

Video-conferencing in Schools

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Until fairly recently, the use of video-conferencing equipment has been seen largely as the province of the Modern Foreign Languages Departments in schools, for example, for the fine-tuning of French or German accents. Generally, this work is carried out on a one to one basis and as such the equipment has proved to be a very useful learning tool. However, at Holy Cross Convent School we have been exploring the use of this new equipment across a much wider range of secondary school subjects. What follows here is an outline of some of the projects we are developing using video-conferencing equipment, our vision and plans for the future, and finally, some general guidelines for using it creatively, based on our own practical experience.

Is it just an expensive gimmick?

To answer this question directly, and briefly, “Yes, video-conferencing is expensive,” but, “No, it is not a gimmick.” Like all information and communications technology tools, video-conferencing is completely neutral. That is, it rests with the user whether or not any value can be gained from its use. With a hammer, for example, you can choose to smash windows, or build the Taj Mahal; with a word-processor you can waste your life copy-typing, or use it as a creative tool to develop writing skills; with email you can send endless and useless “How’s the Budgie?” messages, or use it to create international drama activities; with a CD Rom you can click and print out mindless acres of text and pictures, or you can integrate it into schemes of work involving increasingly complex searching skills. The tool itself has the potential both for good and ill, and teachers must learn how to explore and to exploit this potential effectively.

Costs, as with all new technology, are reducing almost daily, and what is at present somewhat expensive will soon become relatively cheap. PC based systems will eventually become a cheap daily method for many students to contact their friends, just as email does presently. The question to ask, then, when confronted by any new technology is very simple: What can it actually do? Subsequent questions are: At what cost? How complicated is it? Does it enable my students to do things better than before? “Better” here can mean quicker, more easily, or with more attractive results: seldom does an ICT tool allow anything completely new to be undertaken. One is reminded of T.S. Eliot’s famous statement that anything entirely new is entirely bad.

So, what does video-conferencing allow us to do? The answer is simply that it is a technology which enables us to communicate directly, both in sound and in vision, with other students and teachers, who may well be on the other side of the world. With ISDN cabling running at 128K, good quality audio, and reasonable quality video can be exchanged in real time. At Holy Cross School, we have been very excited about the potential of this ISDN based equipment, and accordingly we have set about exploring those new aspects of learning which it enables us to develop, using a little imagination. The immediacy of the feed-back from partner schools which the equipment makes possible is a vital ingredient in any such exploration, and there is obvious potential for the use of this equipment, for example in music, through shared creative workshops, comparison and actual teaching of dance steps, collaborative art and drama work, the exchange and comparison of scientific and geographical data, and so on.

At Holy Cross, we are working with Ikeda Junior High School, Osaka, and are engaged in a series of video-conferencing links, one of which we have called the “Kabuki Project”. This is a multi-

layered, international collaboration between the UK and Japan, working under the “Konet Plan” which is currently being developed by Nippon Telegraph and Telecommunications (NTT) - the Japanese equivalent of BT - and supported by the Japanese Ministry of Education. Holy Cross Convent School, New Malden, Surrey, was invited to become a leadership or “hub” school in the “International Exchange Project” of this plan, and to collaborate with the Japanese in exploring together the exciting educational possibilities presented by the new ICT technologies - email, email attachments, image files, General Midi music files, the Web, twinned sites, the National Grid for Learning, document exchange technology and video-conferencing. As part of this project, Holy Cross has signed a “sister school agreement” committing us to work with Ikeda Attached Junior High School, a mixed school in Osaka. (“Attached” here means “attached to Osaka Kyoiku University”. “Kyoiku” means “Education”.) The Head Teacher, or Principal, of the School is a University Professor of Education, and the school is run by the Deputy Principal. This arrangement results in very close links between the school itself and the teacher training courses undertaken at the University.

Three Video-conferencing Projects

Project 1 - “Kabuki Gift”

“Kabuki Gift” is a short play, (a love story), set in Japan and written in English by the American playwright, Douglas Love. Parts of the play were translated into Japanese by the Ikeda students, so that by using video-conferencing technology the two schools were able to undertake a performance of the same text “live” in the two countries (UK and Japan), on two school stages (in Osaka and New Malden), in two different styles (traditional and modern), and in two languages (English and Japanese). The Japanese school, Ikeda, opted to do their scenes in a style which incorporated some elements of traditional Kabuki. By way of contrast, Holy Cross chose to perform their scenes in Modern Contemporary English style, with modern music added, several dances, and a finale which included the beautiful love song from the film “Titanic”. The students in both countries used email to develop the planning of the performance itself, so that, for example, the first scenes were performed by Holy Cross girls in English, and the next scenes, shown on the video screen live from Japan, were performed by the Ikeda students, in Japanese. Then Holy Cross performed a scene in Japanese, and Ikeda performed a scene in English, and so on. A 29 inch colour monitor enabled a good number of visitors to see the play, though the relatively small screen size was clearly an aspect for us to develop further. We have now moved up to a 55 inch screen for the next series of conferences, with financial help from Peter Hand of the Great Britain Sasakawa Foundation, an organisation which kindly supports Anglo-Japanese initiatives.

A special introductory scene was added to the play both to introduce a humorous element into the production itself, and also to save writing lengthy explanatory programme notes for the audience to plough through prior to the performance. Designs for part of the UK costumes were based on ideas sent by Naomi, an artistically gifted Japanese student from Ikeda, the English girls were taught how to write the word “Kabuki” in Japanese calligraphy live from Japan using the video-conferencing equipment, and the Ikeda students taught the English girls how to speak Japanese properly! This was done both as a part of the preparation sessions live over the video-conference link, and through the exchange of letters and audio tapes sent by “snail mail”, the new term for air mail.....

Learning outcomes were amazing, in both countries. As with any school drama production, the students learned to work together as a team, but this time with an international dimension; they memorised their lines of text in two languages; shared ideas about costumes; designed and made those costumes; designed and painted the sets; used their new calligraphy skills; wrote background music; created dance steps; rehearsed and sang songs; prepared make-up; sent email messages to

help them plan the various stages of the production; learnt how to use audio equipment; learnt how to operate video cameras; worked with students across the year groups; stage managed, planned and developed the production itself; designed and made the programme notes and advertising posters; learned to meet deadlines; negotiated changes in the performance; became close friends with their partners in Osaka; and above all, made learning fun. All of this integrated their language, artistic, technological, physical and collaborative skills extremely effectively. As a senior representative from the Japanese Embassy, Hiroshi Minami-san put it, "We have witnessed an excellent mix of dance, drama and music, with new technology, which has helped to further the close liaison between our two countries. I have been very impressed by what I have seen. It is important for young people to build up a good basis for mutual understanding." When Michael Spencer from the London Symphony Orchestra's "Discovery" team heard of this work, through the Japanese Embassy, it was time for us to join forces in a new venture.

Project 2 - Festival of Enlightenment

This Festival also formed part of the continuing educational collaboration between Holy Cross Convent School, New Malden, Surrey, and Ikeda Junior High School, Osaka, under the NTT's "Konet Plan".

Participants:

In the UK

Holy Cross Convent School students (100)

Members of the London Symphony Orchestra, directed by Michael Spencer

In Japan

Ikeda Junior High School students

Members of the Japan Philharmonic Orchestra, directed by Kuma Harada

Local musicians

The aim of this project was "a sharing" of creative musical experience over ISDN cabling and video-conferencing equipment. Both schools invited professional orchestral musicians to assist in the creation of practical music workshops in the two countries, with the results being shared through a final performance. Accordingly, the LSO team under the direction of Michael Spencer, spent a day with the Holy Cross School Orchestra, working with the girls on developing musical improvisations on the theme of "Auld Lang Syne". This music was chosen because it is well known in both countries, and therefore any variations on the theme would be easily recognised both by the students and by the audience. Meanwhile, in Japan, members of the Japan Philharmonic Orchestra travelled from Tokyo to Osaka especially to participate in this workshop, where under the direction of Kuma Harada, they, too, worked out improvisations on the same musical theme.

For the conference itself, in both countries, students were nominated as chair-persons for the Festival. In the UK, two year 7 students, Naomi and Harriet (both aged eleven) held the Holy Cross end together, and in Japan this function was very ably performed by Miho. The event began with the usual testing of equipment for sound balance and vision, then Naomi and Harriet played a hand game "Scissors, paper and stone", in Japanese. First they played each other, then they played Miho. They explained how they had used this game as a basis for the musical ideas of their performance. Holy Cross then played the full orchestral version of their "Fantasia on the Auld Lang Syne theme". Ikeda responded with their own version of the same theme, and a lively discussion ensued with demonstrations of the various instruments, and musical ideas which had just been exchanged.

In the second section, both schools sang choral music to each other, on the theme of “Enlightenment”, and after a drama item introduced by Mrs. Sedgwick, there was a most amazing piano solo from Ikeda, a personal composition based on the pupil’s experience of seeing the aftermath of the Kobe earthquake. It was a stunning composition and performance by Risa, a very able young pianist, and the Holy Cross students, teachers and our visitors watched absolutely transfixed. Then, after another lively discussion, the students in both countries joined hands to sing a final rendition of Auld Lang Syne, with the English girls singing in Japanese, and the Japanese team singing in English. Many of the participants were deeply moved, such was the emotion of the event. As the Japanese teachers put it in an email message - “We can’t express our impression by using words. Our students were moved to tears when they finished singing the last song.” The idea of “Friendship Technology” was being born.

Such events are not possible without some support, however, and we were grateful for the help of:

- Michael Spencer (LSO’s “Discovery” team) for ably developing the musical content of the event, and for arranging for the Japan Philharmonic Orchestra members to visit Ikeda.
- Becky Shaftoe
- Nigel Broadbent
- Robert Turner
- musicians and administrators of the LSO, for their professional help and encouragement
- Kuma Harada (Barefoot Cultural Exchange Initiative) for inspiring the Ikeda students and directing the musical activities in Japan
- Chris Everett of the Daiwa Foundation, for assistance with funding, and for his enthusiastic encouragement

Michael Spencer summed up his own reaction to the project as follows:

“The initial concept of exploring the same musical material (Auld Lang Syne / Hotari no Hokari) and using the results as the basis for original group creative work to take place simultaneously in the UK and Japan produced some extremely stimulating and worthwhile results. In particular, this method of working proved particularly appropriate for video-conferencing, where similarities and contrasts could be observed, compared and discussed immediately. We all felt that the project demonstrated the value of this form of communication as a resource for creating global partnerships that are not restricted to the world of commerce alone, but have considerable educational applications. We are keen to repeat and extend the experience.”

The spreading of these ideas - and a new Science Conference

As a result of reading in “The Times” newspaper about the video-conferencing collaborative work of Holy Cross Convent School and Ikeda Junior High School, a film producer from Anglia Television arrived to find out more for himself. During his preliminary visit, he was also shown some aspects of the famous Holy Cross Light Project, the cross-curricular model which is steadily being adopted across the world. He immediately saw the significance of the Project, and felt that this work, too, should be included, as central to his documentary series. Accordingly, two producers (one for Japan, the other for the Light Project) together with a film crew arrived to look, first of all, at the video-conference with Japan, and then to see some Holy Cross classes “in action” recreating and extending parts of the Light Project, using computers. It is important to us as a school that when we are asked to recreate our work (for the BBC, for example, or for NHK - Japanese Television) we co-operate as best we can, but we also try at the same time to add a new dimension to the work, so that the pupils’ learning outcomes are extended and developed. We do

not wish our students to stagnate, even when they are performing on television. Accordingly, we decided to add a new Science element to link the Japan work with the Science work.

Project 3 - Channel 4 Visit to Holy Cross

At 9.30 UK time (17.30 Osaka time), two Holy Cross girls, Charlotte and Sarah from Year 8 as chairpersons; the Holy Cross School Choir; a Year 10 Science group with their teacher Mrs. Michell; and a group of Irish dancers, all assembled in the Kells Library to wait for the “Incoming Call” signal from Japan. Holy Cross students were particularly excited because, as well as performing for the television film crew, they could all see their Japanese partners much more clearly on the 55 inch colour monitor (with a ten speaker sound system!) which had arrived only a couple of days earlier.

The conference began with four Year 10 Holy Cross students showing Ikeda some of their work in GCSE Science, including a “live” chemistry experiment, which they described and discussed. The purpose of this was to explore in what ways it might be possible to share scientific knowledge and understanding through the use of the new video-conferencing technology. Having carried out a chemistry experiment, a second, document camera was then used to show Ikeda some of the computer calculations which the girls had made and had printed out as part of the recording of their Science work for GCSE coursework assessment.

The Japanese contribution began with a “surprise” item, when two Ikeda Science teachers gave us a fascinating chemistry experiment, in reply to the Year 10 contribution. There is excitement both in Japan and the UK about how this work can be extended in the future. We learned, for example, that it is easily possible to demonstrate a scientific experiment in this way, and that if a second document camera is connected to the same system, then detailed statistical information can be read and discussed by the students in both countries. The potential of this is enormous, although a great deal of careful planning will be necessary to ensure effective learning outcomes in both countries.

Next, the Ikeda students presented a lovely series of dances and songs, which they had either researched or composed, as part of their own musical studies in the school. There were many beautiful, colourful costumes on display, and many musical instruments were played, with audiotape recordings also used to accompany this musical feast. We were fascinated to learn that the Japanese children’s songs, which were also danced to, were similar in many ways to the songs and dances of English children, such as our own “Oranges and Lemons”. The results of the Ikeda students’ research into their musical heritage were very clearly seen on the huge Projection Television, and were appreciated both by the Holy Cross students and by the Channel 4 film team. Then the Holy Cross Choir, now a regular feature of our conferences, sang two lovely songs, in two part harmony accompanied by guitar, to the delight of all, and this was interspersed with some stunning Irish dancing. Incidentally, the dancers had earlier used the new TV as a video tool to view their dance rehearsals, and found this to be a valuable new use of the large TV monitor and camera system. By looking at their own images on the large 55 inch monitor as they rehearsed their Irish dance steps, they were able to make careful and detailed corrections to their positioning relative to the camera. The conference ended with Claire, a Holy Cross student, teaching a group of Ikeda students some of the dance steps which she had previously performed as part of her dance routine. This was an important day in the life of the two schools, who share a common vision of how teaching and learning styles must change in the new millennium.

Future development - the need to combine the technologies

The new ICT tools - email, email attachments, the Internet and video-conferencing - are powerful in different ways. The next task for our two schools, therefore, is to explore in what ways these

tools can be successful when used in combination with each other: our own video-conferences are always planned, developed and evaluated by email, for example. We feel very strongly, however, there are potentially many more powerful ways of working than this. As our next step, therefore, we are setting out to see how a new project, called The Banner Project and involving product development in Textiles, can lead us to harness the combined power of some of these new tools.

The Banner Project

The objective of this next project is for Holy Cross to design and make a series of decorative banners for our partner school, Ikeda, in time to be displayed during their Open Day, when many important visitors will arrive from all over Japan. We therefore have a clear and fixed deadline to meet. As part of their Year 9 Japan studies, the students will set about creating a series of colourful fabric designs, using CAD software, for later manufacture into banners which will be sent to Japan. The preliminary designs for these banners will be emailed to Osaka, where the Japanese students will be encouraged to ask for suitable adjustments to be made to the colour, shape, material, or size of the products. Artistic ideas from Osaka may also be incorporated into these designs. The new specifications will then be emailed back to London, for further development by the Holy Cross students. These final design specifications will then be made up into the banners, and posted by “snail mail” to Osaka.

It will be possible for us to move the video-conferencing equipment from its present location in the Library into a computer room, so that the students can see each other, and talk about various aspects of the project, while they are actually working on the designs. There is also the powerful document camera coupled up to the video-conferencing equipment which can be incorporated into the system to show, in excellent close-up, details such as stitching, or intricate design points. By switching between these different tools, we hope to develop the final banners to very precise design specifications, as indeed is the case with actual industrial practice. The problem of teaching what is otherwise a quite theoretical aspect of the school’s Textiles course in Technology is thereby imaginatively resolved, and our partners will have the pleasure of displaying to their visitors the banners which the Japanese students have themselves helped to design. The whole process can then be published on the web sites of the two schools, for others to see and develop further.

Some students’ reactions to the video-conferencing work

The views of the students about using this new equipment are varied, but very positive:

“I loved being shown how to create origami animal figures by the Japanese student. It was incredible - much better than from a book. You can’t ask a book questions.”

“I like art, and so learning how to use a special Shodo brush to create Japanese characters was really exciting. A drawing lesson, live from Japan! I liked it best when I could ask the teacher to show me how to write my own name in Japanese.”

“I can see how video-conferencing could be very useful in business when I am older, and working.”

“Funny things are interesting, like the Japanese students asking us why we wore safety glasses when we showed them our Science experiment. I didn’t expect that.”

“It was really lovely to work with the LSO musicians, and then to see what the Ikeda students had done with the same music. I suppose we could have just sent them a videotape, but we couldn’t then have talked about things.”

“I am sure that the Ikeda students were as nervous as we were about performing the play together, but we all learnt to keep our feelings under control, for their sake as well as ours, so that the performance would be successful.”

“It’s fun doing new things with the technology.”

Guidelines for using video-conferencing equipment

- As with any communication between students, the most important single factor in ensuring the success of a conference is that both groups should have an equal commitment to the topic or project at hand. If this is a drama, a dance, a music festival or workshop, then such commitment is automatically ensured. Students like to share their talents in music, and are eager to see how others perform, too.
- A clear, previously agreed Agenda helps all participants to find their way through any discussion, and it is important that students have a part in the planning of this aspect of a conference.
- Sound quality and good lighting need to be checked carefully, and often, a short introductory practice session can usefully resolve any difficulties in these areas. Audio-feedback is avoided by placing the microphones well away from the main monitor’s speaker system, for example. Failure to do this can result in a most amazing echo effect, as voices are beamed back across the world!
- Fast movements can cause difficulty for the camera, an especially difficult aspect when dealing with dance and drama. However, creative solutions can easily be found. For example, the dance like that to the music of “Titanic” during the “Kabuki Gift”, was resolved by creating dances in the the two countries which worked to circular, fluid patterns of movement, so that a precise musical beat was unnecessary, (to allow for the unavoidable second’s time delay), and a more graceful dance response was thereby created.
- One surprising problem arises when handing over discussion from one student to another within the conference. When the students come from varied cultural backgrounds (e.g. UK and Japan), there can be a delay while body cues are read and appropriate responses made, especially when everyone is trying so hard to be polite! Experience is the only solution here.
- It is important to ensure that each student has a clearly defined role in each session, such as make-up artist, sound recordist, camera operator, actor, singer, dancer, choir or orchestral member, and that he or she has some chance to rehearse any difficult tasks. Since running costs are still quite high, much of this work needs to be done separately in the two countries, and then put together fairly rapidly. Our experience shows, however, that no matter what demands you make on pupils, they will always rise effectively to a challenge, and exceed the wildest optimism of their teachers. The best example of this was when two Holy Cross girls had only a week in which to prepare an entire scene in Japanese (they had both been away from school on various educational visits) yet were able to impress their Japanese counterparts with the excellence of their Japanese pronunciation.
- In dealing with students from another country, two complementary strategies have emerged:
 - a. to use the target language very deliberately, for example by our UK students acting some of the drama scenes in Japanese, and
 - b. to use musical language and mime so that these language-free elements are easily shared, without a communication problem arising.

This was particularly appreciated by the music and drama teachers at Ikeda, who could easily see the value of producing a play with music and dance, as many participants could

be involved without the need for advanced language skills, while other students could develop their English in a very real context.

- The effect of working in English was, for the Japanese, an immense spur in learning to use the English language. In an email evaluation they remarked that the students “also started studying English harder, because they felt it was necessary to do so.”
- We are often asked about the difficulty of working with a school where there is a significant time difference. (Japan is 8 or 9 hours ahead of the UK depending on Summer Time, whereas the USA is 6 hours behind us.) There is, indeed, a problem arising about times, but it is not what you might expect. We have experienced more problems over the matching of holiday dates than about differences in the hour of the day. Ikeda students were always more than willing to stay after school to work on the collaboration with us but then they, or we, had to break for Half Term, Easter, Activity Weeks, and so on. Plan the year carefully: holidays are a greater problem than time-differences!
- The motivation of pupils is always high during video-conferencing projects, especially when this work is tied effectively in with other cross-curricular ICT project work, for which Holy Cross is now internationally famous. In the case of our Year 9 pupils, this is the Geography-based cross-curricular study of Japan, its economy and culture, which takes up a good part of the September to Christmas Term.
- The Japanese were most keen to allow the students in both countries to exchange their personal feelings about culture. They considered this to be of paramount importance, overshadowing anything possible by way of email, valuable though this is as a planning tool. The Japanese students’ interest in English culture was greatly deepened by the video-conferences, but interestingly, so too was their interest in their own culture. If you have to share your understanding with others, you have first to understand it yourself.
- Finally, actual discussion is probably best kept to a minimum, hence our own emphasis on creative music, dance and drama events. Discussion is best for face to face evaluation sessions, with email providing a better vehicle for the exchange of detailed factual information. If general midi music files and JPEG images are also added to email messages, then much information can be exchanged before and after the actual conference.

We have serious doubts about hoping to maintain the interest and commitment of large numbers of students through lengthy discussion sessions. In fact, the worst thing you can actually do with video-conferencing equipment, it seems to us, is to hold an actual conference!

Note 1

More information about the LSO’s Discovery programme can be obtained from:

London Symphony Orchestra Limited
Barbican Centre
London EC2Y 8DS
Email: discovery@lso.co.uk