

Video Conferencing at Finham Park

www.finhampark.co.uk/dept/d-math.php

Finham Park is a popular and successful 11-18 Specialist College for Mathematics and Computing situated in the south-west of Coventry.

Tags:

Primary, Secondary, Transition, Video Conferencing, Mathematics

Harnessing technology system outcomes:

Technology confident effective providers

Improved personalised learning experiences

Engaged and empowered learners

Sectors:

Primary (KS2), Secondary (KS3), Primary to Secondary transition

Innovation

A secondary teacher, Adam Boddison, used video conferencing technology to distance-teach mathematically-able Year 6 pupils in the West Midlands.

The project had three aims:

1. To create a community of able mathematicians
2. To facilitate independent and personalised learning
3. To enhance the Key Stage 2 to 3 transition process

Background

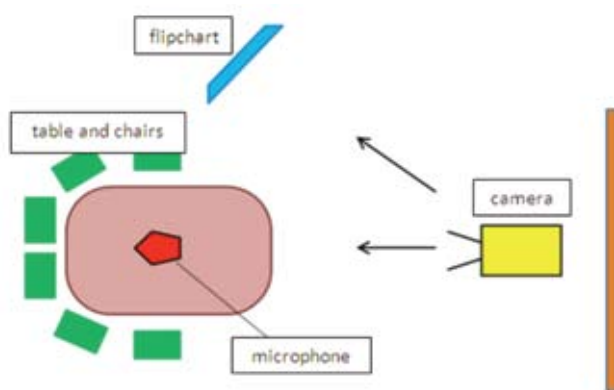
One of Adam's roles as a secondary mathematics teacher was to work with local primary schools on the transition from Key Stage 2 to 3, including mathematics provision for the more able. Six primary schools identified their most able mathematicians in Year 6 and funding for enrichment lessons was made available by the Primary Learning Network (which in turn is centrally funded by the DCSF). Various options were considered including bussing pupils to the secondary school, supporting pupils through asynchronous online media such as forums and blogs, and teaching by video conferencing. The latter was chosen as cheaper and logistically simpler than bussing pupils, but richer and more interactive than asynchronous online media.

The video conference lessons were taught by Adam. In all but one of the primary schools there was no teacher present during sessions, although a named individual was close at hand to deal with emergencies and technical difficulties (usually the head teacher or ICT coordinator). These individuals attended a 20 minute training session with Adam prior to the project to familiarise them with the technology.

The project began in September 2005. Adam taught two one-hour lessons per week. Each lesson involved three of the primary schools, with six pupils from each school. Prior to the project the primary pupils met Adam and one another at the secondary school, in order to help establish a good relationship.

Technology

Video conferencing technology was used to deliver the lessons. Each primary classroom was set up as below, with two preset positions for the camera.



The teacher view when delivering lessons is shown below. The larger, top picture shows the school the teacher is interacting with at any given time. The other pictures show the other two schools and the teacher himself. In addition, a computer screen could be broadcast so that the pupils could see, for example, PowerPoint slides rather than the teacher.



Teaching and learning

The aims of the project centred on enrichment, giving able pupils opportunities to explore curriculum mathematics more deeply and broadly. Tasks were presented in a more open way than in traditional mathematics classrooms, and pupils' own questions were encouraged and capitalised upon.

The project also sought to ease the transition from Key Stage 2 to Key Stage 3 mathematics by using a secondary mathematics specialist to teach primary school children.

Impact

The pupils' overall responses were positive. They reported feeling less bored and more stretched than in their usual mathematics classes. There was also more scope for interacting with others and hands-on work.

The absence of a teacher in the room (bar one of the schools) promoted independent learning. One pupil reported:

"It was great. We could do the problems using our own methods and we didn't have to set it out like our teacher normally tells us to."

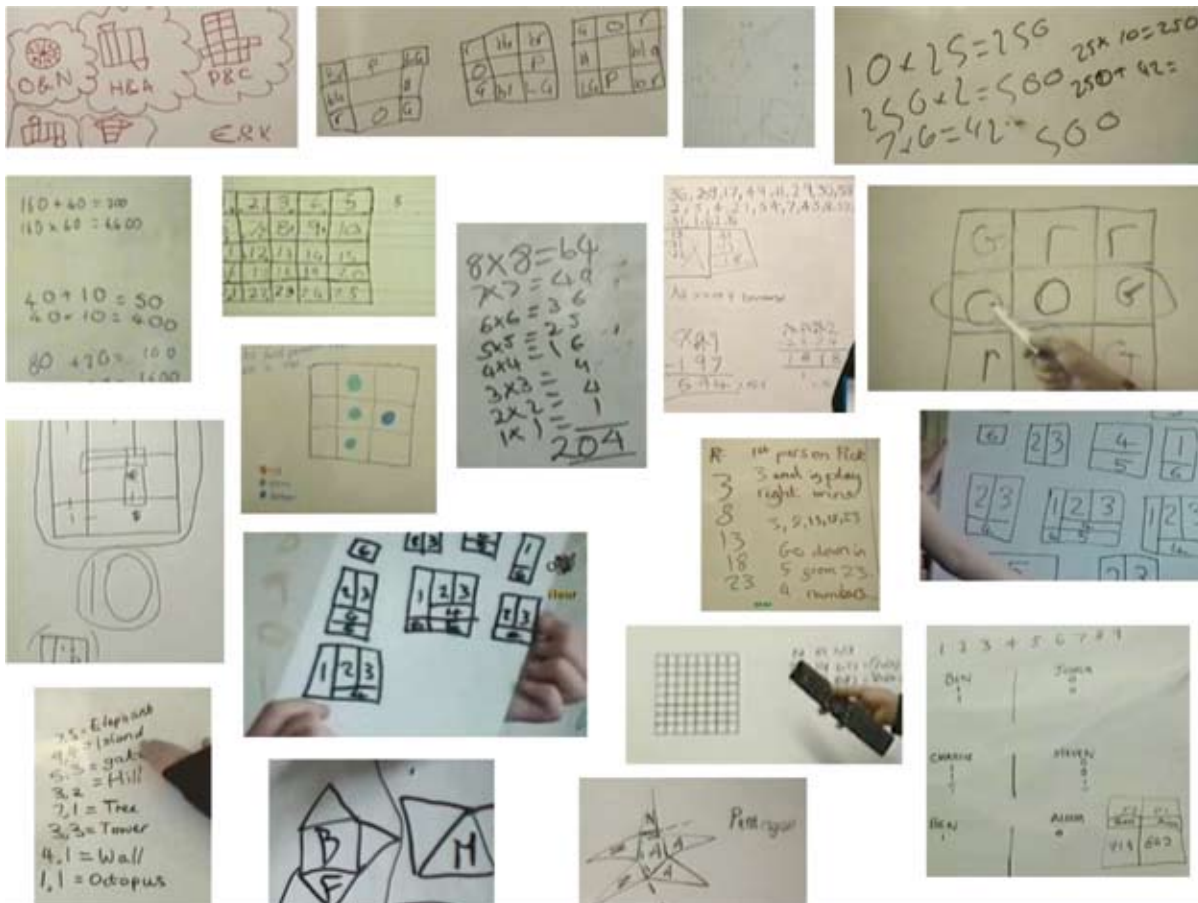
Student user

Often, however, the pupils took advantage of this absence to whisper answers to one another, as Adam discovered through interviews after the session.

Adam did not instruct pupils how to organise themselves when working on activities, but found that pupils naturally worked in pairs or small groups most of the time. Occasional, short spats broke out amongst pupils, usually over technical issues such as positioning the camera, but constructive discussion, not arguments, characterised the sessions. In fact, pupils commonly took responsibility for managing one another's behaviour.

Another aspect of independent learning that emerged was the pupils' presentation of ideas and thoughts to others over the video link. There was notable variety in the resources and notation they chose to use and how they

used them. A selection is shown below.



The need for visualization over a video link led some pupils to use resources innovatively. One pupil reported:

"We didn't have the grids or any paper in our box, so we chose to draw one on the computer. When we pointed the camera at the computer screen, it was just all blurry and you couldn't see anything. Then we drew it on the flip chart with a metre stick, but it took ages and it wasn't very accurate." Student user

Challenges

- » None of the primary schools had video conferencing equipment prior to the project and the outlay proved more expensive than expected (approximately £10,000).
- » Once installed, the equipment worked adequately for the duration of the project. The signal was at times imperfect, with the picture sometimes freezing or becoming 'blocky', as sound was prioritised during high internet traffic.
- » There were some logistical difficulties with co-ordinating all three schools involved in each lesson. Some pupils had to miss part of their break, sport and other school activities.

Wider adoption

The three challenges identified above can be expected to occur were the innovation to be adopted more widely.

1. A typical primary school is unlikely to have adequate video conferencing technology or trained staff. For many primary schools, space is at a premium, and finding a spare room may also be a challenge.
2. Many schools including primary schools have only a domestic broadband connection. As such, infrastructure is currently not good enough for the innovation to be rolled out.
3. There is no national timetabling for primary schools and the logistics of synchronising lessons across sites may well cause difficulties. Compromises are likely to be necessary, as was the case with the project reported here.