CALL Scotland
Communication, Access, Literacy and Learning

ANNUAL REPORT

April 2017 – March 2018

CALL Scotland
The University of Edinburgh

National Support for Learning
through
Assistive Technology (AT)
and
Augmentative and Alternative Communication (AAC)

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 – in order 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 -

- Strategic Leadership
- Free Assistive Technology resources
- Specialist Pupil Assessment and Support
- CPD and Training
- Information and advice
- Equipment Loans and Technical Services
- Knowledge Transfer, research and development

CONTENTS

Summary

2017-18 has been another busy and productive year for the CALL Scotland team, working in partnership with national and local agencies and colleagues.

Highlights

- The number of visits made to the CALL web sites exceeded 1 million for the first time.
- The AAC legislation to provide communication equipment and support commenced on 19 March 2018.
- We are delighted that the AAC in Education online learning modules are complete and available on the revamped AAC Scotland web site!
- Following extensive research and procurement, CereProc was awarded a contract to develop male and female child and teenage computer voices in March 2018.
- *MyStudyBar 4.1*, a suite of free Windows applications to support learners with literacy difficulties created by Craig and Robert, was launched on 30th August 2017 and downloaded 3,346 times in the first six months.
- In 2017, there were more requests for Digital Question Papers than for use of a scribe, in SQA examinations, for the first time.
- We are excited about CALL's new Symbols for All project, web site and resources, which we expect will be extremely helpful to schools across the country who wish to create a more inclusive, communication friendly environment.

Challenges

- The low number of participants attending Professional Learning courses in CALL still gives cause for concern, although we are pleased that our new half-day seminars and workshops do seem to be more accessible for practitioners. Feedback from practitioners suggests that budget restrictions and difficulty in funding and sourcing supply cover are affecting participation.
- The more specialist and expensive resources in the Technology Equipment Bank, such as eye-gaze devices and dedicated high-tech communication aids, are becoming obsolete, and require replacement to enable CALL and other AAC and Assistive Technology services to continue to provide effective independent assessment and trial of equipment prior to purchase.
- Feedback from ATLAS (Assistive Technology for Learning Across Scotland), the national group of practitioners working in local authorities, suggests that levels of provision are being reduced. We are concerned about the number of local authorities that do not have an identified Assistive Technology service.
- There is a need to develop and disseminate research into the impact of Assistive and Communication Technologies.
- The Doran National Commissioning strategy and planning is still in progress, and as a result CALL's funding has been and continues to be uncertain, which inevitably has an impact upon planning.
- CALL's grant from Scottish Government has remained static since 2011, which is effectively a 15% reduction in real terms over the period.

Working across traditional boundaries

CALL Scotland deliberately seeks to support learners with additional support needs arising from a wide range of underlying conditions or circumstances. Examples of this approach are the Books for All Scotland Database, which provides accessible learning resources for learners regardless of whether their print disability is due to visual impairment, dyslexia or physical disability; or the Scottish Voices, which are used for reading text as well as for personal communication and AAC. The CALL multi-disciplinary team reflects this approach, and we believe that this rich interaction of professional backgrounds and perspectives is one of the reasons why CALL continues to provide relevant and innovative initiatives and services.

Working across the education system

CALL Scotland deliberately seeks to collaborate with colleagues and agencies at national, local and individual levels, in Scottish education. This year, we have for example worked with Scottish Government to progress the Doran 10-year strategy, the Scottish National Standardised Assessments, and the implementation of the Bill to provide communication equipment and support. At local authority and school level, we provide information resources, free core assistive technologies and resources, and professional learning opportunities in CALL, on site, and online. Individual leaners and their support teams and families are supported directly through assessment, support, advice and loan of technology for evaluation. Work at each of these levels stimulates and supports activity in the others.

Improvement Priorities 2018-19

Our priorities for improvement for 2018 and beyond are to:

- continue to improve our assessment procedures and practices, and particularly tools for evaluating impact;
- deliver our first Inclusive Digital Technology course through the Moray House Professional Learning programme in early 2019;
- continue to support colleagues in ATLAS (Assistive Technology for Learning Across Scotland), and raise awareness of the need for Assistive Technology services in areas of Scotland where provision is poor;
- continue to work with Scottish Government to progress National Strategic Commissioning;
- continue to work with Scottish Government and ACER in the development of Scottish National Standardised Assessments;
- continue to work with Scottish Government Assisted Communication Team, and the AAC Advisory Group, to improve access to AAC equipment and services;
- and most importantly, to continue to support learners with additional support needs, their families, carers and associated professionals, to be more successful, confident and independent through use of Assistive and Communication Technology.

No rest for the righteous, eh?

Paul Nisbet, Director.

CALL Staff Team 2017-18

Paul Nisbet (1.0 FTE)	Director; Engineer and Educational Technologist
Joanna Courtney (0.6 FTE)	Specialist Speech and Language Therapist
Claire Harrison (1.0 FTE)	Development Officer, Assistive Technology & Complex Needs
Shirley Lawson (1.0 FTE)	Development Officer & Professional Learning Coordinator
Gillian McNeill (0.8 FTE)	Specialist Speech and Language Therapist
Craig Mill (1.0 FTE)	Assistive Technology Specialist
Robert Stewart (1.0 FTE)	Technology Resources, web designer/manager
Allan Wilson (1.0 FTE)	Information Coordinator (General Enquiries)
Sarah Marjoribanks (0.8 FTE)	Office Manager
Rebecca Gow (0.9 FTE)	Resource Developer/Assistant Administrator

Former staff members, Sally Millar and Stuart Aitken, continue to provide occasional consultancy for CALL Scotland.

CALL Steering Group 2017-18

Dr. Mike Gibson	Chair of Steering Group
Deborah Walker	Support and Wellbeing Unit, The Scottish Government
Jean Alexander	AAC Operational Improvement Lead, The Scottish Government
Donna Baillie	Quality Improvement Officer, Glasgow City Council (ASLO representative) (from 01/18)
Mary Berrill	Senior Education Officer, Inclusion, Education Scotland
Cheryl Burnett	National Parent Forum of Scotland
Joanne Dryburgh	Scottish Borders Council (ASLO representative) (until 10/17)
Sam March	Principal Educational Psychologist, North Ayrshire Council (ASPEP representative) (from 10/17)
Joan McKay	Principal Teacher, Eildon Support Centre, Scottish Borders Council
Professor Sheila Riddell	Moray House School of Education, University of Edinburgh
Jackie Swan	ASN Service Manager, East Dunbartonshire Council
Barry Syme	Principal Psychologist, Glasgow (ASPEP representative) (until 06/17)
Martin Vallely	Professional Services Manager: Children & Families, City of Edinburgh Council (ADES representative)

Funding

CALL is funded through grants and contracts with around 65% of the annual income provided by the Scottish Government Learning Directorate. The grant is still provided on an annual basis even though CALL has received this core funding from Scottish Government since 1991.

We have also applied for a small core grant, and for funding for the Technology Equipment Bank, from the Scottish Government Care, Support and Rights Division for 2018-19.

SQA funds our partnership and development work around digital examinations and assessments.

Assessment and support of individual pupils in schools is undertaken via partnership agreements with local authorities: this accounts for around 20% of total funding. Lastly, we generate income through delivery of professional learning in Edinburgh and on site in schools.

The main core grant from Scottish Government has remained static since 2011, while inflation has exceeded 15% between 2011 to 2017. Consequently, we have had to prioritise and reduce spend in some areas to maintain the successful national services evidenced in this report. The funding situation is becoming increasingly challenging, given that demand and usage of CALL services continues to increase.

Strategic Leadership & Collaboration 1

Funded by: Scottish Government Core Grant

OBJECTIVES

Development and delivery of effective policy and good practice in the use of AT and AAC for pupils with additional support needs through:

- Partnership working with colleagues in The Scottish Government, Doran Project Board and National Commissioning Group, Education Scotland, Scotland, SQA, local authorities, Regional Improvement Collaboratives and voluntary organisations.
- Partnership working with Scottish Government Assisted Communication Team, AAC Leads in NHS Health boards and their partners; ACiP:S and SCTCI.
- Collaboration with parents, particularly through the National Parent Forum of Scotland.
- Participation in UK and international committees and working groups.
- Submissions to legislation and policy-making bodies.
- Development of new initiatives & pilot schemes.

OUTCOMES

### National Improvement Framework - Raising Attainment through Assistive Technology

The vision for education in Scotland described in the National Improvement Framework[1], published in January 2016, is:

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

The 2018 National Improvement Framework and Improvement Plan[2] prioritises improvement in attainment, particularly in literacy and numeracy; closing the attainment gap; improvement in children and young people's health and wellbeing; and improvement in employability and positive school-leaver destinations.

Assistive and Communication Technology can enable learners with Additional Support Needs to improve attainment, health and wellbeing and to develop independent life skills.
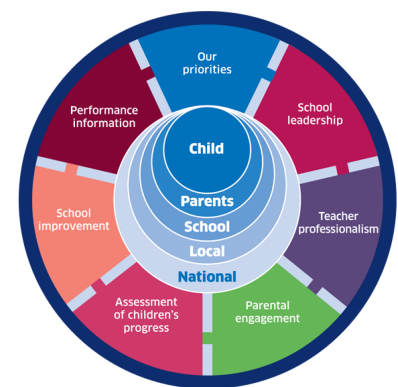
Scottish Government is supporting improvements through the Scottish Attainment Challenge (SAC) and the Pupil Equity Fund (PEF) and the focus is on narrowing the poverty-related attainment gap. Table 1, drawing on data from Scottish Government[3] demonstrates that the attainment gap between the most disadvantaged and all learners (with respect to SIMD) is narrower across all measures and levels, than the gap between learners with ASN and all learners.

This is not surprising of course, given that most children who have ASN are by definition identified because they require additional support to access the curriculum, but we submit that this does raise questions about where national and local government, and schools, should focus intervention in order to have greatest impact on narrowing the overall attainment gap - and, specifically, which attainment gap - for learners in Scotland.

Curriculum for Excellence is for **all** children[4], including children with additional support needs. However, it is recognised that children will achieve the expected levels at different ages: "*Some children and young people will start learning at these levels earlier and others later, depending upon individual needs and aptitudes. The framework is, however, designed to be flexible in order to*

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[2] National Improvement Framework for Scottish Education - achieving excellence and equity. http://www.gov.scot/Publications/2016/01/8314

[2] 2018 National Improvement Framework and Improvement Plan http://www.gov.scot/Publications/2017/12/2207

[3] Scottish Government, 2017, Achievement of Curriculum for Excellence (CfE) Levels 2016/17 http://www.gov.scot/Publications/2017/12/5300

[4] Scottish Government 2008, Curriculum for Excellence: Building the Curriculum 3, http://www.gov.scot/resource/doc/226155/0061245.pdf

permit careful planning for those with additional support needs, including those who, for example, have a learning difficulty and those who are particularly able or talented." [4 p. 28].

Scottish Government advise that the data on achievement of CfE levels is experimental, but even so, we ask whether it is acceptable that, for example, only 51% of learners with ASN are reported to achieve second level reading by P7, compared with 67% of the most disadvantaged learners by SIMD, and 76% overall. The 'overall' figure encompasses children with and without ASN, and all levels of SIMD. The attainment gap is even larger when we compare learners with and without ASN: 86% of children without ASN achieve second level reading in P7 [3, p.22].

Table 1. Measuring the Attainment Gap for Pupils with Additional Support Needs

Measure	All children %	Most disadvantaged (bottom 20% SIMD) %	Gap between Most disadvantaged and all children (percentage points)	ASN %	Gap between children with ASN and all children (percentage points)
% achieving Early Level					
P1 Reading	80	73	7	60	20
P1 Writing	77	70	7	55	22
P1 Listening & Talking	85	81	4	63	22
P1 Numeracy	83	78	5	66	17
% achieving First Level					
P4 Reading	77	68	9	53	24
P4 Writing	71	62	9	46	25
P4 Listening & Talking	83	77	6	63	20
P4 Numeracy	75	67	8	53	22
% achieving Second Level					
P7 Reading	76	67	9	51	25
P7 Writing	69	59	10	42	27
P7 Listening & Talking	81	73	8	60	21
P7 Numeracy	70	62	8	46	24
% achieving Third Level or better					
S3 Reading	90	85	5	77	13
S3 Writing	89	83	6	75	14
S3 Listening & Talking	91	86	5	79	12
S3 Numeracy	88	81	7	74	14

The key question for CALL Scotland, and indeed for Scottish education, is what can be done to address this ASN-related attainment gap. Does support involving assistive and inclusive digital technology raise attainment? We again turn to research reported by Professor Andy Hargreaves, International Council of Education Advisers advising the Scottish Government on the National Improvement Framework, who writes that:

> *"The use of assistive technology to support the needs of special education students has been a revelation and has begun a small revolution in student achievement, so that many students are now able to access, develop and display what they know in ways that have never been possible for them before.*
>
> *Assistive technologies, the results of this study show, can increase participation, enhance inclusion, develop positive identity and self-confidence and raise achievement in the community of students with special educational needs. They can also enhance, extend and engage learning among all students."*[5] (p. 53)

This is all well and good, but it is not enough to know that assistive technologies can have a positive benefit: we need to know *how* technologies and strategies are used, and then on that basis, develop programmes of work to support practitioners and learners. The landscape has changed considerably since Hargreaves published the findings from the Ontario study in 2012, and there is a need to research and disseminate good practice in the field.

Scottish National Standardised Assessments (SNSA)

The Scottish National Standardised Assessments are an important tool through which Scottish Education monitors and measures attainment, for example, to determine whether gaps in attainment are narrowing. The assessments are intended to be "as inclusive as possible and accommodate the needs of children and young people who require additional support"[6] and so it is essential that they are accessible for learners with ASN.

Paul Nisbet has been a member of the Inclusion / Additional Support Needs User Assurance Group and submitted papers to the SNSA development team. The SNSA assessments were launched on the SNSA web site[7] at the start of the 2017-18 academic session and we had intended to develop information and resources for schools and staff regarding accessing the assessments with assistive technologies. However, during 2017-18 we were not able to access the assessments and therefore development of guidance has not been not possible. We hope that we can engage with the SNSA team more effectively in the 2018-19 school session.

PISA SEN Feasibility Study

Coincidentally, CALL was invited by Scottish Government to participate in an international study investigating the accessibility of PISA online science assessments. The study was coordinated by Educational Testing Services based in Princeton, New Jersey, and included researchers from the Netherlands, Canada, Spain and the United Arab Emirates. The project began in February 2018 and CALL's task was to identify ten students aged between 15 and 17 who use different types of assistive technologies, and conduct in-depth interviews while the students work through sample online assessment questions. The interviews and data collection were completed in June 2018.

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[5] Hargreaves, A. *et al.* (2012) *Leading for All Executive Summary: A research report of the development, design, implementation and impact of Ontario's 'Essential for Some, Good for All' initiative*. Ontario. Available at: http://www.ontariodirectors.ca/downloads/Essential_ExecSummary_Final.pdf (Accessed: 23 August 2017).

[6] https://standardisedassessment.gov.scot/questions-and-answers/

[7] Scottish National Standardised Assessments https://standardisedassessment.gov.scot/

Scottish Government: Doran Review

The Doran Review was published in November 2012 and following the response from Scottish Government, a Project Board and five workstreams were commissioned to address the 21 recommendations made in the review:

- Workstream 1: Support for National Grant Recipients;
- Workstream 2: Needs Analysis;
- Workstream 3: National Strategic Commissioning;
- Workstream 4: Local Commissioning;
- Workstream 5: Communications.

In 2015, a National Commissioning Group was created to take forward Workstream 3, and Scotland's Ten Year Strategy for the Learning Provision for Children and Young People with Complex Additional Support Needs 2017-2026 was published for consultation in June 2017. CALL's response focussed on the need for national planning and national services related to Assistive Technology and AAC, and the impact of Assistive Technology and related services upon the education and wellbeing of children and young people with complex additional support needs, drawing on international best practice[8] [9] [10].

The National Commissioning Group met on 15th February 2017 and again on 30th April 2018, when a draft report on the Consultation was presented and discussed. The next meeting of the group will be on 4th September 2018.

The Doran review and the strategy around commissioning of national services impacts upon the continuation of CALL's national services and we hope that progress will be made so that CALL Scotland's own strategy and workplan can be developed for the next financial year in 2019-20.

Scottish Government: Statutory Guidance on Accessibility Strategies

For several years we have reported on efforts to ensure that learners with ASN have access to universal accessibility tools such as text readers, the Scottish Voices, and Ease of Access settings on school computers and devices. For some learners, these tools are essential to enable access to learning technology; while they are also required to comply with guidance from Scottish government on Planning improvements for disabled pupils' access to education. The introduction of the SNSA gives an additional incentive to ensure that computers and devices that are used by learners to access the assessments are accessible.

We know that these accessibility tools are provided in some local authorities but not all. CALL's posters on Are You Meeting Your Legal Requirements for Computer Accessibility? and Inclusive Learning Resources have proved extremely popular at professional learning events, conferences and exhibitions.

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[8] Turner-Cmuchal M & Aitken S (2016) ICT as a tool for supporting inclusive learning opportunities. In Implementing Inclusive Education: Issues in bridging the policy-practice gap. Edited by Amanda Watkins and Cor Meijer – European Agency for Special Needs and Inclusive Education. www.emeraldinsight.com/doi/10.1108/S1479-363620160000008010

[9] Universal Design for Learning, http://www.udlcenter.org/

[10] European Agency for Special Needs and inclusive Education ICT for Inclusion, https://www.european-agency.org/agency-projects/ict4i

Many local authorities are updating Windows-based technology with Windows 10 and new versions of Microsoft Office, and there is a risk that accessibility tools are not re-installed during the refresh. Some local authorities are introducing technologies based on other operating systems - for example, Glasgow are providing iPads to all pupils in P6 and above; while Aberdeen is investing in Chromebooks – and it is important that accessibility tools are made available on these platforms also.
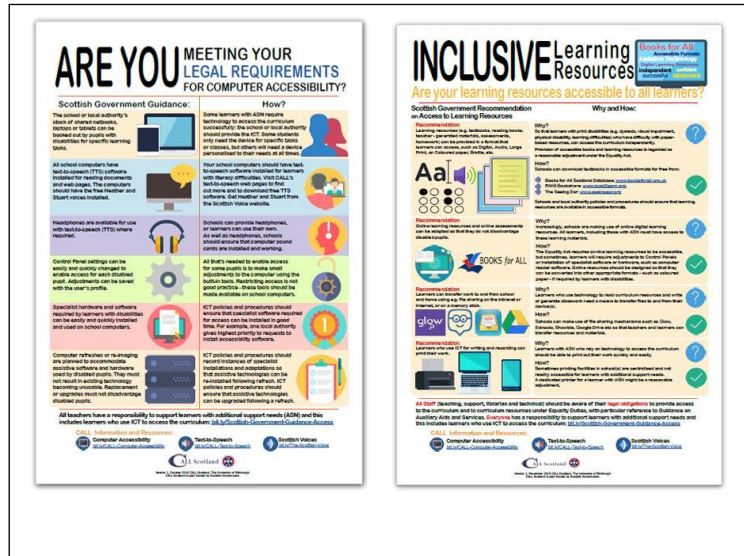
Figure 1 'Reasonable adjustment' posters for schools

School ICT infrastructure is therefore in a state of flux in Scotland; it is not clear if technologies are accessible, or if staff in schools are aware of accessibility and learning support options, and so research is required to investigate and if necessary address gaps in provision.

Education Scotland and Dyslexia Scotland – Dyslexia and Inclusive Practice

CALL contributed to the development of the new Addressing Dyslexia Toolkit and the free online courses on Dyslexia and Inclusive Practice. The creation of the course materials was led by Fran Ranaldi on secondment to Education Scotland and all three modules are now available:

- Introduction to Dyslexia and Inclusive Practice was published on 28/3/17.
- Supporting Dyslexia, Inclusive Practice and Literacy was published in September 2017.
- Dyslexia: Identification and Support was published in March 2018.

Figure 2: The completed Dyslexia and Inclusive Practice Online Learning courses

Education Scotland – Complex Learning Needs

Claire Harrison is a member of an Education Scotland working group that is developing milestones to track progress of learners with Complex Learning Needs. In March 2018, the group published Milestones to support learners with complex additional support needs for Literacy and English[11], and Numeracy & Mathematics[12]. The milestones are not prescriptive checklists, but rather provide illustrations of what progression might look like. From October 2017 to January 2018 a small number of schools were involved in a pilot of the milestones. Feedback from the pilot was collated and informed the final guidance documents.

Scottish Qualifications Authority

CALL continued to support schools using SQA Digital Question Papers and technology in 2017-18 and to advise SQA on the use of technology in assessments and examinations. The report of research into accessible Digital Question Papers for learners with significant sight loss[13] was published in May 2017. During 2017-18, CALL has been carrying out research into the use of Chromebooks as Assessment Arrangements in examinations and the report will be published in autumn 2018.

Augmentative Communication in Practice: Scotland (ACiP:S)

CALL staff (Allan, Gillian, Joanna), as members of the ACiP:S executive committee, provide leadership and participation on national AAC issues. Other committee members represent AAC services across Scotland.

During 2017-18 the work of ACiP:S focused on:

- Facilitating the AAC Leads from across Scotland to meet regularly with the ACiP:S committee, to consult on the AAC legislation 2016 and to share good practice and service procedures for supporting people in AAC.
- Organising an Adult Technology Discovery Day, held at Moray House School of Education on 24th June 2017. This provided an opportunity for adults (16yrs+) and assistants, to find out about different technologies and to take part in a consultation on services for people who use AAC.
- Planning for the 2018 Family Fun Technology Day, held at CALL Scotland on 21st April 2018.
- Providing an opportunity for an AAC user from Scotland to attend the 2018 Communication Matters conference without cost through sponsorship from ACiP:S.

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[11] Milestones to support learners with complex additional support needs Literacy and English, https://education.gov.scot/improvement/Documents/MilestonesLiteracyEnglish.pdf

[12] Milestones to support learners with complex additional support needs Numeracy and Mathematics, https://education.gov.scot/improvement/Documents/MilestonesNumeracyMaths.pdf

[13] Nisbet, P., & Aitken, S. (2017). Digital Question Papers for Candidates who are Blind or have Severe Sight loss: Report May 2017. Edinburgh. Retrieved from http://www.adapteddigitalexams.org.uk/common-assets/cm-files/files/digital-question-papers-for-candidates-who-are-blind-or-have-severe-sight-loss.pdf

Work on revising the ACiP:S network constitution was concluded and an application for charitable status was made to the Scottish Charity Regulator. The application was rejected, but we were invited to make amendments and to re-submit it. In the event, we decided not to re-submit for the time being.

Communication Matters

Allan, Gillian and Paul attended the annual Communication Matters conference in Leeds (September 2017) and provided an exhibitor stand, which gave visitors from across the world an opportunity to explore CALL resources relating to AAC. They also gave a presentation on the work of CALL Scotland, which attracted a good number of practitioners from across the UK. Joanna and Paul attended the Communication Matters Roadshow in Clydebank on May 9[th, 2017].

Health (Tobacco, Nicotine Etc. And Care) (Scotland) Bill: Provision of Communication Equipment

On 3 March 2016, a new Bill was passed by Scottish Parliament placing 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."

The Bill commenced on 19 March 2018, when Health Boards across Scotland were given the responsibility for exercising the duty. In May 2018, Scottish Government published *Guidance on the Provision of Communication Equipment and Support in using that Equipment*[14] to support delivery of the legislative duty, followed by *The National Augmentative and Alternative Communication (AAC) Core Pathway*[15] on 30th August 2018.

From today, all NHS boards in Scotland have a duty to provide communications equipment and support for people who have lost their voice or have difficulty speaking

#NowHearMe

gov.scot

The guidance is the result of work undertaken by the Scottish Government Assisted Communication Team (ACT) and an AAC Advisory Group, of which Gillian and Paul are members. This work is of great significance for learners in Scotland with communication support needs who require AAC, and of the services provided by CALL to support them.

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[14] Guidance on the Provision of Communication Equipment and Support in using that Equipment
http://www.gov.scot/Publications/2018/05/8091/downloads

[15] The National Augmentative and Alternative Communication (AAC) Core Pathway
https://www.gov.scot/Publications/2018/08/7472/downloads

Language and communication skills are central to learning and so it is essential that learners who need AAC have access to the correct strategies and equipment, and the support to use them. School staff, as well as visiting professionals, have an important role in providing this support and an inclusive environment where language and communication can be developed.

In some cases, learners also use their communication aid to access curriculum resources and to develop literacy and numeracy, provided the appropriate software or apps are made available on it. In other cases, learners benefit from separate devices for AAC and for accessing the curriculum, writing and recording.

Provision of an AAC device must be considered in this context and delivered with an integrated, multi-disciplinary approach.

Local authorities

CALL continues to offer assessment and support for individual learners, professional learning and technical expertise tailored to individual local authority contexts through partnership agreements with 15 local authorities; see *Pupil Assessment and Support* and *Career-Long Professional Learning.*

Scottish Book Trust

CALL's partnership with the Scottish Book Trust has continued to develop. In 2017-18 we:

- created accessible digital versions of the 3 shortlisted books in the 2018 BookBug Picture Book Prize, in PDF, PowerPoint and Keynote (iPad) format;
- developed symbolised resources to accompany the P1 Bookbug books, to help learners with physical and communication support needs access the books and participate in reading;
- developed a pack of symbolised resources for the current Explorer pack of Bookbug books, which are given out to all children at nursery school, when they turn 3;
- created accessible digital versions (PDF) of the 3 books shortlisted for the 2018 Scottish Teenage Book Prize.

Further details about these developments are in the *National Provision of Core Assistive Technologies* section.

Assistive Technology for Learning Across Scotland (ATLAS)

Shirley Lawson chairs ATLAS (formerly known as ICTSLS (ICT to Support Learning in Scotland). This is the national group of primarily educational practitioners working in the field of technology to support children and young people with Additional Support Needs and / or disabilities.

The group mainly communicates online via a Google Group forum and provides support for each other: answering questions, sharing resources and suggesting solutions to problems posted. The ATLAS group met on 15/11/17 at the University of Edinburgh and 26/03/18 in Falkirk, with several members participating via a live webinar link. The consensus is that meeting twice a year is extremely valuable to discuss a wide range of current issues on the topic of inclusive digital technologies, educational practices, legislation, Professional Learning opportunities as well as hearing from invited guests on new technologies.

CALL Assistive Technology Community in Scotland

Managed by Craig, the CALL AT Community in Scotland is 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. A CALL AT Community "teach-meet" was held in May 2017 which attracted many members and included a webinar link for those unable to attend. The Community was set up in November 2016 and had 242 members by the end of March 2018.

Other collaborations

- Discussions with software and communication aid suppliers, making an input to product development.
- Exhibition and presentations at Dyslexia Scotland roadshows and events (Allan, Craig, Paul, Shirley).
- CALL staff attended meetings and contributed to the Autism Education Network.

Data protection

An extensive review of data protection and retention procedures was carried out in preparation for the introduction of the EU General Data Protection Regulation (GDPR) in May 2018. CALL has always had appropriate policies and procedures regarding personal data, particularly concerning learners referred to CALL for assessment and support: for example, personal information has been stored in an encrypted, secure digital format for several years. The introduction of GDPR required some changes to procedures:

- Data collection forms and mechanisms have been updated to be fully compliant with GDPR.
- We have contacted individuals about whom we hold data, asking them to formalise permission to retain the data. Contacts who do not respond have been removed from our systems.
- Reports on individual learners are in most cases no longer posted to schools, but are made available only through a secure DataSync system, which requires the recipient to phone CALL for a password to access files for an individual client.
- The Privacy Policy on the CALL web sites has been enhanced to comply with GDPR.

Advisory and working group memberships

- AAC Advisory Group (Gillian and Paul)
- Augmentative Communication in Practice: Scotland (Gillian and Allan)
- Addressing Dyslexia Toolkit Working Group (Paul)
- Doorway Online Accessible Software Trust (Allan, Craig and Shirley)
- Doran National Commissioning Group (Paul)
- Education Scotland Complex Learning Needs Curriculum Milestones Working Group (Claire)
- National Digital Learning Forum (Paul)
- Scottish National Standardised Assessments Project Inclusion/Additional Support Needs User Assurance Group (Paul)
- Scottish Qualifications Authority Equality and Inclusion Key Partners' Group (Paul).

National Provision of Core Assistive Technologies

OBJECTIVES

- **Books for All:** provision of learning materials in accessible formats for pupils with additional support needs. (Funded by Scottish Government Core Grant).
- Provision of high-quality **Scottish Computer Voices** for Scottish schools and public sector. (Funded by Scottish Government Core Grant).
- Ensure that **National Standardised Assessments** are accessible. (Funded by Scottish Government Core Grant).
- Development and support for **SQA Digital Question Papers and Assessments**. (Funded by SQA).
- Provision of **free text reader software** (Funded by Scottish Government Core Grant):
  - WordTalk
  - NaturalReader
  - MyStudyBar 4.1.

Books for All

Funded by: Scottish Government Core Grant

Awareness Raising and CLPL

Books for All and the use of learning materials in accessible formats continues to be a core service disseminated through direct work with learners in schools, professional learning, and via CALL's information services. The Books for All web site received 132,505 visits in 2017-18; an increase of 28% on the previous year. However, the site is becoming outdated both in terms of form and content, and so we plan to update it in 2018-19.

Books for All Scotland Database

42,725 files were downloaded from the Database by 1,326 teachers or practitioners in 2017-18 – a reduction of 8,724, or 17%. The total number of individual schools or services accessing files was 1,326; 47 less than 2016-17.

Table 2: Number of downloaders and books downloaded from the Database

Books for All Downloads	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18
Number of individual downloaders	289	523	862	1,230	1,033	1,360	1,373	**1,326**
Number of books downloaded	2,012	3,923	7,257	11,067	31,315	52,569	51,449	**42,725**
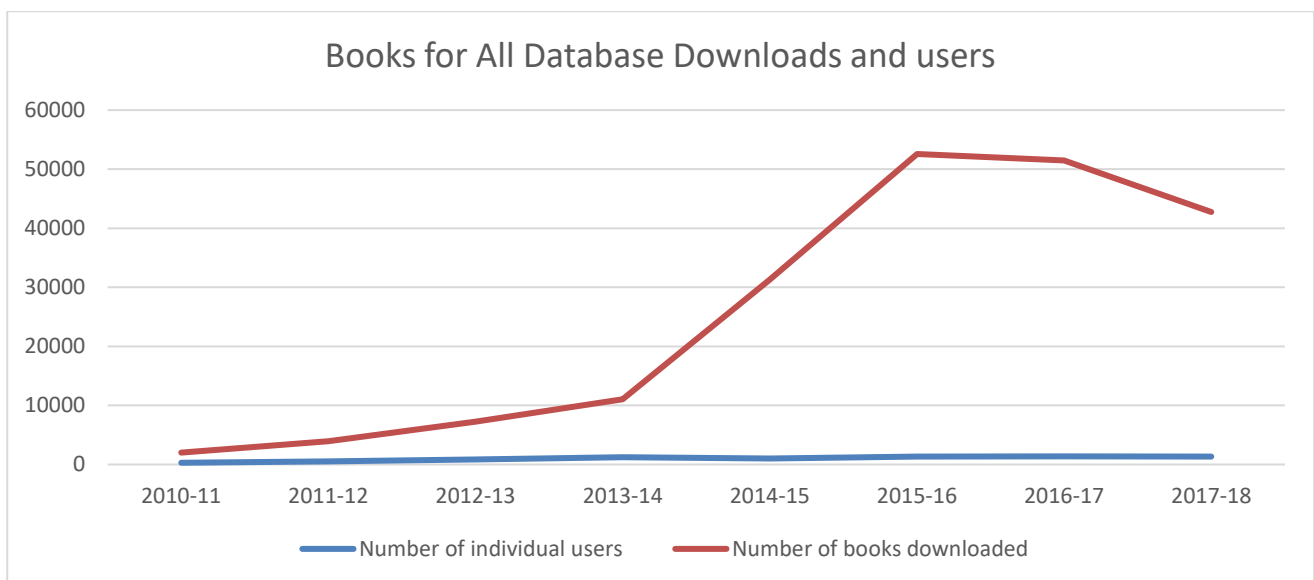
Figure 3: Number of users and books downloaded from the Books for All Database

The number of schools and services using the Books for All Scotland Database has remained stable over the past three years, at about 1,300. Users of the database are in the main recorded as schools – even if an individual teacher logs on with their personal Glow account, a file download is attributed to the school rather than the individual. Individual practitioners in peripatetic services, for example, also have their own personal accounts to access the database. Given that there are over 2,500 schools in Scotland, there is considerable scope to raise awareness and try to increase the number of schools using the database.

The number of files downloaded fell by 8,724 compared to the previous year: there were 6,260 fewer eText files accessed, and 2,848 files in various sizes of Large Print (Table 4). The reduction in eText downloads appears to be associated predominantly by schools accessing fewer Hodder Gibson (-3,305), BrightRED (-1,470) and Heinemann (-1,416) textbooks. There were no BrightRED titles accessed in 2017-18 because they were withdrawn from the database in September 2016 following a complaint that files were being downloaded, printed and distributed for whole class teaching, which entirely contravenes the terms and conditions of supply. There was a similar complaint from Hodder Gibson in January 2017, and we undertook an investigation into how files were being used and subsequently clarified and strengthened the information on copyright and legal usage: this may have contributed to the reduction in downloads of Hodder titles. Regarding Heinemann, primary schools are gradually moving away from the older Scottish Heinemann Maths books towards TeeJay and the new Heinemann Active Maths resources.

Table 3 lists the most downloaded publishers. The 296 Hodder titles account for 15,087 or 35% of the downloads; an average of 50 downloads per book. The 31 TeeJay files were downloaded an average of 315 times each, demonstrating the popularity of the books in Scottish Primary schools. The Scottish Heinemann Maths textbooks with interactive answer boxes were downloaded 4,523 times, showing that although they are out of print, they are still being used and that learners benefit from the interactive format. The most popular book was TeeJay's *Book 1a*: the standard PDF version was downloaded 500 times, while the version with answer boxes had 414 downloads.

Nosy Crow is a new addition to the list of most popular publishers: the files on the database are accessible digital versions of picture books created for the Scottish Children's Book Awards and the large increase in downloads over the past few years shows that awareness of the accessible digital versions is increasing.

Table 3: Most downloaded publishers

Publisher	Number of books downloaded 2014-15	Number of books downloaded 2015-16	Number of books downloaded 2016-17	Number of books downloaded 2017-18	Δ 2016/17 − 2017/18
Hodder Gibson	14,642	18,619	18,392	**15,087**	-3,305
TeeJay Publishers	5,692	8,154	9,698	**9,793**	95
Heinemann	4,051	8,125	8,165	**6,749**	-1,416
Nelson Thornes	1,473	2,676	2,457	**1,780**	-677
Oxford University Press	771	2,812	2,088	**1,430**	-658
Puffin	551	1,037	1,268	**1,174**	-94
Ginn	487	390	641	**339**	-302
Collins	316	509	534	**458**	-76
Leckie & Leckie	216	437	368	**246**	-122
Bloomsbury	124	345	614	**491**	-123
Nosy Crow	6	46	238	**425**	187
BrightRED	0	3,650	1,470	**0**	-1,470
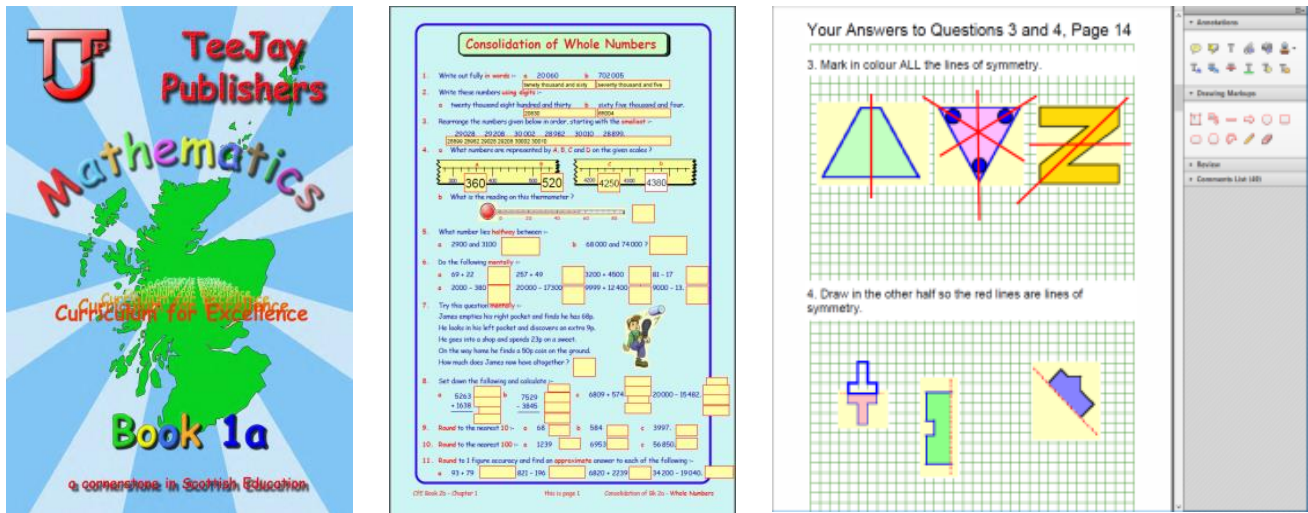
Figure 4: TeeJay Maths book adapted with answer boxes and tools for drawing on screen

75% of the books downloaded were electronic text files, mainly in PDF; most of the others were Large Print.

Table 4: Downloads by file format

Format	Number of downloads 2014-15	Number of downloads 2015-16	Number of downloads 2016-17	Number of downloads 2017-18	Δ 2016/17 – 2017/18
eText	25,264	39,348	38,476	**32,216**	-6,260
Large Print	5,850	7,659	8,614	**6,897**	-1,717
Large Print 24	62	2,238	1,716	**1,222**	-494
Large Print 36	43	1,323	732	**475**	-257
Large Print 18	25	939	645	**476**	-169
eText PowerPoint	25	48	26	**208**	-18
Large Print 14	15	206	136	**17**	-4
Audio	13	12	194	**134**	-84
Large Print 26	13	211	189	**117**	-19
eText Clicker 5	3	2	0	**1**	1
Keynote	0	33	226	**117**	-49
Large Print 28	0	224	218	**130**	-59
Large Print 48	0	291	166	**27**	1
Daisy	0	5	21	**110**	-84

RNIB Bookshare

In 2013, the Load2Learn database was developed by RNIB and Dyslexia Action with funding of £1.35m from the Department of Education. Paul provided advice to RNIB and Load2Learn was created using the same 'Scran in a Box' technology used by the Books for All Scotland Database. In April 2016, Load2Learn was refreshed and launched as RNIB Bookshare in partnership with Benetech.

We know from the Books for All Scotland Database download data that PDFs of publishers' textbooks are very helpful: Hodder Gibson and TeeJay files are the most downloaded files from the database. These PDF files are certainly not perfect or accessible for every learner, but they can be magnified, accessed on almost any device, colours can usually be adjusted to suit a learner's high contrast or colour preference, and text can in most cases be read with text readers.

RNIB Bookshare now has more than 90,000 items available, which is far more than the number of books available on the Books for All Scotland Database. Most of the textbooks on Bookshare are for the English curriculum, but more Scottish textbooks are being uploaded. A key factor behind the number of resources is that RNIB have agreements with most of the UK academic publishers whereby their titles can be uploaded directly to Bookshare. For example, Leckie & Leckie, a Scottish secondary textbook publisher, was not willing to provide files for the Books for All Scotland Database when we first set it up, but PDFs of their textbooks are available on Bookshare through the agreement with Collins, which owns Leckie & Leckie. Likewise, some of the Hodder Gibson textbooks are available on RNIB Bookshare through Hodder Education, a Hachette company.

Given this situation, we have been considering whether we should close the Books for All Scotland Database and offer our files to RNIB Bookshare. The Books for All Scotland Database still has more Hodder titles than Bookshare and we also have the entire TeeJay catalogue (some with interactive answer boxes) and the complete set of interactive Scottish Heinemann Primary Maths books, plus a large stock of Large Print PDFs. We also know that users value the Scottish identity of the Books for All Scotland Database and the ease through which files can be downloaded. All of these are factors that support the continuation of the Books for All Scotland Database. In addition, when RNIB Bookshare was first launched as Load2Learn, it was a paid subscription service, and it is possible that charges could be introduced in future.

We will continue to monitor and review the Books for All Scotland Database, in discussion with users and stakeholders.

Scottish Book Awards

The Scottish Children's Book Award was divided into two separate votes for 2018: the Scottish Teenage Book Prize, and the Bookbug Picture Book Prize.

CALL again produced accessible digital versions of the three shortlisted teenage books and the shortlisted Bookbug picture books, to enable pupils who find it hard to read the standard print books to take part in the awards along with their peers in the classroom. The Bookbug books are provided free to every P1 learner in Scotland each year by Scottish Book Trust.

The accessible digital Bookbug books were made available in:

- reader-enabled PDF,
- PowerPoint recorded narration and switch prompt versions
- Keynote format, for the iPad.

Joanna and Gillian again created symbolised resources for each of the Bookbug books. These 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 *SoundingBoard* communication app for iPad.

Figure 5: Bookbug books with GoTalk overlay

Children with physical or communication support needs can use their communication aids to participate in reading the story, and then talk about and vote for their favourite book. Scottish Book Trust filmed an interactive reading session lead by Joanna at Edinburgh's Braidburn School. This video is available in the Learning Resource section of their website.

http://www.scottishbooktrust.com/learning/learning-resources/video-using-accessible-books-symbolised-resources-in-asn-settings

Figure 6: SoundingBoard app for voting

Figure 5: interactive reading session at Braidburn School

Joanna and Gillian also ran a workshop at the Annual Bookbug Conference in March 2018 in Glasgow. They received very positive feedback and interest from Educational practitioners as well as librarians and parents.

183 books were distributed this year in PDF, PowerPoint and Keynote format, while a total of 3,420 symbolised resources and files were downloaded.

Colleagues at the Scottish Book Trust are very enthusiastic about the benefits of the symbolised resources and asked if we could create equivalent materials to use with the Bookbug Explorer Bag, which is given out at nursery to all three year olds. These were made available on the Books for All web site at the beginning of 2017 and 4568 symbol resources have been downloaded. A second Explorer symbol pack was developed later in 2017 (1819 downloads to date) and a third pack for 2018's bag is due for release this August.
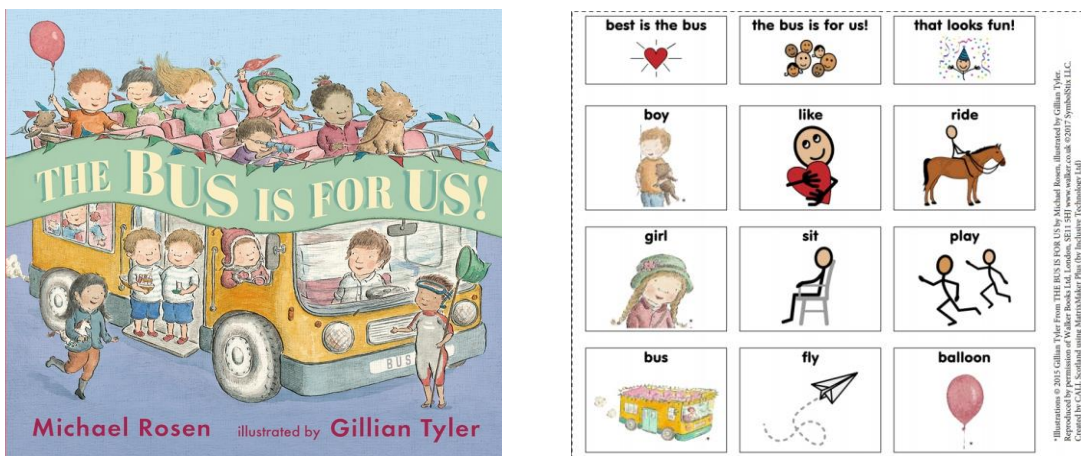

Figure 7: Symbol chart for an Explorer Bag book

Scottish Computer Voices for Scottish schools and public sector

Heather, Stuart and Ceitidh

The Scottish computer voices are used by learners with dyslexia, reading difficulties, learning difficulties or visual impairment, to access curriculum materials, books downloaded from the Books for All Database, and SQA digital examination papers. In 2016 *Heather* and *Stuart* were joined by *Ceitidh*, the world's first Scottish Gaelic computer voice.

All the voices are licenced from CereProc, a text-to-speech company based in Edinburgh. Scotland is the only country in the world, as far as we are aware, to make such essential technology freely available to learners, and by doing so, improve access to the curriculum and reduce the cost to the taxpayer.

The visits to the Scottish Voice web site and the number of downloads of the voices are shown in Table 5. Note that the number of actual users is far higher – in most schools and local authorities, technical support teams download the voices once and then make them available on all the machines across the estate by imaging.

Table 5: Scottish Voice visits and downloads

The Scottish Voice	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18
Scottish Voice web visits	15,487	16,347	13,317	19,973	23,890	26,468	34,432	**40,867**
Heather downloads	728	588	949	855	786	912	954	**908**
Stuart downloads		947	851	742	679	644	722	**741**
Ceitidh downloads						288	267	**259**

Scottish Child Voices

As well as being used to access text, people with communication impairment speak with the voices with their voice output communication aids.

However, both Stuart and Heather are adult voices, and in March 2016 CALL was awarded funding of £40,000 from Scottish Government Directorate of Population Health Improvement to support the development of Scottish child voices, specifically for use in communication aids.

This project has proved extremely complex. CereProc, the Scottish firm with whom CALL has a 10-year relationship, are not the market leader in voices for communication aids, and while their voices can be installed on Windows and Android-based communication aids, they were not available on communication aid apps on iPad.

We surveyed and consulted with Scottish AAC services to identify the most important communication aids and software and discussed the project at great length and detail with the developers of communication aids, and the potential partners to develop the voice. We then worked with University of Edinburgh Procurement to develop a tender document and scoring scheme, and following submissions from two suppliers, the contract to develop male and female child voices, and male and female teenage voices, was offered to CereProc in March 2018.

We hope the voices will be available by the end of 2018.

Assistive Technology in SQA Examinations

Funded by: SQA

Digital Question Papers

CALL continued to work with SQA to refine the Digital Question Papers and to provide support and professional learning to schools and learners.

Details of research and development work are given in *Knowledge Transfer, Research and Development*.

The number of requests for Digital Question Papers (DQP) increased by 23% between 2016 and 2017 and the number of candidates for whom papers were requested increased by 17% (Table 6).
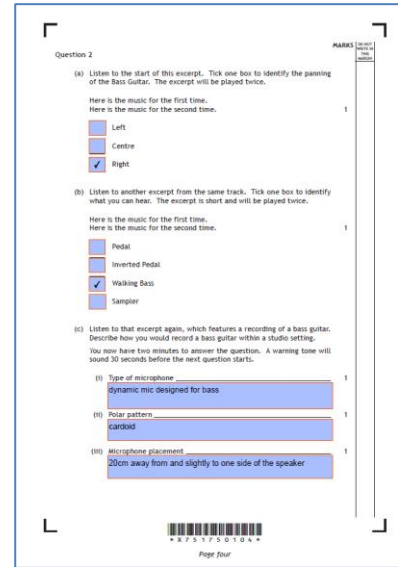
Table 6: Digital Question Papers 2008-2017

Digital Papers	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	% Δ 2016 - 2017
Number of requests	514	1,167	2,000	2,832	3,694	4,291	3,540	3,566	4,802	**5,888**	**22.6%**
Number of centres making requests	46	73	101	149	173	188	191	204	222	**230**	**3.6%**
Number of candidates	204	422	675	1,069	1,327	1,677	1,487	1,599	2,057	**2,398**	**16.6%**
Mean number of requests per centre	11.17	15.99	19.80	19.01	21.35	22.82	18.53	18.92	21.6	**25.6**	**18.4%**
Mean number of candidates per centre	4.43	5.78	6.68	7.32	7.67	8.92	7.79	8.28	9.27	**10.43**	**12.5%**
Mean number of requests per candidate	2.52	2.77	2.96	2.65	2.78	2.56	2.38	2.28	2.33	**2.45**	**5.2%**

Use of technology compared to other types of support

One of the original reasons for researching Digital Question Papers (DQPs) was to provide a more independent alternative to a human reader and/or scribe, which in 2005 were the most popular methods of support requested for learners.

Figure 8 charts the number of requests for readers, scribes, ICT only (usually a word processor) Digital Question Papers and Adapted Papers, since DQPs were first offered in 2008. The use of technology, either in the form of a word processor to type up answers ('ICT only') and/or in conjunction with Digital Question Papers, is now the most popular type of Assessment Arrangement (not including Extra Time and Separate Accommodation).

Initial research undertaken by CALL indicated that candidates felt more independent and confident using technology, and that staff costs and accommodation requirements were lower than using human support[16]. However, there are still many schools and centres where technology is not commonly used in examinations, and there is a need to research the factors that are involved when identifying the most suitable methods of support in Scottish schools. After the 2018 diet, SQA will have ten years of data since Digital Question papers were introduced, and five years of data since the introduction of National 5 examinations, and so this would be an appropriate time to undertake such research.

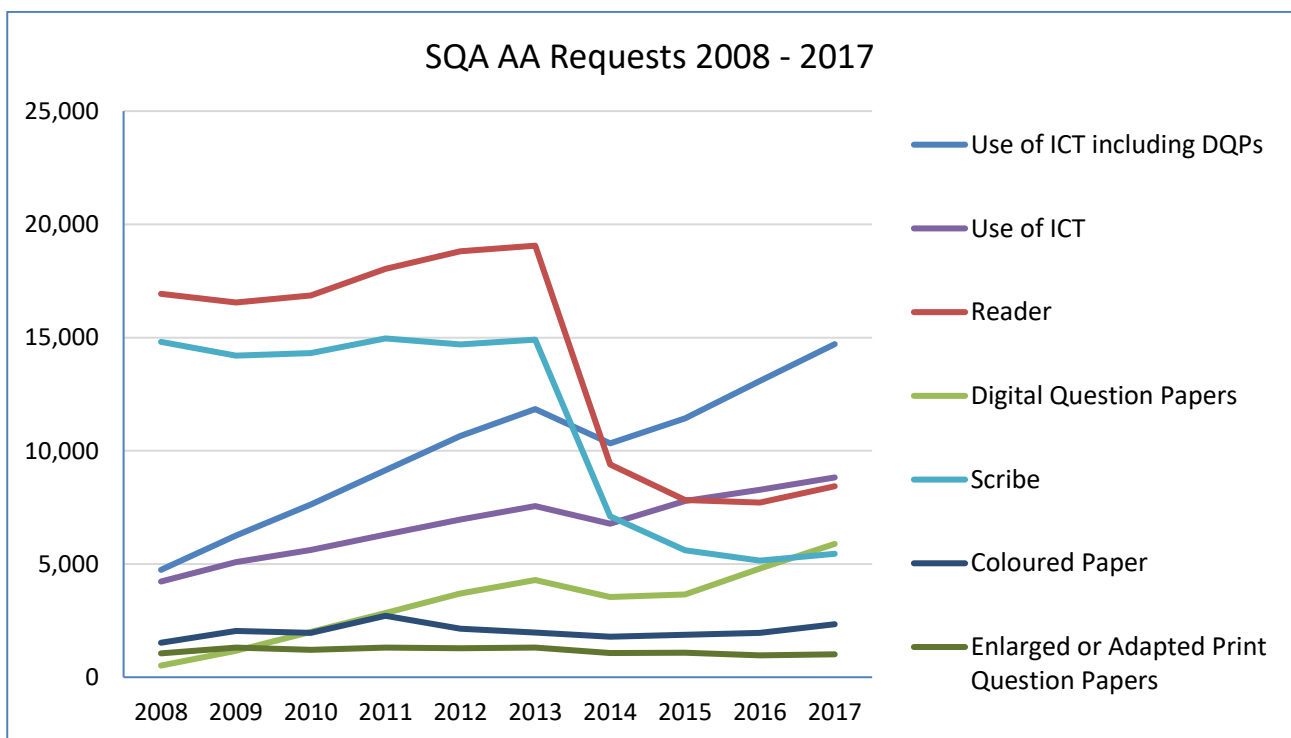

Figure 8: Number of requests for most popular methods of support, 2008-2017

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[16] Nisbet, P. D. (2007). SQA Adapted Examination Papers in Digital Format 2007 Pilot Project Report. Edinburgh. Retrieved from www.callcentrescotland.org.uk.

Scottish National Standardised Assessments

Paul Nisbet attended and contributed papers to meetings of the Inclusion / Additional Support Needs User Assurance Group between January and July 2017 while the Scottish National Standardised Assessments (SNSA) were being developed. We were encouraged by the commitment of Scottish Government and ACER, who are developing the assessments, to include learners with additional support needs. However, we felt that while the needs of learners with blindness or significant sight loss who use screen readers were considered in some detail, accessibility for other groups of learners, such as those with less significant visual impairments, reading difficulties, communication impairment or Braille users, did not seem to be addressed as fully. For example, a learner with a visual impairment might require a high contrast colour scheme, while a child who experiences visual stress might require a different colour page background, but these accommodations are not available in the assessment system.

The SNSA web site[17] was launched at the start of the 2017-18 academic session. We had intended to develop information and resources for schools and staff regarding accessing the assessments with assistive technologies, which required evaluation and trials using appropriate assistive technologies with the assessments themselves. However, we were not able to obtain access to the assessments – logins are restricted to schools only - and so were not able to develop these resources during 2017-18. We did however arrange a workshop at Victoria Quay on 16 May 2018 where we undertook evaluations and fed back findings to the SNSA team.

Throughout the year we have also been consulting with colleagues in schools, in the ATLAS group, and with SAVIE (Scottish Association of Visual Impairment Educators) and several concerns have been raised. It would be helpful if Scottish Government and/or ACER undertook or commissioned research into the use of the SNSA by learners with ASN.
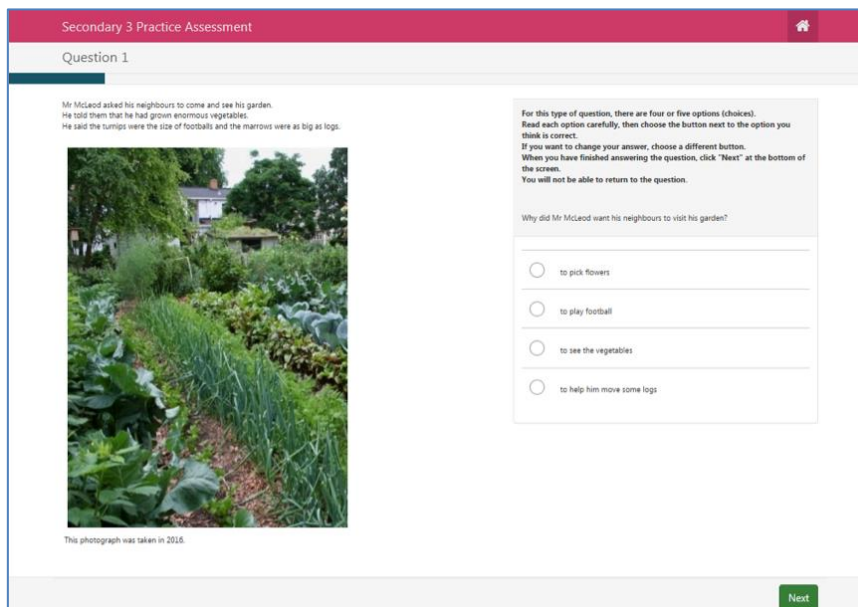

Figure 9: An example of an SNSA S3 Literacy practice question

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[17] Scottish National Standardised Assessments https://standardisedassessment.gov.scot/

Free Text Reader Software

Text reader software, in conjunction with digital learning resources, is one of the most empowering assistive technologies for learners with dyslexia and reading difficulties [18] [19]. It is for this reason that CALL provides free downloadable text reader tools, along with the high quality Scottish Computer voices. Commercial text reader and literacy software such as TextHelp Read&Write and ClaroRead are of course available, offering more features at a cost, but CALL's free solutions offer a base level of accessibility for all schools as well as learners at home.

WordTalk

WordTalk is a free text reader for Microsoft Word, created by Rod Macauley in 2005, that has to date been downloaded 205,424 times from the WordTalk mini-site. Although Rod originally programmed it for Windows XP and Word 2003, remarkably it is still functioning on most versions of Windows and Word 13 years later, thanks to Rod and Robert Stewart, CALL's Technical Officer.

It will act as a 'text reader' and create a spoken of the text in the document and read it back to hlights the words.

free
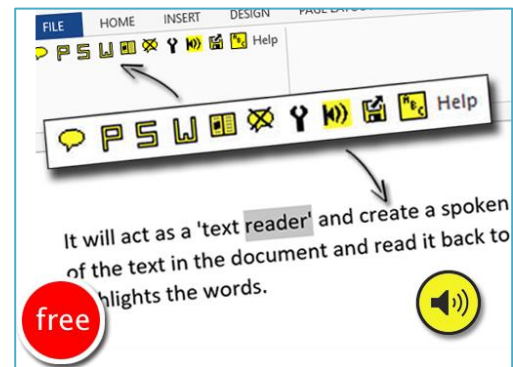
Table 7: WordTalk visits and downloads

WordTalk	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18
WordTalk (visits to web site)	92,805	97,068	119,562	130,518	208,088	**166,240**	**233,810**
WordTalk (downloads)	24,928	21,504	20,826	19,555	21,472	**26,395**	**32,731**

NaturalReader

WordTalk is an excellent resource but it only reads text within Microsoft Word, so learners require a 'universal' text reader for accessing the internet, emails and PDF files – for example textbooks or SQA Digital Question Papers. For many years we recommended Ivona MiniReader, particularly for secondary schools and this tool can be found on many school computers. MiniReader is still available but no longer supported, and so we have obtained permission from the suppliers of NaturalReader 13, a similar product, to distribute it direct from the CALL Scotland web site.

Copy and paste the text to be read into the Natural Reader window, and it will be read out with synchronised highlighting. Alternatively, you can use the 'Floating Bar', which lets you select some text and then click the Play button to have it read out.

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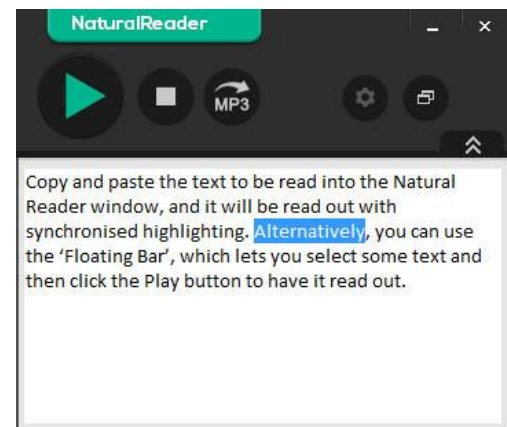
[18] Edyburn, D. L. (2007). Technology-enhanced reading performance: Defining a research agenda. Reading Research Quarterly, 42(1), 146–152. https://doi.org/10.1598/RRQ.42.1.7

[19] Wood, S. G., Moxley, J. H., Tighe, E. L., & Wagner, R. K. (2017). Does Use of Text-to-Speech and Related Read-Aloud Tools Improve Reading Comprehension for Students With Reading Disabilities? A Meta-Analysis. Journal of Learning Disabilities, 51(1), 73–84. https://doi.org/10.1177/0022219416688170

Table 8: NaturalReader 13 downloads

NaturalReader 13	2017-18
NaturalReader 13 downloads	**309**

MyStudyBar 4

MyStudyBar 4 is a new suite of free Windows applications assembled into one package, for learners with literacy difficulties. The first *MyStudyBar* was created by Craig Mill and Kenji Lamb of JISC; Craig and Robert have reprogrammed the toolbar and MyStudyBar 4 was launched on 30 August 2017. In the new version, ATBar has replaced the Orato text reader.

In the first six months following release, MyStudyBar was downloaded 3,346 times.

Table 9

MyStudyBar 4.1	1 September 2017 – 31 March 2018
MyStudyBar 4.1 downloads	**3,346**

Pupil Assessment & Support

Funded by: Partnership Agreements with local authorities (primarily)

OBJECTIVES

Multidisciplinary assessment follow up and support of Individual referred pupils with complex ASN, in mainstream or special settings.

OUTCOMES

- 48 new pupils were referred for assessment and support (42 in 2016-17).
- 48 pupils received a comprehensive assessment for communication and/or assistive technology (47 in 2016-17).
- 90 pupils were supported directly in school through assessment or follow up visits (98 in 2016-17).
- 163 pupils in 17 local authorities were supported directly in school or indirectly through telephone or email advice (131 pupils / 19 local authorities in 2016-17).
- 162 assessment and/or support sessions were delivered in schools (188 in 2016-2017).
- 17 Partnership Agreements or Service Level Agreements (SLAs) were made with local authorities for 183.7 days of work for 2017-18 (17 Agreements / 196 days in 2016-2017). The following local authorities had arrangements with CALL: Argyll & Bute, Clackmannanshire, Dumfries & Galloway, Dundee, East Renfrewshire, Falkirk, Highland, Inverclyde, Moray, North Ayrshire, Perth & Kinross, Renfrewshire, Shetland, South Ayrshire, South Lanarkshire, Stirling and West Dunbartonshire.
- 43% of Assessment and Support staff time was spent in schools (46% in 2016-17); 32% is taken up with support from CALL by telephone and email, equipment preparation, development work, report writing, etc (30% in 2016-17) and 25% is taken up with travel (24% in 2016-17).

Table 10: Assessment and Support 2012-18

Number of …	2013-14	2014-15	2015-16	2016-17	2017-18
New referrals	43	37	39	42	**48**
Pupils assessed/supported on site	85	71	72	99	**90**
Assessment/support sessions	118	107	135	188	**163**
SLA/Partnership agreements with local authorities	15	16	17	17	**17**
(Number of days work)	191.25	196.5	182.75	196	**183.7**

Pupils referred to CALL in 2017-18

CALL supports young people in Scotland who may benefit from assistive technology or augmentative communication, due to complex communication, physical, or other additional support needs. Table 11 gives an indication of the underlying factors giving rise to learners' additional support needs, and the areas in which assistance is requested form CALL.

Most pupils referred to CALL have complex support needs arising from more than one condition and that there are usually multiple areas where assistance is requested.

Table 11: Pupils Referred to CALL in 2017-18

Factors giving rise to Additional Support Needs	Number	Areas where assistance is requested	Number
Autism Spectrum Condition	16	Software	31
Visual Impairment	16	Writing	29
Other	16	Hardware	29
Severe / Complex Learning Difficulty	14	Personalised Resources	24
Speech and Language Difficulty	14	Communication	20
Concentration	13	Teaching & Learning	16
Cerebral Palsy	9	Communication Aid	12
Mild / Moderate Learning Difficulty	9	Keyboard/mouse/switches	11
Social Emotional Behaviour Difficulty	9	Other	4
Specific Learning Disability / Dyslexia	9		
Hearing Impairment	7		
Other physical disability	6		
Attention Deficit Hyperactivity Disorder (ADHD)	1		
Dyspraxia	1		

Case Study

F is a 9-year-old girl with literacy difficulties /dyslexia and struggles to read at a very early level. She is in a mainstream P4 class and requires support throughout the day for all literacy and numeracy tasks. As the gap between her abilities and those of her peers widens, F is becoming aware of her difficulties and her confidence is dipping.

She has been using Dragon software on her school Mac computer with varying amounts of success. There have been technical issues with the device and despite 1 to 1 support from a teacher to help her progress with the speech recognition software, results had been patchy but there is hope that this may be a solution for her to work with greater independence.

During the assessment it was decided to try Dragon software on another computer with a different headset and for some new ground rules to be set on how to use speech recognition. F achieved success with this approach and she was delighted (Figure 10).
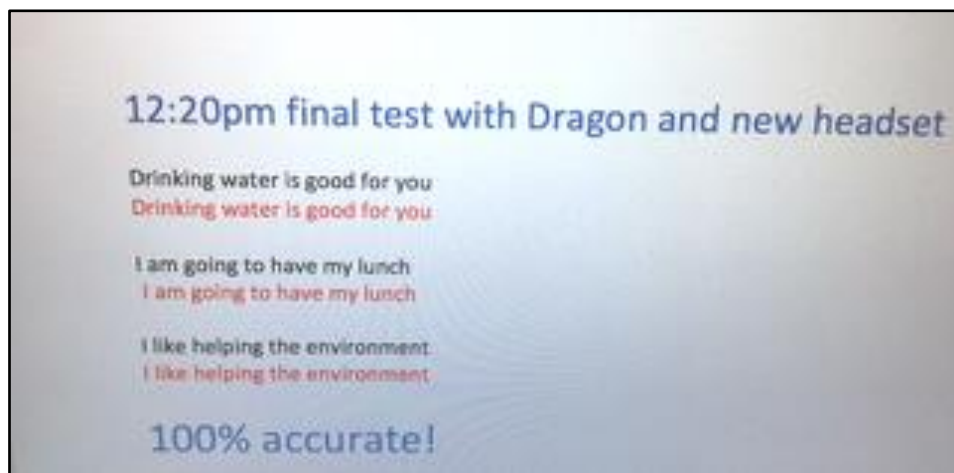
Figure 10: Results of dictation with Dragon

F tended to chatter in a distracted way and included lots of peripheral phrases and comments that were picked up by the microphone and transcribed. As she could not see at a glance that the words were superfluous, it was only picked up at the end when using the <Playback> command.

I reiterated to her support team that she would have to be taught the basic speech recognition process and have time set aside to practise before we can determine its overall effectiveness as a writing tool at this stage. A CALL laptop with Dragon Naturally Speaking software installed and a USB headset that we knew was working properly were loaned for 3 months to facilitate this new approach.

 'Speech Recognition as AT for Writing'[20] was provided as a framework on how to introduce the software for a pupil with literacy difficulties.

Any printed text provided to F presents a barrier to learning so it is essential that curriculum resources are provided in a digital format so that she can use Text to Speech (with headphones on to avoid disturbing her peers) to listen to the text.

There was no procedure in place as to how digital files would be sourced or transferred and so the team discussed and decided that textbooks would be accessed from the Books for All Database or RNIB Bookshare and then transferred via Glow and a shared OneNote notebook to F. One of the advantages of this approach is that once the resources are saved to the cloud-based system, they can be accessed at home. The system is secure to prevent unauthorised access to the files.

Once the text is in a digital format, a text to speech reader can be used to read it out loud. All school computers have Ivona MiniReader installed and F has been shown how to highlight the text and click on **Play**.
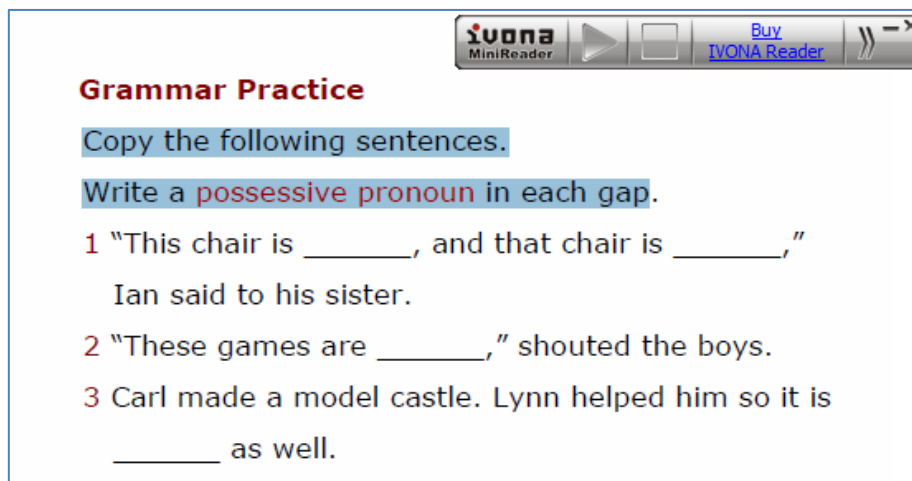
Figure 11: Reading a textbook with support from MiniReader

The class teacher was very receptive to the suggested ideas and strategies to support F. The classroom assistant would be key to ensuring F was accessing the texts more independently and that family members knew what had been set up. This collaborative approach of support is important to ensure consistency and reassurance to F that everyone was able to help her both at school and at home. The SETT framework[21] of assessment identified the gap between pupil performance and instructional expectation both in reading and writing. The use of speech recognition software and text to speech software with digital texts will hugely support F's learning.

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[20] Cochrane, D. and Key, K. (2017) Speech Recognition as AT for Writing: A Guide for K-12 Education. http://pub.lucidpress.com/2f091482-82da-44a9-b8da-0f9c52f81482/

[21] Zabala, J. (2018). Sharing the SETT Framework. http://www.joyzabala.com/Home.php

Assistive and Communication Technology Assessment and Support across Scotland

We continue to have concern regarding support for learners with ASN who require assistive technology and/or AAC to access the curriculum and participate in education. We are confident that we are having a positive impact on policy and strategy, on provision across the country (e.g. the free core technology services, and the information services) and for individual learners who are referred and supported.

However, we are aware that some local authorities do not have specific Assistive Technology teams or services, and some members of ATLAS report that their services are being reviewed and, in some areas, reduced.

Assistive Technology and its application in schools is a specialist field and doing it properly requires expertise, experience, time and resources. There is a need to research the provision of Assistive Technology services across Scotland, and if services are found to be lacking, to support local authorities to develop their capacity.

Specialist Information & Expert Advice

Funded by: Scottish Government Core Grant

OBJECTIVES

- Open access national information and advice service delivered in response to enquiries by telephone, letter, email.
- Publication and circulation of e-News, newsletter, books, information leaflets.
- Maintenance and development of CALL Scotland web sites.
- Provision of a specialist library and web search facility for enquirers.
- Provision of online Professional Learning resources on AAC (funded primarily by NHS Education Scotland).

OUTCOMES

Information and Advice

- 638 significant enquiries were received and given a response, compared with 551 the previous year.

- 58% of enquiries were from education (57% in 2016-17); 23% from people with disabilities, parents and relatives (20%); 9% from health/social work (11%), and 10% were from other sources (12%).

Web sites

The Information pages on the main CALL Scotland website have been expanded to provide two sections: one on 'Additional Support Needs', and the other covering 'Technology'. There has also been considerable work 'behind the scenes':

- Work has gone into ensuring that the CALL Scotland web sites are compliant with the General Data Protection Regulation (GDPR), which comes into effect in May 2018: privacy statements for all of the web sites have been updated; we carried out an analysis of the data collected by the web sites; booking and downloading systems have been modified to collect less personal identifiable data, and to delete data when no longer required; all online databases have been redesigned and encrypted, or deleted.

- Development work has begun on two new web sites, *Symbols for All* and *MyStudyBar*.

- A new shell has been created for the Books for All Database that will allow CALL to take over the management of the data and resources.

- Redesign of the interface between the websites and FileMaker due to the end of support for the PHP Data API.

- Upgrading of server technologies and the introduction of new analytical tools.

Following last year's unexpected dip in numbers of visitors to most of the CALL web sites, we are pleased to report that there was a 29% overall increase in visitors to 1,101,210 in 2017-18. This is the first time that the combined total of visitors to the eight web sites created by CALL has exceeded one million. The main CALL web site had 540,301 visitors, an increase of over 37% compared with last year. Figures for visitors to the various CALL web sites and downloads of resources are shown in Table 12.
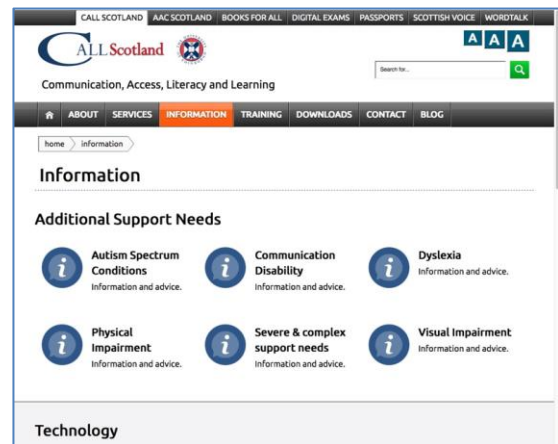
Table 12: CALL web site visits and downloads

CALL Scotland Web Sites	2013-14	2014-15	2015-16	2016-17	2017-18
CALL Scotland main site (visits)	211,075	338,840	428,899	392,536	**540,301**
CALL Scotland (resources downloaded)	72,460	146,146	286,192	269,357	**245,644**
WordTalk (visits)	119,562	130,518	208,088	166,420	**233,810**
WordTalk (copies downloaded)	20,826	19,555	21,472	26,395	**32,731**
The Scottish Voice (visits)	19,973	23,890	26,468	34,432	**40,867**
Heather downloads	855	786	905	954	**908**
Stuart downloads	742	679	646	722	**741**
Ceitidh (Gaelic voice) downloads	-	-	288	267	**259**
Books for All (visits)	70,935	112,318	90,530	103,155	**132,505**
Books for All Database (downloads)	11,067	31,315	52,569	51,449	**42,725**
Communication Passports (visits)	40,484	53,528	54,603	57,703	**64,435**
Digital Exams and Assessment (visits)	17,435	28,760	27,279	54,515	**32,117**
ASL and Technology Conference (visits)		8,424	11,407	12,019	**13,446**
AAC Scotland (visits)		15,363	25,412	34,214	**43,729**
Total visits	**572,750**	**711,641**	**872,686**	**854,994**	**1,101,210**

Figure 12: Visits to CALL web sites 2012 - 2018
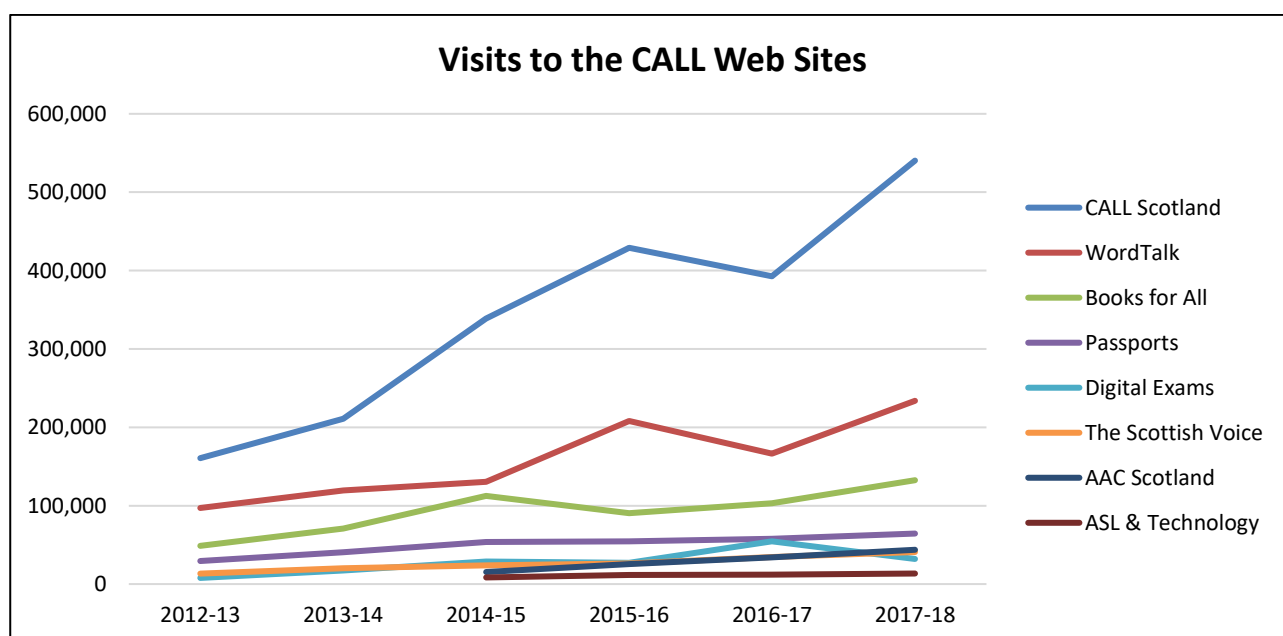
Posters

CALL posters, which provide key information about a variety of topics relating to assistive technology and augmentative and alternative communication in an attractive format, continue to be popular (Table 13).

The posters have helped to significantly raise the profile of CALL Scotland, both nationally and internationally in recent years. Previous posters have been updated as required and six new posters were produced in 2017-18:

- 20 Ways to be Excellent (April 2017)
- A Guide to Single and Multi-Message Devices (April 2017)
- Making the Most of Notes (May 2018)
- iPad Apps for Learners with Dyscalculia / Numeracy Difficulties (October 2017)
- Making the Most of PDFs and Adobe Acrobat Reader (October 2017)
- Eye Gaze Setup Guide (February 2018)
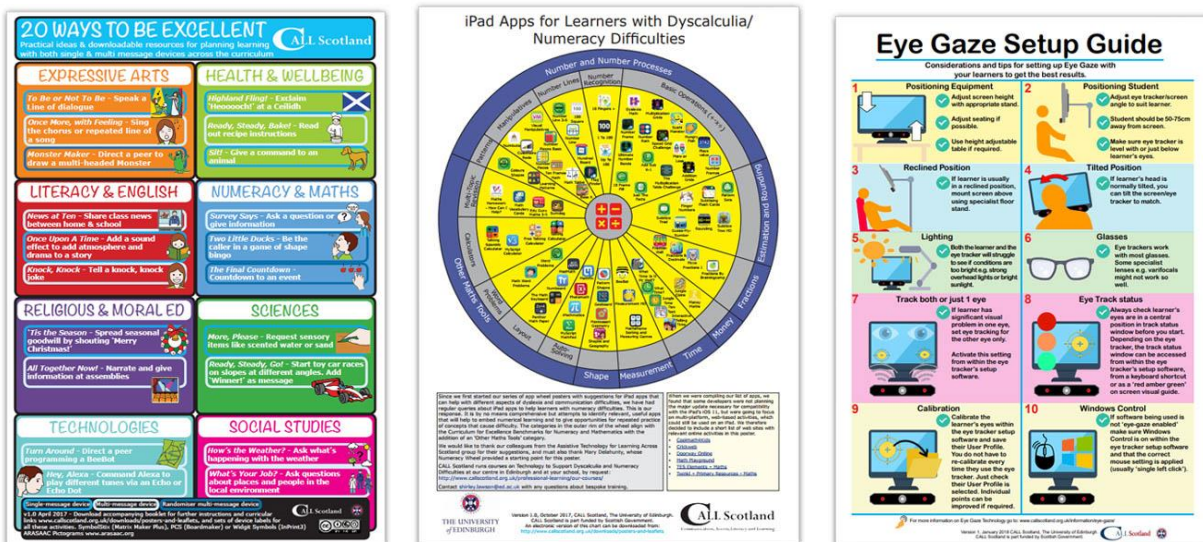
Table 13: Downloads of CALL Scotland Posters

Downloads of CALL Scotland Posters	2017 - 18	Total
20 Ways to be Excellent (leaflet) (Published April 2017)	579	**579**
20 Ways to be Excellent (poster) (Published April 2017)	641	**641**
A Guide to Single & Multi-Message Devices (Published April 2017)	687	**687**
Addressing Reading Difficulties (Published 2015)	2,325	**6,711**
Android Apps for Complex Communication Support Needs (Published 2016)	2,279	**4,152**
Android Apps for Learners with Dyslexia (Published 2015)	3,624	**5,427**
Are you Meeting your Legal Requirements for Computer Accessibility? (Published 2016)	453	**921**
Chromebook Apps and Extensions for Learners with Dyslexia (Published 2016)	2,931	**4,086**
Eye Gaze Setup Guide (Published February 2018)	200	**200**

Downloads of CALL Scotland Posters	2017 - 18	Total
Eye Gaze Software Curve (Published 2015)	1,385	**5,746**
ICT to Support Learners with Dyslexia (Published 2017)	1,249	**1,603**
Inclusive Learning Resources (Published 2016)	830	**1,122**
iPad Apps for Complex Communication Support Needs (Published 2014)	19,923	**52,499**
iPad Apps for Learners with Dyscalculia/Numeracy Difficulties (Published October 2017)	2,854	**2,854**
iPad Apps for Learners with Dyslexia (Published 2013)	31,237	**123,679**
iPad Apps to Support Creativity (Published 2015)	1,830	**5,492**
Keep Talking! (Published 2014)	3,551	**7,399**
Making the Most of Notes (Published May 2017)	404	**404**
Making the Most of PDFs and Adobe Acrobat Reader for Learners with ASN (Published October 2017)	245	**245**
PowerPoint Books for Young Readers (Published 2016)	1,370	**3,931**
Reading and Writing Support on a Mac (Published 2017)	414	**453**
Supporting Writing Difficulties (Published 2014)	1,807	**9,438**
Using Book Creator (Published 2017)	9,514	**10,493**
Using the iPad to Support Dyslexia (Published 2015)	1,547	**7,480**
Using the iPad to Support Learners with Physical Difficulties (Published 2016)	1,458	**2,252**
Using the iPad to Support Learners with Visual Difficulties (Published 2016)	698	**1,757**
What's New in iOS 10 (Published 2016)	248	**660**

Information Resources

Recognising that a poster is not always the most appropriate format for getting information across, CALL continues to produce a variety of other resources, including books, guides and info cards. Resources updated in 2017-18 included guides to *Making the Most of Microsoft Word 2016 to Support Learners with Literacy Difficulties* and *What's New in iOS 11?* (previously *What's New in iOS 10?).* These are all available from the **Download** section of the CALL website

Table 14: Other Resources downloaded from the CALL web site in 2017-18.

Other Downloadable Resources	2017-18
Electronic Books and Reports	
Making the Most of Microsoft Word 2016 to Support Learners with Reading Difficulties (Published 2017)	375
What's new in iOS 10 / 11? (Updated 2017)	692
Talking in Exams Project Report (Published 2016)	502
iPads for Communication Access Literacy and Learning	2,472

Keep Talking!	**352**
Accessible Text: Guidelines for Good Practice	**3,035**
Selected Quick Guides and Info Cards	
Mathematical and Scientific Symbols (Published 2014)	**4,303**
Chromebook Accessibility Features (Published 2016)	**1,550**
Using Calibre to Read E Books and Convert E Pub Files for the Kindle (Published 2014)	**4,008**
Guided Access for the iPad (Published 2017)	**491**
Speak Selection and Speak Screen Info Card (Published 2016)	**872**
Using Siri Speech Recognition Info Card (Published 2016)	**784**

Other Information Services

- 22 publications were sold, with Personal Communication Passports (15 copies) accounting for most of the sales.

- Eight issues of CALL's email newsletter were distributed during 2017-18. The email newsletter had 2,506 subscribers by the end of March 2018, with 200 – 300 defunct addresses being removed to comply with GDPR.

- Members of the CALL team make regular use of the Blog section of the web site, providing up-to-date information on new developments in assistive technology, Scottish Government policies, training courses, etc. 65 new blogs were published in 2017-18. Examples include *Scanning Pens or Scanning Apps* (30.5.17), *Eye Gaze Tablet Mounting Bracket – Make Your Own* (3.8.17) and *Giving Young People a Voice* (6.11.17) and Commencement of Duty to Provide AAC in Scotland (19.3.18).

- We continue to use social media for disseminating information, particularly on courses and webinars, but also for providing news of developments in technology and education. CALL makes regular use of Twitter (676 tweets, 2,186 followers, 582,000 'impressions', i.e. views of individual tweets) and Facebook (903 followers).

- The *CALL Assistive Technology Community in Scotland*, online group continues to bring together teachers, Further and Higher Education staff, therapists, suppliers and others with an interest in Assistive Technology. It provides a forum to ask questions, to share information and discuss current issues in the field with colleagues in other institutions. At the end of March 2018, it had 242 members.

- 5 items were added to the CALL library in 2017-18. 7 journals are currently received.
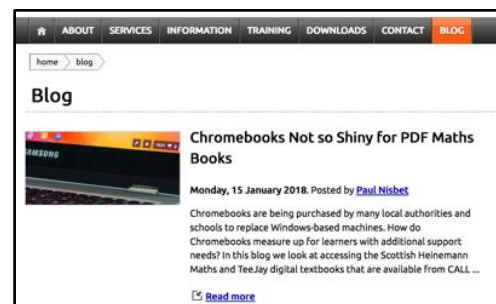
Consultation sessions

Most requests for information are responded to by phone, or email, but sometimes it is more useful to sit down with someone to explore different options for assistive technology. In response to this we now offer a limited number of Consultation sessions, providing people with an opportunity to come to CALL and explore software and technology options with the guidance of a member of CALL staff. We stress that these are informal information sessions, allowing people to see and try different solutions, but with no prescriptive recommendations or report.

Nineteen Consultation sessions were provided in 2017-18, compared with twelve last year. Recent sessions included:

- A student planning a return to University after a year out with illness, seeking advice on iPad apps and software that could help with her dyspraxia.
- A primary school teacher with four pupils with dyslexia wanting to have a clearer idea of whether speech recognition software would be useful for these pupils, and of any issues that might arise from using it, before the school bought the software. Two of the pupils got good results with speech recognition, but the other two are not yet ready to take it on.
- An S1 pupil with dyslexia and visual stress, who likes to read, but has difficulty decoding big words. We looked at the use of coloured overlays for the screen dyslexia and how to use the Learning Tools in Microsoft Word to break words down into syllables and to increase space between words and lines of text. He has been having difficulties with reading as text is very compact. School should be able to increase line and word spacing to alleviate this.

Feedback

"I cannot thank you enough for all this advice and the time you have taken to do this. It seems to be an area that we have many questions about and yet we often do not have the expertise ourselves. I will pass all this on to my friend and once again, thank you, your knowledge is invaluable to us."

(Chair of dyslexia support group seeking advice on technology to support a young learner.)

" Thank you so much for your email. Can I say that I am very impressed with the quality and depth of your reply. I will certainly look into all the sites that you suggest...Many, many thanks again for your help I really appreciate it.

(Retired Head Teacher seeking support for granddaughter, with an auditory processing disorder.)

Career-Long Professional Learning (CLPL)

5

Funded by: (a) Scottish Government Core Grants (PL development)

(b) Charges to course participants (PL delivery)

OBJECTIVES

1. Identification of PL requirements in complex additional support needs, AT & AAC for staff in both special and mainstream settings.

2. **Development and delivery of PL.**

OUTCOMES

Career-Long Professional Learning at CALL Scotland

Information on CALL's Programme of Career-Long Professional Learning (CLPL) for 2017-18 was distributed to around 2,700 schools via local authority intranet systems, and by direct email in May 2017. A further 1,500 paper copies of the programme were printed and sent to selected schools and contacts or distributed at conferences. Throughout the year there was further promotion of courses via direct emails to schools, Twitter, CALL blog posts and e-newsletters. Participants signed up by email or through the booking system on the CALL website.
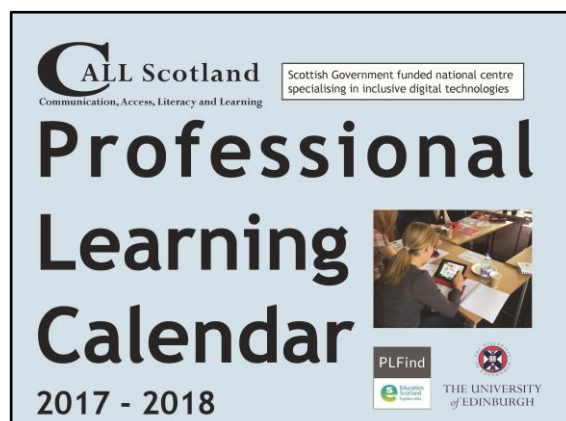
**Table 15: CLPL Courses delivered in CALL (S= morning seminar; W=afternoon workshop)**

Course Title	Date	Number of participants
Using ICT and iPads to Create Accessible Classrooms for Pupils with Severe and Profound Needs	27.4.17	5
Using iPads and Picture Apps for Early Level Communication	11.5.17	5
Clicker 7	25.5.17	6
Closing the Attainment Gap using Digital Technologies to Support Learners with ASN (Seminar and Workshop)	7.9.17	19(S) / 9(W)
Technologies and Digital Question Papers in SQA Examinations and Assessments (Seminar and Workshop)	14.9.17	12(S) / 11(W)
Supporting Learners with Dyslexia using Digital Technology (Seminar and Workshop)	5.10.17	11(S) / 6(W)
How to create a Communication Friendly Environment (Seminar and Workshop)	2.11.17	12(S) / 11(W)
Getting to grips with VoiceOver on the iPad (Seminar)	9.11.17	6
Technology and the Autism Spectrum Condition Learner: What Works and Why (Seminar and Workshop)	23.11.17	5(S) / 4(W)
Assistive Technology to Raise Attainment in a Complex Needs Classroom (Seminar and Workshop)	7.12.17	9(S) / 7(W)
Low Cost / No Cost Apps and Software to Support Learners with Literacy Difficulties (Seminar and Workshop)	25.1.18	11(S) / 6(W)
Assistive Technology to Support Learners with Physical Difficulties (Seminar and Workshop)	1.2.18	Cancelled
Supporting Learners with Dyslexia using Digital Technology	22.2.18	31(S) / 13(W)
Technology to Support Learners with Complex Communication Support Needs (Full Day Course)	8.3.18	Cancelled
How Technology can Support Dyscalculic Learners (Full Day Course)	22.3.18	16
Personal Communication Passports (Seminar and Workshop)	23.3.17	Cancelled

In response to declining numbers of people attending CALL courses in recent years, in 2016-17 we experimented with a small number of half-day seminars and workshops as well as the usual full-day courses. The response was positive as it can be easier for teachers to come on a half-day course rather than take a full day away from school. We therefore provided a mixture of full-day courses and morning seminars, with an optional workshop in the afternoon, for the 16 CLPL courses in the 2017-18 Programme. Although we still had to cancel three courses due to lack of bookings, a total of 148 people attended the remaining thirteen courses.

INSET Professional Learning

In addition to the courses in the CALL-based programme of Professional Learning, we provide a wide range of in-service courses in schools and local authorities. Courses can be designed to meet the specific needs of the school or local authority and CALL can provide laptops or iPads so that participants can have hands on practice with the assistive hardware and software under the expert tutelage of CALL staff.
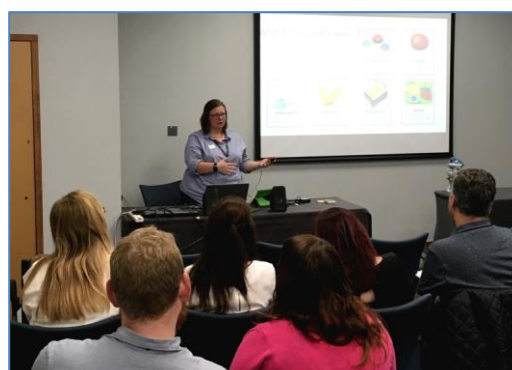
During 2017-18 CALL provided 28 INSET sessions of Professional Learning for 628 people (teachers, Support for Learning staff, classroom assistants, education psychologists, Speech and Language Therapists, parents/carers, etc.) across Scotland.

Table 16: INSET Courses provided in schools and local authorities

INSET topic / title	Date	Venue / Authority	Number Attending
SQA Digital Exams / Assessments	2.5.17	St Ninian's High, East Renfrewshire	12
Creating a Communication Friendly School	16.5.17	Langlands, Dumfries & Galloway	8
SQA Digital Exams / Assessments	24.5.17	St Luke's High, East Renfrewshire	9
SQA Digital Exams / Assessments	30.5.17	Woodfarm High, East Renfrewshire	10
Boardmaker Studio	30.5.17	St Mark's Primary, East Renfrewshire	13
Clicker 6	14.8.17	Donaldson's School, West Lothian	17
Creating Digital Assessments	15.8.17	Boclair Academy, East Dunbartonshire	24
Equality, Diversity and Inclusion	30.8.17	Scottish Book Trust, Edinburgh	28
Proloquo2Go version 5.1	6.9.17	Fairview School, Perth & Kinross	9
Assistive Technology in a Complex Needs Classroom	25.9.17	James McFarlane School, North Ayrshire	33
Dyslexia Scotland Masterclass on Dyslexia and Inclusion	26.9.17	Moray House School of Education, Edinburgh	90
Low & Medium AT across the curriculum	8.11.17	Greenburn School, South Lanarkshire	32

INSET topic / title	Date	Venue / Authority	Number Attending
Enhancing Teaching and Learning using the iPad	27.11.17	Oban High, Argyll & Bute	70
Introduction to IPads	27.11.17	Oban High, Argyll & Bute	14
Clicker 7	29.11.17	Lossiemouth High, Moray	10
Raising Attainment in the Complex Needs Classroom through AT	8.1.18	Pinewood School, West Lothian	19
Raising Attainment in a Complex Needs Classroom	25.1.18	Craigmarloch School, Inverclyde	7
Assistive Technology to Raise Attainment in a Complex Needs Classroom	5.2.18	Kilpatrick School, West Dunbartonshire	8
Speech Recognition – Dragon and iPad	12.2.18	Strathblane Primary, Stirling	10
Clicker 7	14.2.18	Dumfries & Galloway	20
Assistive Technology	14.2.18	Calaiswood School, Fife	60
Speech Recognition in SQA Assessments and Exams	21.2.18	Caldervale High, North Lanarkshire	13
Assistive Technology to support pupils with ASN	23.2.18	St John Ogilvie Primary, West Lothian	25
Supporting Learners with Dyslexia Using Digital Technology	24.2.18	Dyslexia Scotland (held at CALL)	18
Speech Recognition in SQA Assessments and Examinations	28.2.18	Aberdeenshire Council HQ, Aberdeen	20
Eye Gaze Technology	14.3.18	Carrongrange School, Falkirk	5
AT for adults with complex disabilities	27.3.18	Capability Scotland, Edinburgh	30
Supporting Learners with Dyslexia Using Digital Technology	29.3.18	Dyslexia Scotland (held at CALL)	14

Online Professional Learning

Following a successful pilot with Aberdeenshire in 2016-17, CALL has offered online Professional Learning to schools and authorities. While it is not suitable for every course this can be an effective means for delivering a short course, as it can save time and money for both CALL staff and course participants. Our experience suggests that there are a number of requirements for a successful online course: previous testing of the web link to ensure there are no local authority firewall issues; a reliable internet connection; a meeting room in the school with a board at the front to project the webinar; a local facilitator confident in the use of webinar technology and with reasonable knowledge of the subject matter for the course. Three courses were delivered online to an estimated 87 members of staff. (It is not always possible to be sure how many people are watching content delivered online.) It is very likely that online training will increase as the reliability of Wi-Fi and familiarity with this method for professional learning increases in the next few years.

Table 17: Online Professional Learning for Schools, Local Authorities and Organisations

Online course topic / title	Date	School / Local Authority / Organisation	Number Attending
Thinking Digitally	3.4.17	Lead Scotland	4
Creating Accessible Learning Materials	26.4.17	College Development Network	8
Using iPads to Raise Attainment	15.8.17	Argyll and Bute	75

CALL Webinars

Webinars are convenient, live 20 – 30 minute presentations delivered to your computer, or tablet over the web. Participants can listen to the presenter via audio, view materials on screen and engage in discussion via instant messaging.

- CALL hosted 18 webinars during the year (23 in 2016-17); 9 presented by CALL staff and 9 by suppliers and other guest presenters.
- 869 people signed up for the webinars, compared with 738 in 2016-17. An archive version of a webinar is generally made available via the CALL web site the day after the live broadcast. This can be viewed by any interested person, not just those who signed up for the original webinar. The archived webinars for 2017-18 were viewed 1,508 times, an average of 84 for each recording, compared with an average of 50 people viewing last year's files.

Table 18: CALL Webinars 2017-18

Webinar title	Date	Number signing up	Archive Views
Using Claro software in an Exam Scenario	5.4.17	23	57
One Note - Helping Students with Organisational Difficulties Keep Their Work Organised	26.4.17	78	114
Ghotit - Writing and Reading Assistive Technology for People with Dyslexia and Dysgraphia	3.5.17	77	102
Exploring the iPad's Switch Control	17.5.17	59	67
How do I Get Stuff on and off my Tablet/Device?	21.6.17	13	52
Dekko Educational (and fun) Comic Books for Learners with Literacy Difficulties	30.8.17	23	53
C.O.D.E.S. Framework and Toolkit - Creating Effective and Competent Communicators	13.9.17	12	85
SensusAccess - A New Approach to Support Students and Faculty who need Alternate Formats	27.9.17	7	50
Electronic Aids for Blind and Partially Sighted Students	25.10.17	32	62
Making the Most of your Interactive Whiteboard for Students with Additional Support Needs	8.11.17	54	81

Webinar title	Date	Number signing up	Archive Views
Using the Tools2Talk+ App for Symbolised Resources	6.12.17	**31**	**56**
Nessy - Games Based Literacy Software to Support Literacy Difficulties	24.1.18	**46**	**60**
Scanning Pens to support reading difficulties	31.1.18	**46**	**88**
iPad Apps for Dyscalculia and Numeracy Difficulties	7.2.18	**64**	**109**
IPAACKS: Informing and Profiling Augmentative and Alternative Communication (AAC) Knowledge and Skills	21.2.18	**34**	**70**
What's new in iOS11 to Support Learners with ASN	28.2.18	**36**	**52**
iPad Apps for Learners with Complex Needs	14.3.18	**128**	**318**
Using Garage Band on the iPad to Engage Learners and Promote Creativity	21.3.18	**27**	**36**

Conference Presentations and Talks

Members of staff from CALL are regularly invited to give formal presentations at conferences and requested talks for special interest groups, parents' organisations, etc. CALL staff delivered 26 conference presentations (listed in the Knowledge Transfer, Research and Development Section) and nine talks with a combined estimated audience of around 900 attendees in 2017-18.

CALL's annual Additional Support for Learning and Technology Conference and Exhibition was held in Clydebank and Edinburgh in June 2017. 132 teachers, therapists and others with an interest in assistive technology in education attended the day in Edinburgh, while Clydebank attracted 111 visitors.
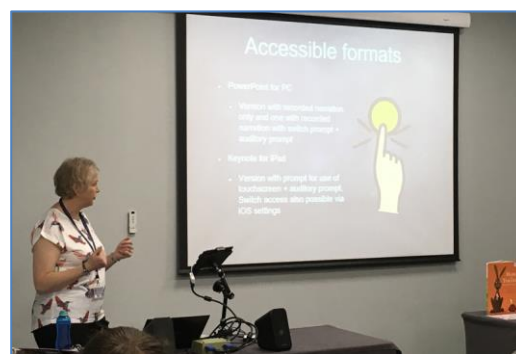
Table 19: Requested talks provided by CALL staff

Title	Date	Event	Number
Using Technology to Support Dyslexia	27.4.17	West Lothian Branch, Dyslexia Scotland	30
Assistive Technology for Dyslexia	6.5.17	Dyslexia Scotland Adult Network (Edinburgh)	10
Assistive Technology for Dyslexia	10.5.17	Dyslexia Scotland, Lanarkshire	60
Software and Apps to Support Dyslexia	8.6.17	Parents, Kirklandneuk Primary, Renfrewshire.	12
Assistive Technology for Dyslexia	12.6.17	Dyslexia Scotland, Lanarkshire	60
Assistive Technology to Support Dyslexia	24.3.18	Dyslexia Scotland Youth Day	30

Exhibitions

CALL regularly provides an exhibition stand at local and national conferences, study days and other events giving a wide range of people an opportunity to find out more about the work of the organisation and raising the profile of CALL. Attending these events provides us with valuable opportunities for networking and dissemination of information and can lead to the procurement of our Professional Learning. We had a stand at 10 exhibitions in 2017-18 with an estimated potential audience of around 1,500 people.

Table 20: Events where CALL exhibited in 2017-18

Event	Date	Venue	Numbers
AT Ready	27.4.17	Stirling	100
ASL & Technology	14.6.17	Edinburgh	132
ASL & Technology	15.6.17	Clydebank	111
Interweaving: Multidisciplinary Research in an Educational and Sporting Context	6.9.17	Edinburgh	30
Communication Matters conference	10.9.17 - 12.9.17	Leeds	375
Dyslexia Scotland Roadshow	27.9.17	Livingston	50
Bobath Scotland conference	5.10.17	Glasgow	120
Dyslexia Scotland Education Conference	28.10.17	Glasgow	250
National Parent Forum Scotland	10.3.18	Edinburgh	160
Scottish Book Trust Bookbug Conference	21.3.18	Edinburgh	200

Technology Discovery Day for Adults who use AAC

A Technology Discovery Day for Adults who use Augmentative and Alternative Communication, run in partnership with Augmentative Communication in Practice: Scotland, was held at CALL on Saturday 24th June 2017. The morning session allowed people to find out about the latest technology for communication and to take part in leisure activities such as green screen photography and music.

After lunch there was a 'consultation' session, giving people a chance to find out about the new legislation on AAC, and to express their views on current services for AAC users. Sadly, despite extensive publicity through personal contact and social media, only seven AAC users could attend.

Post-graduate teaching

CALL took part in several events relating to teaching within the Moray House School of Education in 2017-18:

- Allan and Craig gave a presentation on Assistive Technology to 24 postgraduate students on the Children and Technology module of the MSc Education course on 24.10.17.
- Joanna, Claire and Allan gave a presentation on CALL's work to a group of 35 head teachers from China on a study tour hosted by Moray House on 16.11.17. This was an interesting experience for us as we had to wait at regular intervals for translation of our comments and questions from the teachers.
- Shirley and Claire delivered teaching sessions on Assistive Technology for Learners with Additional Support Needs to 60 Moray House Postgraduate Primary students on 26.1.18.

Inclusive Digital Technology Professional Learning

The CALL team, and particularly Craig, who has done a huge amount of work to organise and create resources, have been developing a blended learning course on Inclusive Digital Technology which we hope will run for the first time in early 2019. The course is set at SCQF level 11 (Masters) and involves both face to face teaching and online elements. It will be offered as part of the Moray House Professional Learning Programme.

Online AAC modules

The *AAC in Education* modules that we were commissioned to produce by NHS Education Scotland have now been completed and will be launched in September 2018. They are much more comprehensive than originally planned and will be very welcome within the AAC community.

Meanwhile, people are continuing to make use of the five introductory online learning modules developed by CALL with 'Right to Speak' funding for people who would like to learn more about augmentative and alternative communication. 712 people accessed Module 1 of these resources via the AAC Scotland website in 2017-18.

Evaluation and Feedback

Courses at CALL are evaluated on the day of delivery. 85% of the people attending a course at CALL were "very satisfied" and 15% were "satisfied".

Courses in schools or local authorities are also evaluated using either a CALL or a local authority evaluation tool but we do not always have access to the results when a course is evaluated by the local authority. We have data from 15 of the 28 courses delivered externally, with 76% of participants "very satisfied" and 24% "satisfied". Comments on evaluation forms suggest that slightly lower numbers being "very satisfied" is due more to issues like catering, limitations in the local environment and Wi-Fi issues, than the content and delivery of the course.

A follow-up survey is sent out three to four months after the course to evaluate the impact that it has had on professional practice. The Impact Evaluation form generally has a lower response rate than the initial evaluation (around 22% overall) but returns gave an average score of 4.1 / 5 in response to the statement "*The course has had a positive impact on my professional practice.*"

Table 21: Satisfaction with Professional Learning Delivered in CALL

Professional Learning Delivered in CALL (%)	2013-14	2014-15	2015-16	2016-17	2017-18
Very satisfied	91	85	96	84	**85**
Satisfied	8	14	4	16	**15**
Not Satisfied	1	1	0	0	0

Table 22: Satisfaction with CALL Professional Learning Delivered in Schools

Professional Learning Delivered in Schools (%)	2013-14	2014-15	2015-16	2016-17	2017-18
Very satisfied	62	94	75	83	**76**
Satisfied	38	6	25	19	**24**
Not Satisfied	0	0	0	0	0

Sample comments:

'It was totally aimed at the level of children I work with. I could relate to what was said and collected lots of fab ideas. It could easily have been a two day course!'

(Teacher on Accessible Classrooms course)

'An excellent day and really enjoyed the presentations and hand-on experiences of seeing how children can access the curriculum'

(Teacher on ASL and Technology Day**)**

'Excellent value! Always very much based on user friendly strategies and resources and emailed presentations'

(Teacher on How Technology can support Dyscalculic learners course)

I just wanted to drop you a quick email to say a massive thank you for attending our iPad group last month and to give you feedback on what they all said. They found you to be so informative, supportive and really helpful. They loved your presentation and all of them came in yesterday with the new apps on their iPads, using the speech and highlight tool and the games you showed them. They all wanted me to pass on their thanks to you once again.

(Charity worker on presentation to support group for adults with aphasia**)**

Summary

Table 23: Summary of CLPL events 2012-17

Summary of CLPL Events	2013-14	2014-15	2015-16	2016-17	2017-18
PL delivered in CALL					
Number of courses	15	14	13	13	**13**
Number of participants	157	209	146	212	**147**
PL delivered in schools/authorities					
Number of courses	36	28	30	24	**28**
Number of participants	593	647	507	475	**628**
Webinars delivered					
Number of Webinars delivered		19	22	23	**18**

Number of participants registering		n/a	426	738	**869**
Average Number of people viewing archived webinars		n/a	157	50	**79**
Presentations at conferences	12	20	20	20	**26**
Numbers attending presentations	Not recorded		865	450	**650**
Exhibitions	16	10	14	12	**10**
Requested talks for parent/voluntary groups, etc.	7	5	7	8	**8**
ASL and Technology participants	202	313	215	196	**243**

Figure 13: Participants on CALL Professional Learning events 2013-2018
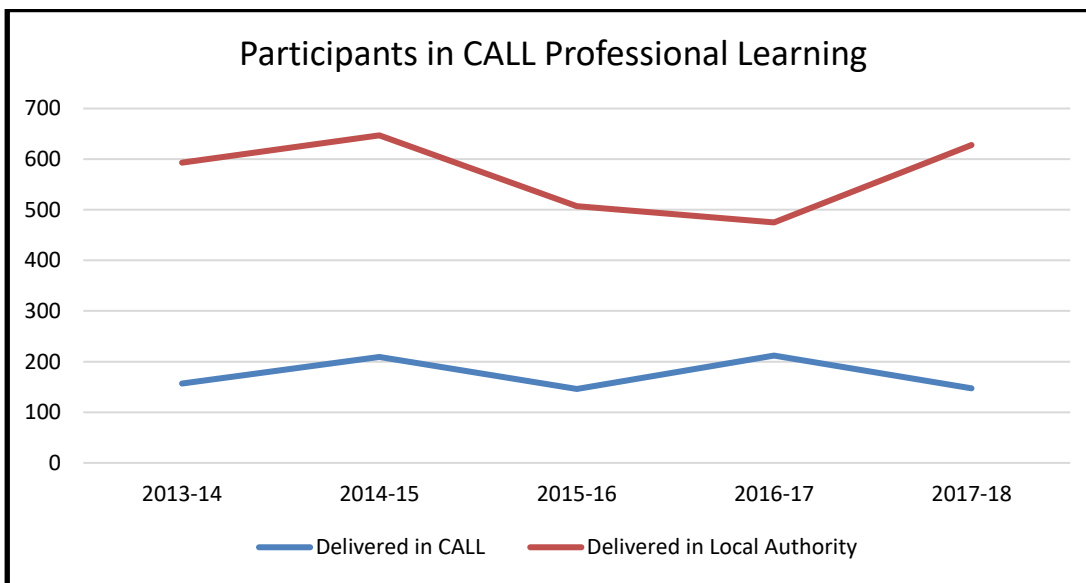
Assistive Technology Loans & Support

Funded by: (a) Scottish Government Core Grant (Assistive Technology Loans and Support service)
(b) other income generated through consultancy etc

OBJECTIVES

1. Provision of a National Assistive and Communication Technology Equipment Bank for Scotland.

OUTCOMES

- 107 pieces of equipment and software with a total value of £12,221 were added to the Loan Bank last year. This compares with £18,058 spent on 157 new items in 2015-2016. Items purchased included a Tobii Indi tablet-based communication aid (right, above); an iPad Pro tablet (right, below) and three HP Elitebook 840 laptops for client evaluations.

- 91 of these items, costing £10,035, were purchased with funding from the Scottish Government. The remaining items were provided free by suppliers for evaluation purposes or purchased through other funding sources.

- The Loan Bank provides borrowers with an opportunity to try equipment rather than spend money on items that might not be suitable. 228 new equipment loans, with a total value of £53,450, were issued to clients in 26 local authorities. This compares with 232 loans with a value of £69,000 in 2016-17.

- The number of loans provided to assessment clients dropped from 163 in 2016-17 (70% of all loans) to 104 in 2017-18 (47%).

Table 24: Summary of Loans of equipment

Summary of Loans	2013-14	2014-15	2015-16	2016-17	2017-18
Number of loans	225	150	213	232	**228**
Value of loans	£71,000	£32,800	£41,000	£69,000	**£53,450**
Number of Loans to Assessment Clients	114	61	136	163	**104**
Number of instances of technical support	160	115	84	53	**54**
% "Very Satisfied" with CALL Loan Service	80	74	86	96	**77**

Table 25: Categories of Equipment Loaned

Type of Equipment	2015-16	2016-17	2017-18
Interface / Mount / Switch	67	41	59
Mouse / Alternative	29	24	24
Tablet	17	25	24
Tablet Accessory	37	44	24
Communication Aid	21	30	23
Reading / Writing Aid	5	12	18
Computer	8	16	17
Computer Accessory	6	7	13
Keyboard / Alternative	10	13	11
Toy	3	11	9
Other	5	9	2

Loans and technical support of equipment continue to provide a significant 'best value' service, representing a substantial saving to schools and local authorities by ensuring that they buy only suitable and successfully trialled equipment and reducing the likelihood of them making inappropriate purchases.

Investment in the Technology Loan Bank

Devices and software are added to the Technology Bank every year (Table 26) but it is now five years since the last major injection of funding. Since 2011, the Scottish Government Learning Directorate has funded purchase of equipment valued at £181,132 for the loan bank, while resources worth £39,693 have been purchased through income generated by CALL from partnerships, training and consultancy, Scottish Government Section 10 grant, or provided free of charge by suppliers. This equipment comprises Assistive Technologies for accessing the curriculum, such as laptops, tablets, keyboards, mice/pointing devices, switches, mounting systems and interfaces as well as Communication Aids and Equipment.

However, technology changes rapidly and most of the more expensive high-tech Communication Equipment that was purchased in 2011 and 2012 is no longer commercially available and/or has exceeded its service life. The number and value of loans has not yet been significantly affected, but the Bank simply does not contain many of the newer Communication Equipment systems. The situation for computer access devices such as specialist keyboards and mice, or laptops, is less critical as they are less expensive and have longer operational life.

Table 26: Investment in Technology Bank 2011-2017

Investment in Technology Loan Bank	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18
Scottish Government Learning Directorate	74,142	44,447	10,288	18,250	8,570	15,400	10,035
Other income	26,007	1,067	3,108	1,587	3,080	2,658	2,186
Number of devices added	375	207	163	139	129	157	107
TOTAL	**£100,149**	**£45,514**	**£13,396**	**£19,837**	**£11,650**	**£18,058**	**£12,221**

The Technology Equipment Bank is a national resource used by CALL and other services who can borrow expensive high-tech equipment for trial prior to purchase. For example, CALL recently completed delivery and commissioning of Communication Equipment accessed by eye-gaze, at a cost of over £10,000, for a six-year old girl. Funding for the technology was provided by health, education and social work and was the outcome from initial assessment (of two different eye gaze cameras) followed by loan, with support, of equipment for over a year.

It is impossible to conduct assessment of Assistive or Communication Technology without the technology. Some AAC suppliers offer assessments on site, and this can be extremely helpful, but a supplier can only demonstrate their own equipment and so it is essential that CALL (and other AAC services, since equipment can be borrowed by practitioners across Scotland) has access to a full range of Communication Equipment to carry out an independent assessment.

The National AAC Core Pathway published on 31/8/18 recommends trial of equipment for evaluation following assessment. Trial of equipment is required to confirm the accuracy of recommendations made in the initial assessment, but it is equally important to ensure that expensive resources are **not** purchased if they are not suitable for the user. A trial evaluation

period is essential to prevent people being supplied with equipment that does not meet their needs.

We have applied to the Scottish Government Assisted Communication Team for funding for new AAC equipment, and if successful this will enable purchase of a small number of Communication Aids and eye-gaze systems, and expand the stock of iPads, together with the necessary software, apps, cases, mounting systems and other accessories.

> *"Would not have been possible without CALL loan bank equipment to complete AAC assessment. Evidence obtained during loan period has resulted in joint purchase of iPad with Proloquo2Go software. CALL have been easy to contact and offer excellent communication via telephone and email. Many thanks for all your support."*
>
> *(Speech and Language Therapist on loan of iPad with communication apps.)*

Technical Support

54 instances of technical support were recorded. This includes troubleshooting problems with equipment on loan, advising developers of numeracy app on how to make it more accessible, developing and producing laminated symbol resources for clients, creating and setting up communication grids for clients advising on text-to-speech apps and extensions that can use a Scottish Voice, designing and constructing new foot plate switch for client.

Evaluation and Feedback

Borrowers are asked to complete a feedback form when returning equipment. There was feedback on the outcome of a loan for 82 of the 211 loans returned in 2017-18 (39%). Of these, 63% indicated that the 'Equipment met the client's need'; 12% 'did not meet the client's need' and 24% were 'inconclusive'.

70 feedback forms gave an indication of future action to be considered. Of these, 67% stated that they would try to buy the system they had borrowed, while 11% planned to borrow something else and 16% wanted to seek further advice.

Overall, 77% of borrowers who provided feedback were 'very satisfied' with the CALL Loan Service and 23% were 'satisfied'.

> *"School Staff pleased device accessed on loan from CALL as child able to participate in circle time, group games and so on. CALL have been easy to contact and offer excellent communication via telephone and email. Many thanks for all your support.*
>
> (Head Teacher on loan of iPad for pupil with learning difficulties.)
>
> *"L enjoyed using the laptop but found bending down/towards the screen to get close enough a problem. She said she preferred sitting at the PC but wanted to use the software suggested. Thank you for advice and help given. The school will now ensure the software is available for L and I will chase up the purchase of a large monitor."*
>
> (Head Teacher on loan of laptop for pupil with reading difficulties.)
>
> *"The P6 girl was delighted with the pen as it allowed her to access text and comprehension work that others in her class were doing. It certainly boosted her self-esteem. She even stopped me in the corridor to tell me about it!"*
>
> (Teacher on loan of C-Pen Reader Pen for pupil with reading difficulties.)

Knowledge Transfer, Research & Development

7

Funded by: Scottish Government Core Grants and other funders (see individual projects below)

OBJECTIVES

1. Identification of needs and development of research project proposals.

2. Dissemination and knowledge transfer of products and outcomes of project with stakeholders in Scottish education.

Conference and Study Day Presentations

Courtney, J. (2017) **Accessible Digital Books and symbolised story resources.** ASL & Technology, Edinburgh, 14 June 2017.

Courtney, J (2017) **Introduction to assistive technology for learners with complex needs**. University of Edinburgh delegation of Chinese Headteachers, Moray House Edinburgh, 16 Nov 17

Courtney, J & McNeill, G. (2018) **Using Accessible Resources to create inclusive Bookbug story sessions**. Bookbug Annual Conference, Glasgow 21 March 2018

Harrison, C (2017) **Introduction to assistive technology for leaners with complex needs**. University of Edinburgh delegation of Chinese Headteachers, Moray House Edinburgh, 16 Nov 17

Harrison, C (2017) **How to use switch access to engage learners with complex needs**. ASL & Technology, Edinburgh 14 June 2017

Harrison, C (2017) **How to use switch access to engage learners with complex needs**. ASL & Technology, Clydebank 15 June 2017

Harrison, C (2018) **How assistive technology can support an inclusive approach to literacy**. Northern Alliance Learning Festival, 13 February

Lawson, S (2017) **Dyslexia, Inclusive Practice and Technology.** Northern Alliance Dyslexia & Inclusive Practice event, 2 May 2017

Lawson, S (2017) **Speech recognition for pupils with ASN.** ASL & Technology, Edinburgh 14 June 2017

Lawson, S (2017) **Speech recognition for pupils with ASN.** ASL & Technology, Clydebank 15 June 2017

Lawson, S (2017) **Technologies to support inclusion.** Scottish Learning Festival, 21 September 2017

Lawson, S & Harrison, C. (2017) **ASN, Technology and Pedagogy.** ASN and Nurture Facebook group Teachmeet, Linwood 26 October 2017

Lawson, S (2017) **How CALL supports ASN pupils to achieve their potential using assistive technologies.** Education: Priorities, Potential, and the 10-Year Strategy, Edinburgh 31 October 2017

Lawson, S (2017) **Using Assistive Technology to support people with dyslexia.** Glasgow Council for the Voluntary Sector, 10 November 2017

Lawson, S & Harrison, C. (2017) **Using Assistive Technology to create an inclusive learning environment.** University of Edinburgh PGDE event, Edinburgh 26 January 2018

Lawson, S (2017) **Using Assistive Technology to create an inclusive learning.** East Lothian Primary Teachers' conference, Dunbar 19 February 2018

Lawson, S & Nisbet, P. (2017) **Speech recognition in SQA exams**, Teachers' Seminar, Airdrie 21 February 2018

Lawson, S & Nisbet, P. (2017) **Speech recognition in SQA exams**, Teachers' Seminar, Aberdeen 28 February 2018

McNeill, G. (2017) **Using Book Creator to Support Literacy, Organisation and Communication Skills.** ASL & Technology, Edinburgh, 14 June 2017.

McNeill, G. (2017) **Accessible digital books and symbolised story resources.** ASL & Technology, Clydebank, 15 June 2017.

McNeill, G, Nisbet, P & Wilson, A. (2017) **Supporting Learners with Communication Difficulties since 1983**, Communication Matters National AAC Conference, Leeds 12 September 2017

Nisbet, P. (2017) **Accessing the Scottish National Standardised Assessments.** ASL & Technology Conference, Edinburgh 14th June 2017

Nisbet, P. (2017) **The Fund and Additional Support Needs: The Case for Assistive Technology**. Invited presentation. Conference on Pupil Equity Funding: Planning, Best Practice and Next Steps for Delivery. Holyrood Communications, Edinburgh 21st June 2017.

Nisbet, P. (2017) **Practical Applications of Assistive Technology in Schools**. Keynote presentation, National Council for Special Education Annual Research Conference. Dublin 21st November 2017. http://ncse.ie/research-conference

Nisbet, P. (2017) **Supporting pupils with additional needs - tips, tricks and tech for teachers.** Invited presentation. EduTech 2017, Glasgow 23 November 2017.

Nisbet, P. (2017) **Masterclass: Supporting children and young people with additional support needs**. Invited keynote. FutureScots Education Leaders' Summit, Edinburgh 24th November 2017.

SQA Digital Question Papers and Assessments

Funded by: Scottish Qualifications Authority

OBJECTIVES

- Partnership working with SQA to continue to develop digital papers and assessments.

- Research into speech recognition in examinations and assessments.

OUTCOMES

Uptake and use of SQA Digital Question Papers and Assessments is discussed earlier *in National Provision of Core Assistive Technologies*. A summary of research and development in 2017-18 is given here.

Digital Question Papers for Candidates who are blind or have severe sight loss

The existing SQA Digital Question Papers are not optimised for candidates who use screen reader facilities and software, and SQA adopts a bespoke procedure for providing digital papers in response to individual requests from schools. Since 2014, we have been working with practitioners and learners to research appropriate digital formats for SQA digital question papers, for candidates who are blind or have severe sight loss and who use screen readers to access text.

The research has involved technical investigation and testing; interviews with candidates and staff; and a survey of digital devices, tools and file formats used by learners with visual impairment. The final project report was published in May 2017 and is available on CALL's Adapted Digital Assessments web site.

The survey undertaken as part of the research collected data in respect of 325 learners in 17 local authorities in Scotland.

The responses indicate that while most learners with visual impairment use Windows laptops (205 students out of 325; 63%), a significant number of learners (144; 44%) use iPads instead of or as well as laptops.

The focus of the study was learners who are either blind or have severe sight loss and who use screen reading technology, as opposed to partially-sighted learners who are more likely to use screen magnification and/or text reader software to access digital technology. 68 learners out of 325 (21% of the total) were identified as using screen readers and 37 of these learners (54%) use *VoiceOver* or *Speak Selection* on the iPad while 32 learners (47%) use a Windows-based computer reader. 15 learners were reported to be using Jaws, the most popular Windows screen reader, i.e. less than half the number that are reported to be using VoiceOver on iPad.

Therefore, digital assessments must function on **both** iPad and Windows screen readers. This has implications for other assessment systems, including the Scottish National Standardised Assessments.

The survey provides a very useful snapshot of the technologies and methods that are used to access curriculum resources by learners with visual impairment in Scotland.
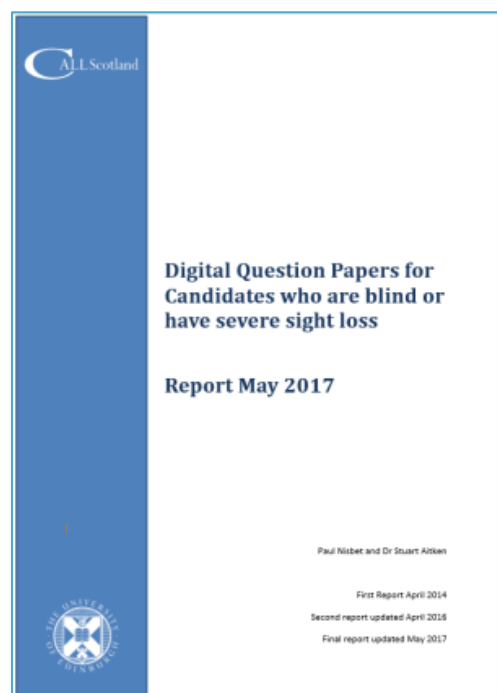
Chromebooks and SQA Assessment Arrangements

Technology in the form of a computer or word processor has been used by candidates with Additional Support Needs or disabilities as an Assessment Arrangement in SQA exams for many years, and Digital Question Papers have been available since 2008.

Most candidates currently use Windows laptops or computers, and the technology has proved reliable and practical for SQA and for centres.

Chromebooks are being purchased by some local authorities and schools in Scotland and consequently SQA commissioned CALL to research the use of Chromebooks in SQA examinations.

Our research questions were:

- How can Chromebooks be configured to meet administration and security requirements, in terms of restricting access to information sources and support tools such as spellcheckers that may not be permitted in the examination?
- How can candidates open and access Digital Question Papers in PDF in Chromebooks?
- What tools are available to help candidates access and read DQPs?
- What tools are available to help candidates type or record their answers?

The CALL team undertook desk research, testing of apps and extensions for accessing Digital Question Papers, Digital Answer Booklets, and options for typing answers, and engaged with colleagues from Google and software developers.

We found that the use of Chromebooks in examinations is not nearly as straightforward as we had expected. It is not clear how the requirements of security (e.g. disabling spellchecking) and accessibility can be met easily for candidates. Chromebooks can certainly be used by some candidates in some subjects, but they do not offer the same range of accessibility options that are available on Windows machines.

The report is due to be published in Autumn 2018. CALL will then add advice and guidance to the Adapted Digital Assessments web site.

CALL Scotland

CHROMEBOOKS
AND SQA
ASSESSMENT
ARRANGEMENTS

A report into the use Chromebooks by candidates who require Assessment Arrangements in Scottish Qualification Authority external examinations.
Paul Nisbet
July 2018
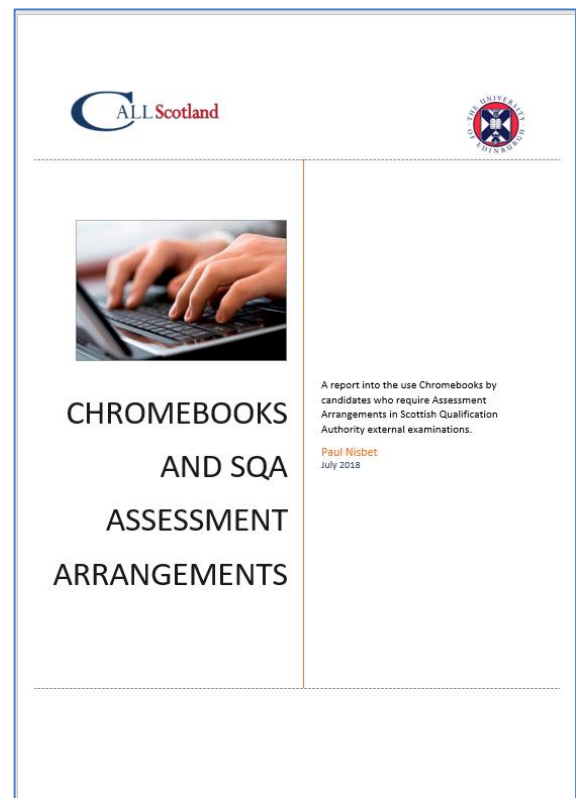
AAC Online Professional Learning Resources

Funded by: NHS Education Scotland (primarily)

OBJECTIVES

- Development of free online professional learning resource for teachers and practitioners.

OUTCOMES

The *AAC in Education* modules were made available on CALL's revamped AAC Scotland website, on 6 September 2018. Even though the resource was not completed in the 2017-18 year, we feel it is important to record the completion in this report. The resource complements the existing *Introduction to AAC* modules.

The *AAC in Education* course is an extensive learning tool and has involved a huge amount of work by Sally Millar, Craig, Robert and colleagues in ACiP:S, but we think the wait has been worth it. It offers a valuable, free, high quality and up-to-date professional learning for anyone involved in using AAC in education, not only in Scotland, but worldwide. It deserves to be marketed and advertised widely.

Module 1: Setting the Scene

Module 2: Communication Friendly Schools

Module 3: Augmentative Communication in Practice
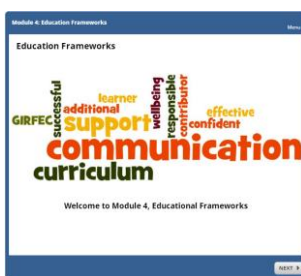
Module 4: Education Frameworks

Module 5: Supporting Teaching and Learning

Module 6: Working Together to Support AAC
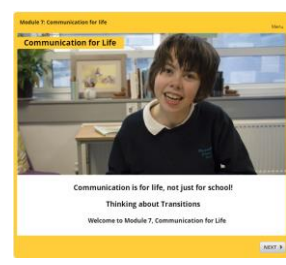
Module 7: Communication for Life

MyStudyBar 4.1

MyStudyBar 4 is a suite of free Windows applications assembled into one package, for learners with literacy difficulties. The original MyStudyBar was created by Craig Mill and Kenji Lamb of JISC; Craig and Robert have reprogrammed the toolbar and MyStudyBar 4 was launched on 30 August 2017. In the new version, ATBar has replaced the Orato text reader.

MyStudyBar has 6 groups of tools, with 11 apps:

Planning

- Xmind – mind mapping.

Reading

- T-Bar – to customise background colours.
- Vu-Bar – an onscreen ruler to read single lines of text.
- ssOverlay – coloured overlays.
- ATBar – select text to hear it read aloud (also with font and background colour options).

Writing

- Balabolka – a talking word processor with options to save text to audio.
- LetMeType – flexible word prediction - over 30 topic dictionaries including; Ancient Rome, Cell Biology, Global Warming and much more.
- Rapid Typing – learn to touch type.

Voice

- Windows Speech Recognition - speak to your computer.

Vision

- System Font Size Changer – customise font, colour settings in Windows.

Help

- Find out more on technology to support dyslexia.
- Download the Scottish voices.
- Download WordTalk.
- Ease of Access Centre.
- High Contrast display.

In the first six months following release, MyStudyBar was downloaded 3,346 times.
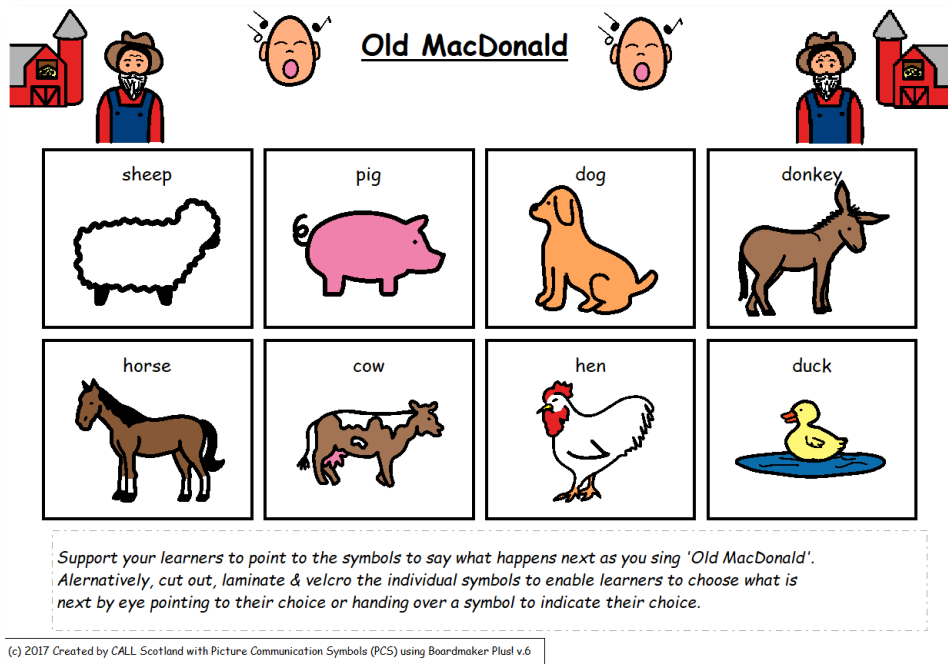
Symbols for All

Using picture symbols as visual supports can benefit learners by supporting communication and learning. Their use can also improve outcomes and raise attainment for those with identified additional support needs. Research[22] indicates that symbols can support all 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.

The Symbols for All project developed from the November 2017 CALL Course on 'Communication Friendly Schools' and from the symbolised resources which CALL Scotland produce for the Bookbug Picture Book Prize each year. The first phase of the project has focused on creating symbolised resources in each of the 8 curricular areas for Primary-aged learners.

Currently, there are over 50 print-based resources created with Picture Communication Symbols (PCS) available via the Boardmaker Online website at https://www.boardmakeronline.com/Community/GroupsHome/4676.

In order for the resources to be freely available to all, a new website is being developed. The Symbols for All website will become a national resource, offering free, high quality symbolised resources produced in a variety of symbol sets to download in PDF format. In time, practitioners will also be able to find pre-made resources for learners from age 13-18, information on creating their own bespoke symbolised resources, and case studies demonstrating their use.

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[22] Symbols in Education - https://www.widgit.com/about-symbols/booklets/Symbols-in-Education.pdf

PISA SEN Feasibility Study

In late 2017 CALL was invited by Scottish Government to participate in an international study investigating the accessibility of PISA online science assessments. The Programme for International Student Assessment is a triennial international survey which aims to evaluate education systems worldwide by testing the skills and knowledge of 15-year-old students. In 2015 over half a million students, representing 28 million 15-year-olds in 72 countries and economies, took the internationally agreed two-hour test. Students were assessed in science, mathematics, reading, collaborative problem solving and financial literacy.

Scottish Government uses PISA to compare the performance of Scottish 15-year-old pupils in maths, reading and science with learners in other countries[23].

The aim of the project was to evaluate the accessibility of modified PISA on-line assessment questions. The study was coordinated by Educational Testing Services based in Princeton, New Jersey, and included researchers from the Netherlands, Canada, Spain and the United Arab Emirates. The project began in February 2018 and CALL's task was to identify ten 15 to 17 year students who use different types of assistive technologies, and then conduct an in-depth interview while the student worked through sample online assessment questions.

The study was designed to evaluate a full range of assistive technologies and included learners with a range of additional support needs:

- two students who were blind or have significant visual impairment, and who use technologies such as screen readers or a Braille display / keyboard;
- three students who use assistive technology to support literacy - e.g. a computer text reader or literacy support tools.
- three students with low vision, who might use for example zoom / screen magnification software or high contrast display settings.
- two students with physical support needs, who use alternative keyboard, mice, switches or eye gaze for access.

The interviews and data collection were completed in June 2018.

Figure 14: An example of a PISA test question

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[23] International Surveys – PISA https://www.gov.scot/Topics/Statistics/Browse/School-Education/PISA

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
ICTSLS	ICT Support for Learning Scotland (now ATLAS)
JISC	Joint Information Systems Committee (in FE/HE)
Keycomm	Edinburgh & Lothians AAC service
LA	Local authority
MH/MHIE	Moray House/Moray House Institute of Education
NAACE	[not an acronym] ICT association for education professionals (UK)

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

SCRAN   Scottish Cultural Resource (charity and online resource base)

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)

SocITM   Society of IT Managers

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

Communication, Access, Literacy and Learning

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