Dyslexia and Technology

Dyslexia is a condition that affects the learning processes involved with reading, spelling and/or writing. It is estimated that dyslexia affects approximately 1 in 10 people with 1 in 25 being classed as severely dyslexic.

It is what we now recognise as a neurodiverse condition. Neurodiversity recognises that humans are not all the same and a neurological difference such as dyslexia is a normal variation of the human experience with a number of positive and desirable character traits and a fundamental part of a person’s identity.

This factsheet gives an overview of some of the ways that technology can be used to assist people with dyslexia. Much of this help is built into devices or available for free.
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1. What is dyslexia?

Dyslexia comes from the Greek ‘dys’ meaning ‘difficult’ and ‘lexis’ meaning ‘word’ so describes a ‘difficulty with words’. It affects the learning process involved with reading, spelling or writing (or a combination). Other activities may be affected as well – including spoken language, maths, memory and organisation. There can also be difficulties with auditory and / or visual perception. At the same time, however, dyslexics also often have enhanced problem-solving skills, excellent spatial awareness and high levels of creativity. A BBC survey has also highlighted some strong links with entrepreneurial success with 40% of the 300 self-made millionaires interviewed in relation with the programme reported as dyslexic.

Dyslexia is described as being on a continuum or spectrum, meaning that it can impact people in different ways.

The kind of challenges to education and work can include:

- reading and understanding new terminology
- taking notes in meetings, seminars and presentations
- organising information and revision
- planning and writing letters, emails, essays and reports
- maintaining a consistent quality of work
- meeting deadlines
- filling in forms
- personal organisation.

2. How can technology help?

Dyslexia cannot be ‘treated’ or ‘cured’ but many of those affected develop effective strategies for successfully managing its impact as well as recognising and making good use of the many positive aspects that a dyslexic brain gives them.

Common technologies to help with reading, spelling and writing include voice recognition programmes, text-to-speech software, and spellcheck. Mind mapping and note taking applications as well electronic calendars can assist with organisation. Adjustments to how documents and web pages appear can also make reading more comfortable.
Help with reading:

**Changing the physical appearance of text**

- select colours you find most helpful for both the text and background adjust the ‘font’ size or use the ‘zoom’ facility to increase or reduce letter size
- increase the spacing between rows – to 1.5 or 2 times
- choose a font that you are more comfortable with

Many dyslexic people are sensitive to the glare of the white background on a page, whiteboard or computer screen. This can make the reading of text much harder. The use of coloured background or coloured filters can make reading more comfortable.

Visit [www.mycomputermyway.com](http://www.mycomputermyway.com) for guidance on how to make these kinds of adjustments.

**Converting text to speech**

Text-to-speech software reads text from a computer screen and is an efficient way to get information from text without needing to read it. Text-to-speech software is also a good way to proofread as incorrect words or spellings are often more obvious when heard.

**Scanning with Optical Character Recognition**

You can use Optical Character Recognition (OCR) software to scan typed or printed documents into text that can be read by your device. There are also many apps available for smartphones that can take a picture of a page and perform OCR to create a text version of the page which can then be spoken out and/or saved.

Reading pens are about the size of a marker pen and can be used to scan over a printed document and have it read aloud through a built-in speaker or headphones. Most reading pens also have an inbuilt dictionary so you can hear the definitions of words.

Help with writing:

**Checking and correcting spellings**

Word processing programmes have tools for checking spelling and grammar and will either highlight errors as you type or will correct misspellings automatically.
You can also use voice assistants such as Siri, Cortana, Google assistant or Amazon’s ‘Alexa’ to ask how you spell words you are struggling with just by asking; “How do you spell…?”

**Predictive text**

Predictive text tries to predict or ‘guess’ what you are about to type and complete the word for you. These can be used to reduce keystrokes, save typing time and improve spelling. Smartphones use word prediction as standard, but it is a feature that is available on many other devices and in many other programs.

**Voice recognition**

Voice or speech recognition software enables you to dictate text to your computer and, with some programmes, to control how it operates. It is often a very effective and productive method for writing, correcting, editing and formatting text on a computer (and, potentially, a host of other activities) and is a good way to bypass difficulties with spelling as the software will generally do this by itself.

For more information, see the AbilityNet factsheet on *Controlling the computer with your voice*.

**Help with organising:**

**Mind-mapping software**

Organising information into well-structured documents and reports can be very challenging.

Mind-mapping allows ideas to be jotted down quickly and visually without initially worrying about structure or order. Links between the ideas can then be added to give a visual structure to the connections between themes and ideas, which can also help with memory.

Mind maps can either be drawn by hand or by using specialist software.

Most mind mapping software offers the choice to export into a variety of programs such as Word, PowerPoint, web page (HTML) or pdf.
How important is training?

Whilst many people are able to access what they need from software without training, this can mean that some tools, and understanding about more efficient workflows, remain undiscovered.

Training tends to be most effective when it is spread over time and geared towards the specific needs of the individual, focusing on their particular tasks, abilities and challenges. Periodic training help users to practice and consolidate new skills in between coaching sessions.

How can employers / education providers help?

Under the Equality Act, employers and education providers have a duty to ensure that disabled employees and students are able to perform effectively. You are disabled under the act if you have an impairment that has a ‘substantial’ and ‘long-term’ effect on your ability to do normal daily activities.

To meet the requirements of the Equality Act, employers and education providers may need to make ‘reasonable adjustments’ to ensure that disabled people enjoy equal access to perform successfully in their chosen career or course.

Any adjustments required do not necessarily need to cost a lot of money. What may be reasonable would depend, among other factors, on the size and nature of the organisation. This could include:

- introducing some changes to work organisation / deadlines
- providing personal training and support
- making use of relevant assistive technologies.

Given the prevalence of dyslexia, making such reasonable adjustments in your workforce could help to increase productivity through improved staff motivation, loyalty and efficiency, along with reduced stress, sick leave and staff turnover. From an Education provider standpoint, making reasonable adjustments could help to improve student engagement, retention and outcomes.

Without appropriate help and support, dyslexia could prevent individuals from gaining qualifications, accessing training or applying for promotions. Furthermore, employers or education providers who fail to make reasonable adjustments for disabled people are vulnerable to claims of discrimination under the Equality Act.
3. Useful Contacts

British Dyslexia Association
www.bdadyslexia.org.uk

CALL Scotland
www.callscotland.org.uk/information/dyslexia/

Dyslexia Action
www.dyslexiaaction.org.uk

Dyslexia Association
www.dyslexia.uk.net

4. How can AbilityNet help you?

AbilityNet is a leading authority on accessibility and assistive technologies. We can assist individuals, charities and employers by providing:

- advice and information
- workplace assessments
- consultancy services
- DSA / student assessments

My Computer My Way

*My Computer My Way* is a free, interactive tool developed by AbilityNet that makes any computer, tablet and smartphone easier to use.

It can help you ensure that your equipment is set up the best way possible to suit your particular needs. It covers all the accessibility features built into your computer, laptop, Chromebook, tablet or smartphone, and all the major operating systems – Windows, MacOS, iOS, Chrome OS and Android.

*My Computer My Way* shows you how to adjust your computer to assist with:

- vision – help seeing your screen
- hearing – help with sounds and audio
- motor – help with your keyboard, mouse and mobile device
- cognitive – help with reading, writing and understanding

You can use it for free at www.mycomputermyway.com
Workplace Assessment Service

When it comes to technology solutions, one size does not fit all. We believe that each case is unique and that individual attention is vital. Our Workplace Assessment Service integrates personal, technical and organisational considerations to arrive at sound and realistic suggestions, documented in a report.

To find out more about AbilityNet’s Workplace Assessment Service, please visit www.abilitynet.org.uk/workplace or call 01926 465 247.

Consultancy services

Our expert consultants are also available to assist employers who wish to take a broad, longer-term view in designing computer systems and associated work processes. Our experience and expertise can help you to achieve safe, healthy and productive working procedures.

To find out more about AbilityNet’s consultancy services, call 01962 465 247 or email sales@abilitynet.org.uk

DSA / Student assessments

If you have a disability and are in higher or further education, you may qualify for a Disabled Students Allowance (DSA). If you are eligible you will receive a free assessment and may qualify for a grant towards any adjustments that you might require. This could help with the costs of buying a new computer or any other specialist equipment you might need.

For information, please visit www.abilitynet.org.uk/dsa or call 01926 464 095.
5. About AbilityNet

AbilityNet is the national charity that supports people with any disability, of any age. Our specialist services help disabled people to use computers and the internet to improve their lives, whether at work, at home or in education. We offer:

- free advice and information
- accessibility services
- DSA/student assessments
- workplace assessments
- IT help at home
- IT volunteers.

Support us

Visit www.abilitynet.org.uk/donate to learn how you can support our work.

Contact us

- Telephone 0800 269 545
- Email enquiries@abilitynet.org.uk
- Web: www.abilitynet.org.uk

We are always keen to help share knowledge about accessibility and assistive technology. If you have any questions about how you may use the contents of this factsheet, please contact us at AbilityNet and we will do all we can to help.

6. Copyright information

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