	played football
went for a walk		relaxed
went in a car		something else

symbolsforall
The Picture Communication Symbols #12981-2017 by Tobii Dynavox. All Rights Reserved Worldwide. Used with permission. Created by CALL Scotland 2018. Updated August 2019.
News Prompt

Figure 14: News Prompts communication board with Boardmaker PCS

² Symbols in Education - <https://www.widgit.com/about-symbols/booklets/Symbols-in-Education.pdf>

Limited access to symbol software is one of the barriers that prevents practitioners from making symbol resources and Symbols for All provides a core starter set of materials, plus ideas for how they can be used, that will enable educators everywhere to get going. The site also provides the original Boardmaker and Widgit files so that practitioners with access to symbol software can edit and adapt them to personalise for their own schools and learners.

The number of visits to the site and the number of resources downloaded decreased this year. Given that the resources have been available in their current form for five years, we plan review and update the Symbols for All offering in Summer/Autumn 2023.

Table 3: Symbols for All page views and downloads

Symbols for all Website	2018-19	2019-20	2020-21	2021-22	2022-2023
Symbols for All web site page views	24,475	42,596	40,695	62,548	23,686
Symbols for All downloads	9,001	16,802	16,190	27,869	16,190

Symbol resources for learners who use eye gaze and special access

In addition to the symbol materials for printing there are twelve resource sets for children and young people who use the Grid 3 communication and access environment. This year these resources were updated and rearranged to make them easier to find on the SmartBox Online Grids site. (SmartBox are a UK assistive technology firm that integrated the Scottish computer voices into their products, and we are pleased to extend our partnership through creating these resources.)

The resources can be used to model sentence building, model 'core' communication words, communicate requests and create communication opportunities around various curricular activities from baking to reading and more. PCS, SymbolStix and Widgit grid sets are available.

The grid sets are primarily designed for eye gaze access but can also be accessed by touch, using switches, or with a pointing device such as a joystick.

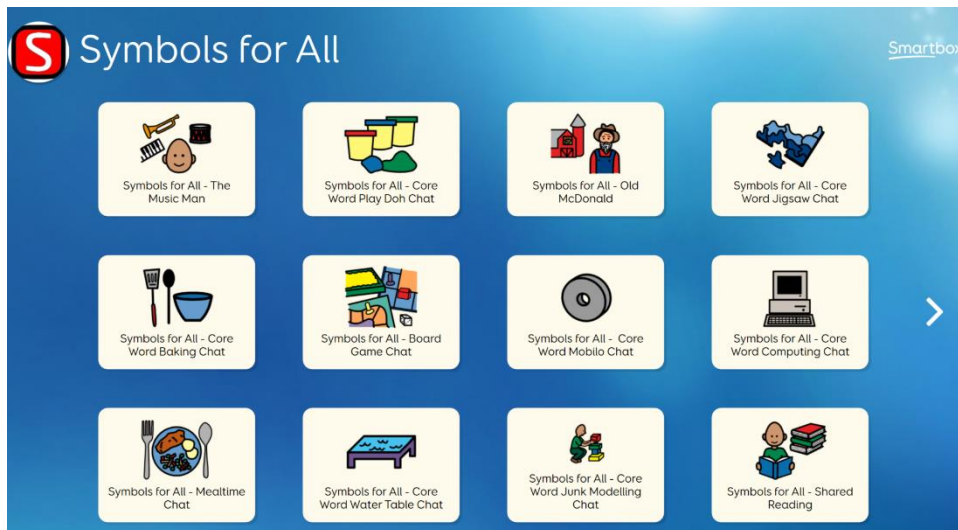


Figure 15: Updated Grid 3 Symbols for All resources

Symbols for All AAC Core Word Toolkit

Scottish Government Section 10 funded our development of the Symbols for All Core Word Toolkit and one outcome from the project was a physical Kit to help school staff get started with and develop their use of symbols across the curriculum by creating communication opportunities based on the principles of Core Words.



Figure 16: Tweet from a school using one of the loan kits



Figure 17: <https://www.symbolsforall.org.uk/core-word-kit/>

Core Words are the building blocks of language and makeup around 80% of what we say. When we create teaching and learning experiences using the principles of Core Words, evidence suggests that using them will enable learners who use symbols for communication to communicate more effectively and flexibly.

Core Words can be used across the curriculum, with a few words used repeatedly to communicate in various topics and contexts. By augmenting Core Words with a few more specific topic words, learners can experience and use these Core Words all day, every day.

The kit is available for schools (in Scotland) to borrow from our CALL Scotland loan bank for staff to learn the principles of teaching with Core Words and embed communication across the school day. The kit has everything a teacher will need, from simple communication devices (and batteries!), printed symbol boards in various formats, to digital resources and more.

Enquiries about borrowing the kit increased this year, with requests to borrow exceeding capacity of equipment. In response, we



Figure 18: Core Word Video Guide

developed a 'mini' kit with some of our loan bank items, and also provided a 'no-tech' kit of pre-printed and laminated resources. Schools are reporting that they find the combination of ready-made printed resources, lessons and lesson plans along with pieces of AAC and assistive technology extremely beneficial:

"Learners were engaged and excited about new resources. Our learners are in good routines of communicating and participating in shared attention experiences. For our class in particular the sensory aspects of the kit increased engagement in learning the most...low tech communication with highly stimulating resources e.g. floating and sinking activity, sensory story, the fan with switch."

"..Lots more modelling is happening from staff which has had a huge impact on our learners engaging with visuals. I have also created a bank of sensory resources to create stories in a similar way. The kit is incredible. What an excellent resource to share across schools and for free! Thank you to Claire and the team for their on going professional dialogue and support this session."

Kit Loan feedback, 2022-23

Scottish Computer Voices for Scottish schools and public sector

Table 4 gives the number of visits and downloads of the Scottish computer voices. In schools, the voices are usually downloaded once by the local authority technical team and then packaged and made available on all the computers across the entire authority, so the number of actual users is far greater than the number of downloads.

Table 4: Scottish Voice page views and downloads

The Scottish Voice	2018-19	2019-20	2020-21	2021-22	2022-2023
Scottish Voice page views	39,103	43,484	52,424	64,941	42,654
Heather downloads	775	534	704	709	539
Stuart downloads	603	479	596	618	458
Ceitidh downloads	249	124	147	144	155
Isla downloads		161	162	142	141
Callum downloads		165	155	123	131
Andrew downloads		128	111	95	108
Mairi downloads		129	107	76	108

Scottish and Gaelic Voices on Microsoft Immersive Reader

The Scottish Voices can be downloaded from CALL's [Scottish Voice](#) web site and installed on Windows and MacOS computers. However, Microsoft's popular Immersive Reader and Read Aloud tools are still restricted to using Microsoft's own online voices and they cannot read with the Scottish Voices or with the *Ceitidh* Scottish Gaelic voice.

This is a significant limitation because Microsoft do not provide any Scottish accent voices or Scottish Gaelic voices – so learners in Gaelic Medium Education cannot use Immersive Reader in the language of their learning. Microsoft do not provide any UK child voices either.

We have a similar situation with Scottish accent voices: Microsoft provide English language voices with UK (English) (5 voices), US (7 voices), Canadian, Hong Kong, Indian, Irish, Kenyan, New Zealand, Nigerian, Philippine, Singapore, South African and Tanzanian accents, but not Scottish. This does not seem acceptable, particularly given that the Scottish Government funds provision of Office 365 for every learner and educator in Scotland.



Figure 19: Irish and Welsh voices are offered in Immersive Reader but not Scottish Gaelic

In 2022 Paul Nisbet wrote a [blog post](#)³ observing that Microsoft provide Catalan, Galacian, Irish and Welsh voices but not Scottish Gaelic, and suggested that the company might either develop a Scottish Gaelic voice, or develop Immersive Reader so that it could speak with our Scottish voices. This was followed by a Twitter discussion ([#ImmersiveReaderSpeakScottish](#)), following which the Microsoft Azure Speech Team were in contact and developed some Scottish accent voices, but they were surprising poor and really unacceptable.

We will continue to lobby Microsoft to either licence the existing voices from CereProc, develop Immersive Reader so that it can speak with our Scottish voices installed on the individual Windows PC, or develop their own voices.

Scottish and Gaelic Voices on iPads

The situation with iPads is similar. Learners in P6 and above in Glasgow, Scottish Borders, Edinburgh and Falkirk are being provided with personal iPads and while the built-in voices available on iPads are of good quality, there is only one Scottish accent voice ('Fiona') and no Scottish Gaelic voices so that learners with dyslexia or reading difficulties attending the Glasgow Gaelic School, for example, are being given iPads that do not have a text reader in the language of their learning. Any learners with significant sight loss cannot use VoiceOver to read Gaelic text. We do not think that this is acceptable.

It is technically possible to make the CereProc Scottish and Gaelic voices available on iPads but the voices must be integrated into each individual app by the app developer. We have worked with SmartBox to make the Scottish voices available in their [Grid for iPad](#) communication app and we have been encouraging other developers such as Crick (particularly as Glasgow have licenced

³ Nisbet, P. (2022) [How Immersive Reader Could be More Inclusive - by Speaking Our Language and with Our Accents](#).

Crick’s [ClickerWriter](#) app), Tobii DynaVox (suppliers of [BoardMaker](#), [communication aids](#) and [communication apps](#)) and [textHelp](#) to do likewise.

Table 5: iOS 16.5.1 built-in English voices

English accent voices	English Scottish accent voices	English Australian accent voices	English Indian accent voices	English Irish accent voices	English South African accent voices	English US accent voices
Daniel Jamie Kate Oliver Serena Siri Stephanie Eloquence (older, robotic voices)	Fiona	Karen Lee Matilda Siri	Isha Rishi Sangeeta Siri Veena	Moira Siri	Tessa Siri	Agnes Alex Allison Ava Bruce Eloquence Evan Fred Joelle Junior Kathy Nathan Nicky Noelle Samantha Siri Susan Tom Vicki Victoria Zoe

We have told that Tobii Dynavox are developing their own Scottish child voices, while Texthelp’s Read&Write app has the Ceitidh Gaelic voice and colleagues in textHelp pledge that other CereProc voices will be added in 2023.

Scottish and Gaelic Voices on Chromebooks

Some local authorities such as Highland, Aberdeen City, Midlothian, Stirling and West Dunbartonshire are providing personal Chromebooks to learners and unfortunately, Google do not provide Scottish or Gaelic computer voices on ChromeOS either.

The Scottish and Gaelic voices can now be [installed on Chromebooks](#) and this could provide a solution for Chromebooks that can run Android apps and where apps can be installed easily. Each voice installation on a Chromebook costs 59p and while this is low cost for individual users, purchasing and installing voices across a whole authority has not been a practical possibility. Google now have a mechanism for purchasing and managing apps at [scale](#) and so we will explore this further in 2023-2024. Licencing the voices for all Scottish schools is a possibility.

Read&Write for Chrome already offers the Gaelic *Ceitidh* voice and following discussions with CALL, textHelp intend to add the other CereProc voices in 2023.

Free Text Reader Technologies

Text-to-speech (TTS) technology is one of the most effective supports for learners who have difficulties with reading⁴.

There is often misunderstanding about text-to-speech, screen readers and text readers, which can cause confusion; this is how we view the different terms:

Text-to-speech refers to the overall technology that converts text into speech. It includes text readers, screen readers and the technology used in voice output communication aids.

A text reader is an app or software that is primarily designed for reading text. Typically, the user selects text on screen and then activates a button to have it read out. Text readers are simple and most commonly used by learners with dyslexia, reading difficulties, learning difficulties, EAL and sometimes by pupils with visual impairment or hearing impairment. Text readers can also be used by anyone to read emails or documents. Chromebooks have [Select-to-Speak](#) and iPads have [Speak Selection](#), but Windows still lacks a general-purpose simple text reader.

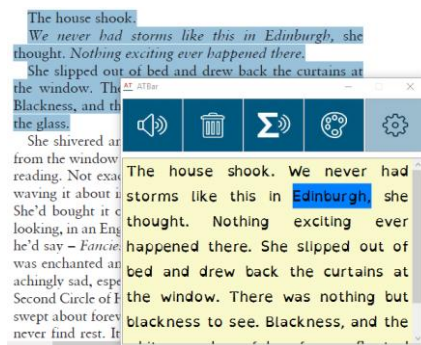


Figure 20: the free ATbar text reader for Windows

A Screen Reader is an app or software designed for people with significant visual impairment or who are blind. The screen reader can read out everything on screen – information about windows or documents, text, headings in documents and web pages, alternative text attached to images, tables, menus, dialogue boxes, links in web pages etc. Screen readers are complicated tools and take time and effort to master. Screen readers are built into Windows ([Narrator](#)); Chromebook ([ChromeVox](#)) and iOS ([VoiceOver](#)) although many people use commercial tools such as [Jaws](#) or [SuperNova](#).



Figure 21: VoiceOver for iOS



Figure 22: SuperNova magnifier and screen reader

⁴ Wood SG, Moxley JH, Tighe EL, Wagner RK. Does Use of Text-to-Speech and Related Read-Aloud Tools Improve Reading Comprehension for Students With Reading Disabilities? A Meta-Analysis. *J Learn Disabil.* 2018 Jan/Feb;51(1):73-84. doi: [10.1177/0022219416688170](https://doi.org/10.1177/0022219416688170). Epub 2017 Jan 23. PMID: 28112580; PMCID: PMC5494021.

Screen Readers can also send text descriptions to an electronic [braille display](#), instead of/as well as speaking.



Figure 23: Orbit Reader 20 braille display

The output of Screen Readers only makes sense when the content of what is being read is structured, with alternative text for images, and where the reading order is correct – without that, the speech is nonsense – which is why it is so important to have web sites, documents and digital assessments that are properly accessible.

For many years CALL has provided downloads and access to free text reader tools for Windows OS for learners to use to access digital textbooks, learning resources and assessments such as the NSAS and SQA Digital Question Papers. The text readers in conjunction with the Scottish computer voices provides a universal level of accessibility software across the country, enabling equality of access and saving schools, parents and carers the cost of purchasing commercial software.

WordTalk

WordTalk was one of the earliest text readers distributed by CALL. It was created by Rod Macauley in 2005 and remarkably, it still works with some combinations of Word and Windows, but there are many PCs where it does not.

Microsoft’s built-in Speak button, Read Aloud and Immersive Reader now meet the support needs of many Word users and so the number of WordTalk downloads has decreased in recent years. We will monitor the use of the site and may withdraw it in the future if we feel it is not useful.

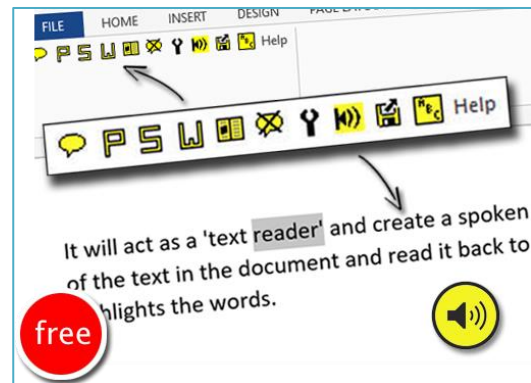


Table 6: WordTalk page views and downloads

WordTalk	2017-18	2018-19	2019-20	2020-21	2021-22	2022-2023
WordTalk page views	157,443	106,327	116,686	124,769	79,507	68,354
WordTalk (downloads)	32,731	19,588	7,471	10,506	9,735	9,120

Universal text readers

Learners require a general-purpose text reader for accessing the internet, emails and PDF files – for example textbooks or SQA Digital Question Papers. The CALL website provides information and links to free tools for Windows devices including for example ATbar and Natural Reader.

The web site also has information on the built-in tools in iPad and Android tablets and Chromebooks and in 2023-2024 we will expand this to include links to a range of text readers for these devices.

MyStudyBar 4

Craig Mill’s [MyStudyBar 4](#) was launched on 30 August 2017 and was downloaded 4,213 times in 2022-2023. MyStudyBar is a collection of free tools for Windows that can support learners with literacy difficulties, particularly in a secondary school or FE / HE setting, in a package that can be used on individual computers, or from a USB memory stick. While there is greater awareness and use of tools such as Immersive Reader in Office 365, there is still a need for a stand-alone option like MyStudyBar. One advantage of MyStudyBar is that the tools do not need to be installed on a school computer; a second is that the text-to-speech tools provided ([ATbar](#) & [Balabolka](#)) can use the Scottish and Gaelic voices.

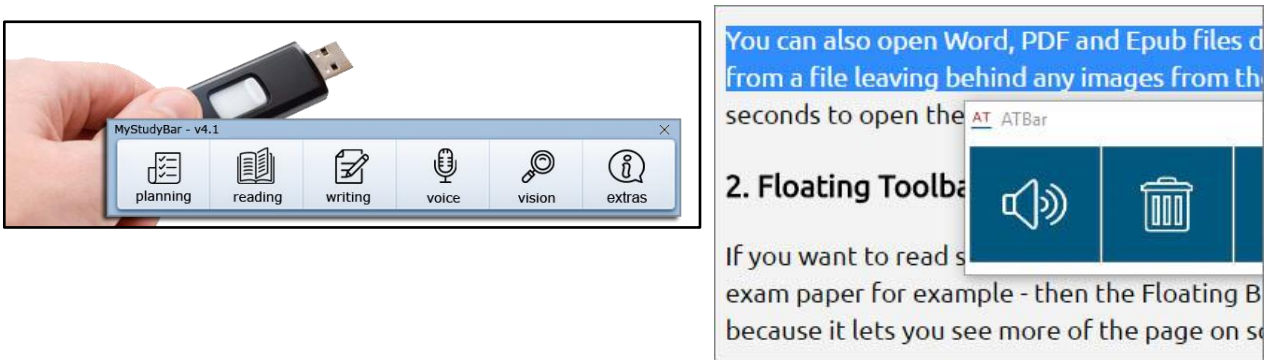


Table 7: MyStudyBar downloads


MyStudyBar 4.1	2018-19	2019-20	2020-21	2021-22	2022-2023
MyStudyBar 4.1 downloads	5,216	5,483	6,379	4,623	4,213

Doorway Online Interactive and Accessible Learning

[Doorway Online](#) is an excellent collection of free and highly accessible online educational activities covering literacy, numeracy, time and money, memory and matching, and typing skills. The activities were originally created with funding from Scottish Borders Council and the web site is now managed by the Doorway Accessible Software Trust, a Scottish charity. The Trustees approached CALL to discuss whether we could take over management of Doorway Online, and so we have been working with colleagues in the University to take this forward. There have been many questions around legal and financial matters and we are grateful to Sarah and Craig, and colleagues in the School and University for taking this forward.

Welcome

Doorway Online is a collection of free and highly accessible educational games that learners will find easy to use independently. Each activity has a range of accessibility and difficulty options. Originally developed with funding from Scottish Borders Council, it is now managed by the Doorway Accessible Software Trust, a Scottish charity.



The Doorway activities are particularly useful because they are free, very well designed (by teachers), and have excellent accessibility options. They are used by children all over Scotland and the world and it is important that children - both with and without additional support needs - continue to have access to these excellent learning resources.

Recently, the Welsh government funded development work to adapt the Typing tutorial into Welsh.

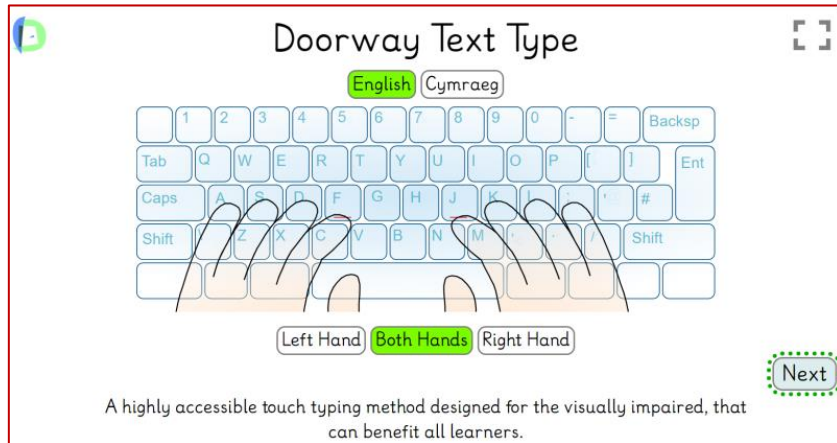


Figure 24: Doorway Text Type bilingual tutorial for single and two handed pupils



Figure 25: Doorway Online Speller 2 - a complete Look, Say, Cover, Write and Check scheme



Figure 26: Doorway Online Money activity



National Information and Advice

Objective

To provide an expert Scottish national information and advice service to all those involved in meeting the AT and AAC support needs of pupils with complex additional support needs and make information accessible in a variety of forms.

Expected outcomes

All those involved in meeting the AT and AAC support needs of pupils with complex additional support needs will be able to access the information they need to be successful in their role.



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OUTCOMES

Summary

- **438** significant enquiries were received and responded to between 1/8/22 and 31/7/23, compared with 805 for the same period in 2021-22.
- The nine websites maintained by CALL received **950,067** page views compared to 910,897 in 2021-2022. **97,223** resources were downloaded compared to 85,224 in the previous year.
- There were **59** blog posts compared to 35 in 2021-2022.
- The CALL Twitter account has **5,380 followers** and **418,300 tweet impressions** while the CALL’s Facebook has **9,604 followers** and a ‘reach’ of **1,627,794**.
- The CALL YouTube channel has **848** subscribers with **52,876** views in 2022-2023.
- The CALL email Newsletter has **4,076** subscribers.

Requests for assistance

CALL provides a free open access advice and information service through telephone, email and social media for anyone in Scotland who wishes to ask about communication or assistive technology. There were 438 requests for assistance: 34% of requests were from teachers or other school staff and 24% from parents or relatives.

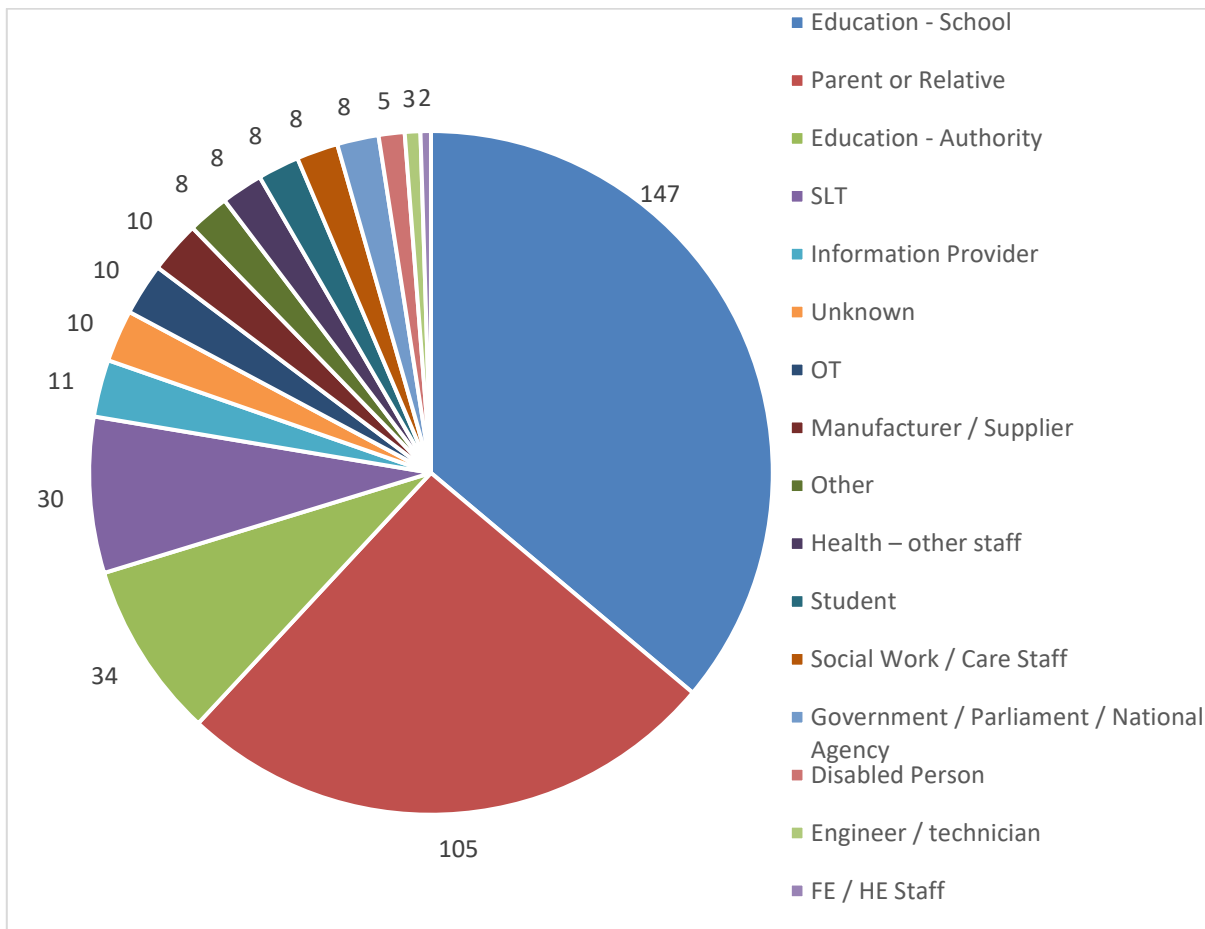


Figure 27: Background of people contacting CALL 2022-2023

The nature and subject of requests varies considerably: they include straightforward enquiries about technology or about a CALL Professional Learning course, a call to ask about equipment for

loan, or a more detailed discussion about the application of assistive technology in a local authority, school, class or for an individual learner.

Examples from the past year are given below and illustrate the range of additional support needs for which people are looking for assistance.

I am a pupil support teacher in XXXXX. I have watched your excellent video on laptop accessibility. I am teaching a few pupils to access immersive reader – looking for the book icon in the web address. I checked on my own device that this would appear as I know this isn't available on all websites, it appears on mine, but not on the child's. Is this because the laptops in the school are old?

Pupil Support teacher

I am looking for an AAC device for patients of a military hospital in my city in Ukraine, where there are soldiers with severe injuries. I had a chat with a physical therapist. She said it would be extremely useful to have an AAC device. She said there are patients with a spinal cord injury at the cervical level. Such people do not have speech difficulties or cognitive impairments. But such devices can help them, because they may have difficulties with typing, or using the phone or computer due to weak hand muscles and reduced or completely absent upper limb functioning. Also there are patients who, as a result of a stroke or brain injury, have speech disorders, and may also have various cognitive disorders. Speech impairments may include difficulty speaking, but in some cases also a person has difficulty understanding spoken language. Sometimes it is difficult to "find" the right words in one's memory, to remember the name of an object, etc. And build sentences to express oneself.

Volunteer in a hospital in Ukraine

I'm looking for advice on IT supports in and out of school for my 15 year old daughter who has dyslexia.

I'm not sure if you still offer one hour individual sessions (I know these were offered a few years ago) - if you do I think this would be most helpful for us.

Parent

I hope you don't mind me getting in touch for some advice about magnifiers. I'm supporting a pupil who has reduced vision due to refractive errors. He is in S3 and recently been referred to us for some support. He struggles with seeing text, the whiteboard, small objects and equipment and has to rely on a learning support worker to help all the time.

Are there any magnifiers that you could recommend? There are so many I've looked at its difficult to know which would be best.

QTVI

I have a pupil for whom a mouse is too difficult to control but who uses an Xbox controller at home for gaming. How difficult would it be to get software downloaded that would allow him to use the Xbox controller as his mouse?

Teacher

I wonder if you can advise on any apps to support a student in P7 with an excellent understanding and ability in maths but suffers severe dyslexia and dysgraphia. We get by in writing based subjects using notepad and evernote, but maths is challenging. He's tried modmath but that isn't always helpful and I want to get him set up for moving into S1 next year.

Peripatetic ASN teacher

I was looking through your website and came across your Books for All. I understand these downloads are only for students with print disabilities in the Scotland. Is there anyway that I could have access to 1 or part of one to see how these are set up? I am the assistive technology specialist for my district and I am working to create accessible versions of our adopted curriculum.

Assistive Technology Specialist, USA

We have a pupil at XXXX with Duchenne Muscular Dystrophy. He is now in S5, and his mobility issues are having more of an impact on his ability to work independently in class. He attends mainstream classes and is not keen on the idea of working with a scribe if he can avoid it. We have suggested use of a laptop, but we have a couple of issues. He feels that this will work well for English. However, he is studying Maths and Biology at National 5 level and these do not overly lend themselves to a standard laptop. His OT is also concerned that typing on a standard keyboard may also become tiring and more difficult for him. Do you have any suggestions around adapted technology or programmes which would allow us to support him in school?

PT pupil support

Our students and we as a school are trying to use immersive reader which we love however, is it possible to change the voice to Scottish to make it more recognizable for our learners?

Teacher

I am one of the SLTs working at a specialist AAC service in Kent, England. I have an adult patient moving to XXXX in Scotland. I am not familiar with the services available to AAC users in Scotland so wondered if you could point me in the right direction if there are any services that can support him with his AAC in the long term?

Speech and language therapist

My dad has recently had a stroke and is getting very frustrated and despondent about the fact that he cannot read the newspaper. I was wondering if you could help me and recommend any reading pens that would be suitable for this purpose. He is 86 years old and really with no devices apart from an ancient phone which he only uses to receive phone calls, he has no need to download any of what he would be scanning onto anything. All he requires is an easy to use, portable, reliable text to speech device.

Relative

I would be so grateful if somebody could help me go through step-by-step what I need to do to help my son in school with his new laptop. I am ideally looking for a speech to text. Also a dyslexia friendly font. How to change the background colour of a Word document. After being sent links, I am still none the wiser after spending two hours or more trying to figure it out I think it's something that somebody will have to do with me over the phone perhaps is this not possible at all. I'm really stuck. I'll be so grateful for your help.

Parent

I am writing to request permission to adjust and adapt the flowcharts addressing reading and writing difficulties to suit N. Ireland procedures to post on our closed Literacy Support MS Team.

Teacher, Northern Ireland

I'm an independent SLT near XXXX supporting families with AAC and I'm wondering if you could offer some advice? I am using the new Proloquo app on an iPad 9 with one family but we need a keyguard. We are struggling to find a supplier who we can purchase one from who is making a keyguard for this new app. Would you have any suggestions of sources or contacts we could try to buy a suitable keyguard?

Speech and Language Therapist

I have a service user who has cancer of the voice box and is in the process of having their voice box removed which will leave them without the capability of speech. After doing some research I

realise there is apps for ipads and phones that can be downloaded so that the user can type into the device and the device will read out what they are trying to communicate. Could you advise of any apps, equipment, help that is available for the user?

Adult Services Technology Support Assistant

One of our staff member's have recently had an Access to Work assessment from which a list of software packages have been recommended. The assessment does not explain what the items are and how they assist and I wondered if you would be able to provide any guidance on this?

Nurse, Adult Community Nursing

Hello, I am looking for some advice/support. I am currently supporting a young person from Ukraine. The young person has been here for one year and still speaks no English. Last week I worked with a translator and the young person has Dyslexia in their native language. I was wondering if you could advise me on any strategies to support this young person.

Teacher

We now have number of pupils who are asylum seekers either from Ukraine of Afghanistan. I went on the CALL Scotland website had a look and searched but could not find anything. Do you have anything on supporting UASC?

Teacher

Please help. We have a young person in S4 whose dyslexic needs have been overlooked. It also seems he's dyspraxic/ dysgraphia. The boy is bright and wants to try N5 Maths Applications but the thinking of his maths teachers is that he can't because his handwriting is so bad and there's a lot of handwriting at this level they say. I'm hoping there's something you can suggest that would help. I hate to think of this bright boy being told his handwriting prevents him from doing the subject.

Teacher

I am a Community based Children's Occupational Therapist and was looking to get some advice to support a young person I am currently working with.

I am seeking to explore options with regards to switch adapted appliances which could allow the young person to access some activities in the kitchen at home and was hoping I might be able to get your advice/support around this?

Paediatric Occupational Therapist

Most enquiries regarding individuals required a personalised response and we usually offer to speak to the parent or practitioner by phone or video call. We generally follow up by sending an email with a summary and signpost to sources of information or offer a loan of technology. If we meet on Teams, we ask if the enquirer is happy for the session to be recorded and we send a link to the recording.

If we feel that we are receiving requests for assistance around a similar topic, we develop posters, blogs or videos that we hope will address the questions that are asked. This both helps parents and practitioners and also helps the CALL team to respond more efficiently to future enquiries.

Feedback

"I just downloaded your technology checklist from call Scotland - this is amazing and a great resource I've just started tutoring dyslexic students after completing the educator and associate Orton Gillingham dyslexia courses with an OG fellow in the US (online). I'm in Australia"

Teacher

Websites

CALL Scotland hosts nine separate websites: [CALL Scotland](#), [AAC Scotland](#), [ASL and Technology](#), [Adapted Digital Assessments](#), [Books for All](#), [Personal Communication Passports](#), [Symbols for All](#), [The Scottish Voice](#) and [WordTalk](#). Robert Stewart creates and maintains the sites with some content being written and updated by the rest of the CALL team.

Robert created a more up-to-date design for the main CALL site which was launched in December 2022. The new site is more accessible, especially for people viewing on mobile phones, course bookings and payments and purchases from the [CALL Shop](#) are integrated directly into the University of Edinburgh finance systems.

Given the increase in cyber-attacks on other universities and public sector organisations, Robert has been researching and ensuring that the CALL sites are secure.

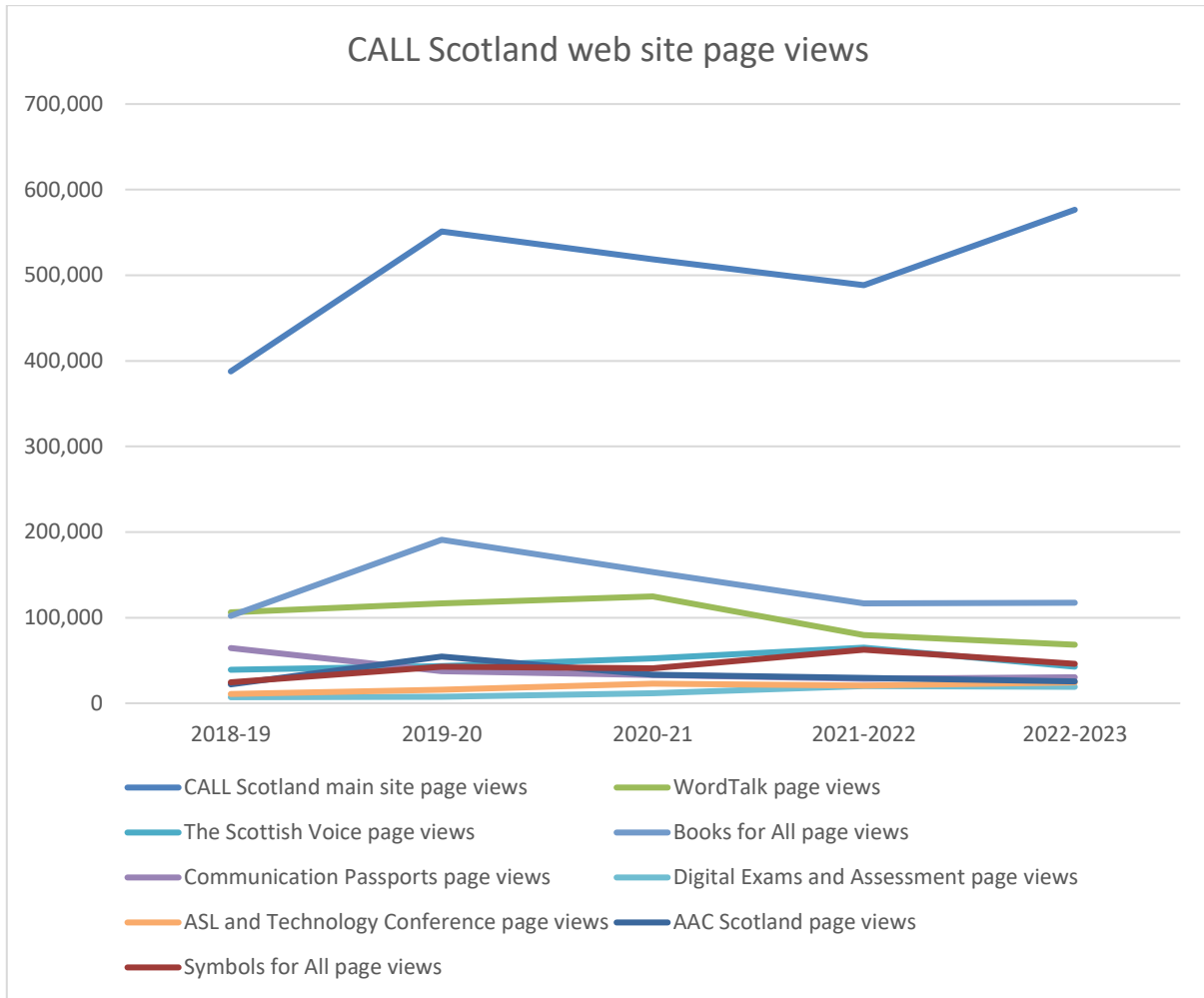
Table 8: CALL website visits and downloads provides information on the number of page views and downloads from the CALL web sites. We report the number of 'page views' as measured by Google Analytics. The total number of page views of the nine sites increased by 1.6% and the number of resources downloaded by 17.2%.

The main CALL site is most visited followed by Books for All, WordTalk, Symbols for All and the Scottish voice.

Table 8: CALL website visits and downloads

	2018-19	2019-20	2020-21	2021-2022	2022-2023
CALL Scotland main site page views	387,663	550,987	518,474	488,513	576,507
CALL Scotland (resources downloaded)		55,928	48,874	39,985	63,312
WordTalk page views	106,327	116,686	124,769	79,507	68,354
WordTalk (copies downloaded)	19,588	7,471	10,506	9,735	9,120
The Scottish Voice page views	39,103	43,484	52,424	64,941	42,654
Heather downloads	775	534	704	709	539
Stuart downloads	603	479	596	618	458
Callum downloads	-	165	155	123	131
Isla downloads	-	161	162	142	141
Andrew downloads	-	128	111	95	108
Mairi downloads	-	129	107	76	108
Ceitidh (Gaelic voice) downloads	249	124	147	144	155
Books for All page views	102,107	190,977	153,197	116,492	117,231
Number of Books for All user accounts		3,535	5,507	6,888	8,158
Books for All downloads		5,528	7,380	5,728	5,515
Communication Passports page views	64,485	37,312	33,057	28,565	30,385
Digital Exams and Assessment page views	7,027	7,557	11,496	20,055	19,097
ASL and Technology Conference page views	10,786	15,697	22,726	20,545	24,343
AAC Scotland page views	22,032	54,504	33,296	29,731	25,468
Symbols for All page views	24,475	42,596	40,695	62,548	46,028
Symbols for All (downloads)	9,001	16,802	16,190	27,869	17,636
Total page views	764,005	1,059,800	990,134	910,897	950,067
Total downloads	30,216	87,449	84,932	85,224	97,223

Figure 28: CALL website page views 2018 – 2023



Posters

The free downloadable CALL posters provide key information about assistive technology and augmentative and alternative communication and continue to be popular. The posters have helped to raise the profile of CALL Scotland both nationally and internationally and have provided useful information for people with an interest in assistive technology and AAC.

Craig created a new poster suggesting a [Technology Checklist to creating a dyslexia-friendly classroom](#); the interactive [Bookbug Digital Bookshelf](#) was updated with the 2023 titles; and the popular 'wheel of apps' for learners with dyslexia and [wheel of apps for learners with complex additional support needs](#) were both updated.

A TECHNOLOGY CHECKLIST TO CREATING A DYSLEXIA-FRIENDLY CLASSROOM

Technology can make a big difference for pupils with literacy difficulties arising from dyslexia. Modern devices have built-in tools that are easy-to-use, e.g., a text reader, speech recognition, support for spelling, grammar and more. Embracing digital technology in the classroom can help learners to overcome barriers, promote inclusion and raise attainment allowing everyone to unlock their true potential - see below for our 8 top technology tips!

- 1: Text-to-speech - use a text reader**
A 'text-to-speech' program or 'text reader' on your computer or tablet reads text from a document or web page using a computer voice. Examples of text readers include 'Speak for Pads', 'Natural Reader' for Windows and 'Select to Speak' for Chromebooks. Scottish voices, which are natural sounding voices, can be downloaded from www.speechtoimage.org.uk/home
- 2: Speech recognition - speak to your device**
With Speech Recognition you can speak to your computer, tablet or smartphone to control it, give commands and dictate text. Popular examples include Dictate in Word and Word Online, Siri (and Voice Control) for iPads/iPhones and Google Voice Typing for Chromebooks. The latest version of Windows 11 includes the built-in Voice Access. <https://www.microsoft.com/en-gb/windows/voice-access>
- 3: Using a talking spell checker**
A talking spelling checker helps pupils to hear and choose the correct word. Current versions of Microsoft Word include a talking spelling checker called 'Read Aloud and/or 'Spell Out'. The iPad also has a talking spell checker 'Spell'. When a word is underlined in 'red' tap the word and choose 'Spell' from the pop up menu. To turn on spelling on a Chromebook go to Settings > Language and turn on 'Spell Check'.
- 4: Fonts screen tints and colours**
For some, adjusting the font style, colour and spacing, as well as page background colours can improve the readability of a document. Changing background colours in Word can be done quickly and easily using the 'Design Tab > Page Colour'. Screen tints are available on the iPad/iPhone using 'Colour Filter in Accessibility > Display > Text Size'. On a Chromebook, in Accessibility 'Colour Corrector' provides a range of colours to choose from.
- 5: Word/text prediction**
Word prediction has many benefits, such as making the writing process easier. It can help with spelling and grammar difficulties, focusing on the writing task rather than worrying about making spelling mistakes. It can encourage pupils to be more creative - expand their ideas, rather than avoiding words they can't spell. To see a selection of free word prediction apps visit: <https://bit.ly/wordprediction>
- 6: Scan and read text aloud**
Using a combination of a camera, such as on an iPad, and 'scanning apps' you can now take a photo or scan a worksheet or printed materials and convert them into readable, editable and accessible text, e.g., text that can be read aloud using text-to-speech or a text reader. This short guide explains how to do it: <https://bit.ly/scanning-apps>
- 7: Source digital books and resources**
Books for All provides books in accessible formats for students who have difficulty reading ordinary printed books, including those with cerebral, who have a physical disability or who are blind or partially sighted. Accounts are FREE for educators in Scotland supporting learners who are print disabled - with over 2,000 titles available: <https://www.booksforall.co.uk/home>
- 8: Technology to Support Dyslexia module**
The 'Technology to Support Dyslexia' free online module explores how technology can support literacy difficulties such as spelling, writing and planning/organisation. The focus of the module is maximising the accessibility built-in features found in modern devices. You can access the course from the link below: <https://www.callscotland.org.uk/learning/learning-modules/>

Version 2, April 2023 CALL Scotland, The University of Edinburgh, CALL Scotland and University of Dundee

Bookbug Digital Bookshelf 2023

These books have all been finalists in the Bookbug Picture Book Prize 2009-2023. CALL Scotland has worked with Scottish Book Trust, the authors and publishers to create Accessible Copies of these books so that learners with print disabilities can read and participate in the book prize.

Professionals working in schools in Scotland can create a free account on booksforall.org.uk and download these books for their learners with print disabilities. Print disabilities can include people with physical, sensory or learning difficulties.

The digital books are available as PowerPoint, Keynote, Grid 3 & Grid for iPad files. Click on the icons under the books on the bookshelf to download the files.

Many of the books on the bookshelf have additional symbol-supported resources. There are communication boards, labels for simple communication devices and more. There are also talking communication boards for the free 105 'Soundingboard' apps. Each book has its own set of story-specific vocabulary. In addition, there are some scaffolded writing and book review grids for Clicker 6 and the Clicker Writer app. These include Sentence Set grids and scaffolded Book Review grids.

Find all of these additional resources on the Bookbug pages on the Symbols for All website: bit.ly/bookbugresources

Bookbug illustration by Debbie Clout

iPad Apps for Learners with Dyslexia/ Reading and Writing Difficulties

The 'Wheel of Apps' is not comprehensive, but attempts to identify relevant, useful apps and to categorise them according to difficulties faced by people with dyslexia. Note that some apps address a range of difficulties. To save space, we have not placed individual apps into multiple categories, but have listed them under a single category that is particularly relevant to the app.

Links to the electronic version of the poster are 'clickable' and will take you to the Apple App Store.

Free apps (no in-app purchases offered)
*Some apps are free on the App Store but there are in-app purchases for full functionality.

Version 2, April 2023 CALL Scotland, The University of Edinburgh, CALL Scotland is part funded by the Scottish Government. An electronic version of this chart can be downloaded from: <https://www.callscotland.org.uk/downloads/posters-and-leaflets>

CALL Scotland
Communication, Access and Learning

iPad Apps for Learners with Complex Additional Support Needs

Key:
 - App has built-in Switch Access
 - Free App (may have in-app purchase options)
 - Particularly suitable for learners with CVI
 - App is available as part of a bundle, cheaper to purchase together

How to use this poster:
 This poster shows the app categories and icons. To find out more about an app, click on the app icon to get more information including a link to the app on the App Store.

Using this poster with learners with Complex Additional Support Needs:
 Using this poster with learners with Complex Additional Support Needs is important to consider the why and how of the app. The app may be useful to some learners, but not to others. It is important to consider the why and how of the app. The app may be useful to some learners, but not to others. It is important to consider the why and how of the app. The app may be useful to some learners, but not to others. It is important to consider the why and how of the app.

Identifying suitable apps:
 The poster shows the app categories and icons. To find out more about an app, click on the app icon to get more information including a link to the app on the App Store.

Available Apps:
 Many learners are not able to use the iPad and therefore they are unable to use any of the apps. To find out more about the apps, click on the app icon to get more information including a link to the app on the App Store.

Version 2, April 2023 CALL Scotland, The University of Edinburgh, CALL Scotland is part funded by the Scottish Government. An electronic version of this chart can be downloaded from: <https://www.callscotland.org.uk/downloads/posters-and-leaflets>

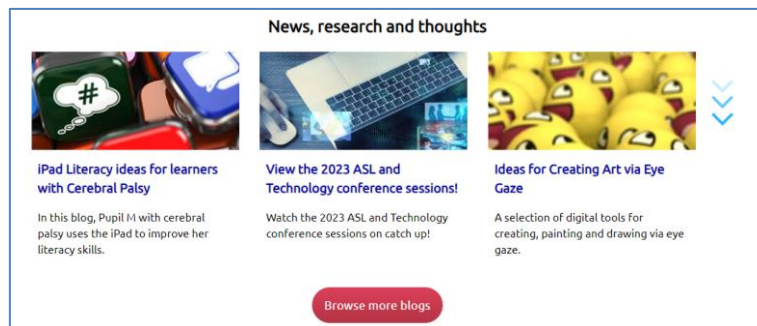
CALL Scotland
Communication, Access and Learning

Blogs

The CALL Scotland [Blogs](#) feature articles by the CALL team, news about events, technology, Government initiatives and other developments. If people ask for information about a particular topic on a regular basis, a blog is often a good way to respond and share information.

The team published 59 blog posts in 2022-2023 (compared to 35 the previous year) covering a wide range of practical and policy-related topics such as:

- [Looking for a free photo app that snaps and reads aloud the text?](#) (Craig)
- [Online Learning opportunity for parents](#) (Shirley)
- [Five Simple Assistive Technology Ideas](#) (Claire)
- [1:1 technology must be accessible](#) (Paul)
- [A true story of an AAC user's journey – from low tech to high tech eye gaze](#) (Joanna)
- [DPIA Document Available - Important Step Forward for AAC Providers in Scotland!](#) (Gillian)



Videos from CALL Scotland

Practitioners, learners and parents often ask for advice on using apps and tools and video tutorials can be helpful. Craig created a new series of short video guides on [Using Microsoft Word to support learners with Additional Support Needs](#) and Using the iPad to Support Literacy. Claire produced [four new videos](#) showing how to use Bookbug Symbolised Resources, Accessible Digital Books and the Writing Resources for Grid 3 and Clicker. These are available on the [CALL YouTube channel](#).

The CALL YouTube channel has 848 subscribers and received 52,876 views in 2022-2023. It has received 277,730 views since the channel started in 2011.

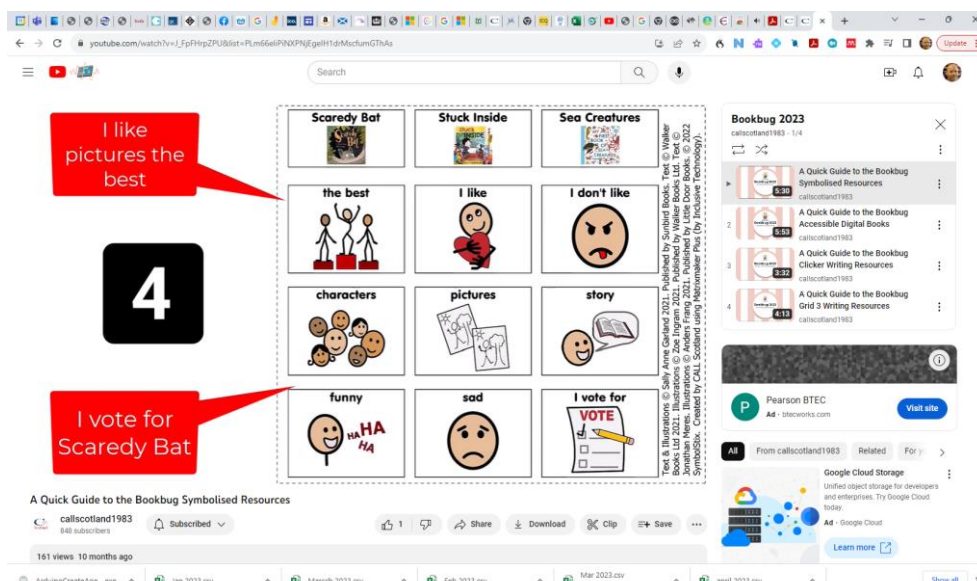


Figure 29: YouTube video *A Quick Guide to the Bookbug Symbolised Resources*

Social Media

The CALL [Twitter](#) account featured 182 tweets, 418,300 tweet impressions and 5,380 followers in 2022-2023 compared to 378 tweets, 497,000 tweet impressions and 4,850 followers in 2021-22.

The CALL [Facebook](#) page now has 9,604 followers (an increase of 79% on last year) with a “reach” of 1,627,794 (an increase of 884%). The reach is the number of people who view or have contact with the page. A post about the updated iPad wheel of apps for pupils with dyslexia accounted for a reach of 145,000 and an additional 1,045 followers on 6th February alone.

Reports and articles

Nisbet, P. (2023) **SQA Assessment Arrangements and Assistive Technologies in 2022**. Research Report commissioned and submitted to Scottish Qualifications Authority. January 2023.

Nisbet, P. (2023) [How tech can help close the gap for ASN pupils](#). TES Magazine 18 July 2023.



Professional Learning

Objectives

To develop and deliver Professional Learning for staff and training for parents on assistive technology and Augmentative and Alternative Communication.

Expected outcomes

Include developing and providing Career Long Professional Learning that meets the needs of staff and local authorities, linked to implementing the Code of Practice.



THE UNIVERSITY *of* EDINBURGH

OUTCOMES

- **218** participants attended 16 online courses.
- **1,200** participants attended 24 insets in schools, local authorities on online.
- **445** participants attended 20 free webinars.
- **32** practitioners completed the 10 week Technology to support ASN in Education course.
- **23** practitioners completed the new 5 week Technology to Support Dyslexia in Education course.
- We provided input to 4 teacher-training courses in Moray House for **181** students.
- **365** participants registered for the 2023 ASL & Technology Conference.
- CALL staff presented at **11** conferences to approximately **1,080** people.

Table 9: Summary of Professional Learning 2023 summarises the professional learning outcomes over the past 7 years. The move to online delivery has enabled larger numbers of practitioners to participate in the CALL programme of Professional Learning including 60 minute courses, free webinars and bespoke sessions delivered online after school hours (or on In-Service days) to teaching staff. There has been an increased level of interest in our self-paced online learning modules which has encouraged us to develop our range of web based Professional Learning.

Table 9: Summary of Professional Learning 2016-2023

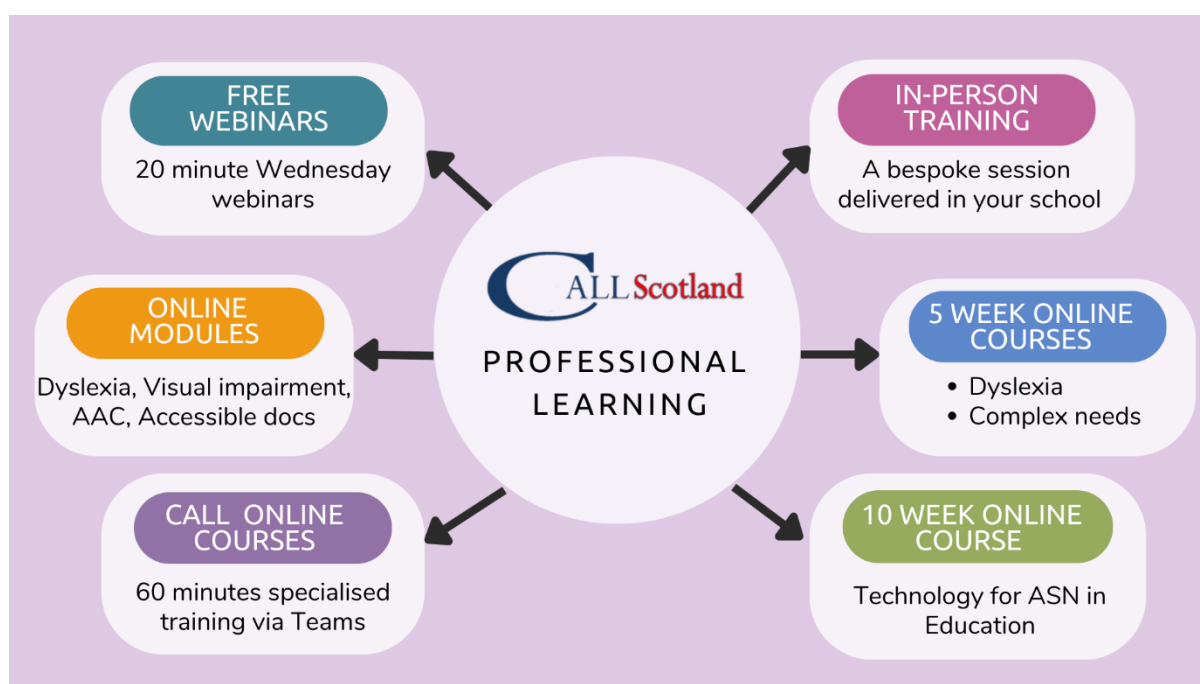
Summary of PL Events	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23
PL delivered online by CALL							
Number of courses	13	13	12	9	14	17	16
Number of participants	212	147	80	138	231	274	218
PL delivered in schools/authorities							
Number of courses	24	28	28	30	31	43	34
Number of participants	475	628	401	661	917	1169	1,200
Webinars delivered							
Number of Webinars delivered	23	18	20	22	21	24	20
Number of participants registering	738	869	1,243	1,875	5,766	5,598	1,648
Presentations at conferences	20	26	26	9	12	12	11
Exhibitions	12	10	11	9	2	2	2
Talks	8	8	10	8	14	6	0
Moray House lectures							
Number of lectures/courses						7	4
Number of students						300	181
ASL and Technology – number of participants	196	243	162	345	262	195	365
AAC Introductory Modules –			576	6,784	2,910	1,698	1,354

number of completions							
AAC in Education Modules – number of completions			56	3,169	536	396	694

Professional Learning at CALL Scotland

CALL's Programme of online Career Long Professional Learning (CLPL) for 2022-2023 was distributed to around 2,700 schools via Local Authority intranet systems. Throughout the year there was further promotion of courses via direct emails to schools, Twitter, Facebook, CALL blog posts and e-newsletters.

The Professional Learning programme is led by Shirley Lawson with input from the whole CALL team. Robert Stewart takes the lead for technical aspects, while Sarah Marjoribanks manages bookings, invoicing and administration. Craig Mill is the Lead Tutor of the 10 week *Technology to support ASN in Education* course (formerly known as Inclusive Digital Learning) and the new 5 week *Technology to Support Dyslexia* course, while Claire leads the brand new *Technology for reading and writing for learners with complex needs* 5 week course.



GTCS Standard for Career-Long Professional Learning

CALL Scotland's Professional Learning aligns with the GTCS Professional Standards and endeavours to meet the needs of staff and local authorities, linked to implementing the Code of Practice under the Education (Additional Support for Learning) (Scotland) Act 2004 (as amended 2009).

We deliver relevant and practical training opportunities for teachers who will then record this as part of their Professional Update. Our Professional Learning can provide the stimulus for teachers to adopt an enquiring, reflective and critical approach to their professional practice and make changes which can result in improved outcomes for their pupils with Additional Support Needs.

We provide training opportunities primarily but not exclusively for teachers. It is important we include everyone who is supporting learners with ASN and this can include:

- Pupil Support Assistants
- Families

- Occupational Therapists
- Physical Therapists
- Speech and Language Therapists
- Social workers and Allied Health Professionals
- Staff and support workers in FE and HE establishments
- Students (ITE, PG and MSc)
- Newly Qualified Teachers and mentors

Professional Learning Delivered Online

The success of our 60-minute online courses delivered through the Microsoft Teams platform and the ability to reach a wider, more geographically distant audience has been a positive shift.

Online courses are more convenient for participants further away from the central belt and the timing of courses enables practitioners to attend at the end of the school day. Participants are provided with a link to the recording of the course and online course materials and resources. Course leaders extend the offer to speak to participants after the course and provide continued support. It is unlikely that we will ever return to delivering courses in person at the University and we will continue to develop our skills in delivering successful online training experiences.

The lower attendance overall figure for course participants is likely to be due to the increase in uptake in our online self-paced modules.

New for 2022/23 has been the selling of archived courses and to date we have sold 8 course recordings at the same price as the course cost (£30) and 15 archived ASL and Technology conference recordings (£5).

Table 10: CLPL Courses delivered online, August 2022 – July 2023.

Date	Courses 2022-2023	Number of participants
08/09/22	Supporting your child's learning at home using technology	8
22/09/22	AAC Alternative Access methods: options and best practice	12
29/09/22	How to use technology in examinations and assessments for pupils with ASN	14
06/10/22	Exploring the iPad's built-in tools to support dyslexia	13
27/10/22	Complex Learning Needs: Using technology to support early literacy	17
03/11/22	Assistive Technology for learners with physical access needs	7
10/11/22	Setting up a school AAC tool box for learners with Communication Support Needs	10
24/11/22	Complex Learning Needs: Using technology to support early numeracy	11
01/12/22	Supporting literacy difficulties for learners with dyslexia in upper primary / early high school	23
19/01/23	Google Voice typing for learners with writing difficulties	11
02/02/23	The benefits of Word Prediction to support learners with writing difficulties	cancelled
23/02/23	Identifying assistive technologies for later primary learners with dyslexia – the assessment process	26
02/03/23	Creating switch accessible resources with PowerPoint	15

16/03/23	Shared Reading strategies and resources for learners with Communication Support Needs	18
23/03/23	OneNote digital notebooks to support dyslexic learners	15
27/04/23	Communication opportunities for using AAC in school	13
11/05/23	Digital tools for creating interactive schedules	5
	Total number of participants	218

Table 11: Number of courses and participants on CALL-courses since 2017

PL courses delivered in CALL	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23
Number of courses	13	12	9	14	17	16
Number of participants	147	80	138	231	274	218
Average number of participants per course	11.3	6.7	15.3	16.5	16.1	13.6

INSET Professional Learning



We provided a wide range of INSET courses in response to requests from school and local authority colleagues who have a Service Level Agreement with CALL. These bespoke sessions took place after school hours (twilight) or on a scheduled In-service day.

During 2022-23 we provided 34 INSET sessions of Professional Learning for 1,199 people (teachers, Support for Learning staff, classroom assistants, education psychologists, Speech and Language Therapists, parents/carers, etc.) across Scotland. The online sessions are often hosted by the school or local authority and from one log-in there could be multiple viewers so we do not always have accurate figures for the number of participants.

There was a 20.9 % decrease in the number of INSET courses delivered in 2022-23 but the total number of attendees increased by 2.6% from 1169 to 1200. The majority of these INSET sessions are delivered via MS Teams. An advantage of the online model, compared to face-to-face, are that larger numbers of participants can attend, and the recordings can be made available for staff unable to attend on the day. For some schools, they request an in-person training session so that they can see live demos of equipment and to try it out themselves with support from CALL trainers.

Table 12: INSET Courses provided online for schools and local authorities in 2022-23

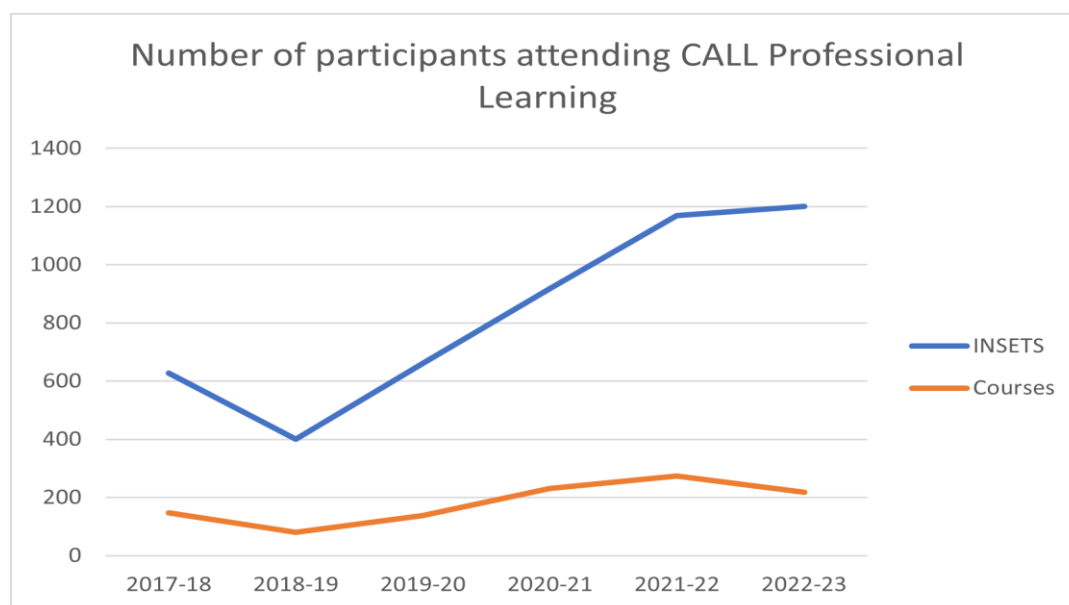
Date	INSETS 2021-2022	Organisation	Number of participants
10/8/22	Technology for Access	Dumfries &Galloway OT group	10
16/08/22	Building An Assistive Technology Toolbox	St. Oswald's, Glasgow	19
16/08/22	Technology to support dyslexic learners	St.Paul's High, Glasgow	100
23/08/22	Creating accessible digital prelims	Stewarts Melville	8
24/8/22	Creating accessible digital prelims	Glasgow EAL and GDSS	30
21/9/22	Building An Assistive Technology Toolbox Part 2	St. Oswald's, Glasgow	12
09/11/22	Building An Assistive Technology Toolbox Part 3	St. Oswald's, Glasgow	8
09/11/22	Assistive Technology to support learners with ASN	National AGM EAL group	42
09/11/22	Supporting learners with literacy difficulties using an iPad	Argyll and Bute	18
10/11/22	Assistive Technology for Intensive Service Provisions	Perth and Kinross	65
14/11/22	iPads and Chromebooks accessibility	Renfrewshire	28
14/11/22	AAC across the curriculum	Shetland	17
15/11/22	AAC across the curriculum	Shetland	16
28/11/22	Creating Opportunities and Supporting Communication through AAC	Argyll and Bute	50
28/11/22	Supporting learners with literacy difficulties using a Chromebook	Argyll and Bute	50
29/11/22	iPads and dyslexia	Kelvinside Junior, Glasgow	20
08/12/22	Assistive Technology to support pupils with ASN	George Watson's, Edinburgh	40
24/1/23	How to use Technology in SQA assessments and examinations	Argyll and Bute	13
14 and 15/02/23	Introduction to Shared Reading	Orchard Brae, Glasgow	200
15/2/23	Communication and Assistive Technology for Early Learners	Inverclyde	140
23/02/23	Supporting younger dyslexic pupils using technology (ages 7 – 10)	Dyslexia Scotland	20
01/03/23	PSA session: Assistive Technology to support ASN learners	Perth Grammar	15
07/03/23	Supporting dyslexic pupils using technology (upper primary and high school)	Dyslexia Scotland	12
13/03/23	An Introduction to MS Teams	Dyslexia Scotland	3
18/03/23	A beginner's session on how to use technology to support dyslexic learners	Dyslexia Scotland	4
23/03/23	Making the most of MS Teams	Dyslexia Scotland	4
28/03/23	Using technology to support early numeracy	Argyll and Bute	1

2/5/23	Early communication and curriculum Assistive Technology	East Dunbartonshire	110
10/05/23	Assistive Technology to support dyslexic learners	RDM Primary, Perth and Kinross	25
11/05/23	iPad Accessibility Features	Dundee	20
16/05/23	Introduction to AAC Technologies and Strategies for Learners with Communication Support Needs	Highland	30
24/05/23	Get interactive with Boardmaker 7 and Tar Heel Gameplay	Craigmarloch, Glasgow	4
25/05/23	Chromebook Accessibility	Highland	37
30/5/23	Introduction to AT for Learners with Complex Needs	Highland	29
	Total number of participants		1,200

Table 13: Number of INSET courses and participants

PL delivered in schools / authorities	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23
Number of courses	28	28	30	31	42	34
Number of participants	628	401	661	917	1169	1200
Average number of participants per course	22.4	14.3	22	29.6	27.8	35.2

Figure 30: Participants on CALL Professional Learning events 2017 - 2023



Evaluation and Feedback

All participants in CALL courses are asked to complete an online evaluation from which we hope to gather information to improve our Professional Learning content and delivery. The response rate was 13.8% (30 out of 218) which is lower than previous years.

The evaluation forms are not the only way we gather information. The chat panel in Teams is reviewed after the meeting and comments collated from there. If there is any personal follow up

with participants, the Course leader will gather evidence about how the training session met their needs.

We are always keen to get as much feedback as possible and so will be reviewing the formal evaluation process as we want to optimise the response rate and the quality of response.

For the question, "On a scale of 1 to 10 how would you rate this training course?" 66.6% of participants gave a rating of 9 or 10.

For Insets delivered in a school or as part of a Local Authority Service Level Agreement, the dissemination of our evaluation form is carried out by the lead person in the school / Local Authority. We have no control over when this is sent out and therefore returns can be lower as this can take place long after the event. Additionally, some schools / organisations issue their own evaluation forms and they gather slightly different data.

Table 14: Participants' scores for Professional Learning delivered by CALL

On a scale of 1 to 10 how would you rate this training course?	Average Rating 2019-20	Average Rating 2020-21	Average Rating 2021-22	Average Rating 2022-23
Courses as part of the CALL CLPL Programme	9.1 / 10	8.7 / 10	8.7/10	9.0/10
INSET courses	9.3 / 10	9.1 / 10	8.9/10	8.6/10

Sample comments from evaluations:

'The clarity of presentation, the examples looked at which puts it in context, the fact I have been sent the recording and resources to go over.'

'All of the examples given were based on real experience and provided helpful information.'

'Practical demonstrations and clearly presented. It was a full hour course but it didn't feel too much info or rushed.'

'Good delivery and excellent resource ideas.'

CALL Webinars

Webinars are live, 20 – 30 minute presentations delivered via Microsoft Teams. People who sign up are sent a Teams Meetings room link and can log in to watch, engage in discussion and ask questions via the Teams online chat panel.

CALL hosted 20 webinars during the year (24 in 2021-22); 14 by suppliers, 1 by practitioner Scottish ASN Teacher, Karen Watson (Setting meaningful targets using AAC) and 5 by CALL staff.

1,648 people registered for the webinars compared with 5,598 in 2021-22.

FREE WEBINAR

ENHANCED TRANSITION PLANNING FOR DYSLEXIC PUPILS

WITH SHIRLEY LAWSON

WEDNESDAY 21ST SEP
4:00 PM

CALL Scotland

www.callscotland.org.uk

We think that the reduction in webinar bookings is in part because there was a huge increase in people registering during lockdown and now the figures are back to pre-pandemic levels.

In addition, improvements and fine tuning of the web booking system means that double and multiple registrations are filtered out so we do not have an inflated number of bookings versus number of people attended.

A recording of each webinar is made available via the CALL website the day after the live broadcast. Links are automatically sent to everybody who signed up for the webinar, but the recordings can be viewed by any interested person. Past webinars are stored on the CALL Scotland YouTube Channel in a Webinars Playlist.

Table 15: CALL Webinars 2022-2023

Webinars 2022-23	Date	Number booked	Number attended
Essay Writer: A visual writing tool	31/08/22	82	21
I Fix It Apps	07/09/22	45	8
Enhanced transition planning for dyslexic pupils	21/09/22	157	55
Scanning Pens	05/10/22	101	26
Setting meaningful targets using AAC	12/10/22	107	23
Android devices and accessibility	02/11/22	99	22
OrbitNote - Making every PDF accessible	16/11/22	90	20
Festive Fun with Free Resources	23/11/22	127	25
Doorway Online	07/12/22	116	20
SQA Technology and Assessment Arrangements	13/10/22	93	41
Cosmo: inclusive learning, therapy and play for people with additional learning needs	11/01/23	26	11
PocketPhonic stories app	25/01/23	30	12
Beginner to expert - Head tracker masterclass	01/02/23	29	7
TextAid - Assistive technology for learners with reading difficulties	22/02/23	56	18
Chromebook Accessibility	01/03/23	74	25
Giglets - Online Literacy resource	15/03/23	37	12
Emergent Literacy and Digital Tools for Older Learners	29/03/23	109	42
Alternative Access Methods for AAC on iPad	26/04/23	86	21
Fluency Tutor: Online fluency practice tool	10/05/23	55	12
Technology and Dyslexia - Supporting reading beyond school	24/05/23	129	24
Totals		1,648	445

Table 16: Numbers of webinars and participants 2017-2023

Webinars	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23
Number of Webinars delivered	18	20	22	21	24	20
Number of participants registering	869	1,243	1,875	5,766	5,598	1,648
Number of participants attending	206	231	379	1,250	1,076	445

ASL & Technology Conference



Prior to Covid, CALL Scotland's annual [Additional Support for Learning and Technology Conference and Exhibition](#) was usually held across two days in June in Edinburgh and another venue in for example Glasgow, Aberdeen, Dundee or Inverness. At the beginning of the pandemic in 2020 we experimented with moving the conference online and we have continued this format to date.

The online format is very popular and our 2023 event offered 20 presentations from Assistive technology suppliers, CALL Scotland staff and practitioners. 365 practitioners and parents registered for the event at a cost of £5 which provided access to the live presentations and the archive of all the presentations at the end of the event. This is an increase of 23.3% from 2022. Some teachers registered for the conference knowing that they only had a short break in the day to log in and learn but they were appreciative of having access to the recordings and would be using them as Professional Learning at a later date.

The range of topics covered was varied and each had a specified target audience to make it easier for participants to choose which session to attend. The workshops were 40 minutes in length and there was the opportunity to ask questions via the Teams chat function and to have a discussion after the presentation.

Participants were asked to rate the event on a scale from 1 to 10 and gave an overall rating of 9.05 out of 10, compared with 8.84 for last year's conference.

Sample comments from evaluations:

'I was delighted to hear that you will share all the videos as I was interested in two workshops which were both happening at the same time.'

'Thank you for an excellent day. The cost and online delivery made this very accessible.'
Great day. Loads of really useful information which was well delivered and organised-thank you.

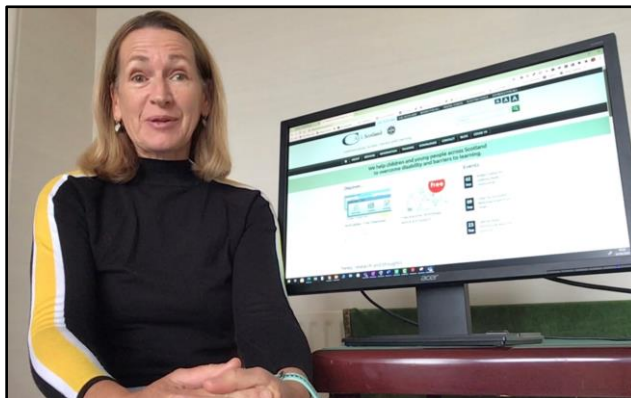
'My first conference, I really feel it will make a difference when I'm back in school tomorrow..'

'I really liked the online option, it meant I could attend all the workshops I wanted to. Having the recording of the workshops will also help as I got called away at one point. Great to see the excellent work taking place across different authorities.'

Conference Presentations

We delivered 11 conference presentations to approximately 1,080 people, some in person and some online.

We regularly turn down speaking engagements due to our other work commitments, and some of the organisations who want CALL Scotland input may not be within the Scottish Education sector.



Conference Presentations

McNeil, G., Courtney, J. (2022) Supporting learners with communication difficulties access the curriculum through AAC 11th to 13th September. Communication Matters Conference 11-13 September 2022. [40]

Nisbet, P. (2022) How can learners with dyslexia reach their potential with 1:1 technology? Keynote Presentation (online). Dyslexia Scotland Education Conference. 1 October 2022. <https://dyslexiascotland.org.uk/learning-journey-2022/> [pre-recorded, target audience 200]

Nisbet, P., Foreman, F. (2022) Assessment for Learning with the new Scottish National Standardised Assessments. Online presentation, Dyslexia Scotland Education Conference. 1 October 2022. <https://dyslexiascotland.org.uk/learning-journey-workshops-2022/> [pre-recorded, target audience 200]

McNeil, G. (2022) Supporting Children and Young People with Symbols and Simple Communication. Cerebral Palsy Conference, Glasgow 06 October 2022 [50]

Nisbet, P. (2022) Why Digital Learning Spaces must be accessible for all our learners, and how we can ensure that they are. Invited presentation. Learning Places Scotland Conference 14-15 November 2022, Glasgow. <https://www.learningplaces.scot/conference-programme-2022> [150]

Nisbet, P. (2023) Communication and Assistive Technology for learners in Scotland. Invited presentation. Scottish Head Injury Forum [Technology and Brain Injury](#), 9 March 2023, Edinburgh. [80 participants]

Nisbet, P. (2023) Assistive Technology and Digital Exams. [ASL and Technology 2023](#). Online, 14 June 2023. [73]

Lawson, S. (2023) Technology checklist for a Dyslexia Friendly Classroom. [ASL and Technology 2023](#). Online, 14 June 2023. [100]

Harrison, C., McGregor, C.,(2023) Using Core words to support communication in the classroom with the CALL Core Word Kit. [ASL and Technology 2023](#). Online, 14 June 2023. [47]

Courtney, J. (2023) Accessible Reading books for learners with complex communication support needs and physical disabilities. [ASL and Technology 2023](#). Online, 14 June 2023. [57]

McNeil, G. (2022) Setting up an AAC Toolbox for learners with Communication support needs. [ASL and Technology 2023](#). Online, 14 June 2023. [83]

Other contributions at conferences

On Saturday 3rd September 2022, Claire Harrison and Joanna Courtney attended the 2022 Early Years conference and had a stand and display table with CALL resources. Attendance figures for this conference was 200 and the CALL stand was popular all day.

Craig Mill attended the Dyslexia Fest in Stirling on Saturday 4th March 2023 and was inundated with delegates (300 in total) wanting more information the use of Assistive Technologies to support dyslexia. He shared CALL resources and provided hands-on demonstrations of different devices, software and apps.

Under and Post Graduate teaching

We continue to offer support and free delivery of lectures, tutorials and workshops to teaching colleagues in Moray House. We passionately believe that the Undergraduate and Postgraduate courses should prominently feature modules on the use of Assistive Technologies in the classroom and therefore we want to be on hand to raise awareness and to provide essential information.

This year we delivered 4 sessions and one was unfortunately cancelled due to low uptake.

Table 9: Presentations to Moray House students 2022-2023

Title	Moray House Course	Date	Number of participants
Inclusive Digital Technology for learners with ASN	PGDE Secondary	12/12/22	60
Inclusive Digital Technology for learners with ASN	MSc Inclusive Education	09/03/23	6
Children in Technology; Design, Diversity & Difference	MSc Inclusive Education	14/03/23	50
An overview of Assistive Technology for pupils with ASN	PGDE Primary	30/03/23	75
	Total number of students		181

Technology to Support ASN in Education Professional Learning

Formerly known as the Inclusive Digital Technology (IDT) course, the newly renamed and updated 10-week [Technology to Support ASN in Education](#) Professional Learning course is run in collaboration with the Moray House School of Education and Sport Professional Learning program.

This year we revised the course with a more practical focus on tools, strategies and processes to help practitioners make the most of technology, including both free software and tools that are built into the operating system of devices, e.g., Windows, iPads (iOS) and Chromebooks as well as specialised tools to support dyslexia, AAC, complex needs etc.

32 people attended the course from across the UK although the majority of participants were teachers from Scottish schools, including primary, secondary and specialist provision.

Everyone commented that they had enjoyed the course and appreciated the level of support they had received. Similar to previous years, feedback was very positive.

Technology to support Dyslexia in Education

Craig led the development and delivery of a new 5-week online course focusing on [Assistive Technology for pupils with dyslexia](#). The course ran in October 2022 and 23 practitioners attended at a cost of £200 per head. Feedback was very positive and we will run it again starting on 24th October 2023.

Technology to Reading & Writing for Learners with Complex Needs

Claire has developed a strong international reputation for her work around developing literacy with pupils with more complex learning needs and she has created a new 5 week course on this topic. The course is fully booked (25 participants) and there is a waiting list. 10 of the places have been sponsored by [Teach Us Too](#), a UK charity that promotes literacy for all children.

Online AAC modules

The original *Introductory Modules* were made available on the AAC Scotland website in 2014 and were joined by the more comprehensive *AAC in Education* modules in 2018. The *Introductory Modules* are also available on the NHS TURAS learning platform.

The modules are aimed at services, teams or individuals to help them review their current knowledge of Augmentative and Alternative Communication, develop best practice and to ensure positive outcomes for people who use AAC.

A wide variety of individuals, from different sectors such as education, health, care and the community, use the modules to increase their knowledge and skills. Many are engaging with or supporting individuals with AAC within Scotland, however evidence shows use much further afield and internationally.

People who finish the modules are invited to complete a feedback form and this provides an indication of the number of users who complete the modules and feedback on how they could be improved.

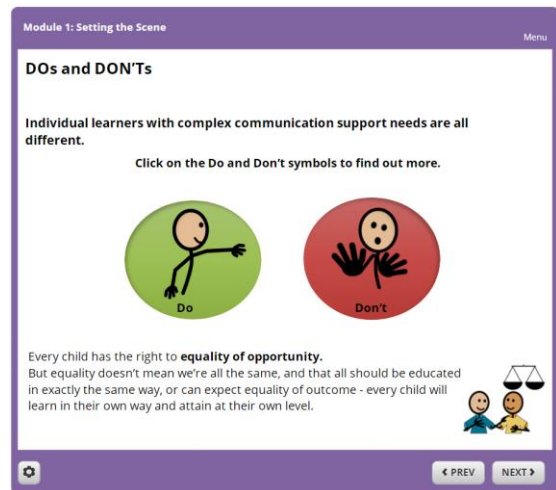


Table 17: *Introductory AAC Online Modules*

Visits and completions of the five Introductory AAC Modules						
Module	2018-19	2019-20	2020-21	2021-22	2022-23	Totals
Total completed feedback forms	576	6,784	2,910	1,698	1,354	13,386

Table 18: *AAC and Education Online Modules*

Visits and completions of the seven AAC & Education Modules						
Module	2018-19	2019-20	2020-21	2021-22	2022-23	Totals
Total completed feedback forms	56	3169	536	396	694	4,854

We do not have data for use or completions of the *Introductory Modules* hosted on the NHS TURAS learning platform.

People who finish the modules are invited to complete a feedback form and this provides an indication of the number of users who complete the modules and feedback on how they could be improved.

In response to the question “On a scale of 1 to 5 how would you rate this training module? (1 low - 5 high)”, the average responses to 31/7/23 are given in Table 19.

Table 19: AAC Online Module ratings

AAC Online Module ratings overall	Average rating (scale 1 to 5)
Introduction to AAC	4.67
AAC in Education	4.67

Written feedback is overwhelmingly positive, as demonstrated in the following quotes in response to the question “*What did you like best about the module?*”

‘access to resources, learning about sensory stories and how to put into practice.’

‘Ways to record and assess learning’

‘Individuals telling their story.’

Inclusive Digital Technology Online Modules

There are now 4 online modules; Technology to Support Dyslexia, Using the iPad to Support Literacy, Technology to Support Visual Impairment and Creating Accessible Documents.

Craig has developed and published the modules to accompany numerous videos that he has created. Originally offered for free (and due to their popularity and positive feedback), we decided to charge £20 for each module as an additional way to help with funding.



Figure 31: Creating Accessible Documents Learning Module

Online Module	Number of completions
Using Technology to Support Dyslexia	242
Using the iPad to Support Literacy	123
Technology to Support VI	35
Creating Accessible Documents	

Feedback has been extremely positive, for example;

“An excellent module that every teacher should enrol on!”

“Top work, whoever has produced this module - again, really enjoyable and informative”

“An excellent module and well worth doing. I feel better equipped with technology I already use and new types of technology”

“The variety of ways the information was delivered and the videos used to show the different types technology. It was good to see the many different types of technology I use in my own teaching and some that I didn't know a lot about but will be further investigating them”



Assistive Technology Loans and Support

Objectives

To provide a National Assistive and Communication Technology Equipment Bank, with technical services to enable learners with complex additional support needs to evaluate specialist technology across Scotland.

Expected outcomes

Learners with additional support can evaluate equipment before purchase.



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OUTCOMES

- **68** devices and software with a total value of £11,055 were added to the [Loan Bank](#) last year.
- The most expensive items purchased were two new iPad Pro 12.9” devices, five Windows laptops and five 10.2” iPads. The other items purchased were mostly switches, low-cost communication aids, cases, stands and interfaces.
- **61** of the items at a cost of £10,832 were purchased through core funding from the Scottish Government.
- **284** equipment loans with a total value of £50,203 were made to pupils in 26 local authorities.

The number of loans of equipment have increased to similar levels to those pre-Covid, reflecting the opening of schools and greater opportunity for the CALL team to visit and support learners in schools.

89% of the borrowers were ‘Very Satisfied’ with the loan service, 9.8% were satisfied and 2 borrowers did not know.

Table 20: Summary of Equipment Loans 2018 - 2023

Summary of Loans	2018-19	2019-20	2020-21	2021-22	2022-2023
Number of loans	307	215	144	202	284
Value of loans	£44,960	£40,466	£24,723	£47,345	£50,203
Number of Loans to Assessment Clients	195	134	82	127	149
% “Very Satisfied” with CALL Loan Service	76	93	95	77	89%

The most common category of items loaned were interfaces, mounts and switches, followed by communication aids, tablets and access devices. Most of the communication aids were simple, low tech equipment such as single or sequential message communicators or multiple message systems such as GoTalks, although high-tech voice output aids such as Surface Pro’s with eye-gaze cameras were also loaned. The tablets were all iPads.



Figure 32: Little Mack and GoTalk

Table 21: Categories of Equipment Loaned

Type of Equipment	2018-19	2019-20	2020-21	2021-22	2022-2023
Interface / Mount / Switch	69	60	36	41	51
Communication Aid	21	25	12	18	37
Tablet	35	20	16	30	29
Keyboard / Alternative	12	14	18	14	28
Tablet Accessory	42	25	16	30	26
Mouse / Alternative	35	24	16	17	19
Toy	20	12	3	20	10
Other	2	6	3	11	10
Computer	22	12	5	6	9
Reading / Writing Aid	13	10	9	9	7
Computer Accessory	22	7	5	5	3

Technology changes all the time and so it is important to invest in new devices and to replace obsolete systems. We do not have a budget to purchase bespoke high-tech communication aids because of the cost, so instead we adapt standard laptops or tablets with peripherals for assessment and loan for evaluation. For example, a communication and access system comprising a Surface Pro tablet, eye-gaze camera and Grid 3 software costs around £3,000 compared with £5,000 to £8,000 for a bespoke, dedicated device.



Figure 33: a pupil using a Surface Pro with eye-gaze camera and Grid

Some suppliers lend us equipment on a long term loan, which is extremely helpful for assessment and evaluation of the more complex and expensive assistive technologies.

Table 22: Investment in Technology Bank 2018-2023

Investment in Technology Loan Bank	2018-19	2019-20	2020-21	2021-22	2022-2023
Scottish Government Learning Directorate	£12,796	£3,970	£2,211	13,552	£10,832
Other income	£500	0	£1,023	£456	£233
Scottish Government Health and Social Care Integration Directorate	£30,345	£3,589	0	0	0
Number of items added	148	68	35	94	68
TOTAL	£43,641	£7,559	£3,234	£14,008	£11,055

Evaluation and Feedback

Borrowers are asked to complete a feedback form when returning equipment. Feedback was received for 79 of the 156 loans returned in 2022-23 (51%). The proportion of borrowers providing feedback increased from 38% last year, which we think is because of the improved loan reminder and recall system that Robert and Sarah have created.

The table below summarises outcomes.

Table 23: Outcomes of loans

Outcome of loan	Number	%
Equipment met the client's need	56	71%
Did not meet the client's need	11	14%
Inconclusive	12	15%

65 feedback forms gave an indication of future action to be taken.

Table 24: Future action

Future action	Number	%
Buy this system	17	26%
Borrow/try something else	40	62%
Seek further information	5	8%
Don't know	3	7%

Borrowers were asked to provide feedback on the loan service itself and the table below summarises responses. The loan service continues to be highly appreciated by the practitioners, parents and people that make use of the service.

Table 25: Evaluation of the CALL Loan Service

Future action	Number	%
Very satisfied	103	90%
Satisfied	9	8%
Dissatisfied	0	0%
Don't know	2	2%

This meant I could see the calculator and have direct algebraic logic like my classmates do on their calculators. (I use N28 print size)

Pupil, on SciPlus large calculator

Parents very happy to try new toys and happy to know about the services available. Some have decided to invest in some switch toys for their children's christmas/birthday.

Teacher

K really enjoyed using the ipad - especially the bitsboard app

Teacher

It helped with really hard maths questions. But sometimes it ran out out charge. I also used it for literacy tasks. It helps to read the sheets the teacher put in my jotter.

Pupil, on ReaderPen

I really enjoy reading, I feel more comfortable. I don't distract the teacher as much, I'm independent. I use the calculator. I can get my writing read to me. I can get a story or worksheet read.

Pupil, on an iPad.

He loved the iPad and other equipment we received. we have now been able to borrow from our local council

Teacher

Evidence gathered showed a decrease in distressed behaviour as the pupil had a means of communication

Teacher on GoTalk 9+ communication device

Due to no fault of the equipment this did not meet the needs of client. Our new internet system would not allow me to connect the device

Teacher

Reported finding it much easier to locate letters (and OT noted less errors).

Occupational Therapist, on Jumbo keyboard

I think we can now successfully say the children LOVE the reader pen!

Teacher, on ReaderPen



Strategic Relationships and Collaboration

Objectives

To align CALL's strategic aims, objectives, structures and processes in response to Scottish education policies and priorities, including the ASL Action Plan; emerging models and procedures for Commissioning of National Services; wider Scottish Education Reform; and legislation on provision of Communication Equipment and support Scottish Government and Education Scotland in development of policy regarding Inclusive Digital technology and UDL.

Expected outcomes

Strengthened relationships with key stakeholders in respect of CALL Scotland's national impact and role.

IDT and AAC technology will feature appropriately in updated ASL Action Plan and framework for National Strategic Commissioning.

CALL's activities will complement and support the updated ASL Action Plan and framework for National Strategic Commissioning.

Advice to Scottish Government with respect to the new Scottish National Standardised Assessments and 1:1 device programme.



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OUTCOMES

Scottish Government

Doran Review and National Commissioning

The Doran Review⁵ was published in 2012 and a draft *10 year Strategy for learning provision for children and young people with complex additional support needs* was issued for consultation in 2017, subsequently published in 2019⁶. The 10 year Strategy timeline has been extended to 2028-2029.

The [National Commissioning Group](#) (NCG) met on 28th April 2021⁷ and the 10 year transition period has been extended to 2028-2029.

A tender for qualitative research⁸ was prepared to investigate “*ways in which support for pupils with complex additional support needs is provided within Scotland to reach their full potential*” and awarded to [Humanly](#). The research was undertaken in 2022 and a draft report presented to the National Strategic Commissioning Group on 4 May 2023; we understand the final report will be published in autumn 2023. Paul Nisbet provided a response to the report⁹.

Work to enhance the content around complex additional support needs within senior leadership courses was planned for 2021 for delivery of a pilot in 2022-2023 and this has been postponed.

ASL Review

Angela Morgan’s *Review of additional support for learning implementation* was published in June 2020¹⁰ followed by the Scottish Government *Action Plan* in October 2020¹¹, a progress report on the actions in November 2021¹² and a further update in November 2022¹³.

There are 76 actions in the updated Action Plan across pupils', parents' and carers' engagement, participation and rights, teacher and practitioner professionalism and leadership and improvement but we are concerned that 'technology' is only mentioned once, in the paragraph below, while 'digital learning' does not feature at all.

“The Scottish Government continues to fund the Scottish Sensory Centre and CALL Scotland to provide specialist advice and training to school staff on support, including the use of assistive technology, for children and young people with specific communication and sensory needs.”

The lack of attention given to digital learning and assistive technology in the ASL Action Plan does not align with other plans and proposals from Scottish Government. For example, in 2021 [John Swinney](#) pledged:

⁵ Scottish Government (2012) [The Right Help at the right time in the right place: Strategic Review of Learning Provision for Children and Young People with Complex Additional Support Needs](#).

⁶ Scottish Government (2019) [The right help at the right time in the right place: strategy for the learning provision for children and young people with complex additional support needs 2017-2026](#).

⁷ Scottish Government (2021) [National Commissioning Group \(additional support needs\)](#).

⁸ Scottish Government (2021) [Research into provision for pupils with complex additional support needs in Scotland tender notice, 7/10/21](#).

⁹ Nisbet, P. (2023) [Research into Provision for Pupils with Complex Additional Support Needs in Scotland draft report. Response from Paul Nisbet, CALL Scotland, 30/5/23](#).

¹⁰ Scottish Government (2020) [Review of additional support for learning implementation: report, 19/6/20](#).

¹¹ Scottish Government (2020) [Additional support for learning: action plan, 21/10/20](#).

¹² Scottish Government (2021) [Additional support for learning action plan: progress report, 1/11/21](#).

¹³ Scottish Government (2022) [Additional support for learning action plan: November 2022 update](#).

“Just as in my day, the teacher handed out a jotter to all, so in this internet age, we will hand each child the device they need to learn and prosper”.

In [All Learners Matter - national discussion on education: final report](#), published by Scottish Government on 31 May 2023, there is extended discussion around Digital Futures that is summarised as follows:

“Digital learning must be at the core of Scottish education so that all learners in Scotland have choice, opportunity, and security in their lives, both now and in the future.”

The [Independent Review of Qualifications and Assessment](#) published on 22 June 2023 suggests that Scotland's qualifications and assessment system should *“develop and maintain an appropriate range of approaches to assessment including through digital mechanisms”* and recommends a *“a digital profile for all learners which allows them to record personal achievements, identify and plan future learning”*.

The 2012 Doran Review recommended that:

“All local authorities in partnership with health boards, university based and voluntary organisations should review their approaches to the provision of aids to mobility and communication, including ICT so as to ensure that what is provided is fit for purpose and that staff and parents, as well as the child or young person have the necessary skills to utilise these resources.”

and that

“the expertise and specialist experience that exists in organisations such as CALL, Scottish Centre of Technology for the Communication Impaired (SCTCI) and Fife Assessment Centre for Communication through Technology (FACCT) could be made more available and accessible to all authorities.”

It is therefore both striking and concerning that the ASL Action Plan does not take account of inclusive digital learning and assistive technology for learners with additional support needs.

Actions relating to inclusive digital learning and assistive technology should be developed by the [Additional Support for Learning Project Board](#) to align the ASL Plan with other Scottish Government initiatives and to ensure that children and young people with additional support needs are included and have full access to digital pedagogies and technologies.

Some suggested actions are offered in a blog post by Paul Nisbet asking [Why is digital learning not considered in the ASL Action Plan?](#)

National Discussion on education

CALL contributed to the national discussion and at the request of Fran Foreman of Education Scotland, created [symbol sheets](#) to help learners with complex additional support needs to participate in the discussion.

These were made available via the [Symbols for All web site](#).



Figure 34: Symbols used in a Talking Mats format for discussing the four national questions

The final report of the national discussion was published on 31 May 2023¹⁴ and reports that support for pupils with additional support needs is a “*major area of concern*” (5.2.8) and that the “*need for timely attention to, and resourcing for, appropriate ASN provision is now urgent*” (5.2.10).

The Call to Action around inclusion and diversity is:

“There is a need to ensure adequate sustained funding to provide staffing and specialist resources to be able to achieve the commitment to inclusivity and meeting the individual needs of each learner, with a particular urgency for children and young people identified as having Additional Support Needs (ASN).”

The report devotes an entire section to [Digital Futures](#) culminating in a Call to Action:

Digital upskilling and digital transformation across the Scottish education system, at all levels, is an urgent priority for all learners in a future digital world. Attention to maximising the existing skills and infrastructure available to further build digital capacity is essential.

1:1 Digital Technology

In March 2021 John Swinney said “*Just as in my day, the teacher handed out a jotter to all, so in this internet age, we will hand each child the device they need to learn and prosper*”¹⁵. Scottish Government has begun working with local authorities “*to provide every school pupil in Scotland with a laptop or tablet*” and is considering “*how to deliver consistent digital infrastructure across Scotland’s 2,500 school buildings*”¹⁶.

Some local authorities already have 1:1 device deployment: pupils in Primary 6 and above in Edinburgh¹⁷, Falkirk¹⁸, Glasgow¹⁹ and Scottish Borders²⁰ are being provided with iPads; while learners in Aberdeen²¹, Highland²², Stirling²³ and West Dunbartonshire²⁴ are receiving Chromebooks. In other areas, learners do not have the same access to technology and so the provision is currently inequitable across the country.

There are also questions to be asked (and answered) around the impact of 1:1 technology for education in general: does having a personal digital device impact upon teaching, learning, well-being and achievement?

Providing a personal digital device to every learner has huge potential for learners with additional support needs. The accessibility tools that are built into modern Chromebooks, iPads and Windows devices are improving continually and so learners are more able to access learning through technology on a par with their peers. As digital learning becomes more common, students and educators will develop more effective working practices and skills. Any stigma that might have

¹⁴ Scottish Government (2023) [All Learners Matter - national discussion on education: final report](#).

¹⁵ SNP (2021) [A laptop or tablet for every school child](#). 28/3/21.

¹⁶ Scottish Government (2021) [Devices for 700,000 children](#). 16/8/21.

¹⁷ City of Edinburgh Council (2021) [Digital boost for pupils with 39,000 iPads in 1:1 roll out](#). 1/4/21.

¹⁸ Falkirk Council [Connected Falkirk](#). Accessed 19/2/22.

¹⁹ Glasgow City Council (2018) Digital Glasgow Strategy. Available at:

<https://www.glasgow.gov.uk/councillorsandcommittees/viewSelectedDocument.asp?c=P62AFQDN2UUTDNUT81>.

²⁰ Scottish Borders Council (2019) Inspire Learning FAQs. Available at:

https://www.scotborders.gov.uk/info/20009/schools_and_learning/914/inspire_learning_faqs.

²¹ LendED (2020) [Aberdeen schools make curriculum accessible to all learners with Read&Write](#).

²² Highland Council (2015) [Final ICT in Learning Strategic Action Plan 2015](#).

²³ Stirling Council (2018) [Chromebooks and G Suite](#).

²⁴ West Dunbartonshire Council (2016) [2016/17 Administration Strategic Budget and Capital Plan](#)

been associated with specialist assistive technology is less likely to occur when all learners are using the same digital devices.

However, there are challenges associated with the 1:1 roll-outs:

- The 'standard' Chromebook, iPad or Windows device may not be accessible or appropriate for all pupils with ASN and so there should be a pathway to ensure that learners' needs are identified and addressed.
- Practitioners report that essential accessibility resources and apps cannot always be made available to pupils with specific ASN.

Some of the challenges that are reported to the CALL team, and that we experience when we work with practitioners and learners appear to us to amount to indirect discrimination under the Equality Act 2010.

We propose the development of Accessibility Standards or benchmarks to ensure that all learners can benefit from 1:1 technology programmes.

National Standardised Assessments Scotland

A [£17 million contract](#) to provide NSASs from April 2021 to August 2024 was awarded to the firm [AlphaPlus](#) and the new assessments went live in autumn 2022. It is clearly essential that assessments are accessible for the 34% of learners in Scotland who are identified with



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ASN and trials were planned with learners with ASN for June and then postponed to the start of the 2022-2023 session. It is not clear when or if these trials are going to take place.

Paul, as a member of the ASN User Group, received a copy of an *NSAS Additional Support Needs and Accessibility Options* document and made a number of detailed and hopefully constructive comments and suggestions in November 2022. Our concerns with the resource are that it is overly focussed on the very small number of learners with severe sight loss who use screen readers and is therefore not relevant to most teachers and the advice is too technical. We suggested that the guidance should address the ASN of other groups of learners in more detail, such as learners with reading difficulties, EAL, physical access, Cortical Visual Impairment, ASD, and that there should be more emphasis on the accessibility tools that are used by these learners.

We offered to work with the NSAS team to test assistive technologies with the assessments, and develop guidance, and were informed that our suggestions would be considered in future revisions of the ASN and accessibility support materials.

Education Scotland

- Paul is a member of the [Addressing Dyslexia Toolkit](#) working group funded by Scottish Government and chaired by Fran Foreman, Senior Education Officer, Inclusion, Educational Scotland.
- Fran Foreman represents Education Scotland on the CALL Scotland Steering Group.
- The CALL team engaged with a team from Education Scotland and Scottish Government investigating how Glow can be improved to better support educators and learners (February 2022).
- The CALL team are in regular contact with the Education Scotland [DigiLearn team](#).

- We have started regular meetings with Susan Sey, Glow Product Manager and Danny McEleney, Google Technical Product manager regarding Glow Connect and particularly, accessibility options for Glow-managed Chromebooks.

Scottish Qualifications Authority

Following previous research commissioned by SQA into the use of internet and digital technologies used for assessment arrangements in the 2022 examination diet, Paul submitted a report to SQA in August 2022, subsequently revised in January 2023²⁵.

The research found that:

“access to the internet is necessary especially for practical use of Chromebooks and iPads”

very few, if any, candidates used iPads or Chromebooks for digital assessment arrangements in 2022 due to several technical and security reasons.

Learners in many areas of Scotland are therefore provided with 1:1 digital devices which have excellent accessibility tools, and are developing skills and practices to access learning using these devices. Yet they cannot use their iPads or Chromebooks for digital assessment arrangements and may be disadvantaged by having to learn new skills with Windows devices for an examination. In addition, teachers report shortages of Windows laptops and computers for use in examinations.

The report recommended:

“Action research with teachers and practitioners in centres, and possibly technology suppliers, to develop tools and processes for administering assessment arrangements using Chromebooks, iPads and Windows with existing DQPs and DABs”

SQA consequently asked CALL to undertake action research with practitioners and learners to research tools and methods for digital assessment arrangements. *iPad in Exams* and *Chromebook in Exams* working groups have been set up with colleagues from areas where learners have 1:1 iPads and Chromebooks, with representation from Google and Apple UK.

We have identified three possible tools that may provide a solution and we hope to trial these in the autumn 2023 term. The three systems are [exam.net](#), [OrbitNote](#) and [Trelson Assessment](#).

More information on this work is in Assistive Technology and National Qualifications.

Regional Improvement Collaboratives

CALL staff liaised with Education Scotland staff and others involved in Regional Improvement Collaboratives on a range of topics.

Association of Support for Learning Officers Scotland (ASLO)

Paul regularly attends monthly ASLO meetings which are extremely valuable for environmental scanning, to gather intelligence across Scotland, and to disseminate information about CALL Scotland activities, services and products.

²⁵ Nisbet, P. (2023) *SQA Assessment Arrangements and Assistive Technologies in 2022*. Research report commissioned by Scottish Qualifications Authority, January 2023.

Implementation of 2016 AAC Legislation

The Health (Tobacco, Nicotine Etc. And Care) (Scotland) Act: Provision of Communication Equipment was commenced on 19th March 2018. The Act places a duty on Scottish Ministers to:

“meet all reasonable requirements, provide or secure the provision of
a) communication equipment, and
b) support in using that equipment,
to any person who has lost their voice or has difficulty speaking.”²⁶

Scottish Government published [Guidance on the Provision of Communication Equipment and Support in using that Equipment](#)²⁷ to support delivery of the legislative duty in May 2018 followed by *The National Augmentative and Alternative Communication (AAC) Core Pathway*²⁸ on 30th August 2018.

Implementation of the legislation by health boards and AAC services has developed over the year with guidance from the Scottish Government Augmentative and Alternative Communication and Sensory Loss Team and the National AAC Advisory Group. Notable developments this year have included publication of a shared DPIA document available, for those working and supporting AAC in health, to adapt and use it. Further information was shared by Gillian in her CALL website [blog](#). Also, the publishing of an update to the online learning module AAC Assessment and a new module on AAC Technology, both available on the NHS learning platform TURAS.

Ongoing work from SG team has been to gather information on the impact of the legislation, to inform the next AAC Work Plan for 2023/24, including:

- A series of user engagement consultations where SG team met with AAC users, carers and families.
- A deep dive questionnaire sent to Health Boards.
- Discussion with members of the National AAC Advisory Group meeting on 15th December and 8th June 2023.

Joanna, Gillian and Paul met with members of the Scottish Government Assisted Communication Team on 17 May 2022 to provide a response to an invitation to share *“what is going well, what challenges you face and how you are addressing them, and examples of good practice that you would like to share, to benefit the AAC community in Scotland”*.

Following this meeting we suggested that the Social Care and National Care Service Development Directorate might consider funding or part-funding a Speech and language Therapist post in CALL, given that we provide services for children who use communication equipment nationally, but this was not taken up.

The AAC Work Plan is due to be shared following a series of themed workshops for National AAC Advisory Group members, due to take place in the autumn.

²⁶ Scottish Parliament (2016) Health (Tobacco, Nicotine Etc. And Care) (Scotland) Act: [Provision of Communication Equipment](#)

²⁷ Scottish Government (2018) [Guidance on the Provision of Communication Equipment and Support in using that Equipment](#)

²⁸ Scottish Government (2018) [The National Augmentative and Alternative Communication \(AAC\) Core Pathway](#)

Augmentative Communication in Practice: Scotland (ACiP:S)

ACiP:S is a national network linking specialist AAC services and professionals; children and adults who use AAC (and their families); statutory services and voluntary agencies; and that provides resources, information and support.

Gillian has been the Chair of the network from August 2021 until her early retirement on August 23. Jan McCleary, SLT from the national AAC service in Glasgow, SCTCI is taking over the role of Chair and Joanna is continuing as a committee member.

During 2022 - 2023 the work of ACiP:S focused on facilitating the AAC SLT Leaders Network from across Scotland to meet regularly with the ACiP:S committee to discuss the implementation of the 2016 AAC legislation and share good practice and service procedures for supporting people who use AAC.

Topic discussed have included Therapy Outcome Measures and use in NHS England and in RCSLT online data gathering tool - ROOT, AAC and exams access, and the new Corseford College Course for Students with ASN.



Communication Matters

The annual [Communication Matters International Conference](#) in September 2022 resumed as an in-person event at the University of Leeds. Speakers were drawn from the UK as well as international contexts, sharing research, professional or personal perspectives on AAC. Gillian and Joanna jointly presented a workshop on *CALL Scotland – supporting learners with communication difficulties access the curriculum through AAC* with approximately 50 delegates in attendance.

Communication Access UK – Jo / Gillian

Communication Access UK is an initiative developed in partnership by charities and organisations that share a vision to improve the lives of people with communication difficulties. The purpose to facilitate organisations and individuals to adopt inclusive communication strategies when communicating with people who use AAC and make this visible to the public through displaying the Communication Access Symbol. The CALL team completed the necessary training and as an organisation, CALL made a set of commitments and received accreditation in May 2022, which was renewed in May 2023. The actions are to recognise communication support needs, find out what support is required by an individual, provide support in an inclusive and accessible way, and to display the symbol in our office, on our websites and within online communication.



Partnerships with local authorities

By providing services to schools and local authorities, we generate around 30% of annual income. The partnerships are an important part of our work:

- The assessment, support, professional learning and consultancy have direct benefits for the pupils and staff within the school or local authority.

- Direct work in schools with children and young people and practitioners provides valuable experience for the CALL team, enabling us to identify needs and develop solutions with real people: we regard this as ‘action research’. These solutions can then be made more widely available through our national services and resources.
- The additional income supports a larger and more diverse CALL Scotland staff team, which has added benefit for the national services and resources that we provide under our Scottish Government core grant.

CALL had 21 partnerships in 2022-2023, comprising a total of 238 days of work.

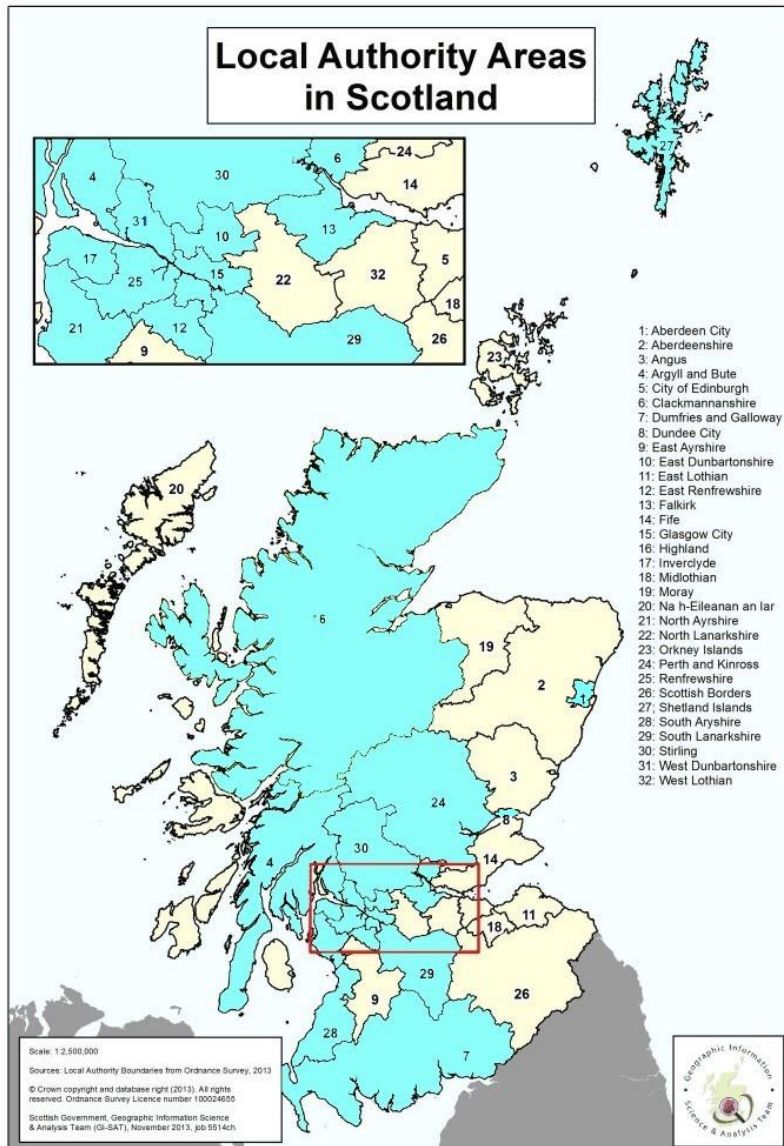


Figure 35: Local authorities with partnerships with CALL Scotland

Much of the support provided through partnerships is assessment and support for individual pupils referred to CALL and this is discussed further in **Section 2. Outcomes funded through Partnerships.**

Assistive Technology for Learning Across Scotland (ATLAS)

ATLAS is the national group of practitioners working in the field of technology to support children and young people with Additional Support Needs and / or disabilities. The group is convened by Claire Harrison. Group membership increased this year from 24 to 35, representing 23 Local Authorities. Group membership is changing, with newer members tending to have an authority-wide Digital Learning remit, rather than an Additional Support Needs and Assistive Technology remit.



We still have a concern that some local authorities do not have a named contact with specific responsibility for assistive technology for learners with additional support needs and will continue to proactively lobby and seek out membership from those authorities not currently represented.

This year the group moved from communicating via a Google Group to an MS Team. This has enabled more straightforward communications and online meetings. Members continue to post questions and advice via the ATLAS team. The ATLAS group met by video conference on 30 November 2022 and 22 March. On 1 June 22 we held a hybrid meeting with members able to join us online or in-person at the University of Edinburgh. The meetings provide a valuable opportunity to share best practice, engage in Professional Learning and provide feedback via representatives from Assistive Technology companies and discuss a wide range of current issues.

The impact of DPIA on access to apps and software has been a main concern and discussion topic throughout the year.

Other Topics included:

- Tools for building capacity and evaluating the impact of Assistive Technologies
- Provision of accessible exam materials to learners who use AAC and have complex physical barriers to learning.
- Development of DPIAs for AAC apps and resources
- AAC visual supports for Ukrainian refugees and other learners with English as an Additional Language.

CALL Assistive Technology Community

Craig manages the CALL AT Community in Scotland - an online forum for teachers, parents and other professionals with an interest in the use of assistive technology in education, including further and higher education. It allows members to share ideas and resources, to ask questions and post answers. Many people in assistive technology work in relative isolation and value opportunities to interact with colleagues with a shared interest. Although the AT Community was popular during lockdown it is used less so although numbers of subscribers have increased.

Other collaborations

- Discussions with software and communication aid suppliers making an input to product development.
- Presentations at Dyslexia Scotland online events (Allan, Craig, Shirley).

2022-2023 advisory and working group memberships

- AAC Advisory Group (Gillian and Joanna).
- AAC Advisory Group User Engagement working group (Gillian).

- AAC Leads for Scottish Health Boards (Gillian and Joanna).
- [Addressing Dyslexia Toolkit](#) Working Group (Paul).
- [Augmentative Communication in Practice: Scotland](#) (Gillian and Joanna).
- National Digital Learning Forum (Paul).
- National Standardised Assessment Scotland ASN User Group (Paul).
- Ofqual [Access Consultation Forum](#) (Paul).
- Scottish Government ASL Network (Paul).
- Scottish Government [ASL Project Board](#) Sub Group 2: Guidance, Training and Resources (Paul).
- Scottish Government [National Strategic Commissioning Group](#) (Paul).
- Scottish Government National Standardised Assessments for Scotland ASN User Group (Paul).
- Scottish Qualifications Authority [Equality and Inclusion Key Partners' Group](#) (Paul).
- [Specific Learning Difficulties Network](#) (Craig).
- University of Edinburgh People and Money Implementation Group (Sarah).

Section 2. Outcomes funded through Partnerships.



Assistive Technology Assessment and Support

The Scottish Government core grant funds CALL's information and advice service (see ***National Information and Advice***) which provides free telephone, email and online support in respect of individual children and young people.

Some local authorities in Scotland wish more intensive assistive technology assessment and support for individual learners and we can provide this under a Partnership Agreement.



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OUTCOMES

Table 26: *Assessment and Support 2018-2023* summarises activities to directly support children and young people.

Pupils

- **42** pupils were referred for assessment and support compared to 59 in 2022-2023, although the latter figure was unusual compared to previous years.
- **39** pupils received a comprehensive assessment for communication and/or assistive technology.
- **71** pupils were supported through personal CALL team visits to school or home visits compared to 85 pupils in 2021-2022.
- **84** pupils were supported through online support sessions (49 pupils in 2021-22).
- **226** pupils in **21** local authorities were supported directly in school or indirectly through telephone, online or email advice (210 pupils / 22 local authorities in 2021-22).

Assessment and support sessions

The number of support sessions provided online give a good example of the development of online working that has occurred as a result of Covid: from 17 in 2019-20 at the start of Covid, to 187 in 2020-21 when schools were closed for part of the year, to 167 over the past year. We think that online support will continue to provide an effective and efficient means of supporting learners, practitioners and parents.

However, there is clearly a continued requirement for visits in-person to meet with pupils, practitioners and parents.

Partnerships with local authorities and schools

21 Partnership Agreements or Service Level Agreements (SLAs) were negotiated with local authorities and schools: Aberdeen; Argyll & Bute, Clackmannanshire, Dumfries & Galloway, East Renfrewshire, Falkirk, Glasgow, Highland, North Ayrshire, Perth & Kinross, Renfrewshire, Shetland, South Ayrshire, South Lanarkshire, Stirling and West Dunbartonshire. We also had agreements with Dundee, East Dunbartonshire, a North Lanarkshire school and Inverclyde to provide support for learners as required on a 'pay as you go' basis.

238 days of assistance was provided and charged for in 2022-23 (210 days in 2021-22).

Table 26: *Assessment and Support 2018-2023*

Number of ...	2018-19	2019-20	2020-21	2021-22	2022-23
Pupils referred for assessment and support	49	36	40	59	42
Pupils supported through assessment	54	45	20	51	39
Pupils assessed/supported on site	104	90	11	85	71
Pupils assessed/supported online	4	10	41	49	84
Pupils supported in total	185	202	209	222	226
Assessment sessions in person or online	45	47	31	57	52
Support visits in person	121	90	32	83	94
Support sessions online	8	17	187	127	167

SLA/Partnership/consultancy agreements with local authorities and schools	19	19	16	16	21
Number of days work	203	216	204	210	238

Pupils referred for assistive technology and AAC support

42 pupils were referred for assessment and support in 2022 – 2023 compared to 59 the previous year. Table 27 gives an indication of the underlying factors giving rise to learners' additional support needs and the areas in which assistance was requested from CALL.

Speech, language or communication needs are the most common factors followed by mild/moderate learning difficulty, dyslexia, severe/complex learning difficulty and then autistic spectrum condition. Most pupils have complex support needs arising from more than one condition or circumstance.

Table 27: Pupils Referred to CALL 2020-2023

Factors giving rise to ASN	Number of pupils 2020-2021	Number of pupils 2021-2022	Number of pupils 2022-2023
Speech, Language / communication needs	18	25	22
Mild / moderate learning difficulty	16	20	14
Dyslexia / specific learning difficulty	7	18	7
Severe / complex learning difficulty	10	17	14
Autism Spectrum Conditions	8	16	7
Visual impairment	16	13	3
Social, Emotional & Behavioural Difficulties	6	13	9
Severe / complex physical disability	8	8	7
Other	6	6	5
Mild / moderate physical disability	12	4	0
Family circumstances	2	4	0
Learning environment	2	4	4
Hearing Impairment	3	3	0
English as an Additional Language	0	2	0

Table 28: Number of learners and the outcomes for which assistance is requested details the outcomes for which referrers hope to receive support. The most common outcome identified was assistive technology for writing or recording, followed by teaching and learning strategies, software and apps and then personalised resources.

Where assistance was required for Augmentative and Alternative Communication, the main focus was on social communication skills and the provision of a high-tech communication aid. Most students who were referred for assistance with AAC device also require technology for accessing curriculum materials and for writing and creating.

Table 28: Number of learners and the outcomes for which assistance is requested

Outcomes where assistance is requested	Number of learners 2020-2021	Number of learners 2021-2022	Number of learners 2022-2023
Alternative access	12	23	14
Personalised resources	22	34	20
Teaching & learning strategies	27	36	29
Teaching & learning software / apps	30	41	21
Augmentative and Alternative Communication			
- social communication skills	16	17	18
- low tech, e.g., printed symbols	3	6	5
- high tech, i.e., communication aid	11	21	16
Assistive Technology for:			
- reading	21	24	16
- writing or recording	34	43	33
- numeracy	18	18	14
- participation and control	8	9	10

Examples of Inclusive Digital Learning and Assistive Technology in practice

Providing assessment and support for pupils with additional support needs is a significant part of CALL's work and underpins much of our research, development, knowledge exchange and professional learning. It is therefore useful to provide some examples of how technology has had an impact on learners.

Supporting John's literacy to access learning

John was in Primary 6 when he was referred to CALL. He was identified as dyslexic at the end of primary 5 and the referral documents noted that he had significant difficulty reading information and accessing texts: he was 9 years 2 months of age but his phoneme awareness, word recognition, reading accuracy and comprehension were assessed at age 5 to 6. However, he had a level of vocabulary knowledge of age 13.

John found handwriting and spelling very challenging and he found it very difficult to write without adult help or scribing.

Many literacy interventions had been implemented over the years but John's literacy challenges had persisted. John's difficulties with literacy were impacting on his learning and he was feeling self-conscious, frustrated, and upset.

John attended a very small rural schools and his class teacher peripatetic ASN teacher provided extremely detailed and helpful background information, including samples of work, a copy of his IEP and results of literacy assessments.

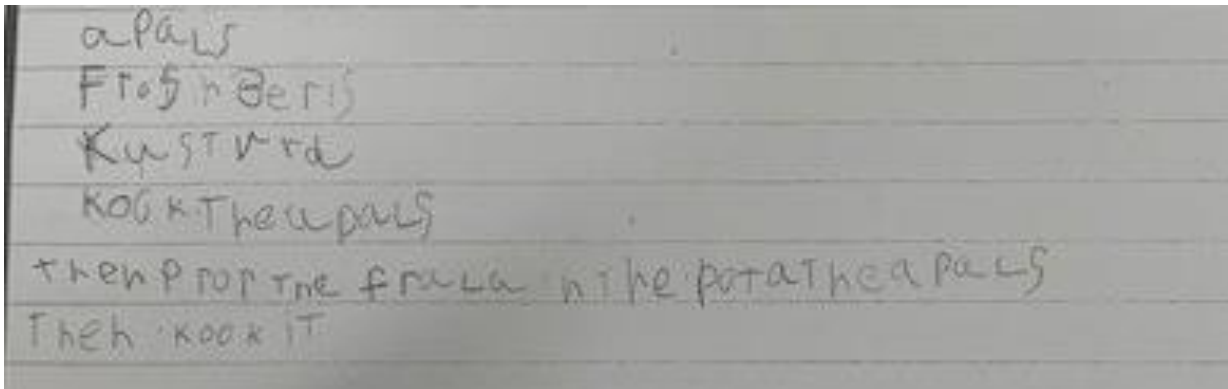


Figure 36: An example of John's writing from a literacy jotter

John had been referred during the Covid pandemic and it was difficult to visit the school to meet him in person to evaluate assistive technology so instead we had online discussions with his ASN teacher.

Reading was a clear challenge and so we agreed that the ASN teacher would arrange a trial of a [Reader Pen](#) from the suppliers, as a first step. This was immediately successful for helping John to access texts. (iPads and mobile phones can also be used for this task – see [Turn your iPad into an easy-to-use document scanner.](#))



Figure 37: a ReaderPen for reading text from paper

When an assessment visit became possible, we evaluated a range of different assistive technologies and strategies.

To evaluate text-to-speech on a laptop, we scanned a numeracy worksheet as a PDF and John used the free Natural Reader to access it.

An advantage of a digital learning resource and computer text-to-speech, relative to a ReaderPen, is that John can type or dictate his answers on the PDF. He can also use the various drawing and annotation tools to markup answers.

This worked very well for him.

A disadvantage of digital worksheets is that someone has to provide John with them, which is why a ReaderPen or taking a photo with a tablet or phone are useful.

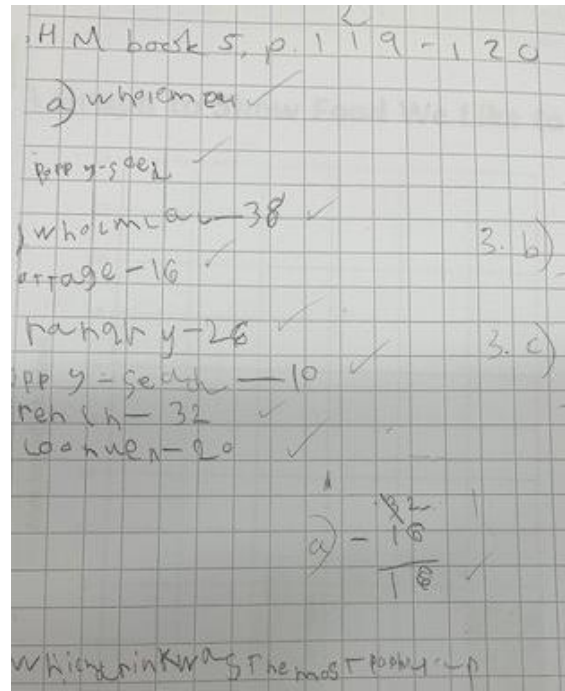


Figure 38: page from John’s numeracy jotter

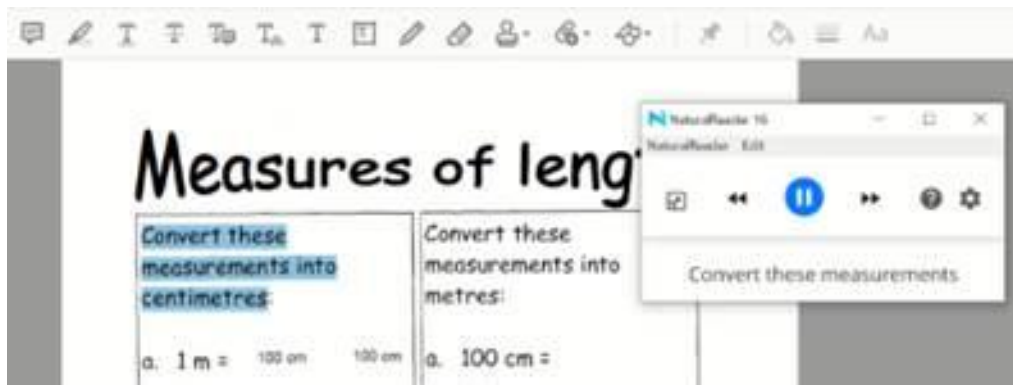


Figure 39: Numeracy worksheet scanned to PDF, read with NaturalReader, answers typed or drawn on screen

The ASN teacher had already began exploring speech-to-text dictation with a school iPad and while there were recognition errors, John’s writing was far more legible (to him and others) and spelling was more accurate.

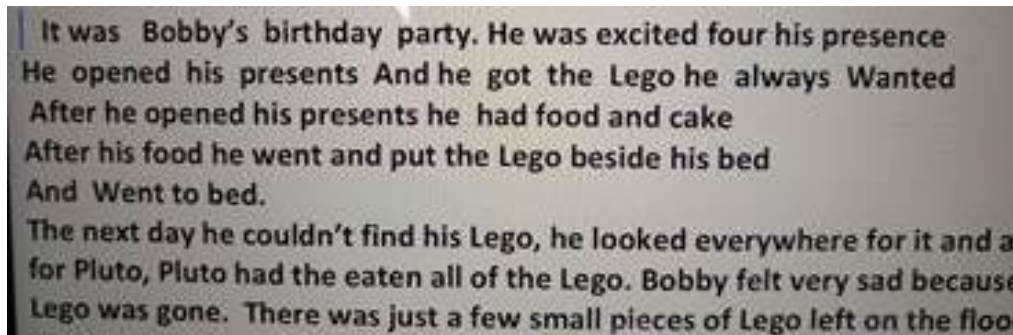


Figure 40: An example of John's work dictated with Siri on iPad

John had difficulty reading back his type or dictated text and so explored text-to-speech (Speak Selection on the iPad and Natural Reader and Microsoft Immersive Reader on Windows laptop).

We also explored Audio Notes (in Clicker 8 and OneNote) as a way for him to record answers and ideas: the advantage of audio notes compared to speech-to-text is that there are no recognition errors.

John found it difficult to plan his work and so we evaluated mind-maps with a Clicker Board, and John used Windows Dictate to dictate into Clicker.

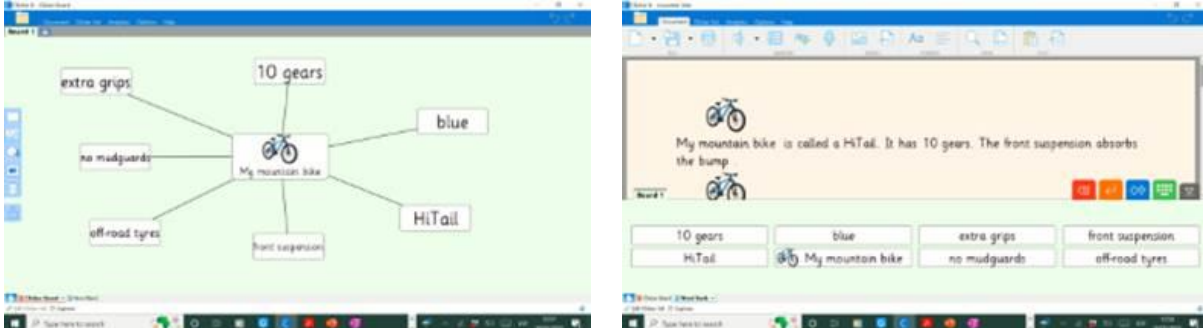


Figure 41: Planning and writing

John benefits from digital learning resources and so we agreed that the school staff would set up accounts for [Books for All](#) and [RNIB Bookshare](#) to obtain digital textbooks.

We discussed the advantages and disadvantages of John using an iPad compared to a Windows laptop, and on balance John and the team felt that the laptop was a more appropriate tool. A laptop with headset and apps and resources was set up and loaned for John to evaluate.

Following the evaluation, staff and John completed an evaluation form. Staff reported:

John is now successfully using the speech-to-text functions on his laptop to create lengthier, more detailed pieces of writing. His confidence in using this function is building and, in turn, his speech is becoming clearer in order to ensure the computer recognises what he is saying. John can now communicate his knowledge and ideas without the barrier of spelling, handwriting, laying out and not being able to understand his own work.

John uses his Reader Pen to access more areas of the curriculum independently. For example, he is able to complete math word problems on his own. This in combination with a laptop has helped John to achieve his targets and ensured ongoing progress.

John said:

I use the laptop to complete research on the internet. I'm learning how to and need to use the read aloud function more. I found it impossible to write my work out before but now I can do it.

I can write a story by speaking it into the computer. I have worked hard to learn how to do this. I have to think about what I want to say and then speak clearly. It helps me know what to change to make my work better because I can see the red and blue lines and I can use the spelling and grammar checker to fix things. I save my work into folders and print it out to share and show my teacher.

The success of the trial was due to the hard work of John and his class and ASN teacher, who supported him and worked with him to develop his skills and confidence. John is about to enter Primary 7 and we hope that the assistive technology will help him to be a more successful learner and confident individual as he approaches transition to high school.

Addressing dyslexia and developmental language disorder in the classroom

Pupil C is in P6 within mainstream provision in a rural primary school in South of Scotland. She was referred to CALL Scotland late on in Primary 5 with 'difficulties and challenges due to her dyslexia as well as associated with developmental language disorder and is presenting a significant challenge in accessing the curriculum.' The school had concerns that Pupil C may never have competent literacy skills to cope with everyday life and this will be a limiting factor in living an independent life.

The gap between Pupil C and her peers was gradually widening and her teacher and Support for Learning teacher were already thinking ahead to how she would cope in high school. She was aware that she was not able to do many of the assigned curricular tasks independently and her levels of anxiety were becoming more apparent.

Although the school was well equipped with technologies, they were not being used on a daily basis to support pupils with ASN. The main reason for this was staff not fully knowing how assistive technologies can support children and young people to reach their potential and importantly, to increase their levels of independent working. Another factor that became apparent was that Professional Learning on the use of technologies did not feature on the School Development plan which meant the levels of knowledge within the school staff team was fragmented.

There was an iPad available in the class and was used for learners to look up information on websites. Pupil C seldom used it as any reading task was very challenging because she was working at Early / First Level on decoding words.

On finding out the class topic was Weather and Climate, I showed Pupil C a website on the iPad on this topic and showed how (a) we could make it more accessible and user friendly by switching on Reader View and (b) having the text read out loud using Speak Selection. The genuinely thrilled reaction of Pupil C was immediate and exciting!

For an activity that she would have previously not been able to engage in on her own, she was now listening to (and remembering) facts from the Weather and Climate website. She was using earphones to listen to the text and was listening to the same paragraph repeatedly. This was of her own choice and without any instruction to do this, indicated that she was using the technology to support her verbal processing speed challenges.



Figure 42: Web site normal view



Figure 43: web site with Reader View, sepia background, larger font size

‘What else could the iPad do to help me?’, asked Pupil C. ‘Lots of great things!’ I replied. I set it up to have the icons on the screen bigger, apps to be organised into folders, larger font, Text-to-speech switched on, typing feedback, spellchecking and word prediction enabled. All these features were built in so no additional app installation was required.

Having text read out from a webpage, a PDF and her own writing within the Notes app gave her such a confidence boost. With this boost came an increased interest in her learning and motivation to do more. Using the iPad camera and **Live Text** feature to read out printed text in books, on the interactive whiteboard and on posters in the classroom cemented the idea that using assistive technology was a way forward for Pupil C.



Figure 44: Pupil C using the iPad camera to identify what was in the boxes by using Live Text feature to have the words read out loud

The iPad’s portability and intuitive interface – not to mention the cool factor - made it an ideal device for Pupil C to use in class on a daily basis to address her literacy difficulties. Developmental language disorder (DLD) is a communication disorder that interferes with learning, understanding, and using language. It can affect a child’s speaking, listening, reading, and writing. The iPad accessibility features and additional apps supported all Pupil C’s areas of difficulty.

Numeracy work was made easier to set out using the [Mod Math](#) app:

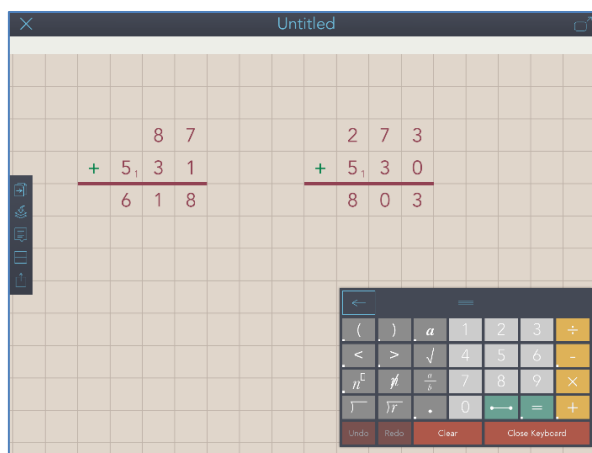


Figure 45: ModMath app for writing calculations

Typing was made easier using a simplified [Keedogo Plus keyboard](#)

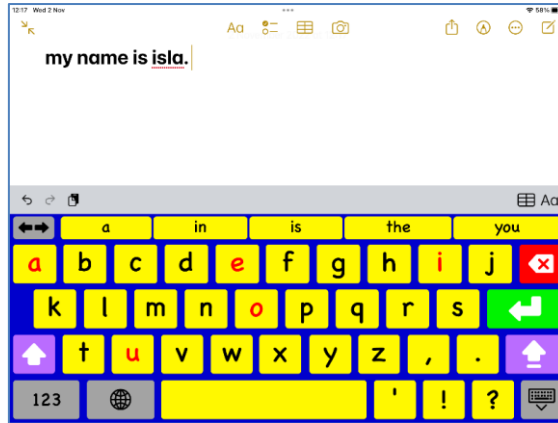


Figure 46: Child-friendly Keedogo keyboard

Scaffolded literacy activities were created using the ClickerWriter app:

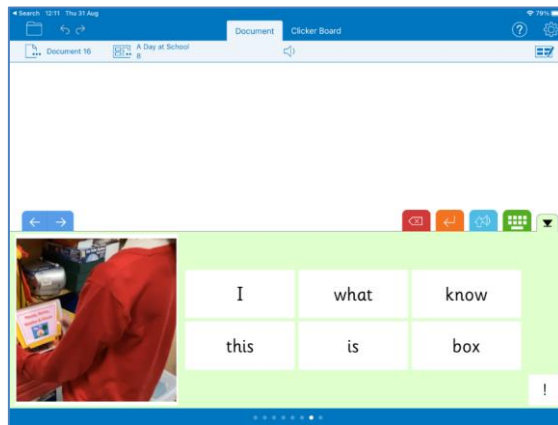


Figure 47: Literacy activities

Pupil C still required support from her Pupil Support Assistant to get started with tasks, but by the end of Primary 6, direct continuous support was halved.

From action points in the Technology Assessment report, teachers and Pupil Support Assistants were signposted to CALL's online learning modules, [Using Technology to Support Dyslexia](#) and [Using the iPad to Support Literacy](#)



Technology to help with vision: small changes can make a big difference.

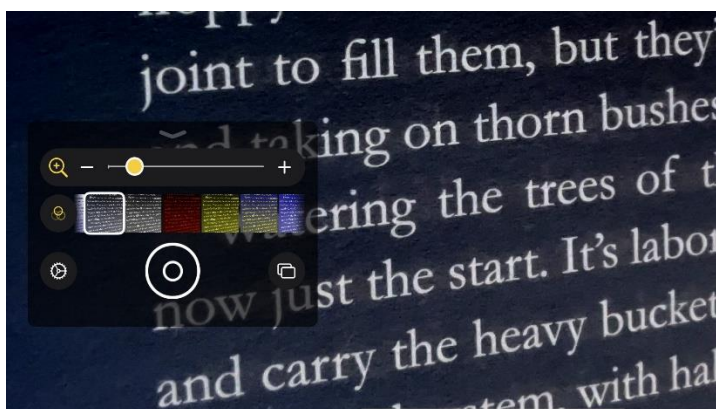
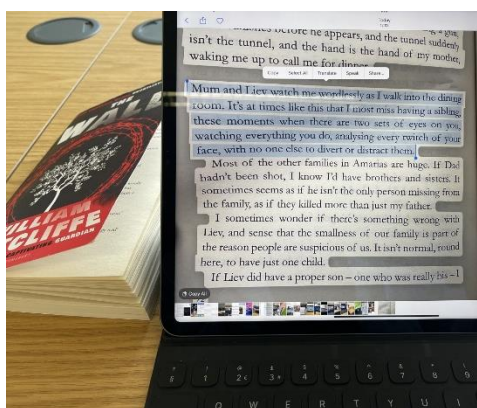
David has a visual impairment and experiences difficulties with reading. He was referred to CALL when he was in Primary 5. Working together with David's teachers, support staff and his mum, CALL has provided ongoing support to help him access the curriculum.

However, since transitioning to high school, David has found it difficult to settle and cope with the demands of secondary school, particularly the amount of reading, e.g., textbooks and novels with small print which act as a barrier because of his visual impairment. David's mum also felt the school were not offering appropriate support and as a result, she decided to withdraw David from school and home-school him.

As CALL was still involved with David, his mum asked if I would visit him at home to explore potential technologies to help with his reading. After contacting his support teacher to gather some background information, it was agreed that a home visit would benefit all involved.

David's mum had bought him a Windows laptop and an iPad to help with home-schooling and although David is comfortable using technology, he was unaware of some of the built-in tools that could make a positive impact on his learning – technology had changed a great deal since his time in primary.

I showed David how he could use built-in tools in his iPad to scan/snap an image of text from a book or worksheet and hear it read aloud. This simple tool proved to be a watershed moment for David.



I explained to David that by using a free app (Office Lens), he could scan/snap an image of text and synchronise it to the online version of Microsoft Word and use tools to increase font sizes, change background colours to improve readability and use text-to-speech to hear it read aloud.

These small changes made a big difference to David's confidence and ability to read. His mum was delighted. David has since returned to school and is doing well. I met with school staff to discuss my meeting with David and to explain the technology he would be using. They were unaware of the built-in tools and recognised how they would help other children with similar difficulties.

David's teachers now provide him with digital books from the Books for All website and RNIB Bookshare – which allow David to customise the settings to meet his needs. He also uses his iPad to take photos of the whiteboard which he can use to pinch to zoom and/or hear it read aloud.

His mum recently told me that he is having great success using dictation tools at home to support his writing. According to his mum, David is a changed person, and enjoys going to school.

The emphasis of this case study is on simplicity – simple tools that can make a big difference yet tools which teachers and schools are unaware of – this is one of CALL's many strengths, providing knowledge, expertise, free resources, the transformative power of assistive technology and inclusive digital tools that are impacting on pupils and schools across Scotland.

Communicating and learning with eye-gaze technology

Emma is now in Primary 3 within mainstream provision at her local Primary School. She was referred to CALL Scotland in Primary 1 and has complex communication and physical support needs, as well as a hearing impairment. She already had a **Tobii Eye Mobile Plus** AAC device with **Grid 3 software** and Super Core learning grids vocabulary to augment her vocalisations and Makaton signing, within specific activities.



Figure 48: Tobii Eye Mobile Plus

The DHT referred Emma because the school team now felt she needed to expand her expressive communication further and have access to a more comprehensive language system, as well as access to the alphabet, so she could start to develop her literacy skills and curricular access within her early primary education.

We introduced her to the **Super Core 30 vocabulary** and provided some **accessible picture books** made in Grid 3 from our **Bookbug Digital Library**. Emma loved being able to read the books, make comments and turn the pages independently with her eyes and the books were a real motivator in her use of the eye gaze device, as well as in developing her access and communication skills. She particularly liked the non-fiction books - for example ‘My First Book of Sea Creatures.’

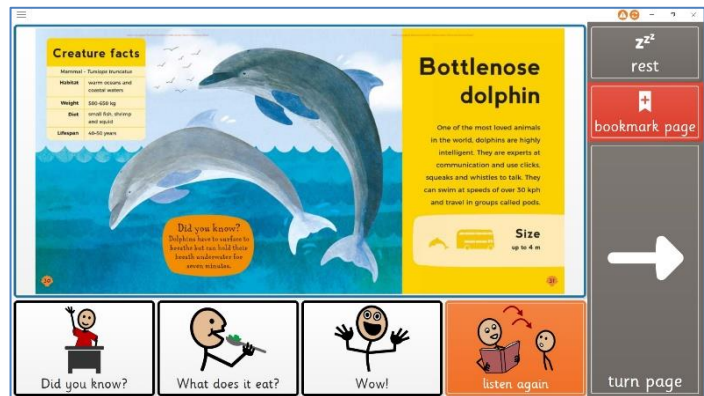


Figure 49: An accessible book in Grid 3

We then expanded her use of the Bookbug resources to include our **Grid 3 writing grids**, which provide scaffolded model sentences for early learners to go on to write about the book they have read and also to write a book review and complete an associated learning activity.

Video guides on the books and resources are available at [How to use the Symbolised Resources](#).



Figure 50: Bookbug book and writing activities in Grid 3

Having the eye-gaze accessible ‘model sentence’ grids was ideal for Emma, as her Support for Learning Assistant (SfLA) had been making low tech resources in the same format, this being a common writing activity within the mainstream classroom.

The Grid 3 writing resources provide text to speech feedback as the learner selects the words and also symbol support to help with comprehension, as required. The learner can also go to a keyboard page to practise spelling out the words.

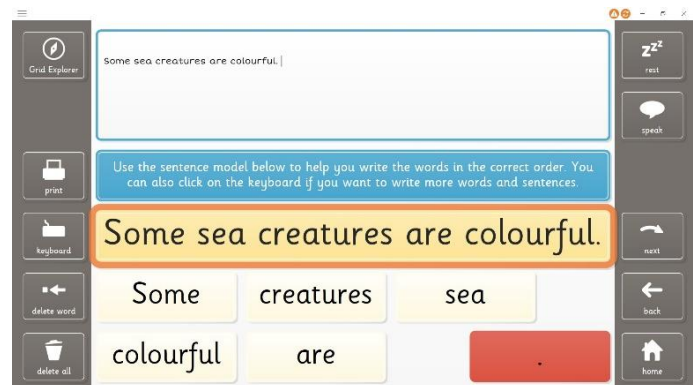


Figure 51: Sentence activity in Grid 3

This format was so successful that we created blank templates, so that the staff could create bespoke 'model sentence' writing resources for Emma, based on class topics and reading books that the other pupils in her class were also writing about.

Emma has now also started to develop her independent writing using a 'Jotter' gridset with Qwerty keyboard. She uses this in supported writing sessions with her Support for Learning Assistant to complete a variety of written tasks within the school day.

She is very motivated and happy to be able to produce written work to hand in to her teacher like the rest of her classmates.

Close partnership working between CALL Scotland and the local SLT, school team around the child and family, as well as staff flexibility in adapting to the learner's changing educational needs have enabled Emma to be successfully supported in the early primary mainstream classroom.

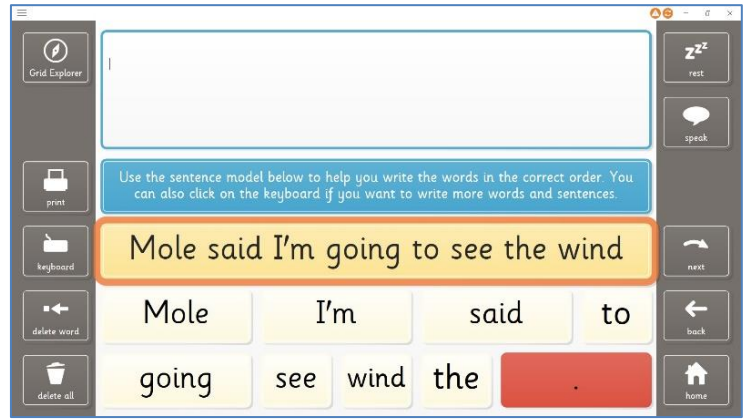


Figure 52: Sentence building template

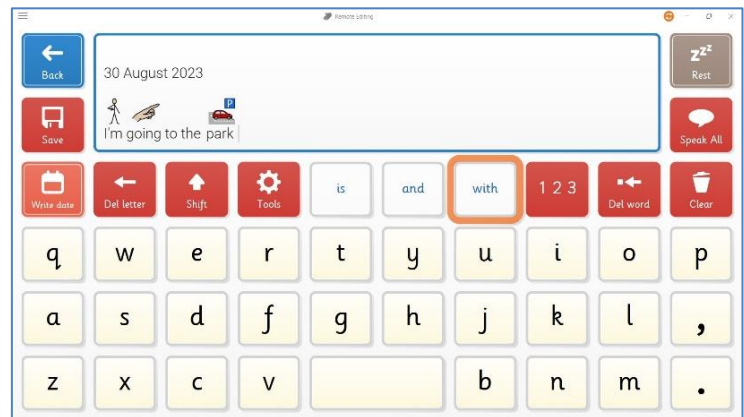


Figure 53: QWERTY layout for writing into Emma's digital jotter

"Just wanted to let you know the jotter is fabulous, we use it for everything!!"

"Thank you for all the great new stuff on Eye Gaze. Emma has now completed her first diary and story with very little help, it's wonderful."

SfL Assistant



Figure 54: Emma's work printed out



Assistive Technology and National Qualifications

CALL has collaborated with colleagues in the Scottish Qualifications Authority around the use of technology in examinations and assessment since 2005. The partnership is funded by SQA and has led to the development of Digital Question Papers and assistive technologies such as free text readers and the Scottish and Gaelic computer voices.



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Background

In 2005, CALL was commissioned to research the use of assistive technology for learners in external examinations. At that time, the most requested type of support for examinations (after extra time and separate accommodation) was a human reader and/or scribe, and our research focussed around whether technology could provide learners with a more independent method of support.

We researched and developed Digital Question Papers and conducted trials with learners between 2005 and 2007²⁹, and following these successful pilots, Digital Question Papers were first offered as an Assessment Arrangement by SQA in 2008. Most of the other UK awarding bodies followed SQA's lead by offering digital papers in 2014.

The use of technology as assessment arrangements has since developed considerably and technology is now a more commonly requested arrangement than readers and scribes (Figure 55). 29% of all requests for Assessment Arrangements included technology and 12% included Digital Question Papers in 2023.

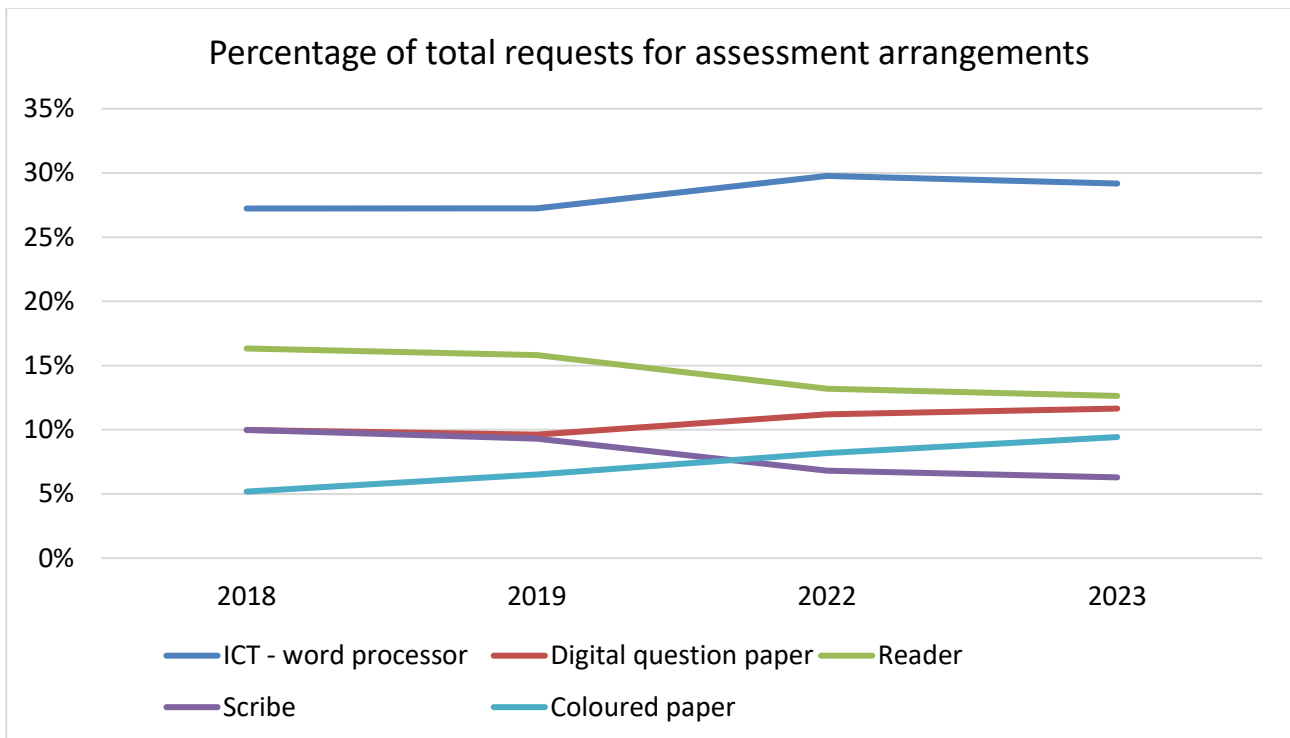


Figure 55: Percentage of requests for Assessment Arrangements that include technology 2018 - 2023

This is a positive development in terms of the four capacities of curriculum for excellence: for many learners, sitting external examinations is their final action before leaving school and in our view, having your examination questions read to you and your answers written down by a teacher is not optimum in terms of developing confidence and responsibility. Relying on support from a human reader or scribe to access education and learning in general is less likely to result in successful learners and effective contributors than enabling young people to access learning independently through assistive technology.

²⁹ CALL Scotland [Reports on the development, evaluation and introduction of digital question papers](#).

2022- 2023

In 2021-2022 we undertook research for SQA into:

- the role of internet-based technologies in examinations, and;
- which devices are for assessment purposes.

The first area is relevant because previous work^{30 31 32} indicated that the SQA policy that prohibits devices to access the internet during examinations was one factor that prevented students from using iPads and Chromebooks as digital assessment arrangements. The second research question aimed to determine which devices were going to be and were actually used in the 2022 diet.

A report with findings was submitted to SQA in August 2022 and revised in January 2023³³.

We found that most candidates used Windows OS devices in the 2022 examination diet, even when iPads or Chromebooks were provisioned on a 1:1 basis in the school. There are several underlying reasons: devices could not be configured and managed to meet security requirements; there are challenges with printing completed assessments; apps necessary to access Digital Question Papers are not available on devices or do not function adequately.

Concern was expressed by some colleagues that candidates may be disadvantaged by having to use less familiar technology in examinations and that this did not meet with the SQA principle that *“Assessment arrangements should reflect, as far as possible, the candidate’s normal way of learning and producing work”*³⁴.

The report recommended action research with teachers and practitioners in centres and technology suppliers to develop tools and processes for administering assessment arrangements using Chromebooks, iPads and Windows, and SQA asked us to:

“find ways for candidates using centre-issued devices to use these, including any accessibility tools, that they use during teaching and learning, in secure assessments, including external exams, without compromising the integrity of the assessment.”

We [approached practitioners](#) and have established one working group to investigate **Chromebooks in SQA Examinations** and a second group to look at **iPads in SQA Examinations**. As part of this work, we have researched tools that could potentially be used to manage digital assessment arrangements using the existing SQA digital question papers and have arranged for the providers of these tools to demonstrate and work with the groups. We hope that teachers and staff in schools will trial these systems with learners in 2023-2024, and if the results of the research are positive, that some candidates will be able to use these systems for digital assessment arrangements in 2024.

This work was featured in [Could students with ASN use own devices in exams next year?](#) in the TES Magazine on 30th August 2023.

³⁰ Nisbet, P. (2021) **Assistive Technology Assessment Arrangements in the Context of Covid-19**. Briefing Paper commissioned by Scottish Qualifications Authority. January 2021.

³¹ Nisbet, P. (2021) **Assistive Technology and Assessment Arrangements following Covid-19**. Briefing Paper commissioned by Scottish Qualifications Authority. July 2021.

³² Nisbet, P. (2021) **Assistive Technology and Assessment Arrangements following Covid-19**. Published Report, commissioned by Scottish Qualifications Authority. October 2021.

³³ Nisbet, P. (2023) **SQA Assessment Arrangements and Assistive Technologies in 2022**. Research Report commissioned and submitted to Scottish Qualifications Authority. January 2023.

³⁴ SQA (2021) Assessment Arrangements Explained: Information for Centres
https://www.sqa.org.uk/sqa/files_ccc/AssessmentArrangementsExplained.pdf

GLOSSARY

AAC	Augmentative and Alternative Communication
ACiP:S	Augmentative Communication in Practice: Scotland
ADES	Association of Directors of Education in Scotland
ASL	Additional Support for Learning
ASLO	Association of Support for Learning Officers
ASN	Additional Support Needs
ASPEP	Association of Scottish Principal Educational Psychologists
AT	Assistive Technology
ATLAS	Assistive Technology Leaders Across Scotland (formerly ICTSLS)
B4A	Books for All
BETT	British Education and Training Technology Exhibition
CALL	Communication, Access, Literacy and Learning
CfE	Curriculum for Excellence
CFS	Communication Forum Scotland
CLA	Copyright Licensing Agency
CLPL	Career-long Professional Learning
CM	Communication Matters
CPD	Continuing Professional Development
ES	Education Scotland
FAACT	Fife Augmentative and Alternative Communication Team
FE	Further Education
GASS	Grant Aided Special Schools
GIRFEC	Getting It Right for Every Child
HE	Higher Education
HI	Hearing Impairment
ICT	Information and Communication Technology
IDT	Inclusive Digital Technology
JISC	Joint Information Systems Committee (in FE/HE)
Keycomm	Edinburgh & Lothians AAC service
LA	Local Authority
MH/MHSES	Moray House/Moray House School of Education and Sport
NAIT	National Autism Implementation Team

NSAS	National Standardised Assessments for Scotland
PL	Professional Learning (previously referred to as CPD)
QMU	Queen Margaret University
RCSLT	Royal College of Speech and Language Therapists
RNIB	Royal National Institute for Blind People
SAVIE	Scottish Association for Visual Impairment Education
SCTCI	Scottish Centre for Technology for the Communication Impaired
SG	Scottish Government
SIG	Special Interest Group
SLA	Service Level Agreement
SLF	Scottish Learning Festival (Education Scotland run event every September)
SNSA	Scottish National Standardised Assessments
SQA	Scottish Qualifications Authority
SSC	Scottish Sensory Centre
TASSCC	Technological Assessment and Support Service for Children and the Curriculum (Aberdeen)
UoE	University of Edinburgh
VI	Visual Impairment
VIP	Visually Impaired Persons
VQ	Victoria Quay

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