Designing Resources for Broadband

http://www.hackneybroadband.com

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This paper gives a brief account of the resources designed and constructed by the Hackney Broadband project and raises some of the issues faced by originators of broadband resources. It is based on my secondment to the project for one academic year from September 2000 to July 2001.

It is intended to help other educationalists, who may be involved in the design and construction of similar resources.

Project Inception

The project began with discussions between Hackney LEA and the City of London School. Hackney had a large educational intranet and needed high quality content, and the City of London School supplied two teachers with experience of innovative ICT resources to originate that content. The project was match funded by Hackney LEA and the DfEE, at a total cost of £500,000. Hackney LEA appointed an independent educational consultant as project co-ordinator and based the project at Hoxton Biblio-tech web enablers, a company with strong links to Hackney LEA and a heavy workload of online and ICT education in the locality.

Project Team

The team comprised a co-ordinator, two teacher advisers, a programmer and three designers with experience of a variety of web-based programs. The co-ordinator and teachers were full time while the other four members of the team all had varying periods of full time involvement, dependent on their commitments to other contracts.

Project Brief and Timetable

The original brief from Hackney LEA was to design six resources for inclusion on their schools' intranet, aimed chiefly at key stage 3 and 4, in the following subject areas:

Art and Design
Citizenship
Humanities
Music
Modern Foreign Languages
Numeracy and Literacy

All six resources were to be piloted with Hackney schools, completed and signed off by the end of March '01, a total of eight months from the team assembling.

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In the event, five of the six resources were delivered complete, the Modern Foreign Languages resource falling foul of time and problems due to outsourcing. The Humanities resource, although complete, was not piloted in school because of the lack of time.

All the finished resources are being evaluated in Hackney schools with the assistance of TEEM, between May and July '01.

The Resources

From the outset the team made a strategic decision to construct resources which used ICT innovatively and interactively, exploiting the potential of broadband connections to stream video and audio content, together with sophisticated educational resources already available via the Internet. An express purpose was to avoid pupil-authored material or textbooks online, in favour of richly rewarding tools for both teachers and pupils to engage with.

It was hoped, and is indeed proving true, that teachers would find further valuable uses for the resources.

Art and Design

Two factors informed the origin of *ExhibiTour*, the online gallery built by the team to answer the requirement for all pupils taking GCSE Art and Design to complete a coursework element which entailed their researching a school of art, or theme, or single artist.

The first was a frequent complaint by Ofsted inspectors that inner city pupils were rarely given the chance to exploit their own ethnic background and the second, the exigent need to remove the mass of oppressive paperwork coursework entails for the individual teacher every year.

The Internet makes available to pupils, a burgeoning mass of high quality art images from the collections of the greatest galleries and museums around the world, as well as far less well-known institutions or sources.

A customised 3D engine was used to construct a highly sophisticated, fully navigable, 3D gallery space with empty picture frames, into which images from the internet could be instantly placed, sized and positioned. Behind each frame, an empty word processing document was held to allow the pupil to write about each image and store it for the teacher to read as part of the marking process.

What this meant was that instead of producing folders full of postcards, prints and notes, which the teacher had to assess, the pupils could build their own, convincing, online gallery of paintings which the teacher could navigate around, reading the pupils' writing on screen before accessing a marking matrix which was also completed online. That matrix could then be printed off as a single sheet of paper to send to the exam board.

This meant the whole process of completing Art and Design coursework could become:
more efficient
richer in content
more closely bound to the experience of real art collections
more firmly rooted in global art history
easily differentiated

Tate Britain assisted with copyright, advice on curatorial issues, and in editing the teachers' notes.

Citizenship
Hackney school children speak a huge variety of mother tongues and there is an extreme diversity of ethnic backgrounds in the LEA's schools. In the absence of very clear guidance regarding the Citizenship curriculum available in September 2000, it was decided to construct a program which dealt with the highly topical issue of asylum seekers, since this would have very real relevance to many Hackney pupils.

It was felt that an effective way to approach such a sensitive topic was by abstraction and a Flash movie was designed for three simple figure types. The use of squares, circles and triangles to represent different nationalities was intended to make discussion and role-play easier and distanced from argument rooted in specific ethnicity.

A number of scenes derived from situations arising out of immigration processes were then put into a narrative sequence which the pupils could view onscreen. Each scene was followed by a discussion point, and dialogue boxes were supplied for pupils to provide possible conversations, reactions and outcomes.

A complete set of abstract figures and other physical elements to the scenes was then placed on a blank stage for pupils to manipulate at will, allowing them to create their own scenes, conversations and outcomes, outside of those proscribed within the program. This section of the movie was extremely interactive, and any single moment could be printed out to form part of a project or provide material for wider dissemination, discussion or assessment.

Finally, a set of teachers' notes was written to accompany the program including a number of links to specific web sites holding useful information and material about asylum issues.

Humanities
It proved difficult to find a topic which overtly combined geography and history, and because we were very eager to make use of video material, a decision was made to focus on history alone.

An increasing emphasis discernible in history teaching at GCSE level is the requirement for pupils to make quite sophisticated, objective judgements about original materials and

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sources. It was felt that many pupils find this difficult with reproductions of original documents, but are more likely to fulfil this requirement successfully with film or television material, because they are more skilled readers of the languages these two media use.

Anticipating the push by commercial organisations to make film archive material available online, an agreement was reached with British Pathé whereby the project had copyright free use of one of their films for a year, in order to see if we could construct a viable tool for viewing, assessing and writing about online video content.

Essayist is the result. A unique, customised interface allows pupils studying History at GCSE to view a digitally compressed version of the British Pathé film, *Churchill the Man*. This film was chosen because it contained very strong footage from both world wars and spanned a time period that many pupils were likely to study in Hackney schools.

Simultaneously, users of *Essayist* can write about the film as they view it: pausing, rewinding, fast forwarding at will, but crucially, freezing any frame which can instantly be incorporated into the body of their essay text as an illustration. In this manner they can study the archive footage closely and use frames from it as evidence within their essay.

Essays can finally be printed out containing illustrations taken directly from the film.

Although piloted as a history resource, it is hoped that *Essayist* will provide a model for teachers of other subject areas to use as they see fit.

Music
The origin of the music resource, *Cinematrix*, was uniquely external to the project team. *Cinematrix* was essentially a home entertainment program which allowed users to mix their own pre-recorded music together with pre-recorded video images, within an interface designed to appeal strongly to a youth market.

Although reservations were expressed both about its lack of appeal for music teachers, and absence of musical content, when it was first presented to the team, it was decided to pursue the program's development as the makers were one of Biblio-tech's seed corn companies, and the fostering of local new media SMEs was considered an important aspect of Biblio-tech's participation in the overall project.

Modern Foreign Languages
Again a key aim of the thinking behind this resource was to provide a tool which both pupils and teachers would find of significant practical value.

We began with the idea that learning a foreign vocabulary is one of the most severe hurdles GCSE pupils face. Well disciplined, organised, motivated pupils may handle this aspect of learning very well, less self-confident pupils require encouragement and help,

while very many pupils never really address the practice of assimilating a foreign vocabulary at all.

It was felt that a resource could be constructed which engaged all those pupils through employing broadband sophistication and interactivity.

Based on the principle that children assimilate information more easily when it is in a meaningful form, a detailed brief for a resource was written which involved users in the process of building lists of words in differing forms. A sufficiently wide variety of options would allow users to select the parameters of their own lists to ensure that the program did not become boring to use.

The process of building their lists would actively assist vocabulary learning, while a final section of the resource would mimic a well founded method of memorising visual information rooted in hiding and revealing words, or parts of words.

Because of time and personnel limitations, it was decided to outsource the brief to the same seed corn company responsible for *Cinematrix*. However, there were fundamental differences of opinion, and the resource the seed corn company finally delivered did not match the brief in any discernible respect and had to be abandoned.

Numeracy and Literacy
Using Time Zones as a theme, and the experience of real world travel and communication, a resource was designed to teach positive and negative numbers. It involved creating a 3D image of the globe which pupils could rotate to help them understand the time relationships between countries and cities.

A number of major cities were linked to live web cameras to inform pupils' grasp of fundamental night and day, seasonal differences between continents and hemispheres.

Superimposed on this basic tool was an extremely wide range of maths tasks all connected to the same theme. These tasks could be worked through online with the aid of a calculator, either independently, or as a whole class exercise.

Conclusions
The following list is intended simply to advise educationalists engaged in similar projects.

- It is imperative that experienced teachers provide the initial, creative input because they can root whatever is being designed in the world of real classrooms.

- Time spent by those teachers, discussing ideas with programmers and designers, *before* they draft a detailed outline brief, saves a great deal of time wasted later on, rebuilding or reworking.

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- Considering the high cost of development, it is sensible to construct tools rather than information based resources, since the former are more likely to inspire teachers and promote good teaching.

- Any resource should ideally enhance the experiences of two, often quite different audiences, teachers and pupils.

- Start from the known needs of teachers and pupils.

Some of the complete resources and models of others can be seen at
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