



AbilityNet Factsheet – September 2017

Learning difficulties and computing

Computer technology can help improve the quality of life for people with a broad range of learning difficulties.

This factsheet outlines some of the ways that assistive technology addresses the varied needs of people with such problems. It includes summary details of adaptations to computer hardware, as well as introducing the growing range of specialist software now available to help people with learning difficulties to learn, communicate and participate more successfully.

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1. What do we mean by learning difficulties or learning disabilities?

The distinction between learning difficulties and learning disabilities continues to be a subject for debate and they are often used interchangeably, especially in education, health and social care settings.

That said, it is broadly accepted that a learning disability (which may be mild, moderate or severe) involves:

- impaired intelligence – with a significantly reduced ability to understand new or complex information, or to learn new skills
- impaired social functioning – with a reduced ability to cope independently
- early onset – starting before adulthood, with a lasting effect on development.

The term 'learning difficulty' is more often used (especially in educational settings) to refer to individuals who have specific problems with learning as a result of medical, emotional or language problems – but no significant general impairment in intelligence. This includes people who have 'specific learning difficulties' (such as attention deficit hyperactivity disorder, dyslexia or dyspraxia), as well as people with an acquired learning difficulty – for example, as a result of a head injury or a stroke.

Confusion around the terms also arises because some people with learning disabilities prefer the term learning difficulties.

For simplicity, we use 'learning difficulties' here as an overarching term that also covers learning disabilities, with a focus on the computing needs of individuals who may have difficulties relating to:

- memory
- reading and/or writing
- visual and/or auditory processing
- motor abilities
- organisation and time management
- screening out extraneous visual or auditory stimuli
- sensory overload.

2. Adapting the computer

Choosing the right input and output devices is as important as choosing the most appropriate software to use.

There are many simple adjustments you can make so that your computing equipment is easier to use if you have cognitive problems, motor issues, vision impairment or hearing difficulties.

My Computer My Way is an easy to use, interactive tool developed by AbilityNet to help you achieve your optimum setup and take advantage of the accessibility features built into your computer, laptop, tablet or smartphone. More details are given below.

3. Alternative equipment

An extensive range of alternative devices is available that can greatly assist anyone who finds it difficult to use standard equipment. These are outlined below, and are also covered in more detail in our separate factsheet on *Keyboard and mouse alternatives and adaptations*.

Keyboard alternatives

The standard black and white, QWERTY keyboard has over 100 small keys close together. This can be confusing or intimidating to some users, or just feel like an invitation to fiddle.

Alternatives to the standard keyboard that can be useful to some people with learning difficulties include:

- simplified keyboards, like the *Big Keys LX*. This has a smaller number of larger keys, available in colour or with high contrast keys, with an alphabetic or QWERTY layout.
- specialist keyboards, including the *Helpikeys*. This can be customised using five available overlays or by programming additional personalised layouts.

Pointing devices

Some people with learning difficulties find it difficult to relate the movement of their hand on a mouse to the movement of the cursor on a screen. In these instances, a trackball mouse, like the *BIGtrack Mouse* (with switches), or a joystick may be easier to use.



Another potential alternative is a touch screen. This offers a more direct approach for users who may find it easier to point directly at a monitor with a touch-sensitive surface and operate much like a tablet.



In addition to touch monitors, it is also possible to fit a 'plug and play' touch window – such as the *TouchGENiE* – over your existing display to convert this into a touch screen.

Switches

For someone who is physically or cognitively unable to use any keyboard or pointing device, then a basic starting point may be to use switch input. A switch is simply a button which, when activated, sends a signal to the computer. This signal can then be used to drive various software packages.

Switches, like the *Buddy Button*, come in a variety of shapes and sizes and can be operated by any controlled movement of the body.



Switches work particularly well with 'cause and effect' software and programs that require simple choices but can also be used to fully control a computer. A small switch interface box is needed to connect a switch to a computer, although some 'all-in-one' and wireless options are now available.

Screen output

Clear outputs are often key to the effective use of computers by people with learning difficulties. Bright, colourful and active screens can be helpful, although it is important not to make them too cluttered. Larger monitors displaying large text can also help, as can working in a darkened room in a darkened room (to intensify the image display).

Where appropriate, the sound features should be fully utilised to make the most of the speech, music and other sounds available from applications. Ensuring that the sounds are heard in response to the user's actions helps to reinforce the cause and effect experience. Also, placing any speakers as close to the monitor as possible may help concentrate the user's attention to one area and reduce possible distraction.

4. Useful software

Software is available for a whole range of needs. This includes very simple programs for stimulation, to encourage vocalization and to introduce cause and effect. More advanced programs are available to address learning difficulties with numeracy and literacy, memory and cognition.

As well as being easy to use, it is important that the software is stimulating and motivating – that it's able to grab and hold the user's attention. Colours, pictures, animation, large text, sounds and speech can all help. The software should also have appropriate rewards for good work and not be discouraging when the wrong answer is given.

The lists below are intended as helpful examples of the diverse software products available grouped under the headings motivation, communication, literacy and numeracy, life skills, and memory and cognition.

Motivation

- Big Bang
- Chooselt! Maker3
- HelpKidzLearn Games and Activities
- Switch Skills

Communication

- Call Talk
- Communicate: By Choice

- Communicate: SymWriter 2
- Grid 3
- InPrint 3
- The Grid 2
- Widgit Online @ Home

Literacy and numeracy

- Abrakadabra
- Bungalow
- Clicker7
- Swap / Fix Games
- Penfriend XL
- ClaroRead
- Read&Write
- Write Online @ Home

Life skills

- Coping with Chaos
- Let's Go to Town
- Life Skills: 24 Hours a Day
- Out and About:1 Plus: The Living Community
- Out and About 1 Plus: The Living Community
- Out and About 2 Plus: Around the Home
- Out and About 3: Gadgets at Home
- Out and About 4: Money & Finance
- Personal Success
- Streetwise – Smart Moves

Memory and cognition

- Bungalow
- Mastering Memory
- React2
- Timely Reminders

5. What about tablets?

The touch screen technology of tablet computers can make them suitable devices for people with learning difficulties. Tablet versions are available for much of the above software and countless accessible apps – including many

designed specifically for people with learning difficulties – can be downloaded from Google Play (for Android devices) and or the App Store (for Apple devices).

Frames, like the *Big Grips Frame* or the *GoNow Case* for iPads, can also help to make the tablet easier to hold while offering additional protection from slips and falls.

6. Suppliers

Specialist suppliers

Most of the software titles and hardware referenced in this factsheet are available from specialist suppliers, including:

- Adapt-IT – www.adapt-it.co.uk (0208 736 0542)
- Inclusive Technology – www.inclusive.co.uk (01457 819790)

Software producers

Producer	Contact details
Claro Software	www.clarosoftware.com sales@clarosoftware.com 01772 977888
Crick Software – producers of Clicker software, Superkeys, Symbol sets and Write Online	www.cricksoft.com info@cricksoft.com 01604 671691
Propeller – titles include <i>Bungalow</i> and <i>React2</i>	www.propellertherapy.com info@propeller.net 01721 725875
Smartbox – producers of Grid software and sets	www.thinksmartbox.com info@thinksmartbox.com 01684 578868
Text Help – titles include Read&Write	www.texthelp.com info@texthelp.com 028 9442 8105

Producer	Contact details
Gamz – producers of Swap / Fix Card Games	www.gamzuk.com support@gamzuk.com 01684 562158
Penfriend Ltd – producers of Penfriend XL	www.penfriend.biz info@penfriend.biz 0131 668 2000
Shiny Learning – producers of special needs software and apps for all ages	www.shinylearning.co.uk info@shinylearning.co.uk 01457 778365
Widgit – producers of InPrint 3, SymWriter 2, Widgit Online and Widgit Symbols	www.widgit.com info@widgit.com 01926 333680

7. How important is training and support?

People with learning difficulties may only realise the full potential of any of the solutions outlined in this factsheet if they receive specialist assessment and support. One size does not fit all, and each person's abilities and needs are unique.

Getting the most out of assistive technology also often requires receiving adequate training and having sufficient opportunity to become familiar and proficient with the products. Generally, training is most effective when it is spread over time and geared towards individual needs.

8. Other useful resources

My Computer My Way

It is essential that your computing equipment is set up the best way possible to suit your particular needs, especially if you are affected by some kind of impairment. *My Computer My Way* can help you achieve your optimum setup. It is a free, interactive tool developed by AbilityNet that makes any computer, tablet and smartphone easier to use.



You can use it for free at www.mycomputermyway.com

AbilityNet factsheets

AbilityNet's factsheets provide practical advice about specific conditions, and the hardware and software adaptations that can help people of any age use computers to fulfil their potential. Relevant topics covered include:

- *Autism and computing*
- *Dyslexia and computing*
- *Keyboard and mouse alternatives and adaptations*

All these resources are free to download from www.abilitynet.org.uk/factsheets

9. About AbilityNet

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

Digital Accessibility Services

The AbilityNet team of expert consultants and user testers help businesses, charities and public bodies ensure that their websites, apps and other digital services are usable, accessible and comply with current legislation.

[Find out more about our Accessibility Services](#)

Workplace Services

Even small adjustments to equipment and work patterns can transform the lives of people with disabilities and have a profound impact on well-being and productivity. Our team of expert assessors identify the Reasonable Adjustments that help employees achieve their full potential.

[Read more about our Workplace Services](#)

DSA/Students Services

Technology can help disabled people of all ages succeed in education. AbilityNet has a network of DSA Assessment Centres and is one of the largest providers of specialist assessments to HE students in the UK.

[Find out more about our DSA/Students Services](#)

Free IT Support for disabled and older people at home

AbilityNet has a national network of disclosure checked volunteers offering support to disabled people and older people. Our volunteers have relevant IT skills to help people get the most from computer systems, laptops, tablets and even some smartphones.

[Find out more about our IT Can help Volunteers](#)

Expert Resources

Our free expert resources have been produced for people with any disability of any age, as well as their employers, family, friends, colleagues and anyone else with an interest in helping disabled people achieve their goals.

[Find out more about our expert resources](#)

Call the Helpline

Call our free Helpline on 0800 269 545 to ask anything about how computers can be adapted to meet the needs of disabled people.

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.

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