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## Summary

In recent years digital video cameras and editing software have become cheaper and easier to use, allowing more teachers to integrate moving image work in their teaching. Research suggests that using DV:

- increases motivation and engagement
- develops literacy skills
- can be used across the curriculum and age phases
- accommodates different learning styles and abilities.

Teachers can maximise the impact of DV by:

- planning and structuring DV activities
- understanding visual literacy
- allowing students frequent access to DV.

# What the research says about digital video in teaching and learning

This report is based on an analysis of current research about the use of digital video (DV) in teaching and learning. It summarises the key findings and suggests resources for further reading.

## What is digital video?

Digital video is video recorded as digital data which can be stored, manipulated and edited on a computer.

DV differs from analogue video in a number of important ways: DV cameras are smaller and lighter than VHS camcorders, and have better picture quality. The key difference, however, is the ease with which digital video can be edited. This enables students to produce films of a higher standard in a shorter time. DV is also easier to share via the Internet and integrate with other ICT applications, such as presentation software.

Use of digital video in teaching and learning can take various forms, from students producing their own films and animations to showing clips to help explain concepts. The literature gives examples of the effective use of DV in a variety of curriculum areas:

- English/literacy
- Drama
- Dance
- Music
- Art and design
- PE
- Science
- History
- Languages
- Citizenship/PSHE

This report focuses on filming and editing, as it is these aspects of DV which have been found to bring the greatest benefits.

# Key research evidence about digital video in teaching and learning

On the basis of Becta's analysis, digital video can have positive effects on teaching and learning in the areas outlined below. There are references for further reading supplied alongside most of the findings.

## Benefits for teachers

- DV work motivates students and keeps them on task, including students with challenging behaviour (Burn and Reed, 1999)
- Planning and editing DV films can improve literacy skills, especially understanding of narrative (Parker, 2002)
- DV production allows differentiation of teaching and learning according to students' abilities, learning styles and personalities (Burn and Reed, 1999)
- Making and editing DV films encourages students to think about their subject matter on a deeper level (Swain, 2003)
- DV production provides opportunities for group work and collaboration (Burn *et al.*, 2001)
- DV makes it easier for teachers to record and share examples of good practice (Hoffenberg and Handler, 2001)
- Teachers can re-use DV clips and re-edit them according to the needs of different classes (Ryan, 2002).

## Benefits for students

- DV production draws on students' out-of-school interests, particularly their knowledge of television and film (Parker, 2002)
- Using DV increases motivation and enjoyment (Burn *et al.*, 2001)
- DV film-making encourages self-expression and creativity (Reid *et al.*, 2002)
- Making and showing DV films gives students a sense of achievement and improves self-esteem (Ryan, 2002)
- DV activities can accommodate students with different learning styles and levels of ability (Burn *et al.*, 2001)
- DV production can help develop a range of social learning skills, including communication, negotiation, decision-making and problem-solving (Reid *et al.*, 2002)
- Making films allows students to explore different roles and identities (Reid *et al.*, 2002)
- Students' work can be shared with parents and the community, via the school website or on CD-ROM (Swain, 2003).

## Factors for effective use

- Teachers need to develop to creative teaching and have a willingness to try new ideas (Reid *et al.*, 2002; Hoffenberg and Handler, 2001)
- Clear planning and structure is essential in DV activities (Reid *et al.*, 2002)
- Students benefit from an audience for their productions, to maximise the benefits in motivation and self-esteem (Buckingham *et al.*, 1999)
- Visual literacy – an understanding of the language of the moving image – is vital (Reid *et al.*, 2002)
- Students should make careful use of stylistic effects such as transitions, sounds and music (Buckingham *et al.*, 1999)
- Attention should be paid to lighting and sound when filming (Brookes, 2003)
- There needs to be sufficient computer storage capacity for DV files (Yao and Ouyang, 2001)
- Teachers need to develop an understanding of how to assess DV work, particularly its creative aspects (Reid *et al.*, 2002)
- Students benefit from opportunities to use DV more frequently, re-visit work and try new ideas (Reid *et al.*, 2002).

## About Becta's 'What the Research Says...' series

This series of briefing papers is designed in particular for teachers, ICT co-ordinators and school managers, in order to provide an initial idea of the available research evidence for the use of Information and Communications Technology (ICT) in schools and colleges. We welcome feedback and suggestions for further titles in the series (contact details can be found at the end of this briefing).

## Digital video in practice

Eddie Wolinski of Failsworth School, Manchester, has used digital video with a number of groups in GCSE Media Studies. Students have found the technology reasonably easy to use, though confidence and sophistication grow with familiarity. Eddie encourages his students to follow a structured creative process in DV work which entails:

- preparation – looking at examples
- purpose – identifying an audience
- planning – storyboards and flowcharts
- making – filming and editing
- final outcome – showing the film
- evaluation – reflecting on what worked.

In working with DV, Eddie has encountered a number of issues and problems, including:

- security of the equipment
- ensuring batteries are charged
- the need for tripods to avoid camera shake
- disagreements during group work
- copyright issues when using music
- the need for DV training for teachers.

Overall, though, Eddie considers his DV projects worthwhile and his students have responded very positively. As the technology becomes more embedded in schools, Eddie sees further possibilities for DV across the curriculum, including recording science experiments, creating sports coaching videos, and making films about historical events.

Further DV case studies are available on Becta's ICT Advice site at <http://www.ictadvice.org.uk>.

# Explanation of Findings

As with any form of ICT, the impact of digital video depends on the ways in which it is used. Although the literature on this technology is still emerging, there is evidence of good practice and positive outcomes in a number of areas.

## Motivation

A key benefit mentioned throughout the literature is the motivational effect the use of DV has on students. Part of the motivational impact of DV seems to be a result of its capacity to engage students' out-of-school interests (Parker, 2002). The range of learning styles DV can accommodate – visual, verbal and active – may be another reason why so many students show enthusiasm for DV work (Reid *et al.*, 2002). This enthusiasm is reflected in the out-of-hours effort students devote to DV projects.

Burn and Reed (1999) found DV production to be an emotional experience for students, resulting in a sense of achievement and even a changed sense of self. A key factor in realising this is making sure that students' films reach an audience – authors comment on students' satisfaction at seeing their names on the credits and hearing their peers applaud.

## DV and literacy

The curriculum area best represented in the literature is the role of DV in the teaching of literacy skills. The impact of DV in this area centres on the link between visual or cine-literacy and the more traditional skills of print literacy. Research by the British Film Institute (Parker, 2002) suggests that planning and editing DV films can foster both these types of literacy simultaneously. In producing digital video, students address concepts which are common to both print and film – character, setting, genre and narrative structure – drawing on their wider cultural knowledge.

The editing process in particular develops students' understanding of narrative. The 'provisionality and plasticity' (Burn and Reed, 1999) afforded by DV editing software allows students to draft and re-draft sequences quickly and easily, encouraging creative experimentation. The software's timeline feature makes the process more transparent and easier to conceptualise (Buckingham *et al.*, 1999).

Parker (1999) argues that this understanding is further deepened by re-writing narratives for different media – so, for example, by adapting a short story for film, students learn about the different narrative requirements of each medium. Evidence of greater understanding is found in the more sophisticated and abstract language they use when talking about their films (Reid *et al.*, 2002) and in the greater depth and detail apparent in students' own writing (Parker, 1999).

## Recording, measuring and analysis

Digital video, however, does not have to be used to create works of imagination in order to be effective. Another useful aspect of DV is what Reid *et al.* (2002) call 'transparent' use – recording and analysing activities, experiments and behaviour. The literature highlights several applications for this:

- Performance analysis in sports, drama or dance (Reid *et al.*, 2002)
- Data capture and analysis in science (Brookes, 2003)
- Encouraging students to reflect on disruptive behaviour (Reid *et al.*, 2002)
- Sharing school activities with parents (Swain, 2003)
- Recording lessons to reflect on practice and share good teaching (Hoffenberg and Handler, 2001).

In conclusion then, it appears that the key advantage of DV is that it promotes greater engagement with the subject, both by allowing opportunities for reflection and analysis and by developing the higher-level thinking skills necessary to communicate ideas through film.

## About the research literature

Most of the academic research has taken place in the area of English and literacy, suggesting that DV has been used most extensively in these subjects. However, even in these areas studies have tended to be small-scale and have yielded only tentative findings. As the overlapping authorship of many of the studies cited here shows, most of the UK research has been conducted by a small number of academics. This highlights the need for the wider research community to engage with DV.

The impact of DV in other subjects is still poorly documented and research evidence is only just beginning to emerge. Most of what academic literature there is in these areas originates from outside the UK; evidence from UK schools is generally restricted to small-scale case studies and anecdotal examples. Some of the international literature relates to the use of DV in colleges and universities, though in many cases there is potential applicability to the school sector.

It seems likely, however, that the amount of DV research available will increase as the technology continues to become more common in schools and interest in its potential grows.

## Key areas for further research

The use of digital video in teaching and learning is relatively new and further research is necessary in all aspects of its use to build models of effective practice. In particular, research is needed to develop understanding of:

- the pedagogy of DV
- what constitutes creativity
- how to assess DV work
- the social and cultural contexts of DV.

Further research is also needed into the use of DV in specific curriculum areas, particularly subjects where little evidence exists, such as PE, science, geography, history and languages.

It would be useful to assess the longer term impact of DV, though Harvey *et al.* (2002) argue that practitioners already have evidence of this which cannot be evaluated or disseminated owing to lack of funds.

### Key questions for schools

- Do teachers in your school have sufficient training in both the technical and pedagogical aspects of DV?
- Do the films students produce reach an audience?
- Have you considered the legal and safety implications of students filming and being filmed?

# Bibliography and further reading

The research referred to in this briefing represents a selection from the developing field of research into the use and impact of DV in teaching and learning, and should not be regarded as a definitive list of the 'most important' research in this area.

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## Becta's ICT Research Network

If you're interested in research on the use of ICT in education, you can join Becta's ICT Research Network.

The ICT Research Network seeks to encourage the exchange of information in order to inform the national agenda and professional practice.

Membership is free and is open to:

- teachers
- ICT co-ordinators
- ICT advisers
- school managers
- researchers
- policy makers
- research sponsors
- industry.

The Network provides an opportunity to:

- exchange information on current research
- develop partnerships
- discuss priorities for further investigation
- focus research on issues of importance to practitioners and policy-makers.

They can do this via:

- an email discussion list
- publications
- conferences and events.

More information on Becta's ICT Research Network can be found at: <http://www.becta.org.uk/research/ictrn/>

Alternatively, send an email to: [ictrn@becta.org.uk](mailto:ictrn@becta.org.uk) or write to: Michael Harris, ICT Research Network, Becta, Millburn Hill Road, Science Park, Coventry CV4 7JJ.

# [www.becta.org.uk/research](http://www.becta.org.uk/research)

### About Becta

Becta is the Government's lead agency for information and communications technology (ICT) in education and supports UK Government, national organisations, schools and colleges in the use and development of ICT in education to raise standards, widen access, improve skills and encourage effective management.

### About the ICT in Schools Programme

The ICT in Schools Programme is the Government's key initiative to stimulate and support the use of information and communications technology (ICT) to improve standards and to encourage new ways of teaching and learning. The enormous potential of ICT means that for the first time it is becoming possible for each child to be educated in a way and at a pace which suits them, recognising that each is different, with different abilities, interests and needs. The challenge over the next four years will be to successfully embed ICT in every facet of teaching and learning where it can have a direct impact on raising standards of attainment. A vision for the future of ICT in schools can be found in the paper *Fulfilling the Potential – Transforming Teaching and Learning through ICT in Schools*, available on the DfES ICT in Schools website <http://www.dfes.gov.uk/ictinschools/publications/>

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