Improving the accessibility of classroom ICT for all pupils

Using the checklists

The following checklists are designed to help you work out how to make classroom ICT accessible to pupils with additional support needs and disabilities as well as others in the class.

If ICT is to be used to promote inclusion the equipment needs to be accessible to all learners in the class. Access features are already built into the operating systems of modern computers and into software applications. Often this means that a range of users can access programs without having to add any extra software or hardware. The accessibility options mean that the computer can be modified to suit the user's individual needs. For example, the font can be enlarged making it easier for pupils to see the letters on screen, or the computer can be set to avoid sending strings of unwanted characters because the pupil can't get his or her fingers off the keys fast enough

Addressing these problems will benefit all pupils, not just those with additional support needs.

Checklist of access problems and some solutions

In the left-hand column of the table we list a few of the most common problems disabled pupils experience using ICT. Possible solutions are in the right-hand column. We begin by indicating what to check if you think you might need to change anything to do with the mouse, display, or other characteristics.

First thing to check

The first thing is to decide if the pupil needs changes to be made to the whole computer system or just to individual program(s).

- Changes to the whole computer system would be needed if, for example, the pupil: can't see the mouse pointer or the icons on the screen; finds the computer desktop too 'cluttered'; can't control the mouse speed or finds it difficult to double click.
- Changes when using individual programs would be needed if for example the pupil finds the word processor font too small, too faint, confusing, or not well enough contrasted with the screen 'page'.

Changes needed to the whole computer system
See over.

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Problem	Possible solutions
Pupil can't see the font in the whole computer system e.g. can't read the menubar or the names of icons are too small.	Use the Display Control Panels to change the font and size, the colours of foreground / background for the whole computer system. High Contrast settings are one of the options. Set a better contrast between the text and the background by changing their colours or selecting the computer's High Contrast settings. Use text-to-speech facility to give auditory support.
The cursor or screen pointer is too difficult for the pupil to locate.	Change to a larger / thicker pointer, and / or add a trail to the screen pointer using the Mouse Control Panel.
The glare on the screen from reflected light is uncomfortable.	Re-position the monitor or the pupil, especially making sure that light doesn't shine straight onto the monitor. Alter the lighting conditions.
The pupil complains of fatigue when working at the computer.	Check the heights of the chair, table, monitor, keyboard and mouse to make sure they are appropriate for the size of the student, re-arranging or re-positioning if necessary. Tilt the monitor to a better angle if it is adjustable. Place a wrist support in front of the keyboard. Use a different keyboard / mouse. Check use and ensure pupil is not working at the machine too long.
The pointer moves too quickly across the screen.	Change the mouse speed via the Mouse Control Panel.
Pupil can't double-click the mouse button fast enough.	Increase the setting for the time allowed via the Mouse Control Panel. Use a programmable mouse or roller ball to give a double-click when the button is pressed.
It is difficult for the pupil to hold down the mouse button and move it at the same time.	Turn on the click-lock access facility. Use a mouse or tracker ball that has a locking facility. Use a separate switch plugged into the mouse, trackerball, or via a switch interface.
Moving the mouse around the table to navigate is causing difficulty.	Use a different mouse mat to slow down or speed up mouse movement. Use a tracker ball, joystick or other pointing device rather than a mouse.
Strings of unwanted characters appear because pupil can't get fingers off the keys fast enough.	Use the Keyboard Control Panel or Accessibility Options Control Panel to switch off or slow down the keyboard's auto-repeat setting.
I can't make any of the changes because none of the Control Panels listed is available.	If the computer is on a network it is very likely that the Control Panels are 'hidden'. In order to make changes you (or someone else) needs to be able to open the Control Panels folder. How to tell if you can access the Control Panels folder: if you can click on Start then Control Panels (you might have to click Start > Settings) and the Control Panels folder opens up, you should be able

	to make the changes.
	If you can't access the Control Panels speak to the school or local authority ICT contact and explain what needs to be changed.
After the computer is re-started it seems to lose the new settings for mouse, pointer, display and others.	Create a User Profile. You will need to have the right level of privileges to do this, or speak to a school or local authority ICT contact (see above).

Changes needed to individual program(s)

Problem	Possible solutions
Pupil can't see the text in the word processor or other program.	Change the font size in the word processor. Change the font style in the word processor e.g. to bold. Set a better contrast between the text and the background by changing their colours. Use a word processor with a text-to-speech facility so that the pupil can get auditory support e.g. Textease with speech.
The keyboard is too complicated, with lots of keys that the pupil doesn't need.	Put a mask over the keyboard so that only the required letters are visible. Use a simplified keyboard or an overlay keyboard with a simple 'qwerty' keyboard overlay on it.
The keyboard has keys written in upper case and the pupil has difficulty recognising them.	Stick lowercase letters over the letter keys to make them stand out. Use an overlay keyboard and make a lowercase 'qwerty' keyboard overlay for it.
Typing every letter is slow and laborious for the pupil.	Teach keyboard awareness with a typing tutor program. Provide ready-made word banks of the key vocabulary the pupil will need for an activity, either on screen or on an overlay keyboard. Use a word predictor that runs alongside the word processor. Use paired writing with an adult or peer to share the task of scribing.
The pupil uses text-to-speech software but it distracts others.	Use headphones.
A pupil can see the font on screen but has difficulty reading the printout.	Change to a larger font before printing out. Use an enlarging photocopier.

Where can you find out more about how to make these changes?

CALL Centre downloads and Quick Guides

A number of Quick Guides (step-by-step instructions) are available from the CALL Centre website, including ones on how to adjust control panels and many others.

How to…	CALL Quick Guide
…decide what adjustments to make to the keyboard for pupils with ASN	Accessing the Keyboard http://callcentre.education.ed.ac.uk/downloads/quickguides/assessment/keyboardassessment.pdf
…decide what adjustments to make to the mouse for pupils with ASN	Accessing the Mouse http://callcentre.education.ed.ac.uk/downloads/quickguides/assessment/mouseassessment.pdf
…adjust Control Panels for Windows	Adjusting Windows Control Panel Options http://callcentre.education.ed.ac.uk/downloads/quickguides/pc/controlpanel.pdf
…make changes to the Windows Desktop appearance	Organising the PC desktop http://callcentre.education.ed.ac.uk/downloads/quickguides/pc/organising.pdf
…adjust Control Panels for the Macintosh	Mac Easy Access http://callcentre.education.ed.ac.uk/downloads/quickguides/mac/macaccess.pdf
…make changes to the Macintosh Desktop	Organising the Mac desktop http://callcentre.education.ed.ac.uk/downloads/quickguides/mac/organisingmac.pdf
…find detailed information on special keyboards and peripherals etc.	See: Special Access Technology, downloadable from: http://callcentre.education.ed.ac.uk/About_CALL/Publications_CAA/Books_CAB/SAT_CAC/sat_cac.html

CALL Centre

See above as well as the accompanying ICT Advice Sheet *Strategies to improve accessibility for disabled children and young people: planning duties and ICT*.

AbilityNet

Fact sheets cover aspects of access technology including *Keyboard shortcuts in Windows*, *Keyboard and mouse alternatives*, *Single-handed keyboard use* and *Tweaking the web*. http://www.abilitynet.co.uk/content/factsheets/Factsheets.htm

Skill sheets cover specific techniques such as adapting Windows and Microsoft Word to suit individual users. http://www.abilitynet.co.uk/content/factsheets/Factsheets.htm

ACE Centre Trust

A resource list from ACE Centre North with detailed information on access resources.
http://www.ace-north.org.uk/resources/resg.htm

Importance of good seating from ACE Centre North explains how to ensure students are seated comfortably.
http://www.ace-north.org.uk/resources/resj.htm

Keyboards and keyboard access from ACE Centre Trust outlines the various types of keyboard and typing program available, and examines a few add-ons that could open up a 'conventional' keyboard for use with learners who have difficulties accessing ICT.
http://www.ace-centre.org.uk/html/resources/keyboards/resusekb.html

Making Windows work for you is an information sheet from the ACE Centre North showing how to make adjustments to the settings and options built into the Windows operating system.
http://www.ace-centre.org.uk/html/resources/keyboards/resusekb.html

British Dyslexia Association

The BDA's **Keyboard skills and touch-typing** provides information on these topics.
http://www.bda-dyslexia.org.uk/d08cmptr/c03keybd.htm