Evaluation Report of the Becta Digital Video Pilot Project

October 2002

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The authors would like to acknowledge the co-operation and support of the teachers and pupils whose work is the subject of this report, and the staff at Becta who collated and supplied data, and encouraged us in the writing process.

About Becta
Becta (British Educational Communications and Technology Agency) is the Government’s lead agency for ICT in education. Becta supports the UK Government and national organisations in the use and development of ICT in education to raise standards, widen access, improve skills and encourage effective management.

About the British Film Institute (bfi)
The bfi gives everyone the opportunity to increase their understanding and appreciation of film and television from around the world.
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Executive Summary and Recommendations

Introduction

In 2002 Becta commissioned the British Film Institute (bfi) to undertake an evaluation of the Digital Video (DV) Pilot scheme. This publication reports on the findings from this evaluation.

Some 50 schools from across the UK took part in the pilot, which ran from October 2001 until March 2002. The pilot aimed to gather evidence on the impact of use of digital video (DV) technology on pupils’ engagement and behaviours. It also aimed to identify models of effective practice in inspiring and developing pupils’ work with DV.

Findings

Evidence from the pilot shows that the integration of DV into teaching and learning has the potential to enhance learning across the curriculum. In particular it can:

- increase pupil engagement with the curriculum
- promote and develop a range of learning styles
- motivate and engage a wider range of pupils than traditional teaching methods, so providing greater access to the curriculum.

As a short-term study, the pilot did not measure how the integration of DV technology affected standard attainment measures. However, qualitative evidence from the teachers’ own monitoring of the effects suggests that the use of DV:

- stimulates and support the development of other skills, such as problem solving, negotiation, thinking, reasoning and risk-taking.

Evidence gathered from the pilot also suggests that:

- the integration of DV technologies into subject teaching does not automatically improve the quality of work or standards of attainment; high-quality teaching remains the key factor in raising achievement
- teachers were unclear about what constituted creativity and so were unsure about structuring their own role in the process and evaluating the quality of their pupils’ work
- high-quality work showed a greater attention to the uniqueness of the ‘language’ of the moving image
understanding and control of this language, rather than simply of the technology, gives pupils access to expression through DV.

Recommendations

It is suggested that:

- in working with DV, teachers and pupils need to recognise the distinctiveness of the moving image as a unique mode of expression and communication
- teachers will require knowledge of and training in, the language of the moving image before DV can be integrated fully into the curriculum
- pupils will need more than ‘one-off’ opportunities for using DV if its potential to enhance their learning is to be realised.

It is recommended that further evaluations of DV in learning are undertaken over a longer time period, specifically in order to:

- gauge the impact of DV activity which is based on a greater understanding of the language of the moving image
- chart the learning progression in the use of DV across ages, phases and abilities
- devise, develop and apply a clear model of creativity in DV that both suggests criteria for evaluating the quality of DV work, and structures the teacher’s role in the creative process.
Key findings

This section of the report examines the key findings from the pilot. It examines:
1. patterns of use
2. learning and DV
3. creativity and DV
4. moving image literacy
5. DV and generic skills
6. DV and ICT skills and affordances
7. access to technologies
8. good practice in using DV

1. Patterns of use

1.1 There were three broad patterns of use of DV identified across the pilot:
• As an extra-curricular activity
• As integrated into other activities in curriculum subjects
• As used in cross-curricular work.

The project set-up – giving one iMac and a DV camera to each school – circumscribed the patterns of use to a large extent. Although there were schools which obviously had equipment over and above this, the majority had to rely on what they had been given. For these schools, having one set of equipment made it harder to have whole classes working at once. This, together with the sense of video work being seen as ‘special’, and the relative inexperience of some of the teachers in using DV, meant that quite a lot of work went on outside the timetable.

1.2 Where DV was used in the curriculum, it was easy to distinguish between cross-curricular applications (more often in primary schools), and single subject-based uses (more common in secondary settings). Beyond this there were some projects where the focus was clearly on making films, whilst others emphasised supporting learning in other areas. Despite this there was little evidence that the choice of area had any impact on the quality of work. For example, using DV in primary science doesn’t necessarily mean that attention to the moving image will be neglected, or that asking pupils to make a fiction film necessarily makes their piece higher quality in filmic terms.

1.3 It was possible therefore to distinguish further between DV work which demonstrated some sensitivity to the medium, and the language of the medium, and work which appeared to use DV ‘transparently’ as a recording or measuring tool. (However, it is suggested that there can be no effective ‘transparent’ use of DV.)
1.4 The most potent use of DV is as a medium of expression and communication, and here the points in 1.3 above become more pertinent. It was clear that where an audience for a piece of work had been considered, it was even more important to use the language of the medium – the moving image – appropriately and sensitively. Within the pilot, some of the most effective work in curriculum-based subjects used humour to engage an audience.

1.5 Less common, but still important, were uses of DV to enable pupils to reflect on themselves, their behaviour, and their performance. This was an important example of the potential impact on learning enabled by DV (expanded on in section 2 below).

1.6 DV was also used by pupils to model and imagine new worlds, new ideas and new identities. The key benefit here is the flexibility of DV: it can be reshaped and revised over and over again, and with immediate results. It seems to encourage some pupils to experiment with the medium, and the content of their work, increasing their ability to take risks in a confident manner.

1.7 One significant use of DV, as seen as part of the pilot, is in animation, which is explored in more detail in Case Study 1. It is clear that this is a powerful way of crossing curricular areas in both primary and secondary phases, and of using DV to integrate different modes and media such as voice, gesture, music, colour, rhythm, framing and language.

1.8 Another important distinction can be made between uses of DV which focused on editing, and those which combined pupils both filming and editing (the latter was more frequent). It is important to understand the difference between these two processes: editing is not just the process of ‘putting the shots filmed in the right order’. Both processes – filming and editing – benefit from being approached in a structured and planned way.

2. Learning and DV

2.1 There is widespread evidence from the pilot that using DV dramatically increases the motivation for learning and engagement of a wide range of learners, but particularly those excluded from the traditional curriculum. Using DV as part of learning tasks improves behaviour and on-task concentration. Pupils are engaged to stay beyond lessons – into breaks, lunchtimes, and after school.

2.2 There is evidence of the impact of DV as a medium for learning when used in curriculum contexts. DV can be the most appropriate medium, for example, for exploring concepts in science such as forces and motion; for evaluating and improving skills in PE; for extending possibilities in art, music, drama and dance; for synthesising and presenting subject knowledge in history.
However, just as with other ‘languages for learning’, the opportunities for enhancing subject knowledge are maximised if pupils pay attention to the language and presentation of the medium they are using.

2.3 There is evidence that DV dramatically broadens access to the traditional curriculum, and so to achievement in a wider context. Teachers involved in the pilot felt that DV exploits and supports a wider variety of learning styles than other modes of learning. DV offers something to kinaesthetic, visuo-spatial and musical learners, as well as to pupils who are verbally fluent. What is not clear, and thus needs further investigation, is which models of use and teaching strategies best support particular learning styles.

2.4 Differentiation in learning on the pilot seems often to have occurred by outcome, or there has been an assumption that all pupils are equally adept at all of the major roles and skill functions associated with DV and digital video editing (DVE). While aptitude with the medium or technology might be more generously spread across a cohort of pupils than, say, drawing skills or functional literacy, this needs to be backed up with evidence.

2.5 With regard to learning progression using DV, it is apparent (and somewhat understandable given the limited nature of the pilot) that there were few clear models or even basic understandings in use, although a couple of exceptions are cited in Appendix D. No clear picture has emerged of what kinds of DV skills pupils might be ready to acquire at which age. It is therefore possible, for example, that pupils were capable of working at a higher level than the tasks set by their teachers.

2.6 There was a great amount of testimony from teachers of the potential of DV to enable pupils to transform both their own identities and their views of the world. This may be the most significant potential for DV that has arisen out of the pilot work. For example, that DV offers ‘feedback’ to pupils was felt by teachers to have a significant impact on pupils' self-perception and self-esteem. Working with the medium encourages pupils to draw on aspects of their own lives – especially their consumption of popular culture. It seems that DV in many ways bridges different worlds for pupils – interior and exterior, the subjective and objective, private and public, school and home, peer and tutor, solitary and communal. One teacher pointed out that DV seems to ‘cross social boundaries and class barriers’.

3. Creativity and DV

3.1 On the basis of the work witnessed in the pilot, it was clear that there are instances in which DV is the most appropriate medium for communicating ideas, feelings and information. However, there was some confusion and uncertainty in teachers’ understanding of what might constitute creative work with DV. This
might have been because the language surrounding creativity in education is often vague, but also because DV work in schools is relatively new, so that any work produced in this medium can be labelled as ‘creative’.

3.2 There were, unsurprisingly, variations in the quality of work produced across the pilot. This raises a problem: if all work produced was equally creative, what then can be made to account for differences in quality? What is certain is that all DV work, whether recording performances, PE activities or science experiments, will benefit from being thoughtfully and appropriately framed, timed, lit, sound recorded, and edited. As suggested throughout this report, paying explicit attention to the language of the medium leads to better quality work in all areas of DV use.

3.3 There was evidence that some teachers appeared to operate with a model that equated creativity with originality and freedom from constraint. This in turn implied that the teacher had no clear role in supporting pupils’ creative processes. The authors of this report would argue, with Sharples (1999), that originality is a necessary but not sufficient, precondition for creative work, and that teachers setting and pupils understanding clear constraints for creative tasks is likely to generate the best work from pupils. This position is elaborated on in the section ‘Creativity, Design and DV’.

3.4 There was a clear relationship in the work produced between creativity and moving image literacy. The most impressive pieces were informed by a sense of how to use the medium and the language of the moving image thoughtfully and deliberately, regardless of the curriculum area being supported. Very often the less successful work could have been improved with just a little more sensitivity to the contribution made by variations in shot length, camera position, lighting and sound.

3.5 In addition to more sensitivity to the possibilities of the medium, it is suggested that recursive opportunities for DV work would have a significant impact on the quality of work produced. Much work with DV in the past has been characterised as ‘one-off’ opportunities, where pupils never have the chance to revisit pieces of work or try out new techniques, and where the emphasis has been less on learning than on celebrating the fact that anything has been produced at all. This study suggests that the standard of much work could be improved given three factors:

- Attention to moving image literacy
- Teacher expertise in this field
- Pupil experience of a systematic sequence of learning over a period of time.
4. Moving image literacy

4.1 It is clear from the work produced in the pilot that the moving image, as exploited by DV, has the potential to be a powerful language for learning, and one which enables access to learning for a wide range of pupils’ abilities, learning styles and circumstances. But it is a language which itself needs to be learned. Evidence from the pilot shows that pupils who use moving images with clarity, concision, authority and appropriateness produce higher quality DV work, so enabling more effective learning in other areas.

4.2 The key criteria determining the production of interesting DV work seemed to be some experience of video work on behalf of the teacher, together with a structured approach to setting the DV tasks. These criteria were more important than the ICT skills or experience of the teacher.

4.3 A wide range of different kinds of pedagogy were observed in relation to DV and DVE, on a spectrum from no intervention at all, to highly structured. Examples of the latter include structuring of working group roles and role rotation, peer tutors and mentors for editing, word walls for film language, and use of editing software to introduce film language.

4.4 There is evidence that practical DV work also improves pupils’ moving image literacy, though this is dependent on the curriculum context, the degree of structure given to the learning task, and the background and prior video knowledge of the teacher. It was evident that pupils who demonstrated a more sophisticated understanding of the moving image in their work also produced more impressive subject-based DV pieces.

4.5 There is evidence that working with DV raised teachers’ awareness of the need for moving image literacy and understanding. This was manifest in two kinds of response: a recognition that pupils have great implicit knowledge of some aspects of moving image media, and that after using DVE pupils are able to reflect more critically on television.

4.6 As this was the first time many of the teachers had used DV, often there was an understandable lack of attention paid by teachers to the aesthetic qualities of pupils’ DV work. Instead, teachers valued pupils’ improved motivation and access to the curriculum, the collaborative nature of the work, and the broadcast quality of DV as a medium, but often without knowing how to recognise, support or promote high-quality work that reflects pupils’ capabilities. This was evident, for example, in an over-emphasis on the content of a shot, and a neglect (though with significant exceptions) of variations in camera position and shot length, and of lighting and sound recording. We would reiterate that
sensitive attention to the language of the medium is key to producing robust learning outcomes and maintaining pupils’ motivation.

4.7. In general, where DV work incorporates filming, there can be an over-emphasis on gathering footage, to the neglect of the possibilities offered by the editing technology. The work which was most sensitive to the language of the moving image was produced where teachers used the technology with a learning focus. Examples from the pilot included:

- re-using the same footage in the production of a wide variety of outcomes
- constructing different versions of material for pupils to compare
- allowing pupils to experiment with footage
- doing short editing activities
- trying out different camera angles and positions with the same subject.

These types of use can enable teachers and pupils to become familiar with the whole range of expression made possible by DV.

4.8 There were examples of good practice in using the relationship between DV and PowerPoint presentation software. Rather than being a technological compatibility, this rests on an understanding that the media and the languages they draw on are similar, particularly in combining sound and image, and using duration.

5. DV and generic skills

5.1 The use of filming and DVE was often seen by teachers, at least initially, as having particular relevance to ICT skills (many of the lead contacts were school ICT co-ordinators). However, there were some other key generic skills that appeared to have been fostered by the use of DV in the pilot which are not technically related.

5.2 One of these generic skills is communication skills. More than half of the schools involved mentioned the fact that the editing work undertaken in groups provided a forum for discussion which was both purposeful and pupil centred. Talking through and justifying an edit often brought into play critical thinking and communication skills, and in fact it was the ‘talk’ generated by using DVE that perhaps most surprised the teachers involved.

5.3 The specific uses of communication in DV include negotiation, making and mediating judgements, arriving at consensus over choices, and speculating over decisions. It was noted that much of the design of a piece of DV happened in conversation between participants rather than in the planning process.

5.4 However, there was evidence from the visits to schools that sometimes some pupils wanted to work on their own. Other instances included situations
with groups where communication was truncated. As a result, in some situations it could be counter-productive to insist on encouraging pupils to elaborate on the editing process.

5.5 There were also situations in which the use of DV offered alternative avenues to explore stories and concepts for those pupils who were less able or reluctant to write out their work. In such cases there were good examples of motivated and purposive talk which could then be ‘actioned’ or brought to life by making a visual editing decision.

5.6 There were many examples offered by teachers in interview of pupils freely using terminology associated with moving image production and showing good understanding of what these terms meant. In some cases, teachers felt that this new vocabulary might be put to good use in relation to other spheres, particularly in thinking about pupils’ writing and the cross-over potential between editing skills such as cutting, splicing, use of transitions, continuity, pace and flow and the construction of written stories.

5.7 Using the appropriate language in the making and editing of DV enabled pupils to edit more competently and confidently. Good practice in the pilot in this area included a conscious focus on terminology, for example in word walls (where the words associated with the moving image are put on the wall as a reference point) and crib sheets.

5.8 Other generic skills supported by DV reported by teachers include problem solving, project management and organisational and planning skills.

6. **DV and ICT skills and affordances**

6.1 Following the school visits, it has been possible to consider some relationships between DV work and the generic ICT processes and affordances of ICT identified by Moseley and Higgins (1999), such as feedback, dynamic representation and iterative opportunities for editing.

6.2 As suggested in 2.6 above, good practice with DV affords opportunities for pupils to reflect on their work – both on the subject knowledge component of a piece of DV and their use of the language of the moving image. The LCDs on cameras, and the possibility of linking cameras with monitors, make this instantaneous.

6.3 The use of DV as a presentational medium – in assemblies, on intranets, the Web, plasma screens, as well as with peers in a classroom – was recognised by nearly all of the teachers on the pilot. However, the extent to which such representations were *dynamic*, varied considerably. Recording events, performances, experiments, feelings and ideas on DV is not in itself dynamic. In
fact, if recorded on a single camera, in one position, without editing, it can render an original live performance inert. Just as with other forms of ICT, attention has to be paid to the presentational aspects and possibilities of the medium, and an understanding of these has to be integrated into work from the start.

6.4 The third generic feature of ICT that might cross over into DV is the iterative possibilities for editing. The potential of non-linear editing software such as iMovie 2 is precisely in its use to make and re-make, to revise, or make endless different versions of ‘text’. The learning potential of making more than one version of a piece of film, from the same source material, maybe for different purposes, should be apparent. Guidance in this kind of task therefore needs to be promoted amongst teachers who use DVE software.

6.5 Another affordance offered by DV mentioned by teachers lies in its integrative role in relation to other media. In one case, using DV encouraged pupils to source and present images found on the Web in their film, and in many other examples, pupils used back projections, music and text, all combined in a moving image presentation.

7. Access to technologies

7.1 The DV pilot discussion forum (an e-mail based forum established as part of the pilot to share advice and give support) became a successful arena for troubleshooting specific technical difficulties. However, the focus in this report is on the more general technical issues that arose in the visits and reports.

7.2 Some primary teachers found that the small DV ‘handicams’ presented difficulties for younger pupils, reporting that they found the controls ‘fiddly’.

7.3 The ability to project and use iMovie 2 on an interactive whiteboard can significantly improve access to DVE for pupils with limited fine motor skills. Teachers noted that projecting the software could also make it easier for whole-class teaching. Many teachers in the pilot remained unaware that most popular types of whiteboards can support this additional functionality.

7.4 Having one editing workstation for a whole class significantly reduces access for pupils: it can engage the teacher in time-consuming classroom management, keeping non-editing pupils busy, or it can mean that the software is used outside the curriculum altogether. It is recommended that the ratio of editing stations to pupils at any one time should be 1:4. A group size of four should be the maximum for an editing task if all pupils are to gain reasonable access to the technology and the decision-making process, and hence to learning.

7.5 There needs to be wider appreciation of the importance of DV peripherals such as microphones, key lights and tripods. The fact that teachers on the pilot
were given one iMac and DV camera, but not microphones, tripods or lights meant that often the work produced was poorly lit and/or had poor quality sound. It is recommended that where teachers want to use DV in the curriculum, they should be given access to sound and lighting equipment.

7.6 Teachers using the integrated software with pupils who were new to editing were positive about its ease of use. They acknowledged the fact that other packages, such as Final Cut Pro and Premier could be used successfully to extend pupil’s opportunities. They also recognised that iMovie 2 was not intended for those who are using editing as part of their KS4 and above courses. Teachers also recognised the issues around when it is appropriate to introduce pupils to more sophisticated software.

7.7 There was evidence that some network managers think that IT networks in schools cannot support both PC and Apple platforms, though there were exceptions to this. Schools also questioned whether DV work can effectively be shared and stored on a school network, as it takes up vast amounts of storage space. The issues associated with using and storing video are real, and schools need access to advice on solutions and strategies in managing and archiving DV work.

7.8 It is clear that there are very specific issues to do with technical support for DV that extend beyond the remit of conventional ICT support. These can be complicated by the running of Mac systems in what is more usually a PC-dominated school environment. The new networking solutions from Mac OS X may offer some solutions to this issue. Evidence from the pilot suggests that teachers should not be expected to manage, teach, and support DV work without input from specialist technicians.

8. **Good practice in using DV**

The pilot has been successful in producing many examples of good practice using DV, across all phases and a broad range of subjects, and much of this is generically applicable. Examples have been organised under the following headings: managing group work; introducing the software; differences between DV filming and editing; DV as a recording tool; and the use of DV peripherals.

8.1 *Managing group work*

As teachers recognised that one of the learning affordances of DV work is the potential for collaborative learning, many seemed to manage group work in thoughtful ways:

- Swapping roles during the editing phase of a project introduces all pupils to the different levels of involvement available, and to the hands-on business of controlling the software (though other roles, like critical observer, director and negotiator are also important.)
• Enabling pupils to work alone on projects is sometimes important, especially where it is the preferred learning style of particular pupils, and if pupils can, for example, compare edited outcomes from the same footage. However, this does militate against the social aspects of learning that collaborative activity enables. One solution is to establish an ‘academy’ of editors, as was the case with one school, where pupils work on single projects, but alongside each other, and are encouraged to share work in progress and trouble-shoot regularly.

8.2 Introducing and tutoring the software
There is a range of different models for introducing pupils to editing software (Sweetlove, 2001) and teachers on the project used a variety of these. Good practice in this area managed a balance between teacher demonstration, discovery learning and mentoring by peers or older pupils. The peer mentor role is one which opens opportunities for a wide range of pupils to take on ‘expert’ status in the classroom. In addition, peer tutoring helps the pupil who is tutoring to reinforce his or her own learning. As one teacher noted, "I want everybody then at least to try to help out because if they teach it once to somebody else they will learn it again.”

Examples were found of teachers using the software to introduce understanding about film language before actual editing of a DV piece took place. This has two benefits. First, it makes pupils more conscious of aspects of film language, which may have been implicit, but which they had no ‘hands-on’ experience of. Second, it introduces them to the software before they need to use it, when there will be other competing factors, like owning and keeping footage they have filmed.

8.3 Differences between DV filming and editing
There should a clear distinction drawn between the two phases of DV work – filming and editing. In many ways DV filming is a more demanding process: pupils are often unable to reproduce their sense of what a piece of film should look like, especially if the sound recording and lighting are poor and, as suggested above, they will often be too close to their footage to make detached editing decisions upon it.

DV editing, however, can be made into a much more discrete activity, with fewer of these conditions having an impact. It can also be used on its own to explore moving image language. Pupils can, for example:
• edit material ‘found’ elsewhere, effectively re-purposing it
• edit shared footage – maybe shot by another group, or by the teacher – and then compare the different outcomes; one teacher on the pilot made a ‘flawed’ piece of film, then asked pupils to re-edit it
• do short editing tasks, like the 20-minute activities set up by one teacher, or cut a sequence to a new soundtrack
• experiment with DVE, learning that DV pieces are always contingent, can be recuperated, revised, and endlessly perfected; some teachers on the pilot
found that pupils respond well to the ‘trial and error’ process of DV, if they have opportunities to reflect on their material and re-shoot it.

‘Mimetic’ tasks, where pupils try to copy particular examples of moving image text, will teach them a great deal about how texts are composed, how long it takes, what kinds of options arise, and why some are chosen and not others. This kind of work can be every bit as creative as a ‘blue skies’ project where pupils start with carte blanche. In fact, in the experience of the authors, work under these latter conditions is not necessarily creative at all, as pupils typically fall back on models that they already know. This kind of work can therefore be unstructured, and lead to poor outcomes.

Where pupils both film and edit their own work, it has been good practice for them to record different versions of a shot or scene in ‘rushes’, so that they can choose between them during editing. This makes the meaning-making process transparent – and also gives them material for a compilation of ‘out-takes’, which is always popular.

8.4 **DV as a recording tool**
There was widespread use of DV on the pilot for recording activities, such as performances, assembly presentations and so on. It is good practice to use more than one camera, if possible, and to move them around. This gives pupils a range of footage from which to edit a final piece of work, which will have a greater potential for keeping an audience engaged.

8.5 **Use of DV peripherals**
There are a range of simple techniques using peripherals which support higher quality work when DV is used, either in its own right, or as learning medium in another subject:

- Try to ensure that the lighting needs of a scene are attended to, even if it means using Anglepoise lamps. The need for attention to lighting is the same as that for still photography.
- Similarly, pay attention to the quality of sound recording when filming, either by using external microphones, or controlling the sound environment. Wearing headphones plugged into the camera will reveal the quality of the audio environment – just like checking that the shot is lined up correctly.
- Make sure that pupils use a tripod when filming, unless they have a very good reason not to. Bear in mind that professional ‘handheld’ camera work uses ‘steadicams’ – cameras balanced to give a smooth, fluid effect. Handheld should not therefore equal ‘shaky’.
Analysis

This section expands on the key findings in the previous section, and is organised according to the same headings.

1. Patterns of use

Three broad patterns of use of DV were identified across the pilot:
- As an extra-curricular activity;
- Integrated with other activities in curriculum subjects
- As used in cross-curricular work.

(The distribution of curriculum uses of DV reported on in the pilot are collected in Appendix C.)

The project set-up – giving one iMac and a DV camera to each school – circumscribed the patterns of use to a large extent. Although there were schools which obviously had equipment over and above this, the majority had to rely on what they had been given. For these schools, having one set of equipment made it harder to have whole classes working at once. This, together with the sense of video work being seen as ‘special’, and the relative inexperience of some of the teachers in using DV, meant that quite a lot of work went on outside the timetable.

Where DV was used in the curriculum, it was easy to distinguish between cross-curricular applications (more often in primary schools), and single subject-based uses (more common in secondary settings). Beyond this there were some projects where the focus was clearly on making films, whilst others emphasised supporting learning in other areas. Despite this there was little evidence that the choice of area had any impact on the quality of work. For example, using DV in primary science doesn’t necessarily mean that attention to the moving image will be neglected, or that asking pupils to make a fiction film necessarily makes their piece higher quality in filmic terms.

It was possible therefore to distinguish further between DV work which demonstrated some sensitivity to the medium and the language of the medium, and work which appeared to use DV ‘transparently’ – as a recording or measuring tool.
The most potent use of DV is as a medium of expression and communication. It was clear that where an audience for a piece of work has been considered, it was even more important to use the language of the medium – the moving image – appropriately and sensitively. Within the pilot, some of the most effective work in curriculum-based subjects used humour to engage an audience.

Less common, but still important, were uses of DV to enable pupils to reflect on themselves, their behaviour, and their performance. This was an important example of the potential impact on learning enabled by DV.

DV was also used by pupils to model and imagine new worlds, new ideas, new identities. The key benefit here is the flexibility of DV: it can be reshaped and revised with immediate results, over and over again. It seems to encourage some pupils to experiment with the medium, and the content of their work, increasing their ability to take risks in a confident manner.

One significant use of DV, as seen in the pilot, is in animation. This will be explored in more detail in Case Study 1. It is clear that this is a powerful way of crossing curricular areas, in both primary and secondary, and of using DV to integrate different modes and media – such as voice, gesture, music, colour, rhythm, framing and language.

Another important distinction can be made between uses of DV which focused on editing, and those which combined pupils both filming and editing (the latter was more frequent). It is important to understand the difference between these two processes: editing is not just the process of ‘putting the shots filmed in the right order’. Both processes – filming and editing – benefit from being approached in a structured and planned way.

Finally, there were notable uses of DV to support pupils with special needs. These are discussed further in Case Study 2.

2. Learning and DV

Motivating engagement with the curriculum
It is clear that using DV technology invites the vast majority of pupils to engage with the task of making or editing short pieces of film. This was significant in the pilot, regardless of curriculum setting or age phases, which ranged from Year 1 to Year 12.

In art, one teacher commented that DV gives access to creative to pupils who don’t have strong drawing skills, but still have a graphic sense. In science, teachers commented that filming ‘forces’, and editing this into a piece of film, helped pupils assimilate scientific concepts more effectively, quickly and
substantially than the handout or textbook. In PE, a teacher commented that pupils’ swimming improved more rapidly when pupils watched themselves on video for diagnosis and evaluation.

It is clear that DV is often the most appropriate technology and medium for learning and embedding new subject knowledge and understanding, and for reflecting on and reinforcing and extending that knowledge. Examples from the pilot included a project in primary history, where pupils edited together archive footage of Second World War evacuees together with still images and their own readings of first-hand accounts. A citizenship project on the impact of September 11th combined footage of the event together with interviews pupils had conducted with peers, family and staff. In both cases, DV is a highly appropriate medium for the exploration of these topics, as it incorporates the primary source material.

**Motivation across learning styles and abilities**

DV engages a more inclusive range of pupil abilities, in terms of aptitude, temperament and learning style. Whilst pupils should not be labelled as fitting a particular learning style exclusively, evidence from teachers on the pilot suggests that DV is a more democratic and inclusive medium for teaching. One teacher commented that her school streams pupils based on abilities measured in the core subjects, yet there was no measurable difference in the quality of the DV work produced for her by low or high stream pupils.

There is evidence that DV dramatically broadens access to the traditional curriculum. DV engages pupils who are more or less excluded by curricula mediated through print/text literacy, or managed via social learning/talk. It engages pupils who see themselves as not ‘spoken to’ by the traditional school curriculum – and does this because either the technology, or more likely the medium, is familiar to them from outside school.

Many teachers on the pilot commented that DV gave quieter pupils a platform to participate in class – for example, one teacher said that ‘the pupils who come forward often surprise’, and ‘dominant pupils can become more submerged’.

**Potential reasons for increased motivation**

There has been much debate about how a 'technological' or 'informational' divide has arisen in education. It seems that paying attention in DV to the medium – film/video – may be one way of obviating this. Access to television and film, and to the languages, conventions and genres of the moving image, is much more democratic than either the distribution of other ICT hardware, or access to other kinds of cultural capital, like print literacy. Potentially this should mean that pupils who work with DV are more empowered learners and communicators, than those who work with other forms of ICT.
Motivation and ownership
In many cases, DV work on the pilot was not 'led' by a teacher or tied to external sets of objectives, so pupils seemed to take greater ownership of work and projects. This led to increased motivation, particularly among 'disenfranchised' pupils. A number of references were made by teachers to disaffected pupils who had found niches, or higher status roles, when undertaking DV work, which in turn raised their self-esteem and motivation.

Further evidence of the extent to which pupils own their work, and invest significant parts of themselves in it, can be found in the care with which they prepare credit sequences for their pieces. Many teachers noted, to quote one: 'pupils] are very careful editing their own work.'

Motivation and ‘novelty’
A motivational factor for pupils may be the ‘novelty’ value of DV. Given the time frame of the pilot, and that most of the schools had no previous DV experience, it is difficult to offer a conclusion on this issue. It should be a feature of any future longitudinal studies which are undertaken.

However, a number of comments from teachers are useful in this context. One teacher who had experience of working with media in the primary curriculum, and whose pupils were regarded as expert and confident users of DV and DVE, felt that the key to obviating the novelty factor was to continually step up expectations of the pupils. This school noted that their SATs results were 30 per cent higher than other schools in similarly deprived areas, which they attributed to their ICT- and DV-rich curriculum which encouraged a high level of pupil engagement and motivation.

Evidence of improved behaviour and motivation
A teacher at a MENCAP residential school noted that two hours on-task was a very good level of attentiveness for her pupils. There were notes of pupils with Attention Deficit Hyperactivity Disorder (ADHD) being on-task for considerable lengths of time; very low incidences of poor behaviour; disenchanted pupils becoming tutor mentors; disabled pupils motivated to use switches; high rates of vocal participation in groups editing; the transformation of a 'lazy boy' into a group leader.

One teacher commented: "I had serious problems with one or two boys ... but now they would not [try it on] because they love working with this equipment." There were some counter-examples in the pilot: one observer saw a group disintegrate in frustration over how they were managing a task. One pupil didn’t get their way and left to go and do other work. However, the observer had noted an unstructured approach to the task and thus a difficulty in managing and organising it.
Evidence from the pilot suggests that DV work on its own does not automatically motivate pupils. Engagement is sustained where the learning task is well structured. What isn’t clear, and needs further investigation, is which models of use and teaching strategies best support particular learning styles. For example, a collaborative learning style doesn’t necessarily motivate all pupils all of the time. Care should be taken to enable single or lone workers to work alone sometimes if that is their preferred learning style.

**Learning styles which support editing**

A summary of Gardner’s key learning styles (Gardner, 1993) offers suggestions as to why DV and DVE might extend and deepen pupil engagement in learning. A sophisticated editor might be someone who is sensitive to music and voice, to visual composition and rhythmic combinations of images, and who is comfortable with the flexibility of DV. They can ‘cut and paste’, align, re-align, recombine, trim and expand, try different versions and revise – all as if handling pieces of film. These practices correspond to Gardner’s visuo-spatial, kinaesthetic, musical and linguistic learning styles.

Pupils who are editing do the equivalent of choreographing (movement, gesture, setting, music and time in combination) sculpting (taking raw material and carving out a finite piece of work), architecture (designing and assembling a structure piece by piece), and composing (layering sound tracks).

Pupils who are editing will also use and develop interpersonal skills, such as negotiating with others over decisions and roles, and through mediating and compromising. Like other ‘making’ activities, DVE can support intra-personal reflection and evaluation.

There was evidence from the pilot about learning styles: DV and DVE are valued as an experiential and kinaesthetic medium for learning, and one which supports a variety of learning styles. Editing pieces of film into a coherent and finished whole is a problem-solving activity. Pupils have to hypothesise the results of their decisions, negotiate with others, judge the outcome, negotiate again, and reach a consensus if possible. This makes the process of DVE a very language-rich environment.

One teacher on the pilot commented that DV – both the filming and the editing process – is a fertile area for collaborative work. Another noted that some pupils excelled in certain skill areas within DV: the able negotiator turned out to be a skilled ‘director’ and others were developing their ‘graphic sense of appearance’, educating themselves in visual composition.

Another teacher found that her pupils were learning about appropriate lengths of shot, and the effectiveness (in terms of contrast and underscoring) of combining sound with images, and of using music to communicate narratives in silent filmmaking.
DV and gender
A complex picture evolved around gender and DV. At one level, some stereotypes were obviously reinforced across the cohort: that boys 'go for', 'rush at' or 'hog' the technology, while girls plan more patiently and thoroughly, are more consistent editors and are drawn to 'design decisions'. Teachers were imaginative in using strategies to counter these by, for example, using mixed groups, role rotation, and mixed gender tutor/mentors.

It was equally salient that gender stereotypes were often countered on the pilot – for example, using DV gave girls more space, and access to speak and to become involved in class activities such as directing films and making editing decisions.

Owning and transforming identities
There were many instances where teachers noted a positive impact on pupils’ sense of self. Examples include the short boy who found ways of making himself to seem taller, the Kosovan refugees who were enabled to put their lives on film and become a part of their school community and the pupils who had to choose which side of their face they wanted on camera. The latter example shows how DV enables pupils to retain and reassert some control over their presentation of self, which in turn increases their engagement with school.

It would appear from the pilot that DV bridges different worlds for pupils in many ways – for example, the interior and exterior, the subjective and objective, private and public, school and home, peer and tutor, solitary and communal. One teacher pointed out that DV seems to cross ‘social boundaries and class barriers’.

Evidence from the pilot suggests that DV has the potential to enhance the self-esteem and behaviour of difficult pupils largely because of the access it gives them to reflecting on and reconstructing themselves. One project used DV for pupils to explore the impact their behaviour had on others, and for examining how they might modify that behaviour.

One primary teacher on the pilot noted how DV was documenting the maturation of her pupils as they were ‘watching themselves growing up on camera’. A media studies teacher cited the example of two girls making short documentary films about their fathers’ lives (as recently made redundant workers in South Wales) and how DV enabled them to engage with and explore their relationships with their parents from a new perspective. In this sense, and those mentioned above, DV seems to have the potential to ‘transform’ identities. Further comments from teachers on the pilot are concerned with the relationship between DV and pupil identity. First, that DV ‘makes what pupils say and do more important’. Effectively this is saying that DV technology, and the medium of DV, are often more sympathetic to pupil experience and expression, than print texts. It is also a
medium which pupils are exposed to and are familiar with through watching television and films. As a consequence, DV should be accorded a higher status in the curriculum as a ‘language for learning’ alongside the use of print, which would give more pupils opportunities to achieve.

Secondly, working with DV allows ‘pupils’ personality and humour to shine through in subtle ways’. There are numerous examples of work made by pupils on the pilot, such as the Lego man heist film and the ‘twists in the tale’, which are characterised by a genuine wit and a sense of the absurd, which goes far beyond much of the slapstick or crude parody that pupils too often produce in media, and other work. DV affords the potential for subtlety of expression, and for delicacy and intricacy.

3. Creativity and DV

What is creativity?
On the basis of the work witnessed as part of the pilot, it was clear that there are instances in which DV is the most appropriate medium for communicating ideas, feelings and information. However, there was some confusion and uncertainty in teachers’ understanding of what might constitute creative work with DV. This might be because the language surrounding creativity in education is often vague, but also because DV work in schools is relatively new, so that any work produced in this medium can be labeled ‘creative’.

Successful creative work in the pilot was characterised in a number of ways. It:
- achieved an aesthetic effect, often by successfully imitating moving image genres, and always by producing new meanings from those models
- is dependent on the explicit teaching and learning of moving image literacy as part of the production process, and also on a structured and planned approach to the task
- is about representation and transformation, and is often (arguably, always) about self-representation
- is dependent on the formation and application of criteria of quality (not necessarily made entirely explicit, but perhaps depending on well-developed instincts by teachers or pupils about ‘what looks good’).

DV and the arts
In the pilot schools, where DV work was based in contexts already strongly related to the arts, creativity was linked to specific kinds of aesthetic intention. For example, one secondary school used the equipment to develop a range of animation techniques (such as drawing and ‘claymation’). In this case, creativity was focused on aspects of design and production which would achieve the desired aesthetic effect – storyboarding, lighting, stop-frame techniques, and the scripting and recording of dialogue tracks. Here, there was a clear and productive
marriage of the aesthetic practices of art and film). In another school, DV was integrated successfully into short pieces of performance film featuring music, dance and drama.

In a number of other schools, aesthetic intentions were firmly rooted in established practices of media production. These included sophisticated uses of film conventions such as continuity editing, genre styles (such as science fiction, thriller, crime, horror and pop videos), and involved complex and intelligent parodies of such genres.

In primary schools, creativity in some cases lay in the integration of established arts-based practice with the introduction of moving image work through the project. In one school, drama and music-making were integrated in the design and production of a Year 5 murder thriller.

Creativity and quality of work
The judgement over whether a piece of work is ‘creative’ or not is necessarily evaluative and can be subjective. Nevertheless, it is possible in all curriculum subjects to make evaluative judgements about pupils’ work, so this should be possible in DV work too. The consequent sense of benchmarks for DV work would ensure that pupils are pushed and challenged in their use of the medium. Without these opportunities for structured progression and learning gains, pupils might easily become de-motivated and lose interest in the medium.

There were, not surprisingly, variations in the quality of work produced across the pilot. Some of the work could have been improved with a little more attention to moving image language. Examples included an exercise in the psychological thriller genre, which used school corridor spaces imaginatively, but needed to pay more careful attention to sound, and a documentary piece about the Salvation Army, which contained interesting footage and some well conceived interview sequences, but needed better presentational skills and steadier camerawork. The salience of the points about moving image language relate to opportunities for progression – if pupils are given repeated access to DV, then they should then be challenged in their ability to use the language of the medium.

The successful work submitted by the pilot schools had features in common. These included:

• the understanding and an appreciation of the language of the moving image
• coherent and imaginative visual composition (for example, framing, panning and cutting shots in the constricted space of a school toilet to conceal but suggest the presence of a sinister stalker; rotating a shot around the head of a protagonist to match the lyrics ‘Twisting around my own head’; the use of close-up in a ‘light studio’ to suggest a science-fiction type setting, and to empower the pupils acting the roles)
• thoughtful uses of light in filming (such as the use of lighting effects in a light studio to create a futuristic science fiction effect; the positioning of subjects
indoors and outdoors to make best use of available light sources; the use of Anglepoise lamps to key-light and fill-light a stop-frame animation set)

- carefully planned and thoughtfully-executed sound (such as keeping cameras with built-in microphones close to speaking subjects, using external microphones, planning for ambient sound and making separately recorded soundtracks)

- coherent sequencing and transitions of shots (such as shot/reverse shot sequences in a dialogue scene in a corridor and sequences suggesting suspense in a “Scream” pastiche)

- purposeful use of rhythm (such as cutting a clip on the beat of the music; rapid repeat editing of a single dance move to match the musical beat in a pop video; the editing together of filmed and found dance footage to a music track; the careful selection of music to fit the mood and message of the piece).

**Creativity and moving image literacy**

Clearly there is an overlap between literacies of the moving image and creativity: the latter cannot be successfully achieved without the former, and many of the markers of quality evident in the successful pieces, and identified in the section above, are related to moving image literacy.

It is clear that the moving image is a key language for learning, but it is a language which needs learning. This is supported by remarks made by teachers that suggested a perception of DVE as a form of literacy. It ‘takes creativity off the page’, observed one teacher; another suggested that DV was ‘another kind of writing’. Another teacher, based in an EBD school, contrasted the creative potential of expression through the moving image with the ‘constraining effect’ of the National Literacy Strategy (NLS).

In the most successful outcomes, the kinds of literate practices described in earlier research in this field are evident. One of these is a purposeful framing and segmentation of image, such as the Year 9 thriller and science fiction pastiches, which depended on both varied use of shot distance and varied use of point-of-view. Another is a carefully planned combination of non-synced sound and image, evident in the Year 9 animations, where the humour of sound effects and witty one-liner dialogue complemented the animated images; and also in the use of Albanian music by two refugee pupils to complement their video about Kosovo.

Another set of practices is the creation of stylistic features such as humour, irony, and genre pastiche, for example in the ‘heist’ film featuring an action hero made of Lego.

Elsewhere, work was clearly associated with forms of moving image literacy conceptualised in terms of traditional film grammar and the meta-language associated with it. For example, it was reported in one of the school visits that a
Scottish Advanced Higher media studies student had an ‘… understanding … that the film would highlight and reinforce the various techniques such as 180 degree rule, eyeline match etc, and also to experience the whole film-making process – from the initial idea through to planning, scripting, shooting, storyboarding, filming and editing.’

With regard to learning progression using DV, it is apparent (and somewhat understandable given the limited nature of the pilot) that there were few clear models or even basic understandings in use on the pilot (although exceptions can be found in Appendix D). It is clear that we need to move towards some kind of model of creative quality and a model of progression. At one end of a model of progression would be the complex understanding, both in theory and practice, of continuity editing styles (for instance). At the other end there would be an introduction to the design of the moving image through storyboarding, scripting, shot construction and assembly editing. The pilot clearly began to raise such needs, and to produce evidence of the improvement in communicative expertise which is possible if the necessary building blocks are attended to. The following comment is typical of many teachers’ sense of pupils’ development:

‘The pilot has shown pupils to be both creative and thoughtful. The level of detail involved in the storyboarding has been impressive: whereas pupils formerly found difficulty in understanding how to write to play scripts, this now seems to come fairly easily.’

**Freedom and constraint**

There was evidence from the pilot that some teachers appeared to operate with a model that equated creativity with originality and freedom from constraint. This in turn implied that the teacher had no clear role in supporting pupils’ creative processes. The authors of this report would argue, with Sharples (1999), that originality is a necessary but not sufficient, precondition for creative work, and that teachers setting and pupils understanding clear constraints for creative tasks is likely to generate the best work from pupils.

Several teachers expressed the view that creativity depended on freedom from constraint – two teachers avoided showing television or film examples to pupils at the planning stage for fear of imitative work; a number emphasised the lack of technical constraints in iMovie 2’s intuitive interface. One teacher expressed the paradox, saying that having no limits is the essence of creativity, but in this project the limitations of the technology are actually generative.

The answer to the paradox of freedom versus constraint suggested by the evidence here is to clarify where the two principles operate.

It is clear that the introduction of DV as a creative medium expands the repertoire of representational resources available to pupils. This expansion of possibilities
was experienced by several teachers as liberating, and comments included ‘opening doors – no boundaries’, ‘another kind of writing’, ‘liberates the art pupil who can’t draw well’ and ‘takes creativity off the page.’

At the same time, there is no evidence that the experience of using this new creative technology also meant that creativity would be enhanced by free play either with form or content. In the case of form, it is clear that the best practice and most successful outcomes were those which taught formal aspects of film-making most explicitly. Examples from the pilot included a special school which had clearly taught pupils the conventions of continuity editing, a secondary school which had taught students the use of lighting in stop-frame animation, and a primary school which had taught pupils how to construct shot distance in storyboarding. One teacher commented that pupils are natural video makers but they need structure.

In terms of content, there was clearly a balance to be struck between enabling pupils to make their own meanings and say what they wanted to say, and recognising that all meaning-making involves cultural experience of textual forms, messages and conventions. For example, one teacher chose a world story/folk narrative as the basis for the DV work because she felt that television and film stifled creativity, and it became evident from the animations that resulted that pupils had incorporated many popular cultural references. This enriched rather than restricted their designs.

Recursive experiences of moving-image making
In addition to more sensitivity to the possibilities of the medium, it is suggested that recursive opportunities for DV work would have a significant impact on the quality of work produced. Much work with video and DV in the past has been characterised as ‘one-off’ opportunities, where pupils never have the chance to revisit pieces of work or to try out new techniques. The emphasis has not been on learning but on celebrating the fact that something has been produced at all. In the informal sector, the bfi’s Being Seen, Being Heard study of film-making (Harvey et al., 2001) concludes that extended, recursive experiences are necessary (as with print literacy) to develop the necessary skills.

This study suggests that the standard of much work could be improved given three factors:
- Attention to moving image literacy
- Teacher expertise in this field
- Opportunities for pupils to experience a systematic sequence of learning over a period of time.

A future longitudinal study of DV classroom work produced under a range of different conditions and contexts could be used to define exactly what the learning affordances of DV are.
4. Moving image literacy

Moving image literacy, the combination of analytical and production competencies, was not a mandatory feature of this pilot, therefore it is not surprising that levels of explicit use of moving image media concepts varied enormously. Many teachers suggested that the kinds of skills disseminated at the training days (using 'found' footage, for example) were useful and shed some light on the importance of ‘structure’ when using DVE.

Teachers suggested that after having used DVE, pupils’ critical awareness of television and film was increased. This became apparent through pupils referring to television in conversation, evaluations and by mimetic reference. This heightened level of awareness could be measured through adopting a model of learning progression.

There was a widespread sense among the teachers of media concepts and conventions as being intuitive for many pupils. However, there is little clear evidence for this and a model of learning progression would help to set out expectations for learning by age phase. One school reported pupils showing far less awareness of media conventions than the teacher had expected. Almost all teachers, however, reported that after having used iMovie 2, pupils had a greater technical understanding of how the moving image is made. One teacher, for example, said: ‘Editing is for them a fantastic critical judgement about what they’ve done; it’s an evaluation.’

The pilot highlighted planning and editing as key factors in the successful productions and while this may seem counter-intuitive to some pupils (who tended to see filming as the core media production activity), films with the highest production values showed an understanding and informed use of planning and editing.

It is clear from the work produced in the pilot that the moving image, as exploited by DV, has the potential to be a powerful language for learning, and one which enables access to learning for a wider range of pupils’ abilities, learning styles and circumstances. But it is a language which itself needs to be learned. Evidence from the pilot shows that pupils who use moving images with clarity, concision, authority and appropriateness produce DV work of higher quality and more creativity, so more effective learning can occur in other areas.

Examples from the pilot included some of the key features associated with continuity editing – for example, showing the same moment in the story from two different viewpoints (cross-cutting). There were also examples of work that were equally expressive but which employed alternative styles. For example, some work used certain rhythmic and graphic possibilities to create abstract or
associational films and were less narrative based. Finding ways of assessing these different interpretive uses of DVE would be a useful follow-up study.

There is a clear role for teacher and/or pupil-led mediation of moving image literacy. One observation would be to build on the training day activities for the pilot school teachers and to use moving image literacy as a means of exploring the way editing can reshape and represent different meanings from the same stock of source material. This contrasts with practice which used in-camera editing or storyboarding, and then moved to use of iMovie 2 solely as a means of stitching together filmed material. DVE is the process where choices and meaning are made in DV, and pupils should be able to understand and illustrate their developing knowledge of moving image literacy.

Some teachers and a small number of pupils commented that while iMovie 2 is a very good interface for introducing editing of DV footage in a user-friendly way, it has some limitations when exploring moving image production recursively or in greater depth, as for example in the media studies curriculum at Key Stage 4 and beyond. This has implications for advanced learners who, for example, may need more scope to edit soundtracks on a greater number of separate timelines. There are many other DVE packages that offer these features and it would be useful to consider which of these might serve as a useful ‘step-up’ from iMovie 2 for those pupils who begin to encounter limitations. This would mean that for those pupils who become most adept at exploring the knowledge and skills associated with moving image production, and applying these across the curriculum, there would be ample scope to encourage outputs that showcase their learning progression and improving literacy.

Films produced on the pilot adopted a variety of styles. There was a strong use of continuity editing models, but there was also some interesting work which looked at more graphic or stylised presentations that broke with notions of continuity. There were also examples of embedded or ‘naturalised’ approaches to moving image in relation to factual information, with some schools attempting films that convey information in a simple way and which draw upon what film studies refers to as ‘categorical form’. Others have opted to form an argument or take up a position in relation to the intended audience that seeks to convince or persuade. That these industry-standard approaches to factual films were found in this very early work may indicate that some embedded understanding of media conventions may inform the production process. However, without some attention to form, style and literacy this cannot be fully exploited in terms of polished end products. This is another reason to consider a role for explicit teaching about moving image literacy in relation to DVE work in schools.
5. DV and generic skills

The use of filming and DVE was often seen by teachers, at least initially, as having particular relevance to ICT skills (many of the lead contacts were school ICT coordinators). However, there were some other key generic skills that appeared to have been fostered by the use of DV in the pilot which are not technically related.

Communication skills
One of these generic skills is ‘communication skills’. More than half the schools that took part mentioned the fact that the editing work undertaken in groups provided a forum for discussion which was both purposeful and pupil centred. Talking through and justifying an edit often brought into play critical thinking and communication skills, and in fact it was the ‘talk’ generated by using DVE that perhaps most surprised the teachers involved in the pilot. The ability of pupils to make a case for a particular cut, or the effectiveness of juxtaposing certain sounds and images, could be augmented by further knowledge about moving image media texts. However, in terms of transposability, there is already some evidence to suggest that pupils who re-conceptualise knowledge in moving-image media will often carry forward some powerful higher-order thinking skills into other subject areas. These skills are promoted by pupils’ critical engagement with the moving image (Browne, 1999). Examples from recent research carried out by the bfi would include the development of pupils’ literacy through use of media making (such as oral storytelling, narrative schema, genre, modality and metalinguistic awareness) (Parker, 2002).

Other ‘soft skills’ based around group work and the type of collaborative learning engendered by DV are examined in the section on DV and language below. However, it is worth reflecting here on the fact that many teachers remarked on the ‘quiet’, ‘withdrawn’ or ‘shy’ pupils who were able to find ways of expressing verbally and visually their ideas through the process of working with DV. This suggests that that there may be some democratising facets to DV work that allow freer access to the creative process for a wide variety of learners in terms of ability and learning styles. To describe the nature of this process would require further investigation and may be a focus for further longitudinal study.

Pleasure and affect
It may be debatable whether pleasure and affect can be regarded as skills – even soft skills. However, what is clear from the pilot is the fact that making media offers unparalleled opportunities for many pupils to experience the imaginative and stimulating pleasures to be found within moving image culture and, perhaps, the arts generally. It became evident through the programme of school visits that in having to make editing decisions pupils were also enjoying their reflections on why their short films looked and sounded the way they did.
This was a clear example of ‘playing’ or a playful approach to creative interfaces such as iMovie 2 leading to deeper understanding about the nature of affect and the way it can begin to define a refined aesthetic response.

Owing to the short-term nature of the pilot, there is no specific evidence of DV’s propensity to foster particular generic skills, although teacher and pupil perceptions of this effect are valuable initial indicators. A future longitudinal study could examine how the DV technology, and practices associated with it, ‘bed-down’ within the context of other approaches to teaching and learning. It may then be possible to map the links between DV and the development of generic skills, both in relation to ICT and more broadly.

**DV and language**

There was evidence from many schools that the use of DV across the curriculum, and in particular the activities and engagement enabled by DVE, provoked useful group discussions about concepts which helped to clarify meanings and develop subject knowledge. Examples given by teachers in relation to art, science and PE suggested that by using DV to reconceptualise knowledge or skills by creating different viewpoints helped to assimilate new concepts effectively.

Group work was almost a pre-defined aspect of this pilot, as each school was given one iMac and one DV camera. However, this necessity quickly became a virtue. Group work can facilitate negotiation and rich talk in learning contexts and this was evident in the majority of schools who had teams of pupils working on projects and sharing technology. But talking within groups was just one forum for language use and development. As one teacher commented: “It’s partly talking to camera, it’s partly talking within the group. The four of them have gelled very well and have their say but still respect the other person…they don’t automatically shoot down ideas like they might in other areas”. Many more teachers attested to this development of negotiation and collaboration through the production process.

DV appears to have facilitated a kind of social education in the majority of the pilot schools. But this raises a question about the range and nature of learning opportunities when using this technology. If group work helps to encourage use of language and thereby promotes social skills, can it at the same time develop compositional skills to the same extent? There was a great deal of variation in the quality of DV work produced by the pilot schools. This may be due to the limited equipment available, coupled with the fact that for many schools this was their first attempt to use DV at all, let alone ‘creatively’, and as a consequence there were few contexts in which ‘compositional’ knowledge and skills could be fostered. This could be addressed by offering recursive opportunities, more research into models of learning progression and an increase in the amount of DV and DVE equipment available to each school.
A level and GCSE pupils occasionally worked alone at the iMac. In these instances it was interesting to see the extent to which individual activity became a detailed and assiduous exercise in close control over moving image material. This suggests that a blend of group and individual work may facilitate both social and compositional skills, and in terms of language, foster collaborative strategies and a broader vocabulary.

The use of language as a marker of intention was an interesting aspect of the observations made through the programme of school visits. There was generally a clearer use of language to articulate intention by the older pupils who were observed, but this is likely to be a feature of narrative ability in general rather than an understanding restricted to editing alone.

There were also situations in which the use of DV offered alternative avenues to explore stories and concepts for those pupils who were less able or reluctant to write out their work. In such cases there were good examples of motivated and purposive talk which could then be ‘actioned’ or brought to life by making a visual editing decision. To illustrate this, there is research that suggests this analogy between writing and editing the moving image may help to develop the abilities of reluctant or emergent writers (Parker, 1999).

Another interesting consideration in relation to language is the extent to which the pupils observed through the programme of school visits co-opted the iMovie 2 interface as an active partner in their work. For many pupils their talk was contextualised by the iMac’s role as co-worker. In one example, this was particularly evident where the school focused on using DV to record and also to reinforce scientific concepts. Narrative was not merely carried by the story of their science experiment, but was also ‘performed’ when the editing process made their intentions ‘come to life’. As pupils were also the actors or participants in the majority of the filmed footage produced by the pilot schools, an important issue is that language became part of a broader dramatic enactment carried out by pupils’ talk and computer-made actions in partnership.

There were many examples offered by teachers in interview of pupils freely using terminology associated with moving image production and showing good understanding of what these terms meant. In some cases, teachers felt that this new vocabulary might be put to good use in relation to other spheres, particularly in thinking about pupils’ writing and the cross-over potential between editing skills such as cutting, splicing, use of transitions, continuity, pace and flow and the construction of written stories.

DV may hold important possibilities for stimulating language-based collaborative strategies for learning. This is a tentative finding, based on the observations made during the programme of school visits. There is some evidence to suggest that when pupils engage with a moving image text in small groups they show an increased ability to engage each other in eliciting their shared understanding, in
resolving aspects of narratives they are uncertain about, and in developing interpretations and predictions through their interactions with one another (Robinson, 1997). Examples of these strategies were found in several of the schools visited, where pupils discussed the nuances and altered meanings their filmed work might have had if edited one way instead of another.

6. DV and ICT skills and affordances

There were some generic skills developed that had an ICT focus, notably cross-over skills such as research-based work or investigative approaches to data gathering, such as finding images on the Internet or use of a whiteboard. One school suggested that the synthesising nature of moving image media, bringing together as it does music, images, spoken words and text, is a useful way of reinforcing many existing ICT skills and concepts in a holistic way. This school also noted the defined and precise use of time (such as the presence of a timeline and the rendering process, when the assembly edit is ‘stitched’ together) within moving image as a new ICT skill and one that they felt was valuable in terms of planning and creating work using other media.

Following the school visits, it has been possible to consider some relationships between DV work and the generic processes and affordances of ICT identified by Moseley and Higgins (1999), such as feedback, dynamic representation and iterative opportunities for editing.

Good practice with DV affords opportunities for pupils to reflect on their work – both on the subject knowledge component of a piece of DV, and their use of the language of the moving image. The LCDs on cameras, and the possibility of linking cameras with monitors, make this instantaneous. Evidence from teachers of the potential for feedback afforded by DV included noting that pupils would go back and re-shoot material where they felt it fell short of their expectations, for example using a tripod to improve the quality of the shot.

The use of DV as a presentational medium – in assemblies, on intranets, the Web, plasma screens, as well as with peers in a classroom – was recognised by nearly all of the teachers on the pilot. However, the extent to which such representations were dynamic, varied considerably. Recording events, performances, experiments, feelings and ideas on DV isn’t in itself dynamic. In fact, if recorded on a single camera, in one position, without editing, it can render an original live performance inert. Just as with other types of ICT, attention has to be paid to the presentational aspects and possibilities of the medium, and an understanding of these has to be integrated into work from the start.

The final generic feature of ICT that might cross over into DV is the iterative possibilities for editing. The potential of non-linear editing software such as iMovie 2 lies in the ease with which users can make and re-make, revise, or
make endless different versions of ‘text’. The learning potential of making more than one version of a piece of film, from the same source material, maybe for different purposes, should be apparent. Guidance in this kind of task therefore needs to be promoted amongst teachers who use DVE software.

Elsewhere, teachers on the pilot noted cross-overs with pupils’ ICT skills in mouse control, filing, tiling, storage and retrieval. A similar cross-over, or articulation, with PowerPoint was noted, for example in its time-based nature, use of transitions, the opportunity to combine images and sound, and the potential to be used in storyboarding. It appeared from the example of some schools that it may be useful to introduce PowerPoint as part of the ‘entry level’ to DVE, in a learning progression model.

One advantage of DV was that the computer made light of menial tasks, and left the editors free to create. One teacher suggested that DV was a user-friendly introduction to ICT for teachers (and pupils) who were less confident or experienced ICT users.

The potential for editing sound as an ICT activity was also noted by teachers, especially in schools where music technology has already become embedded. DV offers opportunities for pupils to look at constructing sound environments and texts using ICT, especially as copyright clearance for music can be problematic to achieve.

One school wondered whether their use of DV, which was more extensive and ICT-rich than the technology provided via the pilot, had contributed to the rise in ICT skill levels to above the national average. Pupils in the pilot schools also showed considerable curiosity about the difference between iMacs and PCs – the kind of added value that DV seems to contribute.

### 7. Access to technologies

There are a range of issues related to access to the technologies associated with DV and DVE. This section identifies problems which significantly affect the quality of the experience and the outcome. It suggests improvements to the basic equipment allocated in this project and proposes more ambitious alternatives for use either where resources permit, or where needs are more sophisticated, such as in media studies exam courses.

Some primary teachers found that the small DV ‘handicams’ presented difficulties for younger pupils, reporting that they found the controls ‘fiddly’. There are two issues here. First is the difficulty of manipulating very small controls for people with fine motor skills problems (such as young pupils or, as in the case of more than one school on the pilot, pupils with physical disabilities). Secondly, small domestic camcorders do not give access to manual override controls through
external buttons, but within internal menus. This added layer of difficulty may be a disincentive to teachers and pupils to using key manual functions, especially functions such as white balance, exposure and focus.

These issues can result in a uniform emphasis on ‘point and press filming’, which would be suitable for introductory courses in DV, and for curriculum uses which were less focused on quality of outcome. However, this may be undesirable in work which strives for more professional results. Sometimes bigger cameras are actually cheaper than very small palmcorders, but the most expensive cameras are bigger too, and offer access to external manual override function buttons.

There are issues to do with improving access to the technologies for pupils with disabilities. For example, the ability to project and use iMovie 2 on an interactive whiteboard would significantly improve access to DVE for pupils with limited fine motor skills. Teachers noted that projecting the software would also make it easier for whole-class teaching. One school used light-beam technologies to assist computer control for pupils with disabilities such as cerebral palsy, which suggests the possibility of further research into the use of assistive and adaptive technologies with DV and DVE.

Cameras with LCD displays are useful for enabling pupils to reflect and evaluate in groups on the quality of the images they are producing, as they frame shots, and replay them immediately afterwards. Sound replay through the LCD screen is also beneficial in this situation.

Having one editing workstation for a whole class significantly reduces access for pupils; it can engage the teacher in time-consuming classroom management including keeping non-editing pupils busy, or it can mean that the software is used outside the curriculum altogether. There were instances of teachers coping with this limitation through Herculean efforts of classroom management such as devising complex rotations of activities into which the DV filming or editing tasks could be inserted. There were also examples of pupils effectively marking time while their turn on the camera or iMac came around. It is recommended that the ratio of editing stations to pupils at any one time should be 1:4. A group size of four should be the maximum for an editing task if all pupils are to gain adequate access to the technology, the decision-making process, and to learning. This implies that the absolute minimum for whole-class work should be three editing stations, enabling half a class to be editing at one time, whilst the other half are planning, filming, or working on paper-based activities. Ideally, six machines would allow simultaneous editing in groups of four. The absolute ideal would be one editing station per two pupils.

Teachers using the integrated software with pupils who were new to editing were positive about the perceived ease of use. They acknowledged the fact that other packages, such as Final Cut Pro and Adobe Premiere, could be used successfully to extend opportunities for pupils. They also recognised that iMovie
2 was not intended for those who already have editing skills, or those who are using editing as part of their courses at Key Stage 4 and beyond. Teachers face the question of when it is appropriate to introduce pupils to more sophisticated software.

There was evidence that some network managers think that IT networks in schools cannot support both PC and Apple platforms. A less tractable problem seems to be in the perception by IT network managers that Apple equipment cannot be supported by PC technicians. Evidence from the pilot suggests that teachers should not be expected to manage, teach and support DV work without input from specialist technicians.

There is a question over whether DV work can be shared and stored on a school network without taking up valuable space. Teachers need support in managing and archiving DV work using peripherals such as portable external FireWire drives. In the long term, it is clear that school network specifications of the kind LEAs and providers are used to working to are inadequate for moving-image files. This is also a problem for bigger institutions. Until bandwidth and network capacity develop to meet these needs, local storage on hard drives, portable drives, CD-ROMs and small networks to RAID arrays are likely to be the most effective solutions.
Case Studies

A note on the case studies
The case studies written up here were chosen for a number of reasons: two of the three were visited by one or other of the authors, and the third was visited by a member of Becta staff. The three schools are diverse: one primary, one special school and one secondary. Little attention in the main report is given to animation, and this use of DV has enormous potential in schools. We include the work reported in Case Study 1 in order to redress this.

Material from the case studies is drawn from transcripts of interviews with the teachers in two cases, from the site visits, and from the self-completed creativity monitoring forms which each school returned to Becta.

There are slight differences in headings used across the three studies, which reflect the different foci that came out each study.
CASE STUDY 1: Secondary school, East Anglia

The school is a specialist Technology College in East Anglia, with 1400 pupils on the roll. The teacher interviewed is also an artist (painter) and works for the school part time three days a week. She completed her PGCE at Goldsmiths, and a year full-time at a school in Stepney Green in London. She then did the Norwich School of Art MA, and works part time for Media Project East.

She used animation in the school in Stepney Green with Year 10 boys. She has clear memories of how motivating this was both for the boys and her:

"I introduced them to stop-frame animation and they were brilliant. We had a fantastic term. And they produced a film called Plastergeist ... I realised that animation teaches so much and children learn so much ... It's just such a great atmosphere within the classroom and the kids had a great time and so did I, really."

She later made an animation as part of the MA:

"I did an animation which was called Bridget, which is a cut-out animation ... 3 minutes ... so that was shown ... in Norwich and one in London in the big film festival in the East End."

She sees film and animation as predominantly creative media, with the power to “bring children’s work to life”. She also sees it as a move away from how she perceives traditional uses of ICT in school:

"We’ve taken it away from the sort of traditional sort of ICT use in departments where computers are used purely for looking at the web sites and ... for drawing as well. [Animation is] ... actually showing the kids that you can pick your drawings and make your ideas come to life."

The task
On the day the school was visited, a Year 8 class were making group animations (some of them claymations) based on African folktales. These are carefully and extensively designed, with elaborate storyboards, painted backdrops, scripts, drawn/painted title and credit sequences, and plasticine models for the claymation. Much of this work feeds directly into the animation – but it also allows the teacher to orchestrate a complex sequence of activities around the fact that there is only one camera and editing workstation.

All pupils were involved in some form of work to being to the animation, such as storyboarding, painting the background scenery or preparing the haiku credits.
The work is located in the art curriculum and takes place in the art rooms. However, a number of features of this work pull against the norm of ‘art teaching’. Firstly, the teacher is herself a practising artist, and is familiar in her own practice with digital media, including photography, DV and animation. The model of art she presents to the pupils is one in which mixed media, multimedia and cross-overs between moving image and visual design are already embedded and exemplified in practice. It is clear that, though the animation work provides learning opportunities for the conventional art curriculum (visual design, painting, drawing, calligraphy, visual narrative), it has also been taught by the teacher through concepts and skills more closely related to media education (storyboarding, film narrative, shot framing and so on). Secondly, the projects constructed for the DV pilot are not necessarily typical of the experience of art in this school (many of the schools on the pilot have experimented with cross-curricular uses of moving image production). Thirdly, the school is supportive of this kind of creative use of technology, and the headteacher explicitly related such work to the mission of the school as a specialist Technology College.

The workspace
The iMac was positioned on a workbench at the side of the classroom with windows. It was linked to the camcorder, in order to capture still frames of film directly on the computer through a shareware program downloaded by the teacher from the Internet. The camera was on a tripod (provided by the teacher), in a fixed position, to film stop-frame animations placed in a set with a backdrop and two clip-on lights.

Arrangement of pupils round the equipment
The filming of the animation, as stated above, was part of a sequence of orchestrated activities, so groups took turns to work on their own animation. There were typically three to four students at work at one time – usually with one manipulating the models on the set, one filming, and one or two at the iMac capturing the images.

The most creative part of this process is the model manipulation. The other two roles mainly involved pressing the button on the camera and capturing the frames on the iMac. However, these roles are essential, and the complex rotation of roles meant that every student would get to manipulate their own model at some point during the project. The only way to increase the time of each student on the creative practical task would be to provide more cameras.

The talk on-task was fairly perfunctory and instrumental. The task was really accomplished through doing – the kinetic modelling of the plasticine, determined by the students’ understanding of how much change per frame would produce what kind of movement or transformation in the final film. This difficult concept was helped in some instances by teacher intervention to get the student to explain the rationale behind his/her decision and through group communication.
DV and learning
There was solid evidence of marked improvements in pupils’ motivation and engagement in this project, though this should be balanced against the background of a school with an able and well-motivated intake of students. Our observations were of students who were very engaged, even when not using the equipment, and were clearly imaginatively involved in the project and eager to produce high-quality work in every aspect of it. Although students can sometimes find stop-frame animation slow and laborious, these students seemed to be highly motivated by the process, and were keen to stay beyond the end of the lesson to continue with the work.

The teacher made specific points about improvements in the attitudes of boys in general, and in the group of less able pupils in particular. She gave the example of a 'low ability group' of 15 pupils (who not observed on this visit), who were strongly motivated by the animation project. She argued that their work, in terms of quality, is just as good as that of the other classes, and that previous judgements about their ability have been made on the basis of their English, science and maths work; their animations, she said, are as good: "...there’s no difference."

The teacher felt that girls are ‘better’ animators because they take more care and pay more attention to detail:

"They are actually mostly better animators because they have the patience and look at details as well. Looking for detail which is quite important in animation."

However, she felt that, through this type of work, boys are also developing these skills, and ‘growing up’, suggesting that the care over detail is related to maturity and attitude.

The teacher has a powerful sense of the creativity of this work, and relates it to the medium, to the processes and outcomes of animation, to the variety of work the children need to do to accomplish the task, and to the children’s perceptions of film-making as ‘cool’:

"It’s really buzzing. I mean children have to explore painting, drawing. They have to build sets. They have to make models. They have to visualise from the story they … only read. I think it pushes their imagination really out to the boundary … out of the boundaries, over them … They really have to use every corner of their expression and imagination … [And] film making is such a modern tool at the moment. I think that’s why kids love it so much. Because it’s cool, you know. It’s new. It’s trendy. And they respect it. And then to combine it as well with
traditional versions, painting and drawing, I think that’s very creative as well."

**DV in the curriculum**

It was clearly the case here that the potential of DV and DVE was greatly enhanced by the teacher’s experience with the medium, both in her experience as a teacher and in her professional life as a working artist. This improved the quality of the learning process and the outcomes in various ways:

- The complex and imaginative organisation of classroom activities so that the DV work was integrated with art, narrative and literacy work
- The insistence on quality, through exemplification of animation work by young people in previous projects (assisted by the fact that the teacher had a clear idea of what good quality work looked like); by frequent quality checking of work in progress and insistence on redrafting, remodelling and re-filming
- A clear instructional pedagogy where the introduction of the technology and the practices of animation are concerned
- The introduction of appropriate conceptual frameworks and metalanguages for moving image and animation work (for example, in presentation, in work with groups and on word walls)
- The teacher’s ability to handle the technical needs of the project – using the camera, finding alternatives to the lack of stop-frame facility on the camcorder; editing the work-in-progress documentary – working both as teacher and as technician.

The integration of media with art pedagogies had a generally positive effect, emphasising the aesthetic nature of the work, practices of creative expression, and a highly positive attitude to the students’ work. The only area where the practice was dissonant with practices of media education was in the problem of how to approach popular references to television, and how the students’ experiences of the moving image in popular cultural contexts might be incorporated into the project.

The issue of quality and how to achieve it is an important one. The strategies used by the teacher here can be generalised across the curriculum, and can clearly result in quality work, which in this case, is achieved by a teacher who has developed a clear model about what such quality looks like. Such a model is not to be found in any formal structures of educational evaluation or assessment at present and resources for exemplification for pupils are also scarce.

The teacher also sees the animation process in schools as a fairly faithful simulation of what professional animators do:

"They’ve still got a whole store of drawing skills, painting skills … we’re making 3D sets. So they learn so much about being organised and getting
things together, I mean making a film is quite a job isn’t it when you think about it! So they learn everything that a professional animator does really, if you look closer at it.”

Moving image literacy
There were many examples of what might count as forms of moving image literacy in this project. These include:

- the ability to plan coherent narrative sequences, using the variety of audio-visual resources offered by the moving image (such as different kinds of shot framing, movement, sound, dialogue and music) and animation (painted sets and modelled characters); the evidence was apparent in the high quality of the storyboards, painted sets and plasticine models
- the ability to construct good animated movement, in which a key element was teacher intervention which ensured a good understanding of the ratio of movement to frame
- the ability to reflect explicitly on aspects of their moving image designs, using appropriate language.
- the ability to deploy visual and sound references taken from television culture to apply to cartoon texts, mostly for comic effect, which appeared to occur with little or no teacher intervention.

The teacher was asked how she introduced new concepts and terms related specifically to media production. These techniques had been in evidence in her and the students' talk in lessons and were also in evidence on a word wall in the classroom, which she read out during the interview:

"Well I have got, to start with here, animate, abstract films, storyboard, digital, focus, rhythm, composition ... tone, 2D, find a sense of space, harmony and so on".

Though the students have not yet reached the editing stage, the teacher has a clear idea of how she will approach this and what she wants them to learn. She values the explicit language of non-linear editing, and her emphasis on learning through the process clearly relates to other teachers’ observations (Brindley et al., 2001) of the provisionality of DVE and the benefits of this for learning. She also sees the explicit use of language as a way of making the necessary links between the filming and editing processes and perceives this as an intellectually demanding learning process.
Pedagogies
Examples of thoughtful teaching strategies included:

- the teaching of storyboarding, set design and modelling as group activities
- the demonstration of the technology and what could be achieved with it, repeatedly and recursively
- the imaginative use of a variety of activities to overcome the limitations of a single camera and workstation
- the effort to bring the class together round a small television screen to overcome the lack of projection
- the deployment of media and animation concepts and language, and reinforcements of these, such as the word wall
- the teacher intervention in student work to improve quality and understanding of the process
- the acceptance and celebration of pupils’ creative ideas.

In the DV work, the nature of talk took two forms. Firstly, in some cases, the talk was important, and most markedly, took place between the teacher and students. In other cases, there was very little talk between students – having decided what their respective tasks were, they carried on with them (at the tables and at the workstation or set) with minimal talk. In these instances the creative work was being accomplished through action – with models, camera and workstation. The nature of talk and group collaboration in DV and DVE is of significant interest and is worthy of further study.

The teacher was very clear about how the task should be introduced. She achieved this through exemplification, by showing students other animations she has made with other children and young people, including sixth formers and young offenders. The teacher chose the task – folk tales from different cultures – in order to prevent the students modelling their work on popular television forms, genres and texts (she specifically cited Big Brother). There is an issue here regarding popular cultural influences, and whether the best approach is to divert students from using them or whether to work with them. In this particular case, the animations produced made frequent popular cultural references. It may be impossible, and even undesirable, to prevent references being made to popular culture in students’ work. In these instances, references to popular culture should be incorporated positively into the project or, alternatively teachers could investigate introducing new narratives and images from other sources which may result in ‘hybrid’ productions combining popular references and folk cultures, such as in this example.

The stop-frame animation technique, including the use of the DV camera, had been demonstrated earlier in the project, and was not observed whilst on the school visit. However, there were frequent interventions by the teacher to
consolidate, repeat, remind and expand upon what had evidently been a clear and comprehensive presentation. Many teachers on the pilot (although not in this particular instance) found that the best way to demonstrate how to set up a shot and how to use the DV camera’s functions, was to use a data projector. This ensured that all the students could see, and could observe the effect of focus, white balance, exposure, camera angle, framing, and, in the case of animation, the use of lighting and the effect of manipulating the models. Using a data projector to screen work for whole-class reflection and analysis, was also regarded as advantageous.

The teacher had yet to begin teaching DVE skills, but intended to teach it group by group unless she had a data projector by that time and could demonstrate it to the whole class.

The teacher had made a conscious decision to deploy serial peer-tutoring in the filming of the animations. Pairs from one group worked with individuals from the previous group, who consolidated their knowledge by teaching it to their successors:

"Because I want everybody then at least trying to help out because if they teach it once to somebody else they will learn it again. You know, that’s how I function, I think ... so I like kids who have done the job to re-think it one more time so that really they will have to learn it".

Aesthetic quality of DV work
The aesthetic quality of work in this project was high, and consciously strove for aesthetic effects of various kinds. This was because of a range of factors, among which the following seemed to be the most important:

- The link with art
- The teacher’s experience both of animation in education, and as a professional artist
- The attention paid to careful visual design, such as good quality painting, models and elementary lighting of the animation set
- The attention paid to the stop frame process
- The use of practice pieces, separate from the main class project
- The demonstration of what can be achieved, at the beginning of the project
- A constant reflection on work done so far
- An explicit emphasis on aesthetic qualities (such as harmony, composition, rhythm in the word wall, and in the teacher’s approach to the project).

The notion of creativity begins to become clear in this project in certain respects. It is, firstly, related to an emphasis on the aesthetic properties of the ‘text’, or film, being made. These aesthetic properties fall into two categories: the way in which
the work creates an aesthetic impact is strongly emphasised, and the less
conscious incorporation of wider influences of cultural experience, especially the
humorous and parodic references to popular animation.

There is also an apparent sense of the ways in which DV work and creativity
might be linked to the representation and transformation of self. This may not be
as clear in animation examples as in other work produced on the pilot, but it is
evident that students use animation to 'say' important things about how they see
the world, through the way they use narrative, anthropomorphised animals and
humour.

**Generic and ICT skills**
Throughout the project, the teacher has emphasised the social nature of the
work. Teamwork involves trial and error, planning, negotiation and the patience
to learn when things go wrong. She also sees the value of such work as
providing new and group-based ICT skills, and illuminating the processes that lie
behind the media ‘texts’ that students are familiar with.

The teacher also sees this work as boosting their skills and confidence with
certain ICT applications. Rather than perceiving them as ‘cyberkids’, she sees
them as lacking in confidence:

"With the new skills it seems that they’re sometimes still very afraid. Or at
home they might not be allowed to touch the camera. Or they’re not
allowed to use the system. And I think … they’re getting really, really
confident in using all these things."

**Access to technologies**
This project was a clear example of what can be achieved with a relatively
modest provision of DV and DVE equipment, and suggested what could be
achieved with more. The use of DV has clearly functioned as a trigger for an
explosion of creative work across every year group taught by this teacher.

Having one editing workstation for a whole class significantly reduces access for
pupils. The teacher was clear about the need for more equipment to allow the
whole class to film and edit in groups at the same time. She also pointed out that
the DV camera which was given to the school as part of the pilot was limiting for
the purposes of stop-frame animation as it does not have this function. She
recommended Sony cameras which have a stop-frame feature, which means that
the camera could be used independently of the computer.

The need for better provision was clear in several respects:
- Data projection facilities to introduce the technology, show exemplar work,
  and to reflect upon and evaluate pupils' work
• A tripod for the camera (peripherals were not included in the equipment provided by the pilot; in this instance, the teacher used one of her own)
• A consideration of the appropriateness of the camera model (in this case, the camera provided did not have a stop-frame facility)
• The ratio of workstations and DV cameras to pupils (specialist media schools are currently considering three sets of equipment as the acceptable minimum).

The teacher is also investigating opportunities to show students work. In the observed lesson, the teacher showed work from previous lessons at the beginning to the whole class, inviting comment and reflections on it, celebrating it, and raising motivation for the coming session. She used the DVE software to edit together displays of this work in progress, adding music and making the work look ‘polished’, even at this ‘draft’ stage. Students’ work is shown in the school assembly hall at lunchtime, and they are able to buy a copy to take home.

The teacher said she would like to put the films on the school web site, but currently lacks the technical support to be able to do this. Technical support is an issue for many teachers beginning to use DV. The teacher in this case study is conscious of having to put a lot of time into the technical preparation of the work herself. Although she sees the time spent as an investment both for her and the students, in that it makes the experience more rewarding and improves motivation and behaviour, it is an issue which needs to be considered when integrating DV into teaching and learning.
CASE STUDY 2: Special school, Lancashire

The school is a special school with 120 pupils on the roll aged between 2 and 17.

The teacher interviewed is an experienced and thoughtful user of DV. Every year he makes a short film with his English groups, and edits it himself on an Avio Casablanca machine at home. The teacher has a well established approach to preparing, scripting, shooting and editing material, and has a strong sense of where DV can support the curriculum, particularly the ways in which it can give his pupils access to achievement. He has contacts in the audio-visual industries and is resourceful in exploiting these – on the day of the visit he had just procured a clapper-board. In addition to the final filmed product, the teacher films the process and each pupil receives a personalised copy to keep as a visual ‘Record of Achievement’.

The workspace
The editing and some of the filming takes place in a fairly large classroom without windows. The workspace is divided up into a number of discrete areas where different activities happen.

On the day of the visit, pupils were engaged in a number of tasks. Three boys (two from Year 11 and one Year 9 pupil) were using iMovie 2 to edit two pieces of work which had been shot by their peers. Year 7 pupils were in two groups of three, preparing and rehearsing scenes of a film which they had been making as a group.

Eight out of the nine pupils were wheelchair bound. Their teacher said that although their disabilities were physical rather than intellectual, their average mental age was low because their physical disabilities made access to learning very laborious.

The pupils, in a sense, had ‘technologically mediated’ identities. One pupil had no speech and used a Dynavox to communicate mechanically; another had no movement from below the neck and many pupils had very limited fine motor skills. Technology gave pupils access to opportunities in many ways, but they found that small DV camera buttons and keyboards could be unmanageable.

In order to gather evidence on the day of the visit, the three groups of pupils were filmed simply by leaving the camera switched on to avoid intrusive filming. Conversations with the pupils and the interview with the teacher and his colleague were recorded. Over an hour was spent with the pupils, and another hour was spent with their teacher, including a visit to the Light Studio.
Task 1: A Space Oddity
This task was constructed around a specially made ‘set’ which the teacher recycles every year – it has gizmos, buttons, displays and dials and is situated in a corner of the classroom. The ‘set’ doubles as a submarine control room, a command centre, and this year, as the interior of a space ship. A group of pupils were rehearsing parts for a scene, and they explained the story, the roles and dialogue they each had in the film, and who did which tasks in making the film. They understood that the director has control of the camera, but doesn’t always hold it (some of the pupils weren’t able to hold the camera, but used remote controls).

The other group of pupils were filming the whiteboard in order to demonstrate a computer screen as part of the narrative. One pupil who couldn’t use a computer keyboard was filmed with her hands above the keyboard, then the film cut to words appearing on the whiteboard. This gave the effect of the pupil actually typing.

Another pupil was holding the clapper-board and was trying, eventually successfully, to clap them. The pupils understood that the clapper-board was used by people including the actors, the director, camera operators and, most importantly, the editor to know when the shot began.

Task 2: Twisted Tales
Three pupils were editing their short Twisted Tale called ‘The Outsider’, and a piece called ‘A Cold Shock’ about a 999 call which is answered by an ice-cream van instead of an ambulance.

The teacher noted the limitations of the DVE technology – especially the interface – for those pupils with limited fine motor skills. He wondered whether the iMac could be connected to the interactive whiteboard in order to enable pupils to operate the software easier.

Task 3: Dejeuner du Matin
Pupils were not observed working on this task during the visit, but the final film and an account of the process was available. This piece is a filmed rendering of the Jacques Prevert poem ‘Déjeuner du Matin’ made by Key Stage 4 pupils. The finished film was shown at a combined schools’ Language Convention.

Relation of tasks to curriculum
The ‘Space Oddity’ task was undertaken as part of the drama curriculum in English, but also related to ICT and music. The ‘Twists in the Tale’ task combined the drama and ICT curriculum. ‘Déjeuner du Matin’ referenced the Modern Foreign Languages (MFL), art and drama schemes of work. The teacher also emphasised learning objectives from both film making/film language (moving
image literacy) and other ‘discrete’ skills such as co-operation, negotiation and problem solving.

The aims of ‘A Cold Shock’, for example, were:

- to communicate ideas, thoughts and processes in appropriate ways
- to develop creative thinking via problem solving – with group co-operation
- to develop pupils’ knowledge and understanding about film making and moving image literacy.

The proposed learning outcomes for ‘Déjeuner du Matin’ were that pupils would:
- learn about special effects filming
- learn to order shots via the storyboard
- extend and develop their ICT skills
- develop knowledge and understanding about creative film making
- use the language of film to describe their project
- observe, record and modify their work as it progressed
- complete self-evaluation sheets and complete ‘can do’ check lists.

**Completed pieces – ‘Space Oddity’**

‘Space Oddity’ is a very accomplished and beautiful piece of work, just under five minutes long, and shot largely in the school’s Light Studio. The Light Studio is full of effects, colours, projections, sounds and light tubes that can be set up to produce stunning ‘psychedelic’ effects. It also houses a ‘sound beam’ – a microphone that projects an infra-red beam which, when interrupted physically, produces music. This can be programmed to produce music in different keys. The pupils had used the ‘sound beam’ to produce eerie and effective incidental ‘deep space’ music.

The film concerns a group of astronauts who go through a time warp and are visited by an alien from whose planet they have to escape from by cracking a code – typing the alien’s name (‘ESREVER’) into reverse on their computer. The Light Studio effects are effective in portraying the time warp and for ‘colouring’ the pupils who played the alien.

The teacher gave an account of how the piece was devised and produced:

"The group had lengthy discussions about the story line – especially as one member had been absent for a long while and when he returned they were keen to include him. ‘But how do we get him on a Space Station after all the others are already there?’ They quickly resolved that he should be an alien and should appear from nowhere [they used a fade dissolve to bring him into view] ... This pupil was keen to change his appearance and the others decided to light his face with green light only."

The solution to the narrative ‘problem’ of reversing the time warp in the film, and getting rid of the alien, came about by accident:
"One pupil asked if a particular light source could be put in reverse and someone else said that the time warp could be reversed. They decided, with help, that the alien should be called ‘Esrever’ and that if that name was typed into the data banks backwards it would spell ‘Reverse’ and this could trigger the return of the ship to the present."

All of the pupils involved in the ‘Space Oddity’ film have considerable difficulty in accessing the drama curriculum, typically because they have difficulty in projecting themselves or their voices, or accessing drama spaces from wheelchairs. The medium of DV in this instance gives pupils increased access to drama. One pupil in particular, who only has physical control over his head and neck, was able to take an active role in the film. The pupil adopted his role as ‘action’ was called: turned to the camera, put on an expression, and delivered his lines – an action that would be next to impossible for him in conventional drama.

The teacher as a matter of course records ‘rushes’ of filmed sequences – three or four versions of the same line or scene, which pupils then choose from. This is an example of good pedagogic practice in using DV. The pupils then have a series of ‘out-takes’ which they can then compile to humorous effect.

**Completed pieces – Twisted Tales**

The two Twisted Tales films both demonstrated the pupils’ growing understanding of continuity editing (the system of shot combination that follows a set of ‘rules’ like shot-reverse shot, cross-cutting between simultaneous action, and the movement of the camera from establishing shot into close-up). The Year 11 pupils illustrated that they understood this concept by identifying ‘cut-aways’ they had used. These conventions are part of the language of the moving image and are straightforward to learn. When continuity editing is understood and mastered, pupils are able to make successful narrative DV pieces. In order to construct continuity narratives it is necessary, for example, to film the action twice or more, focusing each time on a different participant. This enables pupils to edit between close-ups of two speakers in dialogue scenes or to insert ‘cut-aways’ or reaction shots.

**Completed pieces – Déjeuner du Matin**

As part of the MFL curriculum, one teacher had supervised a group of pupils filming a version of Jacques Prevert’s poem ‘Déjeuner du Matin’. The pupils had imaginatively used the solarising key on the camera to create a half-animated, half-live action effect, as each of the elements of the scene look part-drawn. The effect is to remove the emphasis from pupils as actors and make them function as compositional elements in the frame. This, combined with the use of cardboard cut-out props, gives a two-dimensional pictorial quality to the piece.

The soundtrack comprised individual pupils reading out lines of the poem, together with a version of the soundtrack to the film ‘Jean de Florette’.
Both the teachers described the task as being simple to manage for the pupils, principally because the lines of the poem are very pictorial and in effect supply their own script and storyboard.

The piece is an imaginative way of engaging pupils with performing and understanding poetry in another language. The film was presented at a local Languages Convention where the pupils were able to participate in the event without having to get up on stage.

**DV and learning**
The teacher noted much evidence of the impact of DV on pupils’ learning, both in relation to curriculum areas, to general motivation and engagement, to film-related skills and other ‘discrete’ skills.

During the ‘Space Oddity’ project the teacher noted that:
- pupils were highly motivated throughout with lots of vigour and enthusiasm
- non-vocal pupils were able to express their wishes and preferences clearly
- pupils demanded the highest of standards from each other and were quick to point out if a shot was not good enough
- pupils were delighted with the end product and their own involvement in it.

The pupils at this school cover a broader spectrum of learning styles than pupils in mainstream schooling. The fact that so much of their activity, learning and identity is technologically mediated means that DV offers a medium of expression very close to their everyday experience. Using DV can offer pupils a wider range of opportunities to access areas of the curriculum such as drama, art, music and MFL. The teacher stated that the source of many difficulties faced by the pupils is not learning *per se*, but ‘access to learning’. DV enables this access:

"But with [the pupil] ... with the green face, just that movement of his eyes, which you cannot capture on photograph – on a video it says a thousand words."

**DV and the curriculum**
In their reports, the teachers from this project tended not to emphasise the impact of DV on curriculum-based learning, instead choosing to focus on the generic skills and moving image literacy that the work was fostering. It is clear from the description of activities and the work produced, however, that DV is becoming embedded in a range of different subjects.

On the ‘Déjeuner du Matin’ project, for example, they noted:
- pupils had to learn and practise speaking, in French, live to camera
- pupils designed and created their own card props during art lessons
• pupils took pride in and ownership of their work and were keen to showcase it.

**Moving image literacy**
The work produced by pupils demonstrates a sophisticated grasp of moving image language, even where it is being used to support other curriculum areas, such as drama and MFL. The ‘Twisted Tales’ are set up around the problem of telling two-minute stories as economically as possible, and succeed in this by using conventions like shot-reverse-shot, cross-cutting, and establishing shot – close-up sequencing.

"Sometimes we have used two cameras, because I use my own camera as well, and I’ve tried to explain to them that in TV and the movie industry there are cameras all over the place, all filming the same shot from a different angle."

The teacher introduces pupils to these techniques by setting them small tasks using the DVE software, before they are given cameras and begin filming – an example of good pedagogic practice.

Evidence from conversation with pupils revealed that they have an explicit grasp of these ideas and are encouraged to develop their understanding through hands-on tasks. It was evident that pupils were picking up the specific language of film and DVE and the teacher consciously addressed and reinforced this. Pupils referred to, and understood, terminology such as ‘cut-aways’ and ‘word walls’ (comprising film-related language, which the pupils can point to, select, and use, in a similar way as some of them compile sentences when communicating via their specialised technology) reminded pupils of terminologies and reinforced their learning.

**Pedagogies**
The teacher is experienced in using video as part of his teaching, and this is evidenced by the way he integrates DVE software into the classroom. The teacher uses the DVE software to introduce the key principles of film construction before beginning to film. The software is a way of making pupils’ understanding of the mechanics of film active. The teacher sees DV technology as a way of making pupils’ understanding of film explicit, and of introducing them to new knowledge.

The teacher tracks pupils’ progress and learning through evaluation sheets which pupils complete. The evaluation sheets cover a range of questions including the new language they learn and how they use the camera. The teacher also has a checklist of key stages in filming and DVE which reinforce pupils’ learning.
The teacher's approach overall is to step the stages of progression very clearly. For example, when editing, pupils are helped to sequence the narrative of their piece before they do any 'fine tuning' of individual shots or scenes. This emphasis on 'macro-sequencing' is very helpful to the pupils, and clearly builds on their sequencing skills in other areas of learning:

"I found at the beginning that a lot of them never even watch a film or television and think how it's made or how it's produced. And I think we started off really with a story-telling idea, looking at cartoons and things like that to try and break the story down into pictures. Quite a few of them use these communication boards ... they will point with their eyes or with their fingers to whatever selection ... so that's very sequential ... it's like scanning a cartoon strip."

The teacher then tasks pupils to use the DVE software to consider different orders of shots:

"We did a few exercises where we filmed a sequence of shots, filmed them in the right order, but then put them in a storyboard on the timeline in the wrong order and they can see straight away that it's wrong."

At the beginning of a task, the teacher introduces pupils to the idea of sequencing a story, by asking them to sequence everyday tasks, such as cleaning their teeth. This is then transferred into the editing task where the pupils re-order a series of shots filmed by the teacher. Pupils then plan their short films, where they have to construct sequences of their own. This is regarded as a key part of the curriculum for the pupils at the school, but it is an area that can cross over into other school contexts.

**Generic and ICT skills**

The school's curriculum is ICT rich and DV creates alternative opportunities for pupils to use technology. Pupils learn how to sort and classify when they import clips to the software and cut them down. Pupils practise fine motor skills in order to use the DVE software. Some pupils require the software to be projected onto an electronic whiteboard as the interface is inaccessible.

Much of the curriculum is structured around the development of a range of very specific skills necessary for pupils to function at a level most people take for granted. The development of 'switching skills', for example, whereby pupils learn to operate a wide range of different kinds of switch, is crucial to some pupils' ability to communicate. The teacher felt that through the task of making a short film DV creates a desire in pupils to develop and refine these skills.

The teacher saw DV as providing opportunities for the development of other 'soft', discrete skills, and for sharing and trying different roles. For example, in the
tasks, pupils took turns in being the director, so that they could have an input into deciding the framing and quality of shots. The projects each enabled pupils to develop teamwork, negotiation, and task-sharing skills. Because of this emphasis pupils were able to be critical of shots where appropriate, as no one person considered themselves the ‘individual owner’ of the work.

**Access to technologies**

Pupils with poor motor control and those confined to a wheelchair had difficulties holding and filming with the camera at the same time and the teacher found imaginative ways of adapting the DV camera, iMac and DVE software for his pupils. Pupils sometimes used the camera’s remote control to give them more fine control over the camera. However, this to some extent detaches pupils from the filming process. This has a variety of consequences in the teacher’s opinion:

"I think I would rather they held the camera in their hands then they’ve got the weight of it, they can actually physically move in and pan it. But so many of our children ... will do what I call ‘hoover shots’." 

However, other teachers may recognise this tendency in pupils to ‘hoover’ over everything with a handheld camera!
CASE STUDY 3: Primary school, West Midlands

The school is a primary school in the West Midlands with 480 pupils on the roll.

The headteacher and deputy headteacher of this primary school were both secondary trained and do not have an ICT background. The head had worked in secondary, approved (special EBD) and primary schools. Both were driven by the capacity of ICT, and DV in particular, to capture pupils' enthusiasm for learning. They inspired confidence in their staff to take risks with the curriculum, to explore new technology and to learn with, and from, their pupils.

The school has excellent resources and a pupil:computer ratio of 1:7. Pupils can use equipment independently in their own time at school and in after-school clubs. The school is planning to lend laptops for pupils to use at home.

The workspace
The iMac laptop was located in the corner of a converted classroom that has both natural and artificial lighting. The DV camera was set up on a tripod in another part of the room. This workspace was suitable for the two small Key Stage 1 and 2 groups working on their DV projects.

The school also has a predominantly PC-based networked computer suite, called 'Infinity and Beyond', in the main building, with four iMacs clustered together to make DVE easier. The head had overcome PC and Mac platform issues by having portable 20 Gb hard drives (10 Gb for Macs and 10 Gb for PC) which enabled the transfer of digital material from one system to the other.

The task
On the day the school was visited, pupils from Years 5 and 6 were starting to film one aspect of an abstract art project, ‘Exploring Red’. The task was linked to the art and science curriculum.

The six pupils wanted to see what happened when red paint was added to water and spent time setting up the props needed, discussing the background for filming and whether there was enough light in the room. Lessons learnt from previous filming projects meant the pupils had an additional spotlight to improve the lighting.

The pupils recorded two ‘takes’ with a Year 6 boy operating the camera and a Year 6 girl carrying out the practical demonstration. The group were used to working together as a team and were happy to answer questions about what they were doing. They were very enthusiastic about using DV, with an even preference for filming and editing.
The teacher led a discussion about the ‘Exploring Red’ project in general, and based on earlier filming experiences the pupils answered questions about what they could do to make the final film better. They were honest about what they felt worked and what didn’t, such as lighting and camera angles. Other issues such as using sound and the wider issues of music copyright were discussed.

In another part of the room, a group of three pupils were editing footage they had filmed earlier. They worked well as a team and made collective decisions about which clips to keep and which to discard. The Year 6 girl was confident in operating the DVE software and found the technology very easy to use. The technology did not get in the way of the learning as pupils were able to concentrate on the project rather than on operating the equipment.

**DV and learning**

The pupils appeared to be motivated and engaged with the task. They were proud of the work they had achieved at this stage of the project. When asked if they would want to carry on using the DV equipment, all the pupils put their hands up immediately.

Comments from the teachers at the school indicated that they felt using DV benefited pupils with different learning styles, such as those who work systematically and in a linear way, but also those who like to prefer to move between tasks. It also benefits children who can’t concentrate with static learning, and pupils who naturally hang back. Working with DV encouraged team working and communication as pupils discuss what they are doing. Pupils who prefer to work alone can also benefit from using DVE, but there needs to be enough equipment available to enable this to take place.

DV and DVE can have a positive impact on learning in other subjects; for example, pupils who had done less well in maths were motivated through using DV to persevere with problem solving.

Teachers at the school stated that they have seen a noticeable shift in pupils’ behaviour and standards of work when using DV which hasn’t waned, although this is hard to quantify. The teachers said that pupils felt successful and felt positive about coming to school. The headteacher has compared the school’s SATs results with other schools on similar estates in the area and found they are 30 per cent ahead.

The teachers also observed that pupils who could not write essays well, were able to produce a film that has striking visual literacy. For example, one pupil used animation to demonstrate a science project on soil separation that he would have found difficult to explain through writing. Through using multimedia and DV
pupils are offered opportunities to tackle complex ideas that would be difficult for young pupils to express using language alone.

**Moving image literacy**
The school had previously used PC-based DVE software – Studio 400 – as part of the pupils' work on visual literacy from Reception through to Year 6. This programme of work includes three strands: photography, video work and pupils themselves as creators. The work is being developed to enable the pupils to critically examine moving images such as adverts. The teachers have found that whilst the work is demanding, pupils rise to the task and develop a high level of critical awareness. The experience of using DV draws on many different curriculum strands and allows pupils to develop skills such as handling information, negotiating, different learning styles and to develop their creative instincts.

Interviews were conducted with groups of pupils, and they confidently used terminology such as ‘crop’ and ‘splitting’ and explained what each term meant. Both groups had a few vocal pupils who naturally offered their ideas, but other pupils confidently answered questions when asked for their opinions. Pupils were full of ideas about what to try to improve their films and were confidently critical when selecting and negotiating what footage to use.

**Pedagogies**
To develop pupils' independent learning the teachers used a variety of approaches, such as peer tutoring and group working. Teachers also make a conscious effort to encourage girls to lead the teams. The school has recently completed a two-year research programme focusing on how to teach pupils to use different skills across a variety of activities. In the case of DV, work can require complex team working and pupils naturally swap roles, finding niche roles for different individuals. Pupils learn that DV requires a team approach to work and that no pupil, however capable, can do all aspects of the planning, filming and editing.

In the lesson observed on the visit, a ‘gifted and talented’ art group made up of children who have imaginative and creative flair, ICT capability and confidence, and good inter-personal skills, were experimenting with DV. The teachers were planning to cascade these opportunities to all others in the school.

The school reported examples of DV activities in the Creativity Monitoring Forms (Appendix F) which had to be completed as part of the DV Pilot. These reports demonstrated that the teachers at the school took a highly structured approach to pupils' learning using DV.
The following example, teaching animation to Key Stage 1 pupils, gives a flavour of this.

Task 1: Discussing films

The first task involved discussing films that pupils had watched over Christmas and asking them if those films had a message in them, such as morals. The pupils had seen the animated film ‘Shrek’ and stated that the message of the film was that it doesn’t matter what you look like, you can look mean like ‘Shrek’, but still be kind on the inside. Pupils were asked what other messages they thought were important for children to hear. The group came up with several suggestions but agreed on the message that ‘to be kind to each other – if you are nice to people they will be nice to you.’

Task 2: Designing and making characters for the film

The pupils discussed animated characters in films, such as Pingu, Morph and Wallace and Gromit. They discussed which parts of the characters moved. Examples included Pingu’s mouth moving and Wallace’s ears wiggling.

The pupils discussed how the plasticine models for the films would move and how to best make them. The pupils then discussed the characterisation – whether the characters would be ‘good’ or ‘bad’ and how best to convey this to the audience. Examples from the pupils included: if the character was smiling he would have a friendly face, if they were mean, his mouth would be a different shape. The pupils then began making their plasticine characters.

Task 3: Writing the story

The pupils were asked to work in pairs and to think of a story using the characters. The children were very enthusiastic. Here is one example:

One character, the ‘mean’ one (Pod) won’t share with the other ‘nice’ character (Bob) and teases him. Then the mean character hurts himself and cries. The nice character comes in and the nasty character he is going to be horrible to him, to laugh and be glad. But he helps him. The nasty character is surprised. He learns to be kind to people.

The teacher showed the pupils a selection of comics to explain that pictures could tell a story – like a storyboard. Using this as an example, pupils began to plan their story and decide what they needed to put in each part of the story.

The group debated the story, and discussed questions such as, what was it that Pod would not share? How does he hurt himself? How does Bob help him?
The pupils decided that they wanted lots of action in the film. The teacher explained that it would be easier to produce the film if the characters stayed in one place and produced a story idea which the group then completed as a storyboard. The pupils drew pictures and glued them onto the storyboard. They discussed each frame and decided which frames to film as close-ups, such as when the ‘mean’ character cries and when he is happy at the end of the film.

Task 4: Animating sequences

This activity was designed to introduce the pupils to QuickCam and animating figures. Playmobil figures on skateboards and with a pram were used for this task. Pupils were tasked with making the figures move across the screen and then to wave. Initially this task was difficult but the pupils soon realised that they needed to move the Playmobil figures a little bit at a time. The teacher showed the pupils that they would each need to have different jobs – one person would need to operate the camera; the others would need to move the figures, and they organised themselves within the team, taking it in turns to have a go at the different roles. Pupils then experimented with making their plasticine models move, before deciding on the best option.

Task 5: Creating the set

The pupils debated where the film would be set, and decided that the characters would be outside. They then created the scenery they needed.

Task 6: Shooting the film

The process of shooting the film took a long time. One scene at a time was shot, and shot again. The teacher showed the pupils how to save their film. They viewed the clips and discussed mistakes they had made and offered suggestions on how to improve the shots. The teacher helped the pupils to shoot the sequences and the movie was shot in six parts. The teacher imported the shots into iMovie 2 ready for the pupils to edit and to add voice-overs and titles.

Task 7: Recording voice-overs

The pupils decided what the characters would say in each frame, then practised the dialogue to see if they could fit the voices to the action. Pupils re-recorded the dialogue until they worked with the characters and the animation, and took it in turns to record the voices. The teacher undertook most of the technical side of this process but ensured that the pupils had a good understanding of it.
Generic and ICT skills

ICT skills are not taught as a specific subject within the school and so it is difficult to prove any link between DV and enhancement of ICT skills. However, with ICT and especially with the ease of use of DV technologies, pupils are able to successfully handle the technology. For example, if pupils are producing a video, they learn how to transfer QuickTime to a PowerPoint presentation and download a plug-in from the Internet.

The ethos of the school is one of a ‘learning school’ and the teachers are willing to learn and take risks. ICT is part of this philosophy and the headteacher looks to develop and support ICT skills in his staff. Using DV has provided opportunities for teachers and pupils to develop their problem-solving skills alongside each other.

Teacher observation through the ‘Exploring Red’ project notes that pupils demonstrated:

- versatility and problem-solving skills: "Everything we tried threw up numerous problems – lighting, focus, camera angles, paint that didn't float and swirl as we wanted, balloons that went crazy in the wind so that it was really hard to keep them in shot."
- a tenacity to overcome disappointment and re-film using different set-ups, such as lighting environments
- an ability to select from all the clips those that worked well together, and articulate reasons as to their choices demonstrated an ability to analyse why some things worked better than others
- an ability to ‘see’ and agree how from a variety of ideas the group could follow certain lines of exploration: "Key ideas emerged through filming and looking at what we'd got. There was an almost intuitive feeling about the balloons and paint being 'right'. It took a lot of discussion to identify why they worked. The storyboard was re-written."
- an ability to negotiate and agree on cutting material that didn’t fit: "They used red acetate fixed over the camera lens to produce a red filter. This was a really clever idea and it worked but the clips weren't right for the final piece."

Access to technology

Pupils at the school have been used to using computers since Reception and were comfortable with using them. The teachers see themselves learning along with the pupils and do not spend too long trying out the equipment themselves, before using it with a small group of selected pupils. The school is planning to widen the use of the iMac with all pupils in Years 5 and 6.
The school also has access to a number of iMac laptops. The portability of iMacs is an advantage across the school and means they can be used in all the classrooms and the computer suite. The headteacher demonstrates new equipment to teachers and encourages them to ‘play’ and experiment with the technology, which is good for teachers’ confidence.

Teachers on the pilot used the DV pilot e-mail-based forum to solve problems which they encountered. For example, the school purchased an external mike and five-metre lead to combat problems of poor sound. The forum was highly valued by the headteacher, who used it to share and receive good ideas and technical advice.
APPENDIX A: Project Context – The Becta DV Pilot

Aims

The pilot aimed to gather evidence on the impact of use of DV technology on pupils' engagement and behaviours. It also aimed to identify models of effective practice in inspiring and developing pupils' work with DV. As a short-term study, the pilot did not measure how the integration of DV technology affected standard attainment measures.

Schools

50 schools from across the UK took part in the pilot, which ran from October 2001 until March 2002. Schools had to complete an application form to take part in the pilot. A steering group oversaw the selection process. Those selected were a representative sample from primary, secondary, special and specialist sectors.

Schools selected had:
• demonstrated a commitment to developing pupils’ creativity skills
• demonstrated a commitment to exploiting the potential of DV technologies
• well thought out project plans for developing creativity
• demonstrated a willingness to use e-mail and the Internet to support their projects
• a variety of computer platforms
• a wide range of teacher confidence and competence in using ICT.

Throughout the 50 schools there was a wide spread of proposed DV-based projects across all the curriculum subjects.

Pilot phase

The DV Pilot schools received an Apple iMac G3 500MHz 128Mb/20Gb/CDRW/ATI 128 Pro/56K/KB (computer) with pre-installed iMovie 2, 10 QuickTime Pro software licences and a Canon MV 400i DV camera (or equivalent). The lead teacher on the pilot also received one day's training in using DV. To support teachers, an e-mail-based forum was set up to allow them to ask questions and share experiences and advice with other pilot schools. This was a ‘closed’ group specifically for the pilot teachers; for other people interested in DV, an ‘open’ forum was also established¹.

¹ The digital video forum is open to anyone interested in DV. To join, send an e-mail to digitalvideo@becta.org.uk with subscribe forum in the subject line.
A series of Becta-led school visits took place between January and March 2002. Bfi representatives and an external consultant also took part in a number of the visits. Schools were required to submit to Becta a minimum of three Creativity Monitoring Forms (Appendix F) and examples of edited video pieces.

Initial findings from the pilot were presented at the Education Show in March 2002 (NEC, Birmingham). A free CD-ROM from Becta features advice to practitioners based on the findings of the pilot plus information about using DV in teaching and learning. The DV Pilot has also informed the development of the Creativity in Digital Video Awards, an awards scheme which aims to reward pupils' work with DV.

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2 Copies of the CD-ROM *Teaching and learning using digital video* are available on request by sending an e-mail to dvcdrom@becta.org.uk

3 [http://www.becta.org.uk/creativityawards](http://www.becta.org.uk/creativityawards)
APPENDIX B: Methodology: the evaluation process

In 2002 Becta commissioned the British Film Institute (bfi) to undertake an evaluation of the Digital Video (DV) Pilot scheme. The pilot ran from October 2001 until March 2002, and involved 50 schools from across the UK.

The pilot aimed to gather evidence of the impact of DV on pupils' engagement and behaviours and to identify models of effective practice in inspiring and developing pupils' work with DV.

The evaluation reported here is based on three sources of data: visits to schools, with teacher interviews; work produced by participating schools; and creativity monitoring forms completed and returned by schools.

Visits were made to the 50 project schools in February and March 2002 by Becta and British Film Institute (bfi) staff. Ten of the schools were seen by the bfi evaluation team. Where possible, pupils were observed working with the DV equipment, and work viewed with the teacher present. Teachers were interviewed afterwards for about an hour.

A common observation and interview schedule was followed by all staff who went on visits (see Appendix E). The teacher interviews from the bfi visits were transcribed. Some transcribed material is reproduced verbatim in the report, otherwise the ‘voices’ cited in the report are paraphrased teacher comments from the visit reports.

The work completed by pupils was compiled by Becta and viewed by the evaluation team, with a particular focus on the work produced by the schools visited by the team.

Each school completed and returned a Creativity Monitoring Form (Appendix F) for each of three projects or pieces of work. These were read in conjunction with all of the visit reports and the salient features of each were collated under headings devised by the evaluation team.

There is some overlap between definitions used in the report, particularly where creativity is concerned. It could be argued, for example, that ‘creativity’ should support learning, and so be reported under the heading ‘Learning and DV’. It also comes to some extent under the heading ‘Moving Image Literacy’, especially where the aesthetics of DV are being considered.
APPENDIX C: Patterns of Use

This table shows how the schools on the pilot used DV in the curriculum. This is based on the Creativity Monitoring Forms (Appendix F) which had been received by the time the school visits occurred.
APPENDIX D: Example of a progression sheet

<table>
<thead>
<tr>
<th>Knowledge</th>
<th>Beginner</th>
<th>Competent</th>
<th>Advanced</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Use of a camera and associated equipment</strong></td>
<td>Has basic knowledge of camera. Can attach tripod and external microphone.</td>
<td>Can insert and remove film cartridge. Can connect up to a computer and download clips.</td>
<td>Can separate long clips into smaller ones. Can record separate sound and stills and add to movie.</td>
</tr>
<tr>
<td><strong>Making movie from shooting script or storyboard</strong></td>
<td>Can understand a simple shooting script or storyboard and, with help, edit it.</td>
<td>Can follow a simple shooting script or storyboard, direct it, and edit to produce a complete movie.</td>
<td>Can follow a complete shooting script or storyboard, and export final version to tape or CD.</td>
</tr>
<tr>
<td><strong>Writing shooting script or storyboard</strong></td>
<td>Can, with help, devise a simple storyboard with some indication of shots and dialogue.</td>
<td>Can write a simple storyboard, indicate action and dialogue. Some indication of shots.</td>
<td>Can produce a complete shooting script or storyboard.</td>
</tr>
<tr>
<td><strong>Knowledge of different shots</strong></td>
<td>Has a limited understanding of simple shots.</td>
<td>Knows the use and name of all basic shots.</td>
<td>Knows the effect of all the basic shots and can film a reverse angle dialogue using the 180 rule.</td>
</tr>
<tr>
<td><strong>Understanding of how and why a film has been constructed</strong></td>
<td>Can make simple comments on viewing a commercially produced film.</td>
<td>Can identify different shots and suggest how a commercially made film was made.</td>
<td>Can make reasonable comments about how a commercially made film was filmed and why the effects were used.</td>
</tr>
<tr>
<td><strong>Making movie from previously prepared shots, sound and music</strong></td>
<td>Can, with help, listen to a spoken audio track and add suitable clips and music from a prepared list.</td>
<td>Can assemble a complete movie from prepared clips and music.</td>
<td>Can use advanced techniques, such as track head recording, transformations, to assemble a complete movie and export it in a suitable format.</td>
</tr>
<tr>
<td><strong>Use of iMovie</strong></td>
<td>Can start the program and has a rudimentary knowledge of how it works and is able to use it with assistance.</td>
<td>Can use the iMovie package with the minimum of supervision.</td>
<td>Can use the iMovie package and is familiar with the advanced techniques.</td>
</tr>
</tbody>
</table>
APPENDIX E: Observation and interview schedule

Becta Digital Video Pilot: Briefing Sheet: Observation and questions

This briefing sheet contains information about the observation and question schedule.

The important rider here is that these questions shouldn’t be galloped through as a script, but introduced as broader discursive topics. If the teacher has little to say in response to any single area, then this isn’t disastrous. In fact, the features that they don’t feel able to comment on, or haven’t considered, are useful data in themselves.

We found it worked well to talk to the pupils first about their work, and interview the teacher last. If you don’t get chance to finish the interview we can follow this up later by phone or e-mail. We cannot do this with the pupils.

For the observations, it would be best to spend 15 or 20 minutes with a group of pupils who are editing their work, or viewing and chatting about a piece of work that they have already made. Evidence about process is as useful as that about product. Talk with the students should be as informal as possible and arise in relation to specific aspects of what they are doing, rather than abstract questions.

Any notes made by Becta staff on their visits should be sent to DV Pilot Team in the first instance. These notes form important supplementary data to the project. Please record your findings and thoughts as fully as possible and return electronically if possible to dvpilot@becta.org.uk. We will log the returns and forward them to the bfi and to Tom Barrance on the same day.

Please note: because the timescale for the pilot is very tight, it is vital we must have the returns the day after your visit.

If the teacher can arrange for the observation to be video-ed, and for you to take away the tape as evidence, that would be very useful. The teacher interview needs to be recorded on audiotape or minidisc, and set up in a quiet space if possible. (Remember, the bfi representative/Tom Barrance will do this if they are on the visit. If they are not, then minidiscs players are available from DV Pilot Team).

Please note: If you take pictures or video from the visit, use the permission forms in this pack. They don’t have to be completed there and then, but they do need to be returned to Becta – without these we cannot use any of the images.
The visit should last ca 2 hours. If you have to leave before you have finished asking all the questions, don’t worry, we can follow these up by phone or e-mail later. Record this on your notes.

Observation schedule

- What kind of space are the pupils working in? How is the workstation arranged? Where is it?

- What kind of task are the pupils engaged in? What are they making? How long is the video they are making? What is their own understanding of what they’re making? Are they editing footage that they filmed themselves, or filmed by their peers? Or are they editing found footage (for example taken off TV)?

- Is the task directly related to a curriculum subject or topic? If not, what is the rationale behind it?

- How are the pupils arranged around the equipment? Is any single pupil in charge? How do tasks seem to be divided between pupils? How many pupils are involved? Do group roles stay constant, or do they swap roles?

- How do they pupils talk about what they are doing – while on-task, and when prompted by you. Try to talk to them while they are in front of the screen, rather than away from it. How do they talk to each other? Do they use technical language? How explicit are they to each other?

- How engaged do the pupils seem? How long do they stay on task for? Do they typically stay on after school, or during lunch times? How satisfied are the pupils with what they produce?

- How was the technology introduced by the teacher? By demonstration? Using the Apple Tutor? Through play? Via peer tutoring? How does the teacher manage troubleshooting? How do the pupils rate the way they were instructed?

- How will the work be disseminated or displayed? How importance is this to pupils? What opportunities exist for distribution of work?
Interview Schedule

Context

- What is the professional and subject background of the teacher? What is their level of proficiency with ICT, and their confidence in using digital video? How much training did they have in using the technology, and in teaching (with) it?

- Which curriculum area(s) is/are being supported by digital video? What opportunities does the teacher see for ways in which digital video might support the curriculum? Do they have specific ideas?

- What kinds of digital video task are set by the teacher? Do they involve filming and editing? Do they offer pupils opportunities to edit each other's work, or work with other, found, footage?

- How does the teacher introduce pupils to the technology? What do they think is the most effective way of doing this?

- What opportunities does the teacher see for the distribution or exhibition of the pupils’ work?

- What do you think are the technological issues that need to be considered when using digital video (e.g. cross-platform, network, storage, support)?

Student behaviour

*How does the teacher perceive the:*

- impact of digital video on pupil motivation and engagement?

- social roles taken by pupils: who directs, decides on, chooses, scripts material?

- impact of digital video on different types of learner/ different learning styles: how are these supported or enabled by digital editing?

- pupils’ language use while working with digital video: on-task talk, negotiation, deliberation, levels of explicitness;

- gender: does gender make any difference to any of these processes?
Learning

- Do you think digital video editing impacts on pupil’s generic ICT skills?
- What ICT skills do pupils develop that are specific to digital video?
- Do you think digital video editing enables the development of skills such as team-working, problem-solving, project management, organisation? Do you have any examples?
- Do you think that digital video helps pupils to understand the moving image, e.g. how camera, editing and sound are used? To what extent are your pupils creating work that is based on what they have seen on film and television? Do you have any examples?

Identity

- Do you think digital video allows young people to express themselves and their views about the world? If so, in what way?

Affordance

- Do you think that digital video offers things that other modes of communication, and other learning technologies, do not? If so, what?

Creativity

- How do teachers see the relationship between creativity and pupil use of digital video?
APPENDIX F: Creativity Monitoring Form

Becta DV Pilot - Capturing Creativity

The Process
This document introduces the issue of creativity and explains what it is we are trying to capture during the DV pilot. It also includes a questionnaire and a series of questions to guide your thinking when you are thinking about the impact of the DV pilot on pupils’ creativity. A Becta representative will discuss this with you at your training event and answer any questions you may have. Alternatively, you can contribute your thoughts on the best ways to capture evidence via the DV discussion forum: dvpilot@ngfl.gov.uk

Why Creativity?
In 1999, the DfEE published 'All our Futures', a report on the National Advisory Committee on Creativity, Culture and Education (NACCE). The report had a dramatic impact on the education world and the following statement about pupils’ creative thinking skills was incorporated into the revised National Curriculum as a result:

By providing rich and varied contexts for pupils to acquire, develop and apply a broad range of knowledge, understanding and skills, the curriculum should enable pupils to think creatively and critically, to solve problems and to make a difference for the better. It should give them the opportunity to become creative, innovative, enterprising and capable of leadership to equip them for their future lives as workers and citizens. (Page 11)

The National Curriculum Handbook for Teachers also states:

It (creativity) should enable pupils to respond positively to opportunities, challenges and responsibilities, to manage risk and to cope with change and adversity. (Page 12)

Creative thinking can advance learning by moving pupils’ thinking forward, helping them to extend their ideas, suggest hypotheses, apply their imagination and look for alternative solutions and outcomes. It can also have an impact on pupils’ social and personal development and their educational achievement by raising their self-esteem and confidence. Government research has also linked creative thinking to the promotion of economic competitiveness and the entrepreneurial culture.

What do we mean by Creativity?
The NACCE report recognises four characteristics of creative activity: Thinking and behaving imaginatively
Imaginative activity is purposeful
The process generates something original to the individual
The outcome must be of value in relation to the objective

**We would like you to explore one or more of three questions:**
How can DV be used to explore and record pupils’ creative thinking and behaviour?
How can DV be used as a medium for pupils to demonstrate their learning in creative ways?
How can DV be used by pupils as a creative and expressive form in its own right?

**How can we gather evidence of creativity with DV?**
The suggested methods of data gathering are intended to be as flexible as possible to allow for the wide variety of circumstances in the pilot schools and the individual needs of pupils. We do ask, however, that you give us a clear indication of your intended approach so that we can ensure sufficient evidence is captured across all subject areas. Some methods of data capture might include:
Teacher observation
Teacher assessment
Notes of a discussion or interview with pupils
Pupil questionnaire
On video recorded by the teacher
Pupils’ video diary

**How will we recognise creative activity?**
The following questions should help you to identify creative activity;
**A - Using DV as a medium for pupils to demonstrate their learning in creative ways.**
Whilst working with DV, how far do pupils:
Demonstrate an awareness of the needs of their target audience?
Demonstrate improved subject knowledge?
Demonstrate improved understanding of concepts?

**B - DV as a creative and expressive form in its own right.**
Whilst working with DV, how far do pupils:
Push the boundaries of genre and convention?
Evaluate, analyse and reflect on the success of their outcomes?
Articulate their preferences and justify their choices convincingly?
Demonstrate an awareness of conventions and are able to justify breaking them to achieve the desired effect?
Use the language of film to describe their work and their decisions?
Exploit the technology to express their ideas effectively?
Demonstrate originality in their thoughts, approaches or outputs?
C - Exploring pupils’ creative thinking and behaviour.
Whilst working with DV, how far do pupils:
Respond to the task in unpredictable ways, using a combination of intuition, logic, reason and spontaneity?
Make connections between their work in the classroom with outside experiences, influences and other learning?
Speculate about possible outcomes, envisage what effect their work might have and/or look for alternative ways of doing things?
Experiment, take risks, try things out and evaluate how successful each approach is?
Adopt a variety of flexible roles while working in groups, according to the strengths and weaknesses of individuals.

Becta DV Pilot - Recording your Evidence
In the first instance, please use this form to record the particular circumstances of each example of creative activity. You should use one form for each example and you should aim to record at least three examples during the course of the pilot, preferably one example from each of the three categories above – A, B & C. Please be specific about the aspect of creativity your example captures. Please remember to attach any relevant documentation when you submit your questionnaires, either on paper or via email.

<table>
<thead>
<tr>
<th>School</th>
</tr>
</thead>
<tbody>
<tr>
<td>Teacher’s name</td>
</tr>
<tr>
<td>Key Stage of pupils</td>
</tr>
<tr>
<td>Activity conducted in class or outside class time?</td>
</tr>
<tr>
<td>Which curriculum subject/s if any?</td>
</tr>
<tr>
<td>One off lesson or part of a series? Over what period of time?</td>
</tr>
<tr>
<td>Is this an example of individual, group or class work?</td>
</tr>
</tbody>
</table>

Briefly describe the task, its purpose and objectives.
Briefly describe the example of creativity.

<table>
<thead>
<tr>
<th>Which aspect of creativity does the example address – A, B or C?</th>
<th>Please refer to the questions on page 1 to answer this question.</th>
</tr>
</thead>
</table>

What methods did you use to capture this evidence?  
*Please tick.*

- Teacher observation
- Teacher assessment
- Notes of a discussion or interview with pupils
- Pupil questionnaire
- On video recorded by the teacher
- Pupils’ video diary
- Other – please specify

**Evidence of other impacts**

In addition to the impact on pupils’ creativity, you may notice evidence of the impact of DV on other aspects of pupil behaviour, such as motivation or attitude. Please use this space to make a note of any specific examples, including any evidence, such as improved attendance or time on task.
Please use this space to describe in more detail the activity, process, outcomes and impact on pupils.

Thank you for completing this questionnaire. Please send it to:

DV Pilot
Becta
Milburn Hill Road
The Science Park
Coventry
CV4 7JJ
Or via email to dvpilot@becta.org.uk
APPENDIX G: Creativity, Design and DV

The authors of this report (bfi) felt that there is a need to develop an account of creative DV work. In doing so, we draw on the work of Mike Sharples, in particular his book *How We Write: Writing as Creative Design* (Sharples, 1999).

The first step we take is to describe DV work explicitly as a form of design work. To identify it as such is maybe to make a specific kind of place for it in the curriculum: it is neither writing, nor art work; as design, it enables us to transpose some of the understandings of creative work that characterise design.

Sharples cites Lawson in identifying a range of principles that underpin design work, in a generic sense:

- **Design problems are open-ended and cannot be fully specified.** This makes them different from other kinds of problem-solving activity, which tend to be limited to a single definable outcome, and have clear protocols guiding the solution process. In DV work, by contrast, the nature of the problem being solved changes constantly, and the goals of the design process are vague and multiple. This is evidenced, for example, in the account of DV problem solving given by the teacher in Case Study 3. We believe that the explicit setting of constraints in school-based design work can help narrow and specify the design problems.

- **The design process is endless.** Because design problems are open ended, it is a matter of judgement when the designer feels that her design is complete. In the realm of poetic design, for example, it has been said that a poem is never completed, only abandoned. Teachers with experience of DV will recognise this: the plasticity of the medium means that pupils are tempted to revise and refine ad infinitum. This is a second reason why the setting of clear – and often arbitrary – constraints, like length, and deadlines, will help pupils know when they have finished.

- **There is no infallibly correct process of design.** Our experience of observing work on the pilot project, and of DV work elsewhere, is that there are a great many approaches to composing and editing work. Some pupils will draft an outline on paper, then sequence a rough draft of their piece on the software, then refine. Others might meticulously draw out their design on paper and merely action it on the software. Still others might have a macro-structure in their heads, but only realise it through playing with the software. This variety of approaches has implications for managing teaching and learning: it is not possible, or wise, to follow a single model of DV practice or process. This does not imply, however, a laissez-faire attitude in which pupils are left to their own methods and
devices. It means rather that the role of the teacher is to structure and support all pupils in whatever their chosen mode of operation.

- **The design process involves finding as well as solving problems.** Design isn’t a process of following simple steps towards the goal of finished product. Sharples quotes Flower and Hayes on writing as ‘the act of juggling a number of simultaneous constraints.’ Much of a designer’s time therefore is spent identifying those problems and constraints. An implication for teachers – of DV and other design work – is the value of pupils spending time identifying and articulating the design problems they encounter.

- **Design inevitably involves subjective value judgement.** As we have noted elsewhere, there was often a temptation with teachers on the pilot project to wish away or ignore the question of aesthetic value in the work produced by pupils. This may have been, entirely fairly, because for many pupils this was their first experience of DV filming making. It may also have been due to teachers’ lack of experience of criteria for judging DV work. Again, we make the point elsewhere in this report that pupils’ work must have value ascribed to it, primarily so that they are enabled and encouraged to develop and progress.

**What is creativity in DV work?**

Creativity is much talked and written about in education currently. Following the publication of *All Our Futures* (1999), the report of the National Advisory Committee on Creative and Cultural Education (NACCCE), the Qualifications and Curriculum Authority (QCA), followed by Becta, have tried to formalise approaches to and understandings of creativity. QCA and Becta have followed NACCCE in its definition of creativity as arising out of *imaginative activity*, in pursuit of a *defined purpose*, or goals, ending in the production of something *original*, which in turn has *value* for the maker.

This definition has its uses in focusing what creative activity might be; however, it is less useful in describing what creativity is *not*. The authors of this report turned to Sharples for a more detailed model of creative practice.

**What creativity isn’t**

Following Sharples, we are clear that creativity, in DV and elsewhere, isn’t the same thing as ‘originality’. All utterances are original, in the sense that they haven’t been uttered before (even utterances that have been copied are uttered in a new situation, for a new purpose), but this doesn’t mean that they make sense. In the classic analogy, those monkeys with typewriters are all producing something original; what they are not able to do is produce work that is meaningful or, in Sharples’ terminology, *appropriate*. 
For Sharples, what governs the production of appropriate or meaningful utterances are *constraints*. Creative work doesn’t happen in a vacuum, but is circumscribed by rules, conventions, requirements, and context. In the broadest sense, constraints come under one of two types: internal, and external. For a sculptor carving a piece of work out of a lump of stone, the external constraints might be the sharpness of her chisel and the hardness of the stone, the quality of her eyesight, her physical strength, and maybe other requirements if the work has been commissioned. The internal constraints might be her training or apprenticeship as a sculptress, her sense of which other artists have influenced her and the whole panoply of conventions and practices around three-dimensional work as she has assimilated them.

From this description it should be clear that any creative work, using DV or otherwise, cannot happen in an environment free of constraint. This is contrary to the feeling expressed by some of the teachers on the pilot, and to understandings of creativity abroad more generally. Rather than contradict this idea of absence of constraint generating creative work, however, we would attenuate it a little. One of the impacts of DV on other creative work in school it seems is that it changes the kinds of constraint that operate, which in turn enables pupils to go beyond what they may have produced before. In art, for example, all kinds of ICT software, including DV, remove the skill of drawing as a constraint on the production of artwork. Instead, a new set of constraints are introduced.

The notion of constraint as generating creative work has implications for the role of the teacher in the pupil’s creative process. One of these is for the teacher to set constraints on pupil tasks, for example in asking for DV pieces to be no more than two minutes long, or specifying that no dialogue can be used, or that a list of camera positions must be used. This kind of task is becoming increasingly common in the media studies curriculum and is recognised as enabling creative work. Tasks thus become activities in which there are clear problems with open-ended solutions, which encourage experimentation, which are fun, and which also become part of the larger cycle of learning as the techniques learned and outcomes generated become part of the pupil’s repertoire of work.

Another responsibility incumbent on the teacher is to help the pupil identify which constraints, particularly internal ones, are operating on their task. This in itself – a kind of SWOT analysis – might help pupils to reflect on their own working processes and progress.

A final implication is borne out by teachers’ practice in art education in particular. One of the indicators of a maturing of the artistic sensibility in a pupil might be that gradually they come to choose their own constraints – of medium, of influence, of theme and composition.
What it is – conceptual spaces
Making DV therefore is a rule-governed and constrained activity. The constraints include: the technology (cameras, peripherals and editing software) and pupils’ facility with it; their cultural repertoire (what they intuitively know about moving image conventions) and the extent to which they are able to make them explicit, and useable; the semiotic resource of what is to hand (do they film just in their classroom, in the school buildings but not the grounds, or on other locations? Do they use found footage?); and then the nature of the task set (making a documentary in history; communicating a scientific concept; re-dubbing an advert into another language).

For each of these constraints the teacher has a crucial interventionist role: the extent to which pupils know explicitly about the language and conventions that are available to them depends largely on their teacher introducing them. The range and variety of other texts pupils have experienced will constrain their sense of what they might produce; a combination of these might enable pupils to make a great deal out of the semiotic resource available – imaginative approaches are possible even to filming footage solely in the classroom.

A key constraint which drives any single creative design activity is what Sharples (after Darke, 1978) calls the ‘primary generator’: ‘a powerful but easily stated idea that a designer summons up early in the task to prompt and guide the activity’. When writing an essay, for example, the primary generator isn’t the essay question or title, but the motivating idea or argument that the pupil chooses. For architect Frank Gehry designing the Guggenheim Museum Bilbao, it was the idea that the building should look like a multi-faceted shiny fish.

For teachers supporting DV work it might be helpful to prompt pupils to articulate (or even to choose) the primary generator for their work. In curriculum-focused cases it might be governed by the task itself; in purely film-making terms a primary generator might be more useful.
APPENDIX H: Research overview, DV in Education

Research context

1 Research literature

There is very little research literature specifically relating to practices of DVE in schools. We may speculate that this is largely because the technologies to engage in such practices have only recently become available at prices affordable to schools. Another contributory factor may be that video editing has usually been seen as a part of highly specialised media production work, confined to schools committed to specialist media studies. Even in those contexts, until quite recently, a typical picture has been that editing equipment is rarely available, and even where it is, it has been restricted to a single analogue editing station.

In recent years, a number of changes have prompted more activity in this field, along with a small body of literature describing early work with DV. These changes include:

- the availability of affordable editing software and hardware
- the need in FE in particular to orient vocational media-related courses to practical production work, and thus to adapt to the newly available digital technologies
- the initiation of specialist media arts colleges from 1997 under the government’s specialist schools initiative
- the introduction of City Learning Centres, with a brief to exploit the curricular possibilities of new technologies
- the interest of specialist organisations in the fields of film, media and ICT in exploring and promoting such work in schools (for instance, Media Education Wales, the bfi, Scottish Screen and Becta).

An early account of digital editing work in school is given by Julian Sefton-Green (Buckingham et al., 1995). This describes a classroom project using Adobe Premiere, and comments in particular on how the medium allows for endless reworking of the edited video, the most obvious advantage that the digital format offers over analogue editing equipment. This piece is picked up in a second account of school practice, based on work in the first specialist media arts college, Parkside Community College in Cambridge (Burn and Durrán, 1998). This piece compares what was possible for GCSE media studies students with analogue kit to what became possible with the introduction of digital equipment (Media 100 on a Mac platform). As well as confirming the plasticity of the medium, it extends this point to show how collaborative work by students can be complemented by individual variations on the group piece, using the same digitised footage and the same basic assemblage of clips, but altering aspects
here and there, changing the soundtrack, or editing in or out features for different audiences, such as a school open evening. Further points are made about the visual nature of the interface, creating a metaphor for the editing process in which the co-ordinated sequences of video and audio tracks allow for easy conceptualisation of the process by students, and visible manipulation of these elements in virtual form.

A more general account of the application of media approaches, including DVE, across the curriculum in a specialist media school is given by Burn (Burn, 1998), suggesting how editing can feature in the work of humanities, maths and science departments.

An authoritative view of the research literature can be derived from a systematic review of international research findings on the impact of ICT on literacy. This review has been conducted as part of the EPPI (Evidence-Based Policy and Practice Initiative) project. (Andrews et al., 2002). The review has searched all relevant electronic databases, supplemented by hand searches of journals, which may escape the electronic databases, and has collected literature thrown up by its own keywords, applying rigorous inclusion/exclusion criteria. The relevant keywords for the theme of digital editing were visual learning, media literacies and moving image. The total number of articles included in the initial mapping of the field, after peer-sampled exclusion of those, which did not meet the criteria, was 205 articles.

The search produced evidence of very little research directly concerned with DV in schools. Even the largest research study of the relationship between new technologies and literacy, the Australian study Digital Rhetorics (Bigum et al., 1997), contains no field observations of DV editing, though it mentions schools which offer this activity. The most relevant search terms produced only 11 articles under the keywords visual learning, eight under moving image, and two under media literacies. Of these, only two explored the use of DVE software (Burn and Reed, 1998; Burn, 1999).

Both of these are small-scale studies based in a single school in the UK. The first, (Burn and Reed, 1998), describes the use of Media 100 by a group of five girls to make a trailer of Psycho (Hitchcock, 1960). The piece isolates a number of features of the digital format. It produces evidence from interview data that the collection of raw footage in the form of digitised clips is itself a significant process, allowing for a wide range of potential edited pieces – a process that would not be possible using analogue equipment. It shows that the articulation of soundtrack with the images is a complex construction of meanings, in this case made up by synced sound from the film edited against music from the CD of the film’s soundtrack. It shows that the students treat the visual metaphors of editing on the screen as a kind of literacy, a symbolic set to be learnt and manipulated. It affirms the point made in other studies about the plasticity of the medium. It introduces the question of the pleasure taken by the students, who would stay
long after school to work on their piece. And, finally, it demonstrates how the creative use of the software is intricately bound up with the cultural competences and preferences of the girls in the group, in this case related to the history of slasher horror films, their own viewing of these, and the teaching of Hitchcock contained in the course.

The second piece (Burn, 2000) is a similar study, based in the same school, and exploring the same project: trailer-making for GCSE media studies. It confirms many of the points in the first study (the plasticity of the medium; the motivation afforded by the equipment; the range of cultural competences at work). However, it focuses on two less able, disaffected boys, making some additional points about how the work addresses their needs. It shows, for instance, that, in order to make an edited piece without being dominated by two more able boys they were originally partnered with, they used the same collection of clips as the other two to make their own trailer, adding their own soundtrack. In this way, they could benefit from the selection process, which in effect helped them to make sense of the huge amount of potential material in the whole film. The study shows that they made a piece which was structurally simpler than that of the other pair, but which was a considerable achievement for them, and a success by their standards.

Two more pieces of literature, though not research studies, raise some important questions about work with DVE in schools.

The first (Lachs, 2001) describes practice in a City Learning Centre in Hackney, using a suite of iMacs with iMovie 2. This book raises the question of how DVE can be deployed across the curriculum, serving the needs of students to represent their understandings of historical events, or scientific processes, for example. It also raises the question of how DVE can be exhibited, and in what formats, since it recommends output in QuickTime format which can be pasted into web pages as students incorporate their edited pieces in multimedia formats.

The second piece (Burn and Parker, 2001) raises the question of audiovisual literacies. It argues that, in order to understand how children are using digital editing equipment, we need to construct a grammar of the moving image which will clarify how meaning is made with sequences of sound and image.

2. bfi best practice research scholarships

The Best Practice Research Scholarships (BPRS) are funded by the Department for Education and Skills (DfES), as a way of promoting, analysing and disseminating good practice in schools, and of recognising teachers as active researchers. They include a requirement for the research process to be mentored by a Higher Education Institution.
This project was organised by the Teacher Training Officer of the UK’s *bfi*, in collaboration with the Director of Media Arts at Parkside Community College and the course tutor for English PGCE at Cambridge University’s School of Education.

The aims of the project were to focus on the practice of editing, specifically DVE. In the light of the research identified above, the project wished to explore the idea of editing as a form of media literacy, and to try to build a conceptual framework which would describe the kinds of editing practice the participating teachers observed in their own schools. The point of the framework was to collect the observations and insights of the teachers, and to then abstract key themes, in order to inform future work in the classroom, and feed back into the practice and research loop.

The project, in the first year, involved five schools, and was organised by the *bfi*, in collaboration with Parkside Community College and Cambridge University School of Education. The schools were:

- Parkside Community College, an 11-16 comprehensive in Cambridge, a specialist media arts college
- Charles Edward Brooke, an 11-18 girls comprehensive in Lambeth, London, also a specialist media arts college
- Turton High School, an 11-18 comprehensive in Bolton, also a media arts college
- Sharnbrook Upper School, an 11-18 comprehensive school in Bedfordshire, also a media arts college
- Impington Village College, an 11-18 comprehensive school in Cambridgeshire, and a specialist languages college.

The teachers spent a day observing five Year 9 pupils being mentored by five Year 11 pupils as they worked on video-editing projects for a school television broadcast. The detail of the video work at this stage is unimportant: the group were looking for a broad overview and tentative observations about editing work and what it involves.

They then brainstormed a long list of observations about what the pupils were doing as part of the editing process. These ideas were then roughly sorted into categories, and the process of abstracting key themes began. For instance, many of the actions observed were to do with what might be broadly described as the social roles and relations the pupils worked within. Other actions were more to do with forms of meaning-making – deciding on the order of clips, adding sound, deciding what kinds of transitions to use.

The project organisers then worked further with the model to develop the framework as a robust descriptive instrument, and sent it to the teachers to use in the next stage of the project.
In this stage, the teachers found an opportunity to observe an editing event in their own schools, and wrote an account of the event applying the conceptual framework. The purpose here was to test how useful the model was to help teachers analyse what they had seen; and also to adapt the model further if aspects of it were found inadequate. Three of these accounts form the basis for an interim report, published in the journal *English in Education* (Burn *et al*., 2001).

The next stage involved a planning day, in which each teacher described his or her progress with the project, and then went on to plan the final stage of the project, which would be an intervention of some kind in the editing process, designed to meet a need in their own situation, perhaps a need identified through the first phase of work. These interventions involved a research dimension, in which the teachers asked specific research questions rooted in their own project, but which reflected the wider underlying question of the whole project, which was to discover more about the nature of DVE.

An interim report was published (Burn *et al*., 2001) which included extracts from the written accounts of observations by three of the teachers in the project. The introduction, by two of the project organisers, presented a rationale for the conceptual framework. It argued that the three organising categories each represented both an important principle of the observations the teachers had made on the first day, and also represented an important theme in current debates about literacy and the arts. Thus, the first theme, the social roles of the students, represented observations about how editing practices were rooted in social contexts, where decisions about who was responsible for what, who brought what cultural and technical knowledge and how they deployed it, were important. At the same time, it reflects a tradition of academic commentary in which views of learning as social practice are well established, drawing in particular on Vygotsky’s model of conceptual development through social interaction (Vygotsky, 1962).

The second theme, creativity, reflected on the one hand the set of observations made by the teachers which related to aesthetic and expressive work as part of the editing process. At the same time, it reflects current preoccupations with creativity in the curriculum, especially the arts curriculum (DfES/DCMS, 1999); and with the nature of creativity in DV production specifically (Bazalgette *et al*., 2000).

The third theme, literacies, reflected observations of students’ operating the grammar of editing – sequencing, linking, articulating, making meaning. It also reflects current questions about the nature of literacy, and how it might relate to media and to new technologies in general (Bigum *et al*., 2000; Raney, 1998; Burn and Parker, 2001).
The teachers approached the model and their observations in different ways. Key findings are summarised below under the headings of the conceptual framework.

Social roles and learning styles

Perhaps the most obvious question about roles in this study was to do with how groups of students work collaboratively. There is also the associated question of whether collaborative work is actively planned, whether it is a kind of default mode in practical work more generally, or whether it is necessitated by a shortage of editing equipment. This study provides no clear answers; the question needs to be explored further in future research.

The second question is to do with the extent of teacher intervention in the construction of groups; and also in what roles each member of the group should take, how they should contribute to the editing task, who should control the mouse and keyboard.

In one school, three boys worked on a trailer of The Matrix as a GCSE media studies project (using Media 100). The group was self-selected and the boy in the middle was both controlling the mouse and keyboard, and acting as a mediator or chair to manage the discussion and decision-making. In this case, the arrangement was successful. It is not clear, however, what would happen if the group was not working successfully, or if some students were being left out.

In another school, A Level media studies students were making a pop video, again using Media 100. Roles were allocated by the students themselves. In one group, the guiding principle was that everyone should do something in the whole project, so some filmed, some storyboarded, some edited. In the other group, the principle was that everyone should do some editing. The teacher observes that by 'editing' both groups meant actually operating the mouse and keyboard; and that, in fact, all students were involved in the decision-making aspect of the editing process. The important principles here seem to be that the collaboration was structured so that everyone was involved at some stage.

Another school identified a problem with groups of girls (an all-girls school) editing with the assistance of a male technician. The issues here seem to be the need for the girls to gain confidence with the software, the need for demonstrations which are hands-on and do not distance the learners from the workstation; and the changing roles of technical support staff in this field, as their technical role blurs into an instructional one.

All of the school observations emphasised the pleasure of DVE, and of using digital equipment in particular. This is attributed by one teacher to the liberating effect of being able to rework the material, which led to students making increasingly minute improvements, and to try out different ideas: ‘as a teacher, it
is fantastic to see students realising ideas without the frustration that attended use of more limited equipment.’

Another study found evidence of a strong engagement with the task which seemed to go beyond simple motivation, where the pleasure involved in manipulating footage from the film and in making their own original piece seemed to be integral to the aesthetic nature of both texts, related to popular cinema, to working with audiovisual texts, and to the plasticity of the digital medium. Such pleasures are not represented in the conceptual framework, and this study offered an account which usefully added to the descriptive power of the framework.

Ways in which social roles were expressed, developed, configured or realised in the digital editing process, then, were:
- risk-taking and experimentation
- the visibility of the process on screen
- pleasures: of textual transformation, collaboration, creativity
- collaborative editing – a tension between individual work and collaborative work
- screen sharing; peer tutoring
- the process of instruction, by teacher or technician.

Creativity

The study of the A Level groups found evidence in their talk of creative work of specialised kinds. One, for instance, was the control of pace and rhythm through matching video clips with the beat of the music soundtrack (in Media 100, markers can be placed on the timeline with a keystroke command, so beats in a music track can be easily indicated). Another was control of the point of view indicated by the sequence, moving between different characters in a pop video.

There was also a strong emphasis on the cultural knowledge the groups brought to the work: in one group, a deep understanding of the music genres used; in the other group, an ability to parody styles of music video. ‘Group B played with cultural knowledge by parodying two lovers running in slow motion through a field towards each other.’

In the creative work, the study observed a difference between the approaches of the groups: ‘Group B worked from a clearly plotted storyboard so experimentation was centred on fine-tuning of clip lengths and best lighting for shots whereas Group A moved text with a confidence borne of excitement in the creative process.’ The balance between careful planning and more improvisatory uses of DVE software is clearly a theme to be explored further in future research.
However, the improvisatory work of Group A was by no means sloppy or uncritical: 'In its editing, Group A moved from dancers to DJs to crowd scenes to individuals to dream-like sequences, all with a critical eye. They were meticulous in pace and rhythm of the edits in order to match movement with beats. In a particular dance sequence, they watched and counted beats of two dancers’ heads nodding and attempted to get them on the beat.'

In another school, where Year 8 pupils were making a film of a modern fairytale, there was some evidence of sophisticated awareness of structuring devices in films they had seen (though it was not carried through in the work):

‘Jason talks of using a technique seen in American Werewolf where a similar long shot of characters walking is punctuated by cross-fades to suggest the length of the walk. This shows an aesthetic understanding of fairly considerable sophistication at this age.’

More evidence of aesthetic work in the making of the text was apparent in the decisions about music tracks:

‘Peter in Group B chose Queen albums for their soundtrack and found the lyrics "I want to break free" to accompany the shots of the lonely Charlene cleaning, a clear example of trying to manipulate mood as well as an obvious use of symbolism.’

Creativity, then, seemed to mean a number of fairly specific things in the context of these studies including:

• a familiarity with moving image texts, and how they achieve their aesthetic effects
• an understanding of how the aesthetic nature of their own texts are constructed through specific kinds of work with image and sound
• the careful planning of the look and sound of a film (such as lighting, camera angles, soundtracks)
• a different, improvisatory approach to the aesthetic qualities of the piece, using the digital medium in a provisional, experimental way.

**Literacies and communicative practices**

In one school, it was clear that prior experience was an important factor. Firstly, they had acquired, through the first year of the course, a familiarity with ‘narrative theories, representation, genre conventions, aspects of distribution and exhibition, film technique and associated metalanguage.’ Secondly, they had some experience of editing from the first year, but using an analogue system: this was their first experience of non-linear editing, using Media 100.
The teacher here found that, as in the earlier studies mentioned above, the nature of the medium allowed for revision in ways which were productive and liberating:

‘... one of the biggest advantages that the groups identified which was the ability to take risks and change their minds. This enabled more supposition and experimentation and decreased the worry of group members in proposing a notion that eventually didn't work.’

In terms of moving image literacy, this study found clear evidence that editing decisions were made and remade in the interests of signification, coherence, clarity from an audience perspective, and aesthetic effect. One group rejected the need for a wide variety of transitions, arguing that simple cuts were part of its rapid editing style; a dissolve transition was used ‘to connote fantasy effect’; and a decision was made to replace a pan by two cut shots to show a change in point of view.

The metalinguistic competence that the conceptual framework suggested was also in evidence in this study, but with two refinements. Firstly, the metalanguage associated more generally with the course had by this time become ‘internalised’, so that the students would use it in an abbreviated way with each other, mingled with more informal language; secondly, there was a new metalanguage consisting of the terminology produced by the DVE software itself, which was informally learnt through use.

In another school, by contrast, the 12-year-old boys using the equipment (DC10 plus) had no detailed background in media analysis, and no experience of any editing equipment. Because of this, as well as their age, there was evidence of a predictable naivety in the groups’ use of transition effects available in the software: ‘When it comes to choosing transitions, they are attracted by the whirligigs and fancy gimmicks. ‘That’d be good’. They under-used the preview facility, and chose on impulse rather making than considered decisions.

The teacher also observed that their use of language while editing seemed not to use complex metalinguistic terms, a fact which she associated with a corresponding lack of complex structures or devices in the film itself, and a lack of awareness of important concepts like ‘point of view’. The lack of experience of media production emerged as a lack of awareness of the difference that could be made by structural ideas like point-of-view; in the adherence to a simple chronological idea of the sequence of the film, and in evaluative processes that were simple and intuitive: ‘They tried out various options and found it easy to agree about what “looked best.”

Aspects of what might be broadly described as editing literacies, then, were:

- planning
- improvisation
• transferable ICT skills
• revision, redrafting, ‘never finishing’
• accessibility of the software
• metalanguage: editing terms; evaluative language; technical terminology.

Teaching iMovie 2

A valuable extension of the BPRS project was a longer study of one of the intervention projects (Sweetlove, 2001). This is an intervention study based on different ways of introducing iMovie 2 to pupils of different ages in a specialist Media Arts school. The study compares five different possible ways to introduce pupils to the equipment: teacher demonstration; peer tuition by two Year 8 pupils with two Year 7 pupils; using a printed guide written by Year 8 pupils; using a written guide made by the teacher; peer tuition by members of their own class; and experimentation without any help at all.

Of all the methods tried, peer tutoring was found to be most economical and successful, establishing rapport between tutor and tutee, sharing the screen, using accessible language without unnecessary explanation or elaboration. The least effective was the printed guide. The study concludes by considering where these methods might best be applied. Peer tuition, for instance, might work best with pupils least at home with ICT, for whom learning by experiment or with a printed guide was shown in the study to be least effective. Guides were judged to work best as a supplementary resource, best targeted at those who were proficient readers. Learning without help through experimentation worked as well as teacher instruction and peer tuition for two boys who were already computer-literate but was of little use to two girls who had little experience of computers at home.

The role of the teacher is proposed in quite a specialised way – to help pupils’ decisions to be informed by aesthetic criteria, and to develop the use of metalanguages related to media concepts and editing practices.

Key questions

This summary of the limited research in the field suggests three main areas where we need to know more.

Pedagogies
What forms of teaching and learning work best? This research suggests that, at the very least, teachers should give careful thought to how pupils are grouped, how the software might be introduced to them, how and when they might productively be left to experiment, and what different roles they might adopt or be allocated, in relation to editing as an aesthetic practice, a kind of literacy and a technology.
Literacies
There are really three overlapping ‘literacies’ being referred to here.

The first is best described as cultural competence – an experience of moving image culture, both from outside school and from a moving image curriculum.

The second is a knowledge of how moving image texts make meanings at a detailed level: how to construct coherent sequences using the conventions of editing, either in the kind of montage style typical of the trailers and pop videos described in some of these studies; or in the kind of continuity styles more likely of longer narrative pieces; or in the styles specific to other genres, such as documentary, television news, and so on.

The third is a technical literacy, related in turn to the editing softwares as a form of ICT. The ability to position or trim clips on a timeline is simultaneously an ability to make fine movements with a mouse and pointer. The ability to easily move between the typical three elements of these softwares depends on a grasp, born of experience, of the fluid procedures of drag and drop. An understanding of the palettes of effects the software offers requires in turn an understanding of menus and their behaviour. An ability to use the plasticity of the medium depends on an ease with functions like preview, re-do, restore, copy and paste and so on.

Creativity
There are perhaps three aspects of what commonly passes for creativity. Firstly, there is evidence in these studies of students making choices for aesthetic reasons – the colour of a scene on a pop video or the choice of a piece of moody piano music to emotionally colour a horror trailer.

Secondly, there is the understanding of what it means to work within a cultural practice which is usually defined as artistic. In these studies, this seems to be not so much to do with Romantic notions of creativity as an individual talent free of context or origin; but as a kind of creative apprenticeship, where some degree of imitation of conventional forms such as trailers, pop videos and television dramas is a necessary point of departure, from which more sophisticated creative work such as pastiche, parody and subversion of generic conventions can follow.

Thirdly, there is a strong sense in which creativity is always about identity – a creative piece of work always says something about its maker. In these studies, this is sometimes clear in video work by students about themselves, or using themselves; sometimes it is in the investment of personal tastes and preferences in music or style and sometimes in the ways in which media knowledges have informed the work.
APPENDIX I: Glossary

BPRS – Best Practice Research Scholarships
DfES – Department for Education and Skills
DV – Digital video; throughout this report DV is used to refer to the overarching process of working with DV
DVE – Digital video editing, as distinct from filming
EBD – Emotional and behavioural difficulties
EPPI – Evidence-Based Policy and Practice Initiative
GCSE - General Certificate of Secondary Education
ICT – Information and Communications Technology; computing and communications facilities and features that support teaching, learning and a range of activities in education (such as administration). The focus is on the subject being taught or studied, or the organisation being administered, rather than developing pupils’ skills with and knowledge of the technologies themselves. (IT – Information Technology – comprises the knowledge, skills and understanding needed to use ICT appropriately and effectively.)
LCD – Liquid crystal display; LCDs are used for small areas where display space is at a premium, for example, the thin flat screen used in portable computers, digital cameras and watches
MFL – Modern Foreign Languages
NLS – National Literacy Strategy
PGCE – Postgraduate Certificate of Education
SATs - Standard assessment tasks; these are for the purpose of assessing the levels of attainment pupils have achieved in attainment targets in the core subjects
APPENDIX J: Bibliography


