2004 Report: ICT in schools – the impact of government initiatives

Secondary art and design

Contents

Introduction

This report is based on subject-specific evidence from visits to secondary schools made as part of the inspection of the impact of government ICT initiatives between April 2002 and December 2003 and supplemented by evidence from other school visits where appropriate. This contributed to the main report, *ICT in schools*, which is available from the Ofsted publications centre (07002 637833) or via the Ofsted website (www.ofsted.gov.uk).

Main findings

❑　The sample reflects the national picture, with just under a third of schools making good use of the new technology. In around a third of schools, ICT use still remains unsatisfactory.

❑　Where ICT is used well, teachers have recognised its wide-ranging possibilities as a creative medium and a source of information and ideas, and are developing the management and organisational skills to incorporate it effectively into their day-to-day teaching. Some excellent practice is emerging.

❑　Characteristics of departments where ICT is used well are that: pupils have access to a good range of departmental equipment; at least one of the teaching team has developed a high level of expertise; and ICT is an integral part of the curriculum, often in Key Stage 4 and post-16.

❑　Although most art departments did not find that New Opportunities Fund (NOF) training met their needs, many have benefited from training courses offered in local further education colleges, universities and local education authorities (LEAs), or through school-based initiatives.

❑　The range and quality of ICT resources in art and design have shown at least some improvement in three in four schools, despite often poor ICT development planning at departmental level.

The impact of the initiatives

Teaching and learning in art and design

In art and design, ICT is used as: a creative medium – often in combination with other, more traditional, media; a research tool; and, especially on examination courses, a means of producing written coursework, sometimes involving the amalgamation of images and text. Where departments have interactive whiteboards and presentational software, teachers are able to use ICT to introduce modules of work, explain digital or other, more traditional, art processes, or connect the class to materials relating to a particular artist or genre. Presentational software is also used by pupils to share research findings, for instance.

Where ICT is used effectively as a creative medium, it has been made an integral part of departmental working practices. In one Year 8 lesson, for example, the teacher explained that ICT was part of a continuum of technological development, which artists have always exploited, explaining how, for instance, Vermeer had used the camera obscura and how photography had affected the work of Degas. This continuum was made evident in another school where Year 10 students used as their starting point imagery produced, in part, through the 'old' technology of chemical photography but which they then explored creatively using the new technology of digital photography.

The students were producing artwork based on the expression of movement, with reference to the photographic work of Muybridge and the Italian Futurists. Using digital cameras they took photographs of other pupils which they then manipulated digitally to suggest movement. The work was highly individual, including combinations of images, sound and text. The sequences engaged pupils with questions of balance, relatedness and point of view; all these considerations linked to the history of art. This work could not have been produced in any other way.

Sometimes ICT-related work lacks challenge or is insufficiently differentiated, often reflecting a teacher's lack of awareness of the ICT knowledge and skills pupils have already acquired. In this respect, it is rare for departments to audit systematically how many pupils have computers and particular art software at home or what they have done using ICT in other parts of the curriculum. Conversely, teachers responsible for generic ICT courses in a school do not always take account of what pupils have done in art and design and thus often underestimate pupils' ICT capability. Sometimes, ICT applications are not directed towards a sufficiently engaging artistic problem and are little more than colouring in electronically. Furthermore, some departments are still too tolerant of pupils who, in the name of research, download barely understood, even, in some cases, unread, written material from the internet. By contrast, in one Year 10 General National Vocational Qualification (GNVQ) class, the teacher made the process of mediating material drawn from the internet, the focus of the lesson:

Pupils pulled images and text from internet pages and revamped them for a different audience. While no highly creative work was seen, there was consistency in terms of layout and manipulation of imagery, which pointed to a good grounding in this kind of activity. During the lesson, several pupils moved away from using a publication 'wizard' to control manually some aspects of their work; this indicates very good learning.

A minority of departments include at least some programmed time in an ICT suite for art, usually in Key Stage 3 but also for vocational courses in Key Stage 4 and post-16. For some teachers the arrangements for this are less than ideal, especially in Key Stage 3. Suites often have to be booked weeks in advance, the rooms themselves usually have a very different ambience from art studios, and the size of classes often requires pupils to share machines – though, for some activities, the opportunity for pupils to work together in twos or threes is used positively. In one Year 7 lesson, for instance, the teacher deliberately paired pupils with very different ICT capabilities so that the more able would teach the less able. In another school, Year 10 students, working in pairs, developed

ideas for a logo design which not only tested their ICT skills but their ability to talk together productively.

Where departments have inbuilt ICT suites or can use facilities close to the studios, ICT can become more easily included in the curriculum, with students able to move between conventional media and computers as the need arises. In one Year 10 class, for example, half the pupils worked individually on computers positioned down one side of the studio while the rest of the class developed ideas initiated digitally in the previous lesson, using inks and acrylic paint.

In terms of day-to-day administration, computers have made a significant difference in most departments. Schemes of work, departmental plans, and minutes of meetings are commonly word processed and stored electronically. The production of visual resources has also benefited considerably from the use of ICT. This includes making worksheets using images taken from the internet and producing huge composite reproductions of paintings or using a data projector to project slow-tracked moving images as part of a lesson on the work of Andy Warhol.

The use of support staff in art can be very effective, as long as they know what is expected of them. In one middle school, the teaching assistants were sometimes too interventionist, moving the mouse for particular children with special educational needs (SEN) even when they were quite capable of doing this for themselves, for instance.

Standards and achievement

Like any tool used effectively in art and design, ICT requires the application of handling skills in combination with such qualities as imagination, perspicacity and vision, and at least some understanding of how meanings are made. In the departments where standards and achievement are high, all these factors are evident in pupils' work. Pupils are not only taught how to use software but are also taught to think creatively and critically. For instance, in a project to design a school mascot:

> *Year 8 pupils began work using clip art body part resource sheets to draw from. They created their own characters – in some cases, the product of long-sustained experimentation – by assembling different body parts. This involved them looking critically at existing mascots from other sources such as football teams. Having settled on a final design, they drew the body parts and photocopied these on thin card. These were carefully cut out and assembled as a working model, using paper fasteners to allow for movement. The model was then scanned in five different positions and colour-ways. Because there was no animation software, each scan was inserted into a presentation software sequence, with a setting of zero seconds between each slide. 'Loop' was then selected and the slide show played, thus 'animating' the character. Finally, pupils looked at images of Claes Oldenburg's installation projects and, in the light of this, took digital photographs of the school grounds and placed their mascots as 'sculptures' into these environments.*

In another school, Year 10 students used ICT in an assured and creative way as a response to work they had seen in a gallery.

Pupils following the General Certificate of Secondary Education (GCSE) courses in art and design used digital cameras to capture images produced by an artist whose exhibition they had visited. They researched her influences using the internet and responded to her work in images of their own making, using digital imaging software. In this successful project, the use of ICT is completely congruent with the processes of developing ideas, investigation, making and evaluation – processes which are central to the subject, whatever the medium.

Elsewhere, some good-quality work was produced by Year 8 pupils who moved from drawing self-portraits in charcoal to working on a computer screen, a transition which formed part of a project to which pupils were highly committed.

In one Key Stage 3 unit, based on the H.G. Wells story The Island of Doctor Moreau*, pupils began with self-portraits produced in charcoal which were later photographed digitally by the teacher and put on disc. These were then manipulated to suggest animal features, using images taken from the intranet. Morphing, cloning and texturing applications were used with varying degrees of subtlety: some of the most creative work came from pupils who showed high levels of perseverance in finding the right effect.*

Much good-quality ICT-based work begins with observation of the natural or built environment. In one school, for instance, a rich sequence of work began with pupils observing the effects of weather on billboards:

With magazine images, they created a composition using a layered collage technique which was torn away to simulate the effects of the weather on posters displayed outdoors. They scanned this image and applied different digital effects to produce compositions which reflected the abstract qualities of the original images. This was the starting point for a longer study of colour, shape and texture.

Some of the most ambitious experimental work in the sample was observed in the post-16 phase. In one school, this included:

- *a photograph of a human form in a sheet which had been chased through a series of filters and colour treatments to arrive at a final digital image of some power: these developments were usefully annotated in a sketchbook*

- *a project involving the projection of colour slides of interlinked hands and arms onto a male torso: the resulting images were captured on a digital camera and manipulated*

- *images drawn in ink combined with computer-produced titles and photographic overlays, enlarged to A2-sized monochrome prints.*

In another school, the work of sixth form students included:

- *a digitally produced visual essay of a draped human figure, extended into clay and plaster versions of the same images*

- *over twenty distinctive designs for a chocolate bar, employing a wide range of textual effects produced digitally and presented in an 'ideas book'*

- *mock-ups of pre-Raphaelite pictures photographed digitally and then reworked to show the effects of different lighting schema.*

In work of this kind, students had often been influenced by visits to galleries which had included the work of digital artists, or they had been encouraged by teachers to find work of this kind on the internet. In a few cases, pupils had been inspired by working with digital artists in school as part of a residency.

For children who, for whatever reason, have limited drawing skills, the use of ICT can be liberating, in some cases leading to high achievement. A Year 11 pupil, for instance, who had classed herself as a 'no-hoper' in art because of her lack of drawing ability, had felt able to take the subject at GCSE because of the confidence which ICT-related artwork had given her. She was now producing work of some sophistication, in one digital piece superimposing her own portrait on to the iris of an enlarged eye, inspired by the surrealist images of Escher.

Where the use of ICT in art and design has made little or no impact on standards and achievement, it is often because the teachers involved have yet to appreciate what the new technologies can do for the subject or are daunted by the organisational changes a whole-hearted commitment appears to require. These teachers should be encouraged by the gradualist approach taken by many of the best departments, which, often starting with minimal amounts of equipment and little or no personal expertise, have steadily made the new technologies an essential part of their provision.

Implementation in schools

Leadership and management

While most schools have clear whole-school development plans for ICT, too often development plans for art include little more than a few passing references to ICT. This does not always signify a lack of thought about how the subject might develop, as in one department where 'although strategic planning is minimal, the head of department demonstrates a clear understanding of the potential of ICT and holds a vision for its development, which he communicates well to colleague*'*. In this and other departments where ICT has become an integral part of the subject, conviction is driven by substantial first-hand experience of ICT by the head of department or another art teacher. In a few schools, such experience at management level is still lacking and heads of department remain unconvinced of the value of ICT in art and design. This can seriously impede future developments, especially in schools where resources are allocated according to a department's capacity to make effective use of them.

Schemes of work for art and design usually make some reference to ICT, both as a creative medium and a research tool. Some include relevant website addresses and CD-ROM titles. More developed schemes make clear how, precisely, ICT will be used, as in one Year 8 unit on the theme of towers which would involve the pupils downloading and manipulating the image of the Eiffel Tower. A few schemes make no reference to ICT, raising questions about whether they are meeting National Curriculum requirements.

At departmental level, the monitoring and evaluation of pupils' work in ICT by heads of department are usually informal and unsystematic. Nevertheless, arising from such a process, there is a growing awareness of particular, often complex, issues which, while not entirely new to art and design, have been given a new slant through the use of ICT. These include issues relating to originality and the 'ownership' of visual ideas: how much are they the student's and how much those of the creator of the original image taken from the internet which the student has then manipulated? How can a student's decision-making be revealed when it is comparatively easy to produce stunning visual effects through an entirely arbitrary application of the software? Are students critically distanced enough from the materials they select and download from the internet? For example, a teacher of a Year 10 GCSE class *'encouraged his (mostly male) students, who were designing a poster for a school play, to think critically about the representations of men and women they were finding in 1960s film posters taken from the internet'.* Through engaging with such questions, a department not only sharpens its approaches to using ICT but also encourages a climate of debate about art and design, as well as other forms of cultural production.

Monitoring and evaluation geared to finding out how ICT is contributing to raising standards and achievement are rare. However, one head of a department which had fewer than 30% A*–C passes at GCSE but now consistently reaches 75% and above, claimed that it was the use of ICT which had given pupils the confidence to succeed. In contrast to this, another argued that his department sustains good GCSE results without including ICT in the curriculum. Most departments need to look closely at the impact of ICT use in order to establish what works well and refine their practice.

In relation to the management and analysis of pupils' achievement, most art departments use computer-generated data produced by the school to inform baseline assessments and to track pupils' progress against predicted grades. For recording and reporting on pupils' progress, there is a growing awareness of what might be possible, though effective practice is thin on the ground. One development is centred on the use of electronic files, for example:

> *Pupils have electronic files which show how a piece of work has developed over time. This, when used in conjunction with other evidence such as sketchbooks, provides insights into pupils' decision-making processes and progress. In a tutorial with her teacher a Year 11 student, with reference to images in a zip file, described the choices she had made when developing a digitally produced design for a book cover based on Bauhaus principles. As well as the digital evidence, she also referred occasionally to her sketchbooks.*

Elsewhere, digital videos have been made of collaborative projects, providing useful records of the progress made by both a group and the individuals within it. As a means of disseminating good-quality work and emphasising standards, one LEA adviser takes images of all the authority's schools' GCSE shows and shares these at in-service events. More commonly, LEA websites include examples of pupils' artwork: another means of sharing good practice. Some art departments are using data projectors to share and review work in lessons.

For report writing, many schools have introduced electronic systems, often a real boon to small departments. For instance:

An electronic reporting system enables the art department to produce reports on their laptops at home for feeding into the school system the next day; indeed, they can be emailed in, and often are.

Staff development

The quality and effectiveness of staff development have been patchy. Very few departments have a clear professional development strategy for ICT based on a thorough analysis of teachers' needs and the needs of the curriculum. With few exceptions, NOF-funded training has failed to meet subject requirements. Where it has been successful, it has often been the least knowledgeable and confident teachers – in terms of ICT – who have benefited. Teachers already familiar with the technology have frequently found the training pitched at too low a level or irrelevant to their curricular needs. Many have failed to complete the training. Some training thought to be effective at the time, such as that led by an advanced trainer in the school where the trainer was head of art, had not been followed up in participants' schools. Nevertheless, even where training has had little impact, many teachers feel that NOF, for all its imperfections, has at least raised questions about the role of ICT in the subject.

Although NOF-funded training has had little direct effect, other forms of training have often been successful, at least in the short term. These have included courses offered by LEA subject advisers, local further education colleges and universities or professional associations; or bespoke training events, run by the schools themselves. A head of department with a high level of ICT skill had provided one-to-one support for his colleagues, enabling all of them, from very low baselines, to use ICT in their teaching. Elsewhere, an ICT co-ordinator had co-taught an art class with an art specialist, showing, in the course of the lesson, how presentational software could be used to demonstrate aspects of colour theory. In one LEA an Advanced Skills Teacher with a brief to develop ICT in art, was running training courses for teachers. In schools where art teachers had received laptops through national or local schemes, this had often been a catalyst to the development of skills.

A few schools have benefited from working with visiting artists who use ICT as a creative medium, sometimes funded by an Education Action Zone. By connecting pupils' work to the work of professional artists working digitally – by taking pupils to galleries or downloading ICT-created work from the internet, for instance – teachers can highlight the creative potential of ICT as a medium in its own right. One teacher interested her pupils in digitally created imagery by showing them examples of artwork she had produced herself with a computer.

In more limited ways, the expertise of pupils has also been used, as in one school where a Year 13 student explained to art teachers how to use a scanner. Schools have also used the ICT expertise of newly qualified teachers (NQTs): one NQT, for instance, was teaching a group of formerly disaffected Year 9 boys how to animate a sequence based on digitised photographs of skateboarders. Not all NQTs, however, demonstrate the full

range of ICT capability; thus they require additional departmental training before they can become confident classroom users of ICT.

Many successful courses have focused on one piece of commercial software, enabling teachers to gain a practical understanding of how it can be used within particular curricular contexts. In one school, the high-quality graphics work of students on an Advanced Vocational Certificate of Education (AVCE) course was associated with the sophisticated understanding of particular software which the teacher had acquired on a course of this kind. This teacher, like many art specialists, is building up her expertise bit by bit, taking a pragmatic approach to the opportunities offered. Another department visited typifies this approach:

The department had high standards and achieved good GCSE results year on year. The head of department was rather cautious in his approach, so the department was not a hotbed of innovation. The work was traditional, founded on well-taught basic skills, particularly drawing. His approach to ICT is an evolutionary, pragmatic one. As he and his colleagues become more proficient, they will probably use ICT more and more in their teaching.

Resources and accommodation

While there is still considerable variability in the quantity and quality of ICT resources in art and design, National Grid for Learning funds have enabled around three in four schools to make at least some improvement to departmental provision. Usually, where this has not been the case, the subject has not figured in the school's ICT priorities. At best, departmental facilities comprise groups of networked computers within or adjacent to studios, to which pupils have easy access – including supervised access outside of lessons. Occasionally, where schools are on split sites, the ICT art facilities in the upper school are better than those for lower-school pupils. However, even in single-site schools with modest ICT facilities, there is a tendency for pupils in Key Stage 4 and post-16 courses to have most access to computers. Organisational difficulties arising from large classes chasing too few departmental computers often account for this. In one school, however, where a small number of industry-standard computers had only just been acquired, the department wanted to explore their potential with AVCE students before making them more widely available. The notion that post-16 students could act as trailblazers was also evident in another department, where teachers were not yet proficient in the use of computers.

Where departments have computers they usually have their own scanners and printers and access to, if not always ownership of, digital cameras. While there is a growing use of interactive whiteboards and presentational software, this is still relatively rare in art. Occasionally frustrations occur when the equipment is not up to the task. For instance:

Two pairs of Year 7 pupils worked on scanning and manipulating the image of a feather, while the rest of the class were doing observational drawings of feathers. The pupils took turns but the images were poor and the different filters they were using produced very similar effects. The pairs took some time fiddling around with these but settled on one and saved it on the intranet. Those using traditional drawing media made more progress, trying out different media such as pen and ink and different

scales. While the scanned image is an alternative it demands less creativity from the pupils and takes more time to produce, which frustrated the pupils.

Departmental access to the internet through broadband connections is becoming more widespread, though filtering processes can sometimes prevent access to legitimate sites or images in art, such as paintings of the nude. Increasingly, departments are posting website addresses linked to specific art projects on school intranets and a small but growing number of specialists are producing their own ICT-based resources on aspects of art and design. In one school, for instance, a program was designed to help students understand through practice the ideas associated with Constructivism. Increasingly, pupils are exploring animation effects through ICT.

While many teachers are becoming more discriminating buyers of software – licensing costs being one important consideration – there is little recourse to advice from professional associations or, where it is available, from LEAs. In a few cases, art teachers were observed making effective use of free software packages given away with computer magazines.

Technical support for ICT at departmental level can be good or very poor, but for the most part is satisfactory. One very successful department, which operates a suite of industry-standard computers and produces high-quality work, especially on post-16 courses, enjoys the services of a general art technician who is highly computer-literate as well as sensitive to the learning needs of students. As a consequence, she provides exceptionally well-directed technical support.