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Learning Difficulties and Computing

Learning difficulties covers a wide and diverse group of people. We use the term to include those people with a learning disability from birth, as well as people with an acquired learning difficulty, e.g. as a result of a head injury or stroke. Specific learning difficulties, such as dyslexia, is covered on a separate factsheet called 'Dyslexia and Computing'.

In order to establish whether a computer would be useful for the user, you need to think what you want to achieve with it – be led by their needs, not by the technology.

Accessing the Computer

Choosing the right input and output devices is as important as choosing the right software to use. There are a range of adaptations and alternative devices that may be of use for people who find the standard keyboard and mouse difficult. Some access alternatives have been mentioned below but we also have a more detailed factsheet on Keyboard and Mouse Alternatives.

Pointing Devices

Some people with learning difficulties find it hard to relate the movement of their hand on the mouse to the movement of the cursor on the screen.

In these instances, it may be that a trackball or a joystick is easier to use – see our factsheet on Keyboard and Mouse Alternatives for more information.



Traxsys Joystick Plus

A more direct approach is a touch screen. Some people may find it easier to point to things and this can be applied to using the computer. Touch screens act in the same way as a standard screen but have sensitive surfaces. It is also possible to put a "Touch Window" over the front of a standard monitor to give the same function.

Product	Supplier
Touch screens	Granada Learning, Inclusive Technology, Tyco Electronics, 3M Touch Systems, Keytools, TechReady
Touch Window	Granada Learning
Software packages for use with touchscreens	Granada Learning, Don Johnston, Inclusive Technology

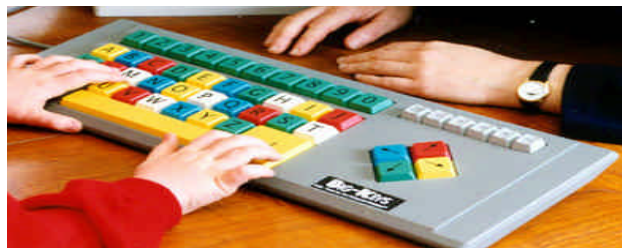
Keyboard

A standard keyboard has over 100 keys and to some users this can appear confusing, intimidating or can be an invitation to fiddle. The keys are fairly small and close together, usually in black and white/beige, uppercase and in a QWERTY layout.

There are many alternatives to the standard keyboard and these are detailed more fully in our Keyboard and Mouse Alternatives factsheet. However some ideas are:

- Keytop stickers – these are available in a variety of colours and in upper / lowercase to stick onto the keys.

- Simplified keyboards – especially the ‘Big Keys Plus’. The keyboard is simplified with just the keys necessary for writing. The keys are large with an audible click. Available in alphabetic / QWERTY and black and white / multi-coloured.



Big Keys Plus

- Lowercase keyboards – as a standard keyboard but with lowercase letters.
- Overlay keyboards – These are touch sensitive membranes with keyboard overlays which slide over the top and determine the functions of the keyboard. Overlays can be customised to have larger keys, less clutter, bigger gaps between keys and exclude unnecessary keys. This means they can be set up to whatever the user needs.

In addition to just letters, overlay keyboards can also work with whole words or pictures. This is why they can be particularly good for people with learning difficulties.



Intellikeys

Product	Supplier
Keytop stickers	TechReady, Keytools, Inclusive Technology, Granada Learning
Simplified keyboards	Keytools, Granada Learning, Inclusive Technology, Don Johnston
Lowercase keyboards	Inclusive Technology, Granada Learning
Overlay keyboards	Keytools, Granada Learning, Don Johnston

Switches

If the user 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 come in a variety of shapes and sizes and can be operated by any controlled movement of the body.

Switches work well with cause and effect software and programs that require simple choices. A small switch interface box is needed to connect a switch to a computer.



Buddy buttons

Product	Supplier
Switches and switch interfaces	Granada Learning, Don Johnston, Inclusive Technology, Keytools, QED, TechReady

Output

Effective output from the computer is often key to effective use of computers by people with learning difficulties. Bright, colourful and active screens can be helpful – though take care not to make them too cluttered. Larger text and large monitors help and it is often suggested that to intensify the image it may be good to work in a darkened room.

The sound facilities on computers can be utilised to the full – speech, sounds and music are available from many applications. To heighten the ‘cause and effect’ experience, the sounds should be in response to the user’s actions. Also, if the speakers are as close to the monitor as possible it will help concentrate the user’s attention to one area and reduce possible distraction.

Software

Once access to the computer has been established, the next step is to choose appropriate software to run on the computer. Software is available for a whole range of needs – these include very simple programs for stimulation, to encourage vocalisation and switch and mouse programs which introduce ‘cause and effect’. More advanced programs are available for numeracy and literacy, memory and cognition. You may need to make sure that the software is age appropriate – though this may not be necessary for everyone.

The software needs to be stimulating and motivating and 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 and attractive rewards for good work and not be discouraging when the wrong answer is given.

It is recommended that software is chosen by people working with the individual such as family, carers and teachers. A good approach is to have a look through the catalogues of the suppliers of the specialist technology, these tend to be very colourful and give comprehensive clear descriptions of the software. The addresses for these suppliers are in our Suppliers factsheet.

The following tables detail some examples of software products that are available. The software has been grouped into the areas of motivation, life skills, literacy and memory & cognition.

Motivation

Product	Supplier
Basic switch games	Inclusive Technology, Widgit, Don Johnston, Granada Learning
Music Factory	Widgit
Switch Connection	Sensory Software, Inclusive Technology
Gamz Jigsaw	Gamz
SwitchIt! Patterns	Inclusive Technology
Doodle Plus	Granada Learning
Drumkit	Inclusive Technology
Disco	Inclusive Technology
K-1	Inclusive Technology
Strategy Games	GSP Ltd

Life Skills

Product	Supplier
About Out and About Level 1	Granada Learning
Lifeskills: Smart Spender	Granada Learning
Lifeskills: 24 Hours A Day	Inclusive Technology
Streetwise – Smart Moves	Learning & Teaching Scotland
SwitchIt! Maker	Inclusive Technology
Traveller's Cheque	Learning & Teaching Scotland
Lifeskills: Time & Money	Inclusive Technology

Literacy

Product	Supplier
Clicker	Crick Software, Granada Learning, Inclusive Technology
Writing with Symbols 2000	Widgit Software
ScreenReader	Texthelp
Penfriend	Inclusive Technology, Crick Software
ClozePro	Crick Software
Inter_Comm	Widgit Software
Wordbar	Crick Software, Granada Learning
Swap/Fix card games	Gamz
Bungalow	Propeller Multimedia

Memory and Cognition

Product	Supplier
React	Propeller Multimedia
Signs and Symbols	Granada Learning
Mastering Memory	CALSC
ColorCards	Inclusive Technology
Timely Reminders	REM, CALSC
Wordbar	Crick Software, Granada Learning
Swap/Fix card games	Gamz

Useful Organisations

ACE Centre (Aiding Communication in Education)

Specialist in the needs of children with physical and communication difficulties. Offer assessments and a range of other services.

ACE Centre, 92 Windmill Road
 Headington, Oxford OX3 7DR
 Tel: 01865 759800
 Web: www.ace-centre.org.uk

ACE Centre North, Broadbent Road
 Watersheddings, Oldham OL1 4HU
 Tel: 0161 627 1358
 Web: www.ace-north.org.uk

BECTa (British Educational Communications & Technology Agency)

is the Government's lead agency on the use of technology in education.

BECTa, Milburn Hill Road, Science Park, Coventry CV4 7JJ
 Tel: 024 7641 6994
 Web: www.becta.org.uk

British Institute of Learning Disabilities (BILD)

BILD is a charity that provides information, publications and training and consultancy services about learning disabilities for organisations and individuals.

BILD, Wolverhampton Road, Kidderminster, Worcestershire DY10 3PP
 Tel: 01562 723010
 Web: www.bild.org.uk

National Association for Special Educational Needs (NASEN)

This organisation promotes the education, training, advancement and development of people with special educational needs.

NASEN, 4-5 Amber Business Village, Amber Close, Amington, Tamworth, Staffordshire B77 4RP
 Tel: 01827 311 500
 Web: www.nasen.org.uk

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