



Video conferencing in the Classroom

Case Studies of Effective Practice

Case Study One
Lent Rise Combined School

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School background

Lent Rise Combined School, which caters for children from the Foundation Stage through to Key Stage 2 (4-11 years), is located in a suburban area of Buckinghamshire. There are 410 pupils on roll and 16 teachers (FTE). The school is located in an area of social and economic disadvantage, although pupils come from a broad range of social and academic backgrounds. The children are drawn mainly from white UK backgrounds. An emphasis on developing the full social and academic potential of each child is fundamental to the school's learning and teaching philosophy. The school has Beacon status, is recognised as a Centre of Excellence for Primary ICT and has achieved recognition as a Nationally Outstanding Primary School.

History of video conferencing in the School

Video conferencing has been used in the school since 2000. An initial sponsorship arrangement with a commercial provider has developed into a stable partnership, so that the same company continues to supply, maintain and update the main video conferencing technology in the school. The use of video conferencing has grown from early experimentation to a point where it is now used on a very regular basis and is embedded into all curriculum areas across all key stages.

Philosophy of video conferencing use

The use of video conferencing is integral to, rather than being separate from, the policy and practice of the school with respect to ICT, the effective use of which is integral to the learning and teaching philosophy of the school.

Video conferencing therefore sits comfortably within a school where the use of ICT is – as one senior member of staff described it - 'second nature' to the pupils, a view confirmed in pupil interviews and observations of video conferencing sessions. Every teacher in the school is encouraged to use video conferencing six times per school year, with a strong emphasis on curriculum integration. All of the teachers interviewed expressed support for this policy, regarding it as an opportunity rather than an imposition.

Video conferencing is also regarded as a cost-effective means of enhancing specific curriculum areas through live access to expertise and knowledge which would otherwise be difficult to arrange. This is seen as especially important for those pupils whose social and economic circumstances may mean that exposure to such experiences (for example through school trips) would not be possible. At least as important as the enhancement of knowledge and understanding in specific curriculum subjects (for example geography or science) is the role of video conferencing in developing social confidence and in raising pupils' literacy, especially in speaking and listening.

Video conferencing equipment and location

The main video conferencing unit is a Tanberg unit which is situated in the main ICT suite, although it can be moved between rooms where required. Workstations in a learning area known as the Cyber Cafe also have individual webcams for point-to-point conferencing using Microsoft NetMeeting. Connectivity is via a dedicated ISDN2 line, with bridging (linking to locations with an internet [IP] connection) provided free of charge by the sponsor. A document camera enables close-up transmissions where required. Conferences are viewed mainly via a large-screen TV monitor, although classroom use allows for projection onto an interactive whiteboard.

We are very, very lucky to have interactive blackboards and video conferences [...] Overall, I think [video conferencing is] a special and unique experience and it is really fun.

Year 6 Pupil

Current patterns of use

The expectation on teachers to use video conferencing six times per year was being followed by most if not all members of the teaching staff, with several going beyond this minimum. Thus video conferencing is a regular feature of the educational experience of pupils, across all subject areas and in every school year, including reception classes. Wherever possible video conferences map directly onto current curriculum activity, in terms of timing as well as topic and content. All conferences are supervised by teaching staff, usually the class teacher, with teaching assistants and/or trainee teachers offering additional supervision.

Although the pupils are involved in a wide range of video conferencing interactions, the main pattern of use is a class or group conference with a remote expert. Sessions with organisations in the UK, for example, include subject experts located in museums (eg, the National History Museum, the National Maritime Museum), galleries (eg, the National Portrait Gallery, Museums and Galleries of Merseyside), Higher Education institutions (eg, Ultralab, part of East Anglia Polytechnic University) and government offices (eg, Public Records Office). Examples of recent use include an exchange with the National History Museum about the properties of light as part of a Y1 natural history topic, a Y3 History conference with experts at the National Portrait Gallery exploring aspects of Tudor life and a session given by the Royal Observatory on the solar system for Y6. Many conferences also take place with international organisations which have an educational remit. Several international conferences have involved links with institutions in the United States, for example, such as the National Aeronautics and Space Administration (NASA: where children get to talk to real astronauts or space experts), the Philadelphia Art Museum and the Ocean Institute in California.

While the 'visiting expert' is the most common approach to video conferencing in the school, school-to-school contact has also taken place. In the main this has been with schools in other countries (for example Brazil) rather than in the UK, although a KS2 geography project involving exchanges with a school in Wales - in the planning stage as we write - will replace an earlier series on exchanges with Flatford.

To help to bridge cultural-divides, each class is currently being 'e-twinned' with a different EU nation, so that children area learning with and from each other. Twins have so far been established for all KS2 classes, with a search currently underway for twins for KS1 classes.

Examples of effective practice

Three conferences- each involving a different year group - were observed during a two-day visit to the school in January 2005. All three of the conferences (two of which are described detail below) were part of ongoing work on a curriculum topic.

The first - arranged via [Global-leap.com](http://www.global-leap.com) - was a conference with an expert at the National History Museum for a Year 4 history class on the Vikings involving around 30 children. As well as the presentation of information, the session involved questions from and to the children about aspects of

Viking life, travel and trade. A range of artefacts of the period - from detailed models of Viking warships to tools and clothing – were shown to support and extend the discussions.

The second conference brought together elements of two general topics in the Foundation stage (reception) curriculum. In the first, on 'transport', the children had been looking at aspects of space travel, while the second concerned 'the food we eat'. The conference – with the National Aeronautics and Space Administration (NASA) in the US combined these two areas by considering how and what astronauts ate when in space. The conference began with the NASA scientist welcoming the children and saying that she was really excited and – to a big cheer – that the children were 'going to learn lots'. Showing a basket of fresh food, she asked the children to identify various fruits and vegetables. She pointed out that while we can usually go to the market or the garden to get food, astronauts had to take theirs with them for the whole trip.

Throughout the conference the dialogue was lively and personal. The NASA representative engaged and maintained the interest of the children through a combination of interesting information, questions to the children and regular opportunities for them to comment and ask questions of her. The session also involved a good deal of positive reinforcement, for example children were identified by name, praised ['that is a *great* question'] and flattered ('say I like that shirt'). A range of objects and resources were deftly employed to illustrate a point or answer a child's query. For example, in response to a spontaneous question about what Mars looked like, she declared that 'rather than tell you, I can show you'. A computer simulation of the planet's surface immediately filled the screen, to gasps from the children.

The conference concluded with the children, the (local) teacher and the NASA scientist discussing possible topics for future sessions. The session lasted just almost 40 minutes – 10 minutes longer than the scheduled period which was already a considerable length of time for pupils of this age to maintain concentration. Despite this, almost all of the children –whether or not they got an opportunity to ask or answer a question directly – appeared engaged, interested and alert throughout the experience.

I have never been to NASA, but I've seen NASA. Not on TV - I have actually spoken to people at NASA. Not even like a phone call - you have actually seen what was going on, and learned about it as if you were there, but without actually leaving the classroom

Year 6 Pupil

The third conference, like the first, was organised via Global-leap and again involved the National History museum. This time the pupils were a class of Year 1 pupils investigating the properties of light - in particular its role in plant growth - as part of the KS1 science curriculum. Two scientists at the museum hosted the conference (taking turns to present information and to ask and answer questions, almost in the manner of a comic 'double-act').

In-class preparation for both the content of the conference and speaking and listening protocols was seen by the teacher as essential to the effectiveness of the session. This was supplemented by pre-conference discussions between the Y1 teacher and the museum, a process of collaboration and sharing of ideas rather than an 'off-the-shelf' package from the NHM. The session began with an immediate question posed to the children 'why do we need light'? This was followed by asking them to think of nocturnal animals, which in turn led to an exploration of how animals see at night. Thus from the outset the pupils were involved in dialogue with the 'far end' teachers. As in the other sessions described, a number of devices and artefacts were used effectively to maximise the visual potential of the conference and to maintain pace and interest.

An illustration of this was, in response to one child suggesting an owl as an example of a night-time creature, the immediate production of a stuffed owl from among the numerous artefacts which littered the shelves behind the two scientists. The camera zoomed in to display in close up various features of the bird, in particular the eyes, which led to an explanation of how owls see in the dark. The discussion then moved from animals to plants and specifically the role light plays in plant growth – the main topic on which the children had been working in class. Towards the end of the conference the

children were invited to ask open questions about light - which generated some fascinating queries such as 'how do stars shine' and 'how do fireflies glow in the dark?' – all of which were answered clearly and at an appropriate level of understanding. To end the conference, the children showed the scientists a range of objects (candles, lamps, torches, light 'wands' and so on) which they had brought along to demonstrate means of light generation.

As in the conference described above, this session lasted almost 40 minutes, with little sign that the children were losing interest or enthusiasm.

It is like a conversation [...] we are learning and it is fun at the same time. You get to take part in it and ask questions, and you get to know more about different things from experts. It's very different to asking the teacher because they are not the experts.

Year 5 Pupil

In the majority of cases teachers took a facilitating rather than directive role, for example clarifying or repeating information, selecting pupils to respond to questions asked by (or ask questions of) the 'far-end' tutor. Indeed since the purpose of inviting experts to talk to the children is partly because of the detailed knowledge and understanding that they bring with them, many conferences represent a learning experience for teachers as well as the children.

I think it's just as much of an opportunity for the teacher as it is for the pupils[...] really they sit back and let us handle it, but at the same time I think for them, it's like being a [pupil]. Obviously our teachers haven't been to NASA [...] it is a good opportunity for them as well.

Year 6 Pupil

In addition to more regular curriculum activities are occasional 'special' conferences (for example a virtual meeting with 'Santa Claus' in Lapland for early years children). A good example of this type of event is the annual 'Virtual Christmas Card' activity where children across the school dress up and perform for a remote audience which has included distinguished personnel at Universities and the Teacher Training Agency (TTA). This reverses the process of the more typical model of experts 'coming into' the school, so that it is the children who 'take out' the school to others. The excitement and pleasure of performance and the opportunity to take pride in their school and their achievements for an audience, combined with the 'magic' of technology, was said by teachers and pupils alike to be a unique and highly enjoyable experience.

Management of video conferencing

Co-ordination

The headteacher at Lent Rise is a strong supporter and active user of video conferencing. As noted above, all teachers are expected to use video conferencing at least six times per year (typically twice per term), an expectation which is built into the Performance Management targets for the school, although many do more as there are now so many links which have been cultivated with 'experts' which have become part of curriculum enrichment over the years.

Overall management and co-ordination of video conferencing activities falls mainly to the Assistant Head. Thus a clear signal to teaching staff is that video conferencing is very much part of the educational vision of the school, and is encouraged and supported at senior level. ICT, including video conferencing, features centrally in school-based training at the school, so that all teachers are fully aware of, and supported in their use of technology.

A 'menu' of video conferencing opportunities is available to teachers, along with guidance about how each might support particular curriculum areas or topics. Many of the conferences with museums and galleries, for example, are arranged via global-leap.com, which provides clear guidance on how each conference maps on to national curriculum programmes of study. Given that video conferencing is used across all age groups, teachers also have plentiful sources of prior experience to draw upon.

Where an existing 'menu item' does not meet a particular need, the Headteacher or the member of staff mainly responsible for the organisation of video conferencing activities in the school explore new possibilities, which in turn get added to the list. In some cases connections are developed through known contacts of staff members. For example a link with a school in North Wales - part of the geography initiative mentioned in the previous section - was established by a teacher who originated from the area.

Video conferencing activities are regularly monitored through a self-assessment system. Teachers complete a brief evaluation proforma following each session. Issues which arise from these evaluations, be they technical or pedagogical, are addressed by the management team and discussed at staff meetings and during training days.

Integration into the curriculum

Video conferencing is embedded into curriculum planning across all year groups and all subjects. The approach of the school is to encourage the use of technology – whether it be video conferencing, interactive whiteboards or ICT more generally – as something which supports and extends learning rather than an 'add on'. Teachers are therefore expected to consider the nature and timing of video conferencing activities so that they represent a planned part of the curriculum topic. Thus the video conference on 'light' was planned to coincide with a particular aspect of a broader science topic. Classroom activities led up to, and subsequently built upon, the learning which took place in the conference.

Mainstreaming

The embedding of video conferencing into school policy and planning, the lead from management and the general enthusiasm with which innovation is embraced in the school has already ensured that video conferencing is at a relatively high level of integration at a whole-school level. This extends to the involvement of trainee teachers and learning support assistants in planning for and participation in video conferencing activities.

Technical issues

The video conferencing equipment in the school is of high quality and robust. The partnership arrangement with the school's sponsor ensures that the facilities are properly maintained and periodically upgraded. All teachers are familiar with the operational side of using the technology, of establishing connections with remote sites and are capable of basic troubleshooting. Every conference is preceded by a short test call to ensure that the connection is sound.

Future plans

The main model of video conferencing usage has been for access to remote expertise, mainly conducted as whole-class exercises, to support a particular aspect of a curriculum topic. This has proved highly successful, and will continue to feature strongly in the school's activities. The school is now looking to build on teachers' enthusiasm for and confidence with video conferencing through developing other approaches. For example regular school-to-school contact, which has occupied a more minor place in the schedule to date, is now being actively explored. A current initiative involves establishing links with schools in Wales for a geography project, which will involve regular contact over time rather than single 'targeted' events. The advent of language teaching at primary level is also an area where the school seeks to develop the potential of video conferencing for contact with native speakers.

Pupils added their voice in offering ideas for future activities. Many of these took the existing 'remote expert' approach as a model, many suggesting contact with famous people such as wildlife experts (eg, David Bellamy, Bill Oddie), politicians (Tony Blair) or royalty. A genuine interest in how people – especially children - lived their lives in other cultures also prompted a number of children to express a wish to make more international contacts. More than one student indicated a desire to communicate on a more personal level than was possible in large groups.

Finally, in addition to the focus on pupil learning is an ongoing consideration of how the technology might be employed to support the professional development of teachers, for example through dialogue with others about best practice.