REPORT

IMPACTS OF MOVING IMAGE EDUCATION

A Summary of Research

SCOTTISH SCREEN

by Cary Bazalgette for Scottish Screen

March 2009

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Executive Summary

Evidence about the impact of moving image education (MIE) is still emerging and is relatively limited. There has been no large-scale research on this topic, and although the research field is growing, the limitations of funding and the diversity of practice on the ground mean that making comparisons between different studies is risky.

Nevertheless, the 14 recent studies that form the basis of this summary do offer some useful indications about the distinctiveness of MIE and its potential to make a substantial contribution to learning and teaching. Each of these studies identifies four or more of the following seven 'generic impacts':

1. Learners' enjoyment and sense of achievement.
2. Disaffected or underachieving learners showing engagement and concentration.
3. Increased motivation, confidence, and self-image.
4. Increased attainment in literacy.
5. Increased skills in collaboration and teamwork.
6. Increased knowledge about, and interest in, making moving images.
7. Increased interest in watching and talking about moving images.

However, these impacts closely mirror those found in a wide range of research and evaluation on cultural interventions in education. To make the case for MIE as a distinctive and worthwhile aspect of education, it is important to be able to identify impacts that are specific to MIE. Although most of the research that has the potential to offer these tends to be small-scale and short term, it has the advantage of depth and detail, and can thus offer important insights on the learning processes involved in MIE, which do indicate distinctiveness and a high level of relevance to other aspects of the curriculum, particularly literacy. Five 'MIE-specific' impacts are identified in this summary. It seems that MIE can:

A. enable access to a distinctive, culturally important, non-verbal mode of expression and communication (i.e. the moving image);
B. provide previously failing or excluded learners with access to the curriculum;
C. offer different routes into key literacy concepts;
D. give learners a sense of agency and autonomy that supports self-image and confidence;
E. build bridges between 'home' and 'school' cultures and knowledge.

A brief overview of the parallel but differently prioritised field of research into the impacts of ICT in education suggests that versions of MIE are frequently present in what is designated 'ICT education' but are misrecognised by both teachers and researchers in this field, due to their focus on technology rather than on texts and textual practices.

The summary concludes with recommendations on further research that Scottish Screen might wish to be involved in, and on changes to its education practice in order to ensure sustainability and larger-scale implementation.

Introduction

Media education practices are numerous and variable. Their intended outcomes, generally summarised as 'media literacy', may have agreed definitions at a high level of generality,[1] but can carry different emphases depending on national contexts, educational philosophies, levels of confidence, training and resources, and the priorities of the institutions that drive them forward.

In the current context, Scottish Screen's policy of focusing exclusively on education about the moving image might be seen as a limitation, determined simply by its institutional remit. Arguments for the importance of media education have shifted attention away from film and television in the last decade, and now focus primarily on what are variously described as 'new media', 'digital technologies' and 'web 2.0'. As so often happens in periods of technological change, public discourse becomes obsessed with the technologies themselves, and loses track of the textual, social and cultural practices which are being affected, and in some cases generated, by these technologies. In this context, moving image media have lost their centrality in debates about cultural and technological change, and some argue that the traditional skills of reading and writing are also losing out.

But when we regard 21st century media in terms of Scotland's Curriculum for Excellence's definition of literacy as a 'set of skills which allows an individual to engage fully in society and in learning, through the different forms of language, and the range of texts, which society values and finds useful' [2], we can see that, besides the functional skills of learning how to operate and adapt to new software and hardware, the decoding and comprehension skills needed to access both new and old media are still massively dominated by the requirements of printed texts. The traditional literacy skills needed to interpret these texts need updating, not only because of the increased importance of layout, graphics, colour and illustration, but also because of the new ways in which these kinds of text are made and distributed, and the vast increase in access to these processes. But the written word still remains a key element of literacy.

It is, however, no longer the only element. Another major mode of communication, that has been hugely important in human culture for more than a century, still struggles for recognition as part of what it means to be literate in the modern age. The moving image is both significant and distinctive, as a mode of expression as well as communication, but until relatively recently, the processes of making moving image media such as films and television were accessible only to small elites, and distribution was corporately controlled.

We are now seeing a revolution in access to moving image media that is comparable to the post-Gutenberg revolution in access to the written word. Society as a whole has only just begun to explore the implications of widespread access to the means of production and distribution of moving images. Predictably, the initial focus is on risks such as 'mobile phone bullying' and children's online access to sexually explicit material, while on the supply side, corporations are still wrestling

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[1] As for example in the Charter for Media Literacy, at www.euromedialiteracy.eu, accessed 18/02/09.
[2] Curriculum for Excellence (2008), *Literacy and English: Principles and Practice*, p3. , .

with the threats of copyright infringement, and the opportunities for commercial exploitation of vast moving image archives, as well as the changing economics of production and distribution. But in the longer term, this revolution promises enormous opportunities, as well as challenges, for education.

It is gratifying that Curriculum for Excellence offers a broad definition of 'text' as ' the medium through which ideas, experiences, opinions and information can be communicated', and includes the rider 'Texts not only include those presented in traditional written or print form, but also orally, electronically or on film.'[3]   Even so, this statement has substantial implications for resources, teacher training and assessment. To justify the level of investment that will be necessary in order to include education about the moving image as an essential dimension of modern literacy, we need to collect evidence about its benefits, and about how it can best be resourced, taught and managed. We also need to identify gaps in the evidence and suggest how they may be filled.

This summary is intended to offer a first step in this direction.

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[3] Ibid, p4.

1) Moving Image Education

UK media teachers' preferred term for education about the media is 'media education', but 'media literacy', as an umbrella term for its learning outcomes, is increasingly widely used, both nationally and internationally. 'Moving image education' and 'moving image media literacy' have been used, primarily in the UK, by cultural organisations with a remit for moving image media, such as the British Film Institute (BFI) and Scottish Screen. 'Film education', as well as being the name of a UK organisation, can suggest a relatively narrow focus, excluding the wider range of moving image media, including TV. It is also at odds with the European Commission's preferred term: 'media literacy for audiovisual works'.[4] Now that the UK Film Council (UKFC) has worked with its directly-funded clients to produce a UK-wide strategy for film education under the title *Film: A 21st Century Literacy,*[5] 'film education' may become more widely used and some claim that it does include a wider range of media forms. Nevertheless, considerable confusion reigns, especially outside this sector, about what all these different terms mean, so it is important to clarify the focus of this summary.

Scottish Screen's published definition is as follows: 'Put simply, moving image media literacy means "reading" and "writing" moving images, understanding, enjoying and sharing them. Moving Image Education refers to learning and teaching practices which develop moving image media literacy.' However, to the non-specialist, this metaphorical use of 'reading' and 'writing' may be mystifying, given the widespread assumption that film and television do not require any specialist interpretative skills but are 'naturally' understood by everyone. The term may therefore be misinterpreted as referring to the pedagogical use of moving image media to teach other subjects (e.g. films about tectonics in Geography, or films in other languages to support language learning).

Moving image education (hereafter to be referred to as MIE) shares with 'media education' and 'media literacy' the basic premises that all media forms have distinctive modes of expression that are learned, that 'texts' in any medium can be analysed and their meanings debated, and that learning how to produce such texts is an important part of developing an understanding of any medium. The widespread recommendations for the essential features of media education, endorsed by the UKFC's strategy and expressed in the Charter for Media Literacy[6], can be adapted for MIE, as follows:

MIE offers learners opportunities to
- Broaden their experience of different kinds of moving image media forms and content;
- Develop critical skills in analysing and assessing moving image media;
- Develop creative skills in using moving image media for expression and communication, and participation in public debate.

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[4] EC Communication 'A European approach to media literacy in the digital environment', 20th December 2007, at http://ec.europa.eu/avpolicy/media_literacy/docs/com/en.pdf, section 4.2, accessed 16/03/09.
[5] See http://www.21stcenturyliteracy.org.uk, accessed 12/03/09.
[6] See www.euromedialiteracy.eu, accessed 20/02/09.

These three recommendations can be summarised as 'the three Cs' (ie the cultural, critical and creative strands of learning), incorporated and promoted in Scottish Screen's teacher training and developmental initiatives. Considered in the wider contexts of literacy and arts curricula in general, a similar configuration of learning strands is widely accepted as appropriate for learners of all ages.

The concept of MIE can however still pose difficulties for people outside education and especially for those who are unfamiliar with the professional debates around media, literacy and arts education. Because moving images are technology-dependent, policy-makers and the corporate sector tend to see any moving image-related learning as essentially technological and therefore simply as part of the much higher profile 'digital revolution'. A widespread set of cultural assumptions that assign film and TV a lower cultural status than the 'high arts' such as literature, theatre and fine art, support the idea that moving image media cannot be worth studying in school and may include the view that any attention paid to them is detrimental to the proper business of education. Some, who see these media as actual sources of harm to children, promoting unhealthy interests in celebrity, consumerism, sexuality and violence, promote the idea of media education but only as a prophylactic.[7] Others welcome the use of moving image media in education, but on limited terms: as an attractive and 'relevant' stimulus or motivation to other subject learning.

It is towards all these concerns and anxieties that this summary is primarily addressed.

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[7] See for example Layard, R. and Dunn, J. (2009) *A Good Childhood*. London: Penguin Books.

2) Different Kinds of Research

The word **impact** is an attractive one for advocates and policy-makers in any sector. As a metaphor it connotes the strong, visible and immediate effects of one object hitting another. Although it is widely employed in education, its usage should be regarded warily, particularly in the arts and humanities subjects. Learning in these subjects is rarely either visible or immediate, and there are many different ways of assessing the 'strength' of a learning outcome, depending on the purposes of the assessment. Educational philosophies over the past two decades have favoured the production of 'hard', quantitative information about education, particularly in the context of increasing quantities of numeric data on educational outcomes in 30 countries from the OECD Programme for International Student Assessment (PISA).[8] Schools in all the UK nations have gone through a period of pressure to deliver on externally-imposed targets which, it is now claimed, have narrowed the curriculum and damaged attainment in the arts and humanities.[9]

In this context, there has been a double pressure on arts organisations and arts educators, both to try and defend the place of arts education in the face of a narrowing, skills-based curriculum, and also to seek easily understandable **evidence** to demonstrate instrumental outcomes that may 'prove' the value of such subjects to non-specialist budget-holders and policy-makers. There is thus no shortage, either nationally or internationally, of reports and conferences about 'the impact of the arts' on core subjects such as mathematics, on students' motivation or personal skills, or on key social issues such as health. But at the same time, researchers in arts and humanities education have resisted using purely **quantitative research** methodologies as a way of trying to produce causal evidence about the impact of such education on other aspects of learning.

Quantitative studies can produce useful kinds of evidence: generalised results and statistical relationships, for example. But to do this they must use large samples and try to make sure that exactly the same things are being compared. They therefore often have to simplify the factors and outcomes they are trying to measure. In contrast, **qualitative research** methods that use procedures like detailed observation, interviews, focus groups and photographic, audio or video recordings, together with rigorous analysis, can produce richly detailed descriptions of teaching and learning and enable learners' voices to be heard. This almost invariably means small samples, for which it can be hard to argue typicality and the transferability of findings. Most researchers in arts education therefore prefer to employ a combination of quantitative and qualitative methods: for example a questionnaire to produce numeric data, together with observation and interviews with small samples of learners.[10]

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[8] http://www.pisa.oecd.org/pages/0,3417,en_32252351_32235907_1_1_1_1_1,00.html (accessed 11/03/09).
[9] See for example Alexander, R. et al. (February 2009)*Towards a New Primary Curriculum*, Cambridge Primary Review, at www.primaryreview.org.uk, accessed 19/02/09.
[10] O'Farrell, L. (2007) "Evaluating the impact of arts education: posing pertinent questions, employing suitable tools" at the international research symposium *Evaluating the impact of arts and cultural education on Children and Young People*, Paris, January 2007, at www.centrepompidou.fr/PDF/symposium/session1/LarryOFarrell.pdf, accessed 19/02/09.

However, this does not solve the problem of producing credible evidence about the impact of arts education – or indeed, any education. It is also widely recognised that it is only by undertaking longitudinal studies (i.e. trawling repeatedly for evidence over time – using the same methods – or maintaining a long-term process of recording data) that reliable and useful evidence can be drawn together. This serves to counteract an inevitable outcome from short-term research on arts interventions: they almost always show a number of positive immediate impacts, simply because learners enjoy the novelty of the intervention: improvements in motivation and attainment almost always follow, but may not last (see also pp 14 and 15, below). For example, a recent literature review of the evidence base for arts and culture policy for the Scottish Arts Council concludes with the statement that 'a consistent theme in the literature reviewed is the need for a longer term approach to evaluating cultural interventions. Authors writing across a range of contexts urge the need for larger scale, longer term studies in order to investigate long term impact, and the question of sustainability.'[11]

Obviously then, reliable evidence about teaching and learning, particularly in the arts and humanities sector, where MIE is located, is expensive and time-consuming to produce. In a political climate where arts and humanities subjects, apart from print literacy, have been seen as a lower priority, it has been hard to find research funding at the level required in order to produce the kind of evidence that would be needed to 'prove' the value of these subjects by demonstrating 'impact'. As a marginal, and in many people's eyes a new and experimental subject, MIE has faced even greater challenges, not only because it is inevitably close to the bottom of the research funding 'food chain', but because few funders, or researchers, have recognised a need to focus specifically on MIE. And even if they did, there is still a relative scarcity of established practice in either formal or informal educational settings, that can provide the kinds of large samples and sustained practice that could support the collection of conclusive evidence about what MIE can achieve.

Nevertheless, the obvious importance of moving image media in modern culture means that their role in education is inevitably of some interest to researchers. The roles of these media in education have attracted attention from a diverse range of disciplines, looking for different kinds of impacts and seeking different kinds of evidence. Two trends predominate. Firstly, there is research that has specifically focused on education about moving image media, but has investigated the instrumental use of critical and/or creative work for other learning outcomes (awareness of gender inequality, for example). This research has been more common in the US than in the UK. Secondly, there is a large and growing body of research on the uses and impacts of digital technologies in education, some of which specifically identifies moving image media technologies as generating some interesting results, but which is not designed to investigate these in detail, or from any point of view other than that of the requirements of the existing curriculum.

There is a smaller but more salient range of research, mainly in the UK and Europe, that has looked for learning outcomes specific to MIE, but any conclusions it offers have to be reconciled with the fact that many different models of MIE have been

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[11] Galloway, S. (2008) *The evidence base for arts and culture policy*, Scottish Arts Council, at http://www.scottisharts.org.uk/resources/publications/research/pdf/SAC%20Lit%20Review%20Executive%20Summary.pdf, accessed 19/02/09.

addressed in this research. Top of the list of 'researchable' MIE topics is creative activity with moving image, and there is a small but useful body of evidence on this, albeit based on very diverse kinds of moving image production work. Many schools are interested in this: it links well with the expansionist ICT agenda, as well as ticking the 'creativity' box (while definitions of 'creativity' abound and are often criticised for being vague[12], there is a general consensus that it is a good thing).[13] But Scottish Screen's definition of MIE places at least as much emphasis on 'reading' moving images – 'understanding, enjoying and sharing them' – as on 'writing' them. Only three major interventions in the UK and the Irish Republic have prioritised this aspect of MIE: Scottish Screen's own MIE projects; the British Film Institute's 'Reframing Literacy' initiative, and Film Education's long-established programme of classroom resources and screenings,. Of these, the latter has never received serious research attention and the other two have been evaluated by reputable academics but have not been the subject of the kind of substantial research attention described above. A similar situation prevails in other countries with large film education programmes based on screenings and 'reading', such as France's 'Ecoles et Cinema' and Sweden's national network of film education centres: in both there has been substantial investment in the programmes, but research and **evaluation** have been relatively limited.

An important distinction needs to be drawn between 'research' and 'evaluation'. Evaluations seek to establish whether or not an activity has achieved the goals declared in advance by those conducting it. Obviously not every MIE activity has the same aims, so simple comparisons between evaluations cannot easily be drawn. Many evaluations of educational interventions by cultural organisations are self-conducted and are based entirely or mainly on audience or 'customer' feedback.[14] Given that they are generally undertaken in order to justify existing funding or to underpin the quest for more, they tend to be extremely positive. Evaluations commissioned from independent researchers, especially where they are given the time and funding to collect data at the pre-project as well as the post-project stage, and are able to 'triangulate' the evidence by drawing on different sources of data (for example, from teachers *and* learners) are likely to produce more reliable findings. But it can happen that evaluators are pressured to produce positive results that will justify the expenditure on the activity, and make the case for further funding.

Research differs from evaluation because it is based on the questions the researchers (and their funders) want to ask. What those questions are will depend on the academic discipline(s) of the researchers, and on the amount as well as the source of the funding. Small grants can only enable researchers to design small-scale projects and to ask questions that are likely to be readily answerable; this does not necessarily mean that they are simple questions. It can be the simplest questions that can be hardest to answer. Some educational research is designed to address what might be considered the simplest possible question: "Did anybody learn anything?" This requires open-ended methods in which questions are framed so that they do not predetermine the answers, and observation takes account of

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[12] Banaji, S. Buckingham, D. and Burn, A. (2006) *The Rhetorics of Creativity: A Review of the Literature*, at http://www.childrenyouthandmedia.org.uk/, accessed 19/03/09.
[13] The key text on creativity is the 1999 NACCCE report *All Our Futures: Creativity, Culture and Education*, at http://www.cypni.org.uk/downloads/alloutfutures.pdf, accessed 09/03/09.
[14] For example, the 'impact analysis of First Light's first year of work consisted mainly of a compilation of self-evaluations: http://www.firstlightmovies.com/upload/analysisreport2004.doc, accessed 16/03/09.

everything that is going on. A very large amount of data is thus generated, and the research can be complex, but it can avoid the pitfalls of other research where there can be a danger of the researchers finding what they expect to find.

Larger grants can pay for more complex research. They can enable educational researchers to select larger samples, ensure that their samples are representative (of age, gender, economic status, ethnic group, geographical region, type of school etc), use a mix of methods to gather their data, and carry out extended projects in order to find out whether the impacts they are looking at are sustained over time. However, the larger the samples and the greater the number of variables, the more time needs to be spent on analysis of the data. Non-specialists are frequently surprised at the costs of research. But one researcher visiting a school for one day has to be paid, not only for their travel and perhaps accommodation as well as for their time, but also for three or four days of preparation and writing-up. In addition there may be costs for transcription of recordings. Thus a grant of £25,000 may gather data from only 15 – 20 pupils and teachers.

This is why it is also important to consider the body of evidence available from individual researchers, particularly from teachers undertaking 'action research' in their own classrooms, usually for their own postgraduate studies or as part of their planned professional development. Because learning is a slow and complex process, evidence produced by researchers like these, who are able to make detailed observations over time, and who know their pupils well, can make a valuable addition to the research literature.

Research evidence is often misinterpreted in the media, and may be used selectively, or even irresponsibly, by policy-makers. This is understandable, given that it can be hard to explain the subtleties and caveats that most research reports inevitably include. But where long-term decisions need to be made about children's learning, it is important that the evidence is carefully evaluated and the context of its production taken into account.

And in the final analysis, we need to recognise that decisions about cultural interventions for learners are not necessarily based on hard evidence anyway, but on what we as a society value and wish to transmit to our children. So although the evidence about the impact of MIE is still emerging and relatively limited, it can contribute not only to new thinking about the curriculum for 21st century learners, but also to public discourse about the value of film in UK culture.

3) Key Evidence

Schools and other education and training providers have been using moving image media in classrooms for over 90 years, and studies of various approaches to it date back many decades.[15] But the increased use of moving image software in schools is now transforming the scope and potential of MIE. So for the purposes of this summary it makes sense to focus on recent studies that take digital technologies into account.

Major Sources
In 2002, a review of the available evidence about the impact of ICT on the learning of literacies associated with moving image texts in English for ages 5-16 was undertaken by Andrew Burn and Jenny Leach for the Evidence-Based Policy and Practice Initiative (EPPI) at the Institute of Education in London.[16] Its research question was in one way wider than that of the present report, because of its focus on a range of ICT (that is, on digital video-editing software, computer animation software, games consoles and multimedia authoring software); but in another way narrower, because of its concern with impacts specifically on English rather than looking for any kinds of possible impacts for learners. But it remains the only systematic, substantial and recent literature review that focuses specifically on moving image media in education. It may thus be surprising to find that after a substantial international search for studies that met their criteria for inclusion, the researchers ended up with no more than nine that they deemed relevant. Further, they admitted that several of these nine were closely related, in terms of both their authorship and their funding.[17] And because most of them took the form of small, qualitative case studies (for example, one study looked at the work of just one child) they had to conclude that, on the basis of the evidence available at that time, "…the benefits for moving image literacy of ICTs could only be suggested by the evidence, not conclusively demonstrated."[18]

Nevertheless, Burn and Leach's review forms an important milestone in what is now a rapidly expanding field of research and evaluation. Six of the studies that Burn and Leach include are relevant to this report, in that they deal with aspects of MIE, and they provide us with some key insights on the nature of children's and young people's experiences with MIE, focusing on the processes through which learners start to engage with the expressive and narrative possibilities of even very simple animation and editing software.[19]

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[15] For example Hoban, C. F. and van Ormer (1950) *Instructional Film Research, 1918 – 1950*, Arno Press.

[16] Burn, A, and Leach, J. (2004) A systematic review of the impact of ICT on the learning of literacies associated with moving image texts in English, 5-16. In: *Research Evidence in Education Library*. London: EPPI-Centre, Social Science Research Unit, Institute of Education; also at
http://eppi.ioe.ac.uk/cms/LinkClick.aspx?fileticket=KqgJeW0UW%2bY%3d&tabid=224&mid=1024&language=en-US, accessed 12/03/09.

[17] 'The largest number of studies were undertaken in England; and several of these were sponsored, either directly or indirectly, by the BFI. The prominence of England in this respect is unusual in comparison with the other sub-reviews.' (Ibid. p 21). Four of the nine studies they included were also by Burn himself: this potential conflict of interest was addressed by independent researchers doing their own data searches, who confirmed the importance of Burn's contributions.

[18] Ibid. p 3

[19] Burn, A. and Parker, D. 'Making your Mark: Digital Inscription, Animation and a New Visual Semiotic' *Education, Communication and Information* 1: 155-179; also at http://www.open.ac.uk/eci/burn/femoset.html, accessed 12/03/09.

A key factor in these studies is that the researchers themselves are not only experienced classroom teachers, but also have a deep knowledge of film and filmmaking. They are thus able to pinpoint key moments where learners have to find creative solutions to representational problems (for example, how to indicate visually that a character has sinister intentions) or to convey essential narrative information (for example, how to show that characters are moving from one place to another). Researchers coming from a technological perspective might see these solutions as technologically-led, rather than perceiving that the technology merely serves the learners' imagination: technological solutions are chosen on the basis of prior, creative decisions. Researchers coming from an educational perspective will see learners who are concentrating hard and appear deeply engaged: they may be inclined to ascribe this to the 'relevance' and 'motivating power' of moving image media, without inquiring further into what it is about these media that makes them relevant and motivating. Both of these perspectives are likely to miss the fact that it may be children's prior familiarity with film language that enables them to deploy creative strategies which the software may or may not be able to fully serve.

Eight other quite substantial studies of MIE have been completed in England, Scotland and Ireland since the EPPI researchers closed their database at the end of 2002, but they are all of a very different type from those selected for the EPPI study, being larger in both scope and scale, and conducted by teams of researchers who in many cases were not MIE specialists. Each study addressed rather different versions of MIE, in different contexts, and sometimes serving different purposes; five focused exclusively or primarily on production work rather than viewing or critical analysis, but one looked entirely at critical analysis. Six are evaluations and two are research studies looking at learning outcomes. As in the EPPI-selected studies, there are close relationships and overlaps between some of these studies in terms of their institutional and policy backgrounds, and their personnel. The eight studies are as follows; in this report they will be referenced by the acronyms shown in brackets, while full references are provided in the List of Sources (p 24).

- An evaluation of a pilot project to place digital video editing equipment in selected schools in England ('DVE')
- An evaluation of a pilot project to establish filmmaking in schools in Ireland ('F SE')
- An evaluation of Scottish Screen's Teacher Education Programme ('TEPE')
- An investigation of learning outcomes related to MIE in nine Creative Partnership projects in England ('SFX')
- An evaluation of Scottish Screen's MIE Projects ('MIEE')
- An evaluation of the British Film Institute's initiative to train MIE leaders in 60 local authorities in England ('MLOE')
- A study of learning outcomes from a BBC project to enable news production by 13/14 year olds in UK schools('LOD')
- An evaluation of a Scottish Screen MIE project for young people not in employment, education or training ('NEETE')

Generic Impacts

All eight of these studies present a positive picture of MIE, even where they also (as in the cases of SFX and LOD) identify considerable problems. They refer to the heightened language of enthusiasm and excitement in statements by both teachers and learners, and list a number of positive impacts, from which it might seem that the case for MIE is fully made. But a wide range of other research on the impact of many different kinds of cultural intervention in education has consistently produced very similar findings.[20] Each of the eight studies identified above refers to four or more of the following impacts:

1. Learners' enjoyment and sense of achievement.
2. Disaffected or underachieving learners showing engagement and concentration.
3. Increased motivation, confidence, and self-image.
4. Increased attainment in literacy.
5. Increased skills in collaboration and teamwork.
6. Increased knowledge about, and interest in, making moving images.
7. Increased interest in watching and discussing moving images.

It makes sense, therefore, to refer to these seven as 'generic impacts': outcomes common to a wide range of studies, both MIE and non-MIE. The problem is that there is nothing in the generic impacts to distinguish MIE from any other art form or sport (with Impacts 6 and 7 being, of course, sport- or art form-specific). A great deal of this kind of research has looked at interventions that, like MIE, have introduced new experiences and approaches into the curriculum. So it could be said that generic impacts tell us more about schools than they do about the specificity of each intervention: in other words, learners welcome and enjoy most novelties that offer 'time out' from the daily grind of the curriculum, and this can stimulate them to learn better – at least for a while.

The case for MIE would be at least a bit more credible if it could be proved that it produced stronger or more long-lasting generic impacts than other types of cultural intervention. Two of these studies – SFX and MIEE – had a slightly longer time-scale, and so could look at what happened when the novelty of an intervention wore off. The SFX researchers were looking at short, 'one-off' projects that involved filmmakers working with teachers and children. They returned to some of their interviewees in the academic year following the completion of the projects, and found that most of the generic impacts they had identified at the immediate post-project stage were now less strong than they had been. But they found that where certain factors prevailed – high levels of pupil involvement, inclusive planning, plenty of time allowed for the project, and a clear and visible role for the teacher alongside the visiting filmmaker – then the generic impacts of a project were likely to be

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[20] See for example http://www.scotland.gov.uk/Publications/2004/08/19784/41519 on the importance of cultural experiences generally in education; http://www.dramaed.net/benefits.pdf on the benefits of drama in education; http://www.sportengland.org/win_win_2.1_introduction.pdf on the importance of sport; and http://www.abrakadoodle.com/benarted.htm on the value of art, all accessed on 12/03/09.

stronger; and where there was a higher level of 'fit' between the project and the curriculum, the generic impacts of the project were more likely to be sustained.

In contrast, MIEE looked at teaching that was planned to continue over an extended period, and the researchers found that in most cases, the positive outcomes were sustained. But a major, different and additional factor here was that the teachers had changed their pedagogy as a result of the demands of teaching MIE, and evolved more open, pupil-centred, collaborative teaching styles, to which pupils responded positively. It is likely that they did this as a result of a more sustained 'modelling' of MIE pedagogy by film professionals whose approach to teaching and learning was very different from their own. The key factor here, then, might not have been MIE itself, but the unusually substantial induction process that was used; but it would be interesting to investigate this more thoroughly and consider whether there may in fact be intrinsic features of MIE that encourage a different kind of pedagogy.

The SFX and MIEE findings, though different, are both important. But a common factor that can also be inferred from them is that MIE is not a 'magic bullet'. Even though it can achieve at least some of the generic impacts, the strength and sustainability of these impacts are closely tied to other factors like clarity of purpose and the quality of pedagogy. This should be obvious to educational professionals, but it is helpful if researchers can spell this out and produce evidence to support it, because the 'magic bullet' concept is very attractive to policy-makers seeking rapid and impressive solutions to intractable problems in education, or to agencies and institutions outside education who seek to provide high-profile projects to schools.

The LOD study revealed similar issues: none of the three schools selected as case studies were able to plan effectively, develop clear learning objectives or a good curriculum 'fit', or allow enough time for the project to develop fully. So although the pupils all enjoyed what they did and particularly liked the experience of working to real deadlines and meeting media professionals, the project's potential to develop their understanding of concepts such as news values or bias remained largely unrealised.

It is obviously helpful and important that even a diverse range of MIE can consistently demonstrate the kinds of generic impact shown in other cultural interventions. However, there is also a downside: the wealth of evidence on these kinds of impact can help to bolster up the perception that MIE is like other cultural interventions in being 'special' and 'separate' from the school curriculum, and to some extent interchangeable with other cultural interventions. So it would make little difference whether a school made a film, developed a dance performance, or painted a mural with local artists: each would enrich pupils' experiences, provide some of the seven generic impacts, and leave the pupils with happy memories. In addition, when schools and external providers are quickly satisfied with generic impacts, this may allow failings in the actual provision to be overlooked – as was shown in both the SFX and LOD studies – because such failings tend not to affect these impacts, at least in the short term. It can also be temptingly easy, particularly for non-educational agencies, to link these impacts to high-level curricular aims such as Curriculum for Excellence's four 'capacities' (being successful learners, confident individuals, responsible citizens and effective contributors) without any basis in evidence about actual learning outcomes.

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Scottish Screen is attempting to go much further than the use of MIE as a special intervention or treat, by looking for ways in which MIE can be systematically embedded in the curriculum. For this to happen on a significant scale, evidence about learning has to go beyond the seven generic impacts.

MIE-specific Impacts

Evidence needs to be found that supports the idea of MIE as a distinctive area of learning, either in its own right, or as one that can make an essential and unique contribution to learning in at least some curriculum areas. But only seven of the 14 studies summarised here were actually looking for this: the six EPPI-selected studies, and DVE. These studies all used researchers with expertise in moving image analysis and production, and were designed to include a higher proportion of close observation, plus interviews with learners. Unsurprisingly, these more in-depth, qualitative studies provide a useful balance to the generic impacts found by the larger studies, by identifying aspects of learning that may be regarded as specific to MIE. One study was based from the outset on a conceptual framework that identified 20 different types of possible outcome, grouped into three areas.[21] For the purposes of this summary, however, the research findings can be said to indicate that MIE can:

   A. enable access to a distinctive, culturally important, non-verbal mode of expression and communication (i.e. the moving image);
   B. provide previously failing or excluded learners with access to the curriculum;
   C. offer different routes into key literacy concepts;
   D. give learners a sense of agency and autonomy that supports self-image and confidence;
   E. build bridges between 'home' and 'school' cultures and knowledge.

The first impact may seem self-evident, but needs to be differentiated from Generic Impacts 6 and 7 (making/engaging with moving image). All the studies note in one way or another that MIE enabled pupils to learn about moving image media, but where non-MIE-specialist researchers were gathering evidence about this, they can only cite relatively generalised observations such as 'learning how to make storyboards' or 'filming', or self-reporting from interviews such as 'I learned how to make a news report'. From this, it is impossible to extrapolate much about what was actually happening: the focus of the observation is on factors such as pupils' levels of engagement, enjoyment and sense of purpose.

For the MIE-specialists, the point of research is to probe more deeply into the kinds of thinking and decision-making that are going on in the processes of analysing or editing film. From this emerges an account of these processes that draws parallels between written and filmic modes – for example, as two ways of constructing narratives, addressing audiences and building suspense – but at the same time provides key points of distinction and contrast. Burn and Reed, for example, describe four girls making a trailer for an imagined re-release of the 1960 Hitchcock film *Psycho.* They explain that the girls abandoned the use of a storyboard, because they were

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[21] Burn, A., Brindley, S., Durran, J., Kelsall, C., Sweetlove, J. and Tuohey, C. (2001) 'The rush of images: a research report into digital editing and the moving image', *English in Education* 35: 34-47.

> …working in a *time-based* visual medium, and it is this feature of visual rhetoric, shared with speech but not with writing, that the storyboard, a more writing-like form, is least well-equipped to help with. They needed to see the moving sequence on screen before they realised that the pace was wrong.[22]

At this level of analysis, the claim can legitimately be made that MIE is offering ways into a mode of expression and communication that is essentially distinct from verbal, page-based texts and requires different kinds of knowledge, understanding and skill.

At the same time there are, of course, obvious correlations between the other three 'MIE-specific impacts' and the generic impacts listed earlier:

Generic impacts	MIE-specific impacts
2. Disaffected or underachieving learners showing engagement and concentration.	B. Providing previously failing or excluded learners with access to the curriculum.
3. Increased attainment in literacy.	C. Offering different routes into key literacy concepts.
4. Increased motivation, confidence, and self-image.	D. Giving learners a sense of agency and autonomy that supports self-image and confidence.
6. Increased knowledge about, and interest in, making moving images. 7. Increased interest in engaging with moving images.	E. Building bridges between 'home' and 'school' cultures and knowledge.

But in each case, the MIE-specific impact is more specific, and offers detail that may account for the levels of excitement and enthusiasm reported in the studies that provide accounts of generic impacts. So for example whereas Generic Impact 2 might suggest that 'previously disaffected or underachieving learners' simply found MIE more fun (which might in any case be true), MIE-specific Impact B suggests that the alternative communicative forms offered by MIE may actually allow such students to do what it is too often assumed they don't particularly care about: learn successfully alongside their peers. For example, MLOE found significant improvements in boys' writing as an apparent result of MIE. In a somewhat different scenario, DVE found that children with severe physical impairments were able to access drama activity through the use of digital video. Likewise, the widely-noted Generic Impact 4 makes more sense when we can envisage learners being able to see themselves on screen as well as being able to control and manipulate meaning.

The fourth correlation is a little more complex. The two art-form specific generic impacts (Increased knowledge about, and interest in, making moving images' and 'increased interest in watching and talking about moving images') are predictable in relation to any cultural intervention: most pupils who get to have a go at making a

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[22] Burn, A. and Reed, K. (1999) 'Digi-teens: media literacies and digital technologies in the secondary classroom', *English in Education* 33: 5-20.

video, creating a sculpture or singing in a choir tend to enjoy themselves (Generic Impact 1) and want to do more; and they are likely to have at least some increased interest in watching videos, looking at sculptures and going to concerts. But MIE-specific Impact E reminds us that most children arrive in school at the age of 4+ from homes that are likely to be well-supplied with moving image material and have their own existing favourite DVDs and TV programmes: there are few other art forms (except possibly music) about which teachers can be so confident that pupils will already have substantial experience, in quantity if not in breadth. But although MIE provides pupils (and indeed their teachers) with opportunities to explore an art form with which they are already extremely familiar, it can also offer them opportunities to encounter material that is culturally, generically or stylistically of types that they have never encountered before. While this is not exclusive to MIE – music education can offer interesting parallels – it is still true that MIE can provide pupils with particularly direct and rich insights on other cultures, times and aesthetic traditions.[23] It is important to bear in mind here that the pleasures of narrative and spectacle offered by moving image media need not be language-dependent, so films can offer children experiences that transcend the linguistic boundaries of other narrative forms.

Generic Impact 5, 'increased skills in collaboration and teamwork', is widely cited and often linked to what is seen as the necessarily collaborative nature of filmmaking, although it is also identified as an impact in many other cultural interventions including, of course, sport. So, where an activity in any cultural intervention involves group work, it may foster collaborative skills and teamwork, although this is not of course inevitable.[24] But MIE in the '3Cs' model as promoted by Scottish Screen is no more essentially collaborative than many other curricular activities, and can include individual creative activity in animation or editing. Claims for its 'essentially' collaborative nature may be as much grounded in logistical convenience as in the nature of the art form. For example, the DVE study concluded in 2002, on the basis of a limited set of DV kit provided to participating schools, that four would be a reasonably sized group for undertaking digital video editing: after seven more years of intense technological development, many teachers would see this as at least twice the number likely to foster real creative decision-making.

MIE and Literacy
The gains in literacy attainment indicated in both types of impact are, unsurprisingly, more complex. Some of the reports, especially those written by non-MIE specialists, refer to the attraction, relevance or even 'magic' of moving image media for children as something strong and distinctive but also taken for granted, unexamined or 'just natural'. Other studies that look more closely at the processes of either analysing or making moving image texts offer a deeper insight into the nature of this attraction.

All children first encounter narratives in audio-visual form. They hear spoken stories while looking at the pictures in books, long before they have any notion that the words written on the page may also be meaningful, and they are almost all watching

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[23] The initial evaluation of Film Club (unpublished, June 2007) has indicated this.
[24] As in for example 'Hangin' with the Technology: A Critical Investigation of Group Production' in Buckingham, D. Grahame, J. and Sefton-Green, J. (1995) *Making Media: Practical Production in Media Education*, London: English and Media Centre.

TV by the time they are a year old.[25] Thus by the time they get to school, children have gained a repertoire of skills for interpreting narrative texts, such as inference, prediction, recognition of genres and character types and the ways in which narratives can manipulate time. Research on literacy has indicated a likely impact from this early learning. For example, researchers at the University of Minnesota were looking for factors that could be measured in six-year-olds starting school in order to predict later reading attainment, and so to identify those who might need additional help. They gave two tests to a group of children at age 6: one on their basic pre-literacy skills (like letter recognition, phoneme awareness, etc) and another on their ability to recall narrative features of a TV series episode (causal sequences, for example). When they tested the children on their reading attainment at age 8, they found that there was a higher correlation between the ability to recall features of the TV narrative and high reading attainment at age 8, than there was between having the pre-literacy 'basics' and being able to read well later on.[26] This interesting finding contradicts most people's intuitive ideas about the relationship between literacy and children's viewing habits. Fanned by media panics about the alleged negative effects of film and TV and the unexamined assumption that they are somehow 'simpler' than print media, these intuitions ignore the obvious fact that, while five-year-olds may be able to access and enjoy a morally complex 89-minute narrative like *Toy Story 2*, the kind of print text they are likely to be able to access on their own at the same age will be considerably simpler.

Both the MIEE and MLOE studies looked at MIE that included providing children with opportunities to view films (mainly non-mainstream shorts films from the BFI's published anthologies) and to develop and deploy their ability to analyse them. Both studies report startling gains in literacy learning:

> Their descriptive, inference and predictive skills were extended and they found that they were better at this than they thought because this form of media was familiar to them. The biggest difference was in the participation and quality of work from the boys who were usually not easily enthused by literacy. By the end of two weeks the children had extended their vocabulary and were able to write for a variety of purposes and in different styles with greater confidence. (Quoted in MLOE p 26)

This adviser is seeking to account for what could be regarded as simply another example of Generic Impact 3, by suggesting that 'this form of media was familiar to them'. Investigating a similar phenomenon, David Parker's important study of children making animated narratives offers a further perspective on the processes by which children's learning may be enhanced, not merely through the introduction of MIE, but because of the enriched relationship between print and moving image texts that is enabled by MIE. He cites quotations from stories written by three different

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[25] Marsh, J. Brooks, G. Hughes, J. Ritchie, L. Roberts, S and Wright, K (2005) *Digital beginnings: Young children's use of popular culture, media and new technologies*, University of Sheffield, at http://www.digitalbeginnings.shef.ac.uk/DigitalBeginningsReport.pdf.(Accessed 16/03/09) Fig 7p25

[26] Kremer, K. Lynch, J.S. Kendeou, P. Butler, J. and van den Broek, P. (2002) *The Role of Early Narrative Understanding in Predicting Future Reading Comprehension,* at http://www.ciera.org/library/presos/2002/2002aera/pvdbroekaerapreso.htm. (Accessed 16/03/09).

children after they had done some animation work, which showed marked changes in their use of descriptive terms:

> "I saw some metal in the moonlight night."
> "All I can see is four walls. Brown, dim and muddy like a prison."
> "I can see the opening to our den. Its daylight light is coming in."

He then offers a thought-provoking insight on the processes both of making films and writing stories:

> In each of these sentences we find a device used constantly in moving image media to predicate an audience towards a particular character and thereby create empathy. It is the use of point-of-view – seeing something through the eyes of another. What is interesting about these examples is not merely that a cinematic stance seems to be taken in terms of the written output, though that is certainly interesting in itself, but that in a piece of writing which aimed to establish the feelings or state of mind of a character, the class which was in the process of producing an animation understood that by spatially repositioning the reader inside the character you could access feelings without necessarily describing them.[27]

Editing, being the aspect of moving image production least likely to be experienced by non-specialists, is also the aspect of MIE most likely to be misread or misunderstood by researchers. For example, F SE looked at a project that had anticipated the importance of editing in MIE and thus invested in high-specification Media 100 suites for project participants. Because this kind of kit turned out to be too complicated and time-consuming for most of the project participants – at least given the level of training they received – the researchers concluded that editing was therefore not an essential part of MIE.

But DVE and several of the EPPI-selected studies focused specifically on editing with much simpler technology, undertaken by small groups, and had this work observed by MIE specialists, who describe how digital editing software enables audio-visual sequences to be made and unmade: a process analogous to drafting and redrafting, but more impressive and satisfying because what is created each time is immediately finished-looking and meaningful, and yet the child knows that s/he can achieve dramatic alterations of meaning by re-sequencing images or adding different sounds. As Burn and Parker put it, this makes the child simultaneously 'both a viewer and a potential remaker' of texts.[28]

Thus children may gain a more powerful sense of agency and command over the meaning-making process than they have when reading or writing. A simplistic conclusion from this could easily be that children might abandon print entirely in

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[27] Parker, D. (1999) 'Moving Image, Media, Print Literacy and Narrative' *English in Education* 33: also at http://www.bfi.org.uk/education/research/teachlearn/nate.html. (Accessed 16/03/09).

[28] Burn A, Parker D (2001) 'Making your mark: digital inscription, animation, and a new visual semiotic', *Education, Communication and Information* 1 at http://www.open.ac.uk/eci/burn/femoset.html. (Accessed 16/03/09).

favour of moving image, but the weight of evidence across all these studies suggests the opposite: by gaining confidence and control in one medium, it becomes easier for children to envisage themselves as authors in other media too: thus, gains in the more conventional 'textual production' modes of writing, speaking and listening are reported across most of the studies.

The Wider Picture

This section has focused so far on the relatively limited number of recent research studies in the UK and Ireland that have specifically addressed the impacts or outcomes of MIE. A great deal of the literature on MIE is descriptive, giving accounts of pedagogy and of what pupils appeared to be learning, but not providing robust evidence about impacts, beyond the anecdotal. There are also studies of MIE in other countries that reinforce the findings on generic impacts that have been described here, but within the scope of this summary it has not been possible to make a thorough comparison of their methods, findings and the educational or policy contexts of the initiatives on which they are based.

There is however an enormous range of research on the impacts and effectiveness of ICT in education, driven by the massive investment in these technologies over the past 20 years. Much of this research picks up 'evidence' about moving image based activity, but is bound to interpret it within the terms of the research remit, which is to investigate the impact of ICT use on existing curricula. Given that the Eurorpean Schoolnet's large study of international research on ICT in schools identifies the UK as the single most consistent and productive source of evidence,[29] Becta's numerous studies can be treated as a good indicator of how thinking in this field is negotiating the moving image. So for example, the 2004 report by Burden and Kuechel on Becta's second DV pilot project produced very different interpretations from those of the DVE study:

> Although the use of digital video and digital video editing in schools is highly motivational, this does not in itself provide sufficient reason for using it. Pupils may be highly motivated when they are involved in these activities without learning anything of real value. Therefore, the use of digital video and digital video editing must be linked to added learning gains above and beyond what would have been achieved without the technology.

Not being MIE specialists, Burden and Kuechel have no reason to investigate the possibility that digital moving image hardware and software may be enabling types of learning not yet identified in the curriculum. Looking for learning gains elsewhere, they discover that 'there appears to be an improvement in writing and speaking skills', and argue that the 'auditory and visual stimulation' of DV and 'the physical processes involved in handling the hardware and software' will favour different learning styles.[30]

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[29] European Schoolnet in the framework of the European Commission's ICT cluster (2008) *The ICT Impact Report: A review of studies of ICT impact on schools in Europe,* at http://ec.europa.eu/education/doc/reports/doc/ictimpact.pdf (Accessed 20/02/09).
[30] Burden, K and Kuechel, T. (2004) *Evaluation Report of the Teaching and learning with Digital Video Assets Pilot 2003-2004*, at http://partners.becta.org.uk/upload-dir/downloads/page_documents/research/evaluation_dv_assets03.pdf (Accessed 20/02/09)

Three years later, Condie and Munro's 'landscape review' of ICT in schools recognised the need for greater caution in interpreting the data:

> Understanding of the extent to which ICT can support creativity, including critical thinking skills and problem solving abilities, is developing, although some of the evidence appears contradictory. In the studies encountered, positive findings were associated with a range of technologies, particularly those with strong visual elements such as digital video, drama-oriented software and multimedia presentations.

They note the recurrent references to moving image technologies in relation to learning gains across the curriculum:

> More specifically, learning of modern foreign languages has benefited greatly from the increased availability of online resources as well as technologies such as digital video and photography, while animations and simulations have enabled pupils to grasp more complex concepts in mathematics and the sciences. These have been particularly effective in supporting understanding of abstract or microscopic concepts and processes in science.

But they conclude that 'there is not a sufficient body of evidence in any of these areas, however, to draw firm conclusions in terms of explanatory or contributory factors'.[31] It might be argued, however, that the body of evidence is there: it just needs interrogating in a different way. It is notable for example that moving image technologies are often referred to in this literature as 'visual' (whereas they are, of course, considerably more multimodal). It may be that ICT research, with its focus on technology-led learning objectives, is quick to validate 'visual' technologies on the basis of the widespread assumption that what is 'visual' is also 'easy'. It is this simplistic assumption that underpins antipathies to MIE: moving images are thought to be essentially easy and obvious, and therefore do not need to be taught.

Perhaps the most important insights from the research summarised here are not only that moving image media are complex, distinctive and challenging both to analyse and to make, but that children and young people relish these challenges. People do not learn better when tasks are made easier: they learn better when they are encouraged to push back the boundaries of what they already know, and step on to new ground.

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[31] Condie, R. and Munro, B. (2007) *Impact of ICT in schools: a landscape review* http://partners.becta.org.uk/index.php?section=rh&catcode=_re_rp_02&rid=13836 (Accessed 20/02/09).

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Recommendations

The following possibilities for further actions by Scottish Screen and others seem to be suggested by the findings of this report.

Scottish Screen should consider shifting its focus from evaluation to research, given that the evaluations it has commissioned have produced largely similar results, but have generated some interesting research issues which would require more extended study: for example, the effects of MIE on pedagogy.

Scottish Screen could work with universities and with other UK and Irish institutions with a remit for MIE, to generate longitudinal, qualitative studies of teaching and learning in MIE, using multidisciplinary research teams that include people with substantial experience in making, analysing and teaching about moving image media. The UKFC's film education strategy could be another potential partner.

One way of approaching this, rather than seeking enormous funds for a programme in which Scottish Screen would inevitably not be a senior partner, would be to develop a programme of coordinated action research by classroom teachers, supervised by a small multidisciplinary team. Priority should be given to studies that include consideration of progression in learning.

Research questions could include:

1)   The relationship between the creative, critical and cultural strands of MIE: how do these interrelate in learning, how can they be best integrated in classroom practice, and how can they realistically be managed in schools?
2)   How does MIE relate to the wider scenario of education for media literacy?
3)   Does MIE necessarily entail changes in pedagogy?
4)   What are the key elements of continuing professional development for MIE?
5)   How does MIE actually contribute to the outcomes of the Curriculum for Excellence?

- and should pursue the six MIE-specific impacts in more detail.

To avoid duplication, any research activity initiated by Scottish Screen should take account of ongoing studies such as Buckingham and Burn's current ESRC-funded project to look at learning progression in media literacy, and of the UKLA/BFI/CLPE study of continuity and progression in learning about film, funded by the QCA and due to report in summer 2009.

In its ongoing training and developmental work with teachers, Scottish Screen should seek to shift teachers' perceptions that MIE is 'all about' making films, and that it is essentially a method rather than a curriculum area in its own right. Rather, Scottish Screen should seek to ensure that teachers are enabled to sustain a balanced approach to MIE in the longer term. To enable larger-scale take-up of MIE, Scottish Screen should extend its lead practitioner scheme to include education professionals from the teaching and advisory services in Scotland.

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f. Research in other countries
Informal contacts were made with colleagues in France, Belgium, Portugal, Austria and Sweden, to confirm the consistency of the 'generic impact' findings in MIE research in other parts of Europe. The following impacts were noted:

- Increased motivation and improved results.
- Transferable learning; increased attainment in some subjects especially mother tongue education.
- Involvement in collaborative activities and tasks; development of team spirit.
- Increased filmmaking skills and capacity for critical analysis.
- Increased willingness to experiment and take risks.
- Better teacher-pupil relationships
- Students' pride take in making something concrete, seeing the result they have reached, and being able to discuss that result with fellow students.
- Outcomes are improved when filmmaking and analysis are closely integrated, and when filmmaking is for 'real' audiences.