



Include ICT

See and hear

Using ICT to support the inclusion of deaf pupils in mainstream schools

Background and introduction

Including deaf children in mainstream education

The move towards inclusive practice has encouraged educationalists to look beyond traditional teaching methods and identify new approaches to successfully integrate and educate pupils with special educational needs (SEN) in mainstream classes.

The Government's strategy for educating children with SEN, *Removing barriers to achievement*, recognises the role that ICT can play in helping to overcome some of the obstacles that prevent children with SEN from accessing the curriculum and becoming full participants in the life of the school. In the document, the Government states its intention to:

'encourage through our ICT in Schools and E-learning strategies the wider use of ICT to improve access to education for children with SEN and disabilities.'

Including pupils who are deaf or hard of hearing within a mainstream class requires careful thought, preparation and attention to individual needs. Factors that need to be taken into account include, along with numerous other considerations: the pupils' degree of deafness, whether or not they use hearing aids, their preferred method of communication, their literacy level, and what input is available from support workers and communicators.

Personal technologies such as loop systems, sound field systems and personal hearing aids can help in very specific ways by, for example, significantly improving the range and/or quality of sounds perceived by some individuals in a classroom setting. Wider technologies can help with the presentation of curriculum

Case studies

Reigate Primary School

Reigate Primary School is situated on the outskirts of Derby, and has around 400 pupils. It is designated as an Enhanced Resource Facility with 30 places for deaf children with moderate to profound hearing loss. The children are educated within mainstream nursery and primary classes, and supported by teachers of the deaf, teaching assistants of the deaf, SEN assistants and two full-time deaf-communication support workers.



information in more appropriate ways – for instance, in a more visual style, which is less text heavy and less reliant on hearing the spoken word – and enable pupils with hearing impairment to participate fully in lessons.

About this booklet

This booklet is one in a series of publications called 'Include ICT' that examine the ways in which schools and other organisations are developing inclusive learning and teaching practices. It explores ways in which ICT may be used to support deaf or hard-of-hearing pupils within a mainstream class. While the main focus is on including pupils with hearing difficulties, there are issues that will be familiar across the range of SEN and disabilities, and uses of ICT that may address challenges faced by many children.

The case studies look at two mainstream schools – one primary and one secondary – that have developed effective approaches to meeting the needs of pupils with hearing difficulties. At both schools, teachers consider access to information in the context of the deaf pupils' communication needs and preferences.

How to use the materials

The booklet is accompanied by a CD-ROM containing video clips that illustrate the key issues. This CD may be viewed in conjunction with the booklet, if you wish, or the booklet alone may be used.

The material can be used by teachers in mainstream schools and special schools, special educational needs co-ordinators and LEAs and others who are leading discussion and training in this field.



Deaf pupils in each year are taught together in one class and withdrawn for specific small-group and individual teaching sessions. The curriculum is delivered through British Sign Language, Sign-Supported English and spoken English, taking into account an individual child's preferred mode of communication. Teachers follow the National Curriculum, but are aware of the differentiation required to meet the different communication needs and learning styles of the pupils.

The school uses technology to enable learning in a much more visual way than could be achieved without it. This is of particular benefit to the deaf children, but also motivates and informs others. The methods employed deny no-one access to the information, and widen participation.

An interactive whiteboard (or a computer used in conjunction with a data projector and screen) allows the clear presentation of information for the whole class. The teachers prepare the materials in advance, which removes the need to write, erase and rewrite during the lesson. Teachers are able to face the class while delivering the lesson, which helps lip-readers. Alternatively a signing box can be incorporated into some software (such as PowerPoint) with little effort, thus providing valuable signed information alongside text.

Cottenham Village College

Cottenham Village College is a mixed comprehensive school for pupils aged 11–16. There are 902 pupils on the roll, making it larger than many other comprehensive schools without a sixth form. The school has an above-average number of pupils with SEN (206 pupils). Of these pupils, 56 have statements of SEN, which is well above the national average.

The school makes very good use of external agencies and adopts a creative and flexible approach to the curricular needs of individual pupils. For pupils with hearing impairment, in-class support by teachers and assistants is effective, and pupils also receive further assistance when withdrawn from lessons for individual tuition. Teachers are sensitive to the pupils' needs, while providing a clear focus and a sense of purpose.



In order to ensure that deaf pupils fully participate in lessons and in any interactive activities, teachers ensure that deaf pupils get all of the information that is given to the rest of the class – including comments and contributions from other class members – and that any delay in them getting this information is taken into account.

At Cottenham Village College, teachers are encouraged to consider the pace of their lessons to ensure that learning moves forward and that pupils do not become bored. A lesson that is well paced for the majority of pupils may not be appropriately paced for a deaf pupil, who may require more time to assimilate information and learn the associated language. Electronic delivery of information allows for different parts of a lesson to be replayed to revise specific points – teaching therefore becomes a less linear process. Teachers also provide differentiated, accessible resources. Electronic worksheets are easily modified to address the needs of specific pupils. A teacher provides a deaf pupil's support worker with the original worksheet, which can then be personalised. Deaf pupils may need to follow up lessons outside the classroom or take information home. Allowing pupils to work at their own pace and develop independent learning skills is vital, and it is motivating to be in control of one's own learning.

Teachers also consider the literacy issues arising from any language delay associated with deafness. A severe language delay may mean that age-appropriate subject matter is rendered inaccessible because of the language levels of the text. Using ICT means that text with simple sentences, appropriate font size and style, use of colour and visual clues to support learning can be saved and used on screen or in hard copy. Deaf pupils will generally learn better when they are able first to visualise a concept – then the text and/or signed support will help them to internalise it.



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The curriculum is delivered through British Sign Language, Sign-Supported English and spoken English.



Key issues

If you are reading this booklet in conjunction with viewing the video clips on the CD, you may wish to watch the videos now, to see how they illustrate the points below.

○ Consider communication

The physical environment is important to deaf children. Pupils who rely on signed support to access the curriculum need other visual reference points to help them learn. Quality teaching supported by creative use of technology enhances communication.

When working interactively with information on a whiteboard, teachers at Reigate Primary know that when a hearing child goes to the front of the class, that child does not have to see the teacher to absorb instructions or comments. The deaf child, however, may need to see the teacher or communication support worker in order to access valuable information, and this can impact upon the pupil's willingness to be involved.

○ Enable participation

Visual props enhance learning by speeding up and aiding comprehension. Supplementing text with visual clues benefits all, but is essential for deaf pupils.

Use of ICT to supplement less-visual media at Reigate Primary means that deaf pupils feel included in the class. The resulting confidence of children makes them keen to be involved and they happily volunteer to take part in interactive tasks.

Using a wireless tablet, deaf pupils at Cottenham Village College are able to interact with what is on screen without losing sight of the teacher. This has the added advantage that the glare and shadow of the projector are no longer issues.

○ Consider deaf pupils' literacy levels

All children need to develop literacy skills, and ICT can support them in achieving this. It is

important to consider the literacy issues arising from any language delay associated with deafness – the language used in subject matter must be appropriate for the literacy levels of the pupils.

Deaf pupils at both featured schools are helped to visualise a concept before using text and/or signed support. Digital cameras and scanners can help build up banks of resources. At Reigate Primary, text is relevant, bold and clear. Key words can be highlighted using colour. Signed clips are incorporated within presentations to support the learning of vocabulary.

○ An appropriate pace lets everyone progress

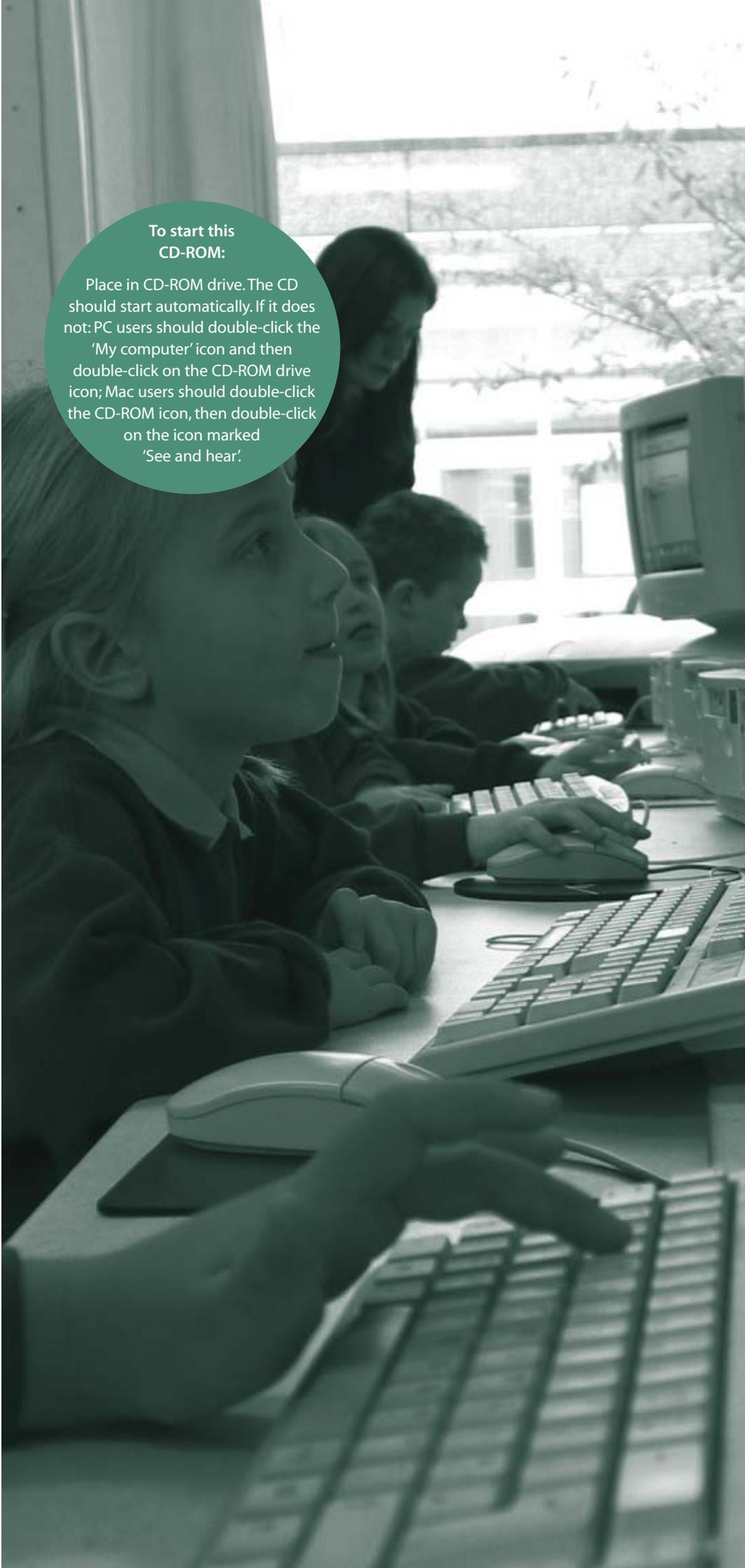
Lessons should be paced so that all pupils progress and demonstrate achievement. Setting a pace that will ensure all pupils understand the concepts and are confident as their understanding and skills develop will benefit everyone. Images and visual explanations can support understanding, avoiding delays caused by the need for detailed explanation.

At Reigate Primary, demonstrations of interactive activities ensure that children understand what they are expected to do, and actions can be repeated to clarify learning.

○ Independent learning is important

ICT supports the exploration of information and encourages independent learning. Individualised resources saved on a school intranet can be called up for any child working outside the classroom.

At Cottenham Village College, resources are made available for follow-up sessions. Pupils are able to return to aspects of the learning either on screen or in hard copy as appropriate. Familiarity with materials and the use of exciting technologies gives pupils confidence.



**To start this
CD-ROM:**

Place in CD-ROM drive. The CD should start automatically. If it does not: PC users should double-click the 'My computer' icon and then double-click on the CD-ROM drive icon; Mac users should double-click the CD-ROM icon, then double-click on the icon marked 'See and hear'.

Further help

Becta, Ferl, 'Assessing the needs of deaf learners prior to admission to colleges – A specialist college view', Lisa Peacock

<http://ferl.becta.org.uk/display.cfm?resID=2046>

British Association of Teachers of the Deaf <http://www.batod.org.uk>

Cottenham Village College
<http://www.cottenhamvillagecollege.org>

Inclusion website
<http://inclusion.ngfl.gov.uk>

National Deaf Children's Society
<http://www.ndcs.org.uk>

Removing barriers to achievement
<http://www.teachernet.gov.uk/wholeschool/sen/senstrategy>

RNID factsheet, Equipment to help deaf and hard of hearing learners
http://www.rnid.org.uk/html/factsheets/edu_equipment_to_help_deaf_learners.htm

RNID guidelines: *Effective inclusion of deaf pupils into mainstream schools*
<http://www.forestbooks.com/system/index.html>

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