

Childhood 2025 and Beyond ***Children, Media and Technology***

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Summary

Suggested Central Question: How might childhood change over the next 18 years as a result of developments in technology?

This paper addresses the relationship between children and technology, with a particular focus on media technologies such as the internet, computer games and mobile communications. Its general arguments are as follows:

1. Technology is becoming an increasingly pervasive dimension of contemporary childhood. Nevertheless, most children's lives are not dominated by technology: for the most part, it is a relatively mundane aspect of their everyday lives.
2. Childhood may be changing, but there are also important continuities in children's needs and experiences. Technology does not produce change in itself: it needs to be understood in the context of broader social, cultural and economic changes.
3. There are several broad aspects of children's relations with technology that are likely to become increasingly significant in the coming years. These include:
 - the convergence of technologies and forms of communication
 - the ability to 'multitask', or engage flexibly with a diverse range of media
 - the individualisation of access to media
 - the potential for communication and participation in creative media production
 - the changing role of media in identity formation
 - the difficulty in establishing the credibility of online information
 - the growing influence of commercial forces.
4. These developments are creating a 'new digital divide' between children's use of media and technology in their leisure time, and the use of technology in school. However, the 'old' digital divide will continue to be an urgent public policy issue.
5. The current school curriculum is ill-equipped to address the changing nature of children's relations with technology. The school subject of ICT is much too narrowly defined; while the subject of English remains largely tied to a print-based notion of literacy. The notion of 'digital literacy', as part of a broader media literacy, provides a more rigorous and coherent basis for future developments in this field.

The Challenge in this field needs to identify how schools and parents can balance the potential opportunities and risks of new technologies, and make the best of their participatory and communicative possibilities. To this end, a series of activities is proposed, on a broad 'commission of enquiry' model, including online consultations, reviews of research, citizens' juries, seminars and the production of policy papers.

The key questions

Today's children are growing up in a world that is saturated with media and technology of many kinds. They are surrounded by technologically mediated images, words and sounds; and they are actively using technology in order to learn, to entertain themselves, to communicate, and to represent their own perspectives and concerns. Their relationships with the family and the peer group are increasingly mediated through electronic and digital technologies; and indeed, many of them are using these technologies to form new relationships with people whom they may never have met face-to-face. Children now spend much more time with screen-based media than they spend in school; and by the time they reach their teenage years, the large majority of British children have independent access to television, video, computers, the internet and mobile communication devices.

This is already the case today, in 2008. By 2025, technology is bound to be even more pervasive. Personalised, portable devices, wireless technologies, and increasingly intuitive interfaces will mean that technology will become more and more embedded in everyday life – and probably much less obtrusive or overtly visible. Technology is also likely to become increasingly 'intelligent', in the sense that it will be able to interpret and respond to our personal habits, needs and preferences. In the process, we will increasingly take these technologies for granted: we may even cease to recognise them as technologies, or as somehow complex and potentially alien to our essential humanity. They may come to be seen, in Marshall McLuhan's term, simply as 'extensions' of ourselves.

Yet before we rush to celebrate – or indeed to lament – the growing influence of technology in our lives, we need to take a considered view of this phenomenon. Technology may indeed be increasingly pervasive – but to what extent are children's lives really dominated by technology? Is childhood fundamentally changing – and even if it is, to what extent is this due to developments in technology? How do technological changes relate to other social, cultural and economic changes in children's lives? What do children know, and what do they need to know, about technology – and what role should schools be playing in this respect? This Challenge Outline Paper seeks to address these questions, with a particular focus on digital media technologies such as the internet, computer games and mobile communications.

Understanding children and technology

It has become commonplace to argue that childhood is a 'social construction': the nature of children's experiences and the meanings we attach to the notion of childhood vary strikingly between different cultural and historical settingsⁱ. Just as childhood changed in many ways over the course of the twentieth century, it is not unreasonable to assume that it will also change significantly in the course of the twenty first. However, it is important to avoid overestimating the pace and nature of that change, and to recognise important areas of continuity.

Popular debates about children and technology are typically quite polarised. Technology is often seen to create significant opportunities in terms of learning, communication and creativity; yet it is also believed to present new risks for children, for example in relation to personal safety and exposure to 'inappropriate' content. Children are frequently seen to possess a natural affinity with new technology: they are assumed to be fearless and intuitive in a way that adults are not. Yet they are also seen to be particularly vulnerable to the harmful influences of technology, and its negative effects both on their personal development and on their educational achievement. Technology is believed by some to be liberating childhood, and by others to be destroying itⁱⁱ.

This combination of childhood and technology therefore brings into focus intense hopes and fears about the future; and this makes it particularly important to adopt a measured and careful approach. Numerous authors have challenged the tendency to 'exoticise' children in

this respect. The notion that young people are 'digital natives', while adults are merely 'digital immigrants' – or that young people represent a 'digital generation' that is radically different from earlier generations – is much too generalised, and attributes too great a significance to the influence of technologyⁱⁱⁱ.

Research in this field is obviously at an early stage, but there is much we can learn from previous work on children's relationships with 'older' technologies such as television and print media^{iv}. Several general points might be made in this respect:

- Change in this area is generally incremental rather than revolutionary. New technologies do not simply replace old technologies, but rather add to the repertoire of available choices. Television, for example, has not replaced the book, just as the book did not replace earlier forms of oral storytelling. Similarly, computers are unlikely to replace television - although they may change the ways in which we use it.
- Many new media technologies rely heavily on the forms and conventions of old technologies: for example, many CD-ROMs and websites implicitly use the book as the model for structuring the reader's access to information; and the internet is heavily reliant on conventional verbal literacy – as indeed are many computer games.
- Technologies are developed, designed and marketed in specific social contexts, that reflect broader economic, cultural and social factors. For example, the characteristic themes and preoccupations of contemporary computer games reflect assumptions about the nature of their market (in terms of gender and age) – although, as this market broadens, this is leading to changes in the design of both software and hardware.
- Technologies possess inherent constraints and possibilities, which derive both from the design of technologies themselves and from the contexts in which they are used. Even so, technologies may be used in unexpected ways, and hence have unpredictable consequences^v: young people's appropriation of mobile communications (for example, in the form of text or image messaging) is a particularly striking case in point.
- Technologies are typically adopted (and indeed adapted) in ways that reflect existing social and individual needs – for example, for establishing personal security, for developing a sense of self-worth, for identifying and interacting with peers, or simply for entertainment and relaxation. They may channel those needs in particular directions, but only rarely do they create needs that did not previously exist.
- Children and young people use technologies in very diverse ways, which depend both on personality and on social factors: boys and girls, for example, are likely to engage with computer games or instant messaging in very different ways, although there will also be significant variations within these groups. Levels of access to technology, and the skills and orientations young people develop in relation to it, also depend very significantly on social class.

For all these reasons, we should resist generalised assertions about the inherently transformative powers of technology – such as the idea that technology is fundamentally changing childhood (or indeed learning) as we know it. Technology may contribute to broader changes in childhood, but it does not produce such changes in its own right. The consequences of technology depend significantly on how it is used, and the motivations of those who use it.

Many wild claims have been made about children's engagement with new technology; but research in this field suggests that the reality is much less spectacular^{vi}. How children use technology remains heavily dependent on well-established routines of everyday life, and on existing relationships within the family and the peer group. It would be false to assume that children in general are automatically more fluent or competent in their use of technology than adults. Most children's everyday uses of new technology are characterised not by

exciting manifestations of innovation and creativity, but by relatively mundane forms of communication and information retrieval. The 'cyberkids' of the popular imagination may indeed exist; but research suggests that they are in a minority, and that they are untypical of children in general. One could even argue that for most young people, technology *per se* is a relatively marginal concern. Most children continue to lead balanced lives: while they spend a lot of time with electronic media of various kinds, they also pursue traditional hobbies and interests, socialise with friends and family, and engage in physical activity – although they often complain that they do not have sufficient opportunities to do these things. Very few children are interested in technology in its own right, or believe it has magical powers: they are simply concerned about what they can use it for.

Even so, there is some truth in the argument that there is a technological 'generation gap' emerging between adults and children today. Most children are growing up in a very different technological environment from the one in which their parents grew up; and this is bound to mean that they regard technology in a different way, and use it for different purposes. Contemporary children have many of the same interests, concerns and preoccupations as children in previous generations; but how they manifest these is likely to be rather different – and perhaps increasingly difficult for adults to recognise. In this context, both the risks and the opportunities that are potentially offered by new technologies may not be immediately obvious. In terms of risks, old concerns (for example, anxieties about the effects of sexual or violent content) may not apply in the new context, or may apply in a different way; while new risks (for example to do with privacy or trust) may be emerging. Likewise, the opportunities afforded by technology may go beyond those that are recognised in conventional terms as 'educational': they may entail new forms or styles of learning, and the development of new skills and competencies. In seeking to understand these developments, we need to situate them in the context of wider social forces. The following section outlines seven broad issues that are at stake here.

Broader challenges in media, technology and society

Since the latter half of the twentieth century, electronic (and subsequently digital) media have become an increasingly central dimension of children's experience. The range of technologies and the sheer amount of media content available to children have proliferated massively. Contemporary childhoods are inescapably *mediated* childhoods; and there is good reason to assume that media technologies will become even more pervasive and ubiquitous in the coming decades. Children have become an increasingly important target for media and technology companies; the costs of access have generally fallen; and the majority of parents appear to regard technology, if not as an essential benefit for children, then at least as an unavoidable aspect of their lives.

Current developments in young people's use of technology point to seven broad themes that are likely to become increasingly important in the coming years:

1. Convergence. Digitalisation, combined with new commercial strategies, has meant that the boundaries between different technologies and cultural forms have become increasingly blurred. This is particularly apparent in children's culture, with the rise of lucrative multi-media franchises such as *Pokemon* and *Harry Potter*: successful media properties are now 'spun off' across television, computer games, films, books, and a whole range of toys and other merchandise. Likewise, the domestic computer screen has become a means of accessing television, radio, films, games and music as well as written text; and mobile communications devices can be used to store music and video, to access the internet, to create still or moving images, to play games, and to communicate via voice, image or text. Both as 'readers' and as 'writers' of media, we are increasingly working across different modes of communication, and often in several modes simultaneously; and in terms of accessing these media, we are no longer so constrained to do so at particular times or in particular contexts.

2. Multitasking. The history of technological innovation suggests that new media do not necessarily replace older media, so much as add to the range of options that are available. Of course, there may be an element of displacement here: statistics show that children in homes with computers and game consoles spend less time watching television – although the decline in overall TV viewing hours is still relatively small. On the other hand, despite the increasing proliferation of electronic media, there is little evidence that children's reading of print has actually declined; although they may well be reading for different reasons, or in different ways. What is notable is that children are increasingly able to combine and shuttle between different activities - to chat on the computer as they watch TV and listen to music and do their homework (or so they will frequently allege). While some see this as evidence of a form of postmodern distraction, others see it as a manifestation of children's skill in 'multitasking', and their selective and autonomous relationships with contemporary communications media.

3. Individualisation. Developments in technology, combined with changes in family life, mean that children's access to technology is increasingly individualised. Growing numbers of children have personal access to televisions, video recorders, computers and internet connections in their bedrooms, as well as to mobile phones, MP3 players and other hand-held devices. Many of these media are also increasingly portable, and capable of being accessed at any time and in any location. Research suggests that parents' fears about the risks of the outside world have increased, leading them to provide children with an increasing range of media technologies in the home^{vii}; while concerns about children's safety are also a major factor in parents providing them with mobile phones. Yet paradoxically this individualised access effectively undermines the potential for parental control or mediation of children's media use; and this in turn gives rise to new forms of risk, for example in relation to personal safety (online bullying or 'stranger danger') or exposure to 'adult' content (such as online pornography). For many parents, balancing this awareness of risk against the apparent educational and social benefits of access to technology is proving extremely difficult – not least because many of children's enthusiasms (for example, for computer games) are relatively inaccessible to their parents.

4. Participation. Perhaps the most significant difference between 'new' and 'old' media technologies is in the potential for communication and creative participation^{viii}. While television is essentially a 'one-to-many' medium, new technologies operate on the principle of 'many-to-many'. The phenomena collectively known as 'Web 2.0' or 'social software' - blogging, file-sharing, social networking, podcasting, wikis and so on - are providing more and more possibilities for individuals to communicate directly with each other, and to become producers of media in their own right. Many young people now have computers in their bedrooms that enable them to make and edit their own videos, music, computer games and websites, and to broadcast these around the world. All of this is making for a media culture that is potentially much more interactive and participatory – a culture in which the boundaries between the elite of producers and the mass of ordinary consumers seem to be breaking down. This is a culture that offers significant democratic possibilities, although these are clearly not yet available to all; and whether so-called user-generated content really amounts to a kind of 'empowerment', as is often claimed, is certainly debatable.

5. Identification. Taken together, these developments pose new questions about the nature and formation of identity. Media play a key role in children's peer group culture – in the marking out of distinctions and differences and in helping to define group membership. Likewise, within the family, the use of media and technology – and the struggles for control that often surround it – helps to define the proper roles of parents and children. In the age of celebrity culture and reality television, the media offer powerful but often confusing messages about identity – most obviously in areas such as sexuality, where they are often accused of contributing to a premature sexualisation of the young. These questions become more acute as young people are increasingly able to construct their own representations of themselves, and to distribute these online, for example via social networking sites. Users may reveal highly personal information in the belief that they are doing so for an audience

consisting only of their 'friends' (whether or not these are people they have met face-to-face). This situation raises far-reaching questions about the changing ways in which young people understand the boundaries between the public and the private, and the relationships between on-line and offline identities^{ix}.

6. Credibility, ethics and trust. These new phenomena also raise new concerns about how users evaluate online information. For example, Wikipedia is an online user-generated encyclopaedia that is very widely cited by students as an authoritative source, although there have been significant criticisms of the quality of its content. Meanwhile, the rise of blogging has further facilitated the rapid circulation of 'hate speech', misleading rumours and conspiracy theories of all kinds. New media offer the benefit of a much wider range of information sources, but the motivations, identity and quality of those sources are often difficult to ascertain. Communities of users may develop their own standards for judging and maintaining credibility, although this process can be fraught with disputes; but very often it is down to individual users to decide what and whom they should trust^x. The potential of digital technology in terms of copying and circulating content also has significant implications for the notion of copyright and intellectual property. This is most evidently the case with file-sharing, where copyright material is exchanged illegally by users, and in the rising incidence of academic plagiarism. However, it also applies to the way in which content can be 'quoted' or 'cut and pasted' into very different contexts from those in which it was originally presented. In these respects, the ethical dimensions of these media pose significant educational challenges: simply 'wiring up' schools or homes and assuming that the social good of information will flow through the screen is at best naïve and at worst positively dangerous.

7. Commercialisation. Finally, it is important to recognise that these developments are largely driven by economic motivations. In recent years, we have seen a relative decline in national public service media, and the rise of global media corporations; while forms of promotion, marketing, branding and sponsorship have steadily permeated the public sphere of social and political debate. Both in new media and in 'older' media such as television, children have become a particularly significant target, both as a means of reaching adults and as a market in their own right. Children are actively participating in consumer culture at an ever younger age; and the ways in which childhood (and, by extension, adulthood) is defined are increasingly governed by commercial imperatives. The individualisation of contemporary media and technologies offers significant new opportunities for targeted marketing; and participatory media sites such as MySpace, Facebook and YouTube are excellent vehicles for personalised advertising – which is why they are currently changing hands for billions of dollars. New technologies are 'intelligent' in the sense that they can learn about individuals' buying habits and preferences; but by the same token, they can be used as a means of surveillance that undermines the individual's right to privacy. Many of these new forms of commercial activity are much less easy to identify than conventional forms of advertising, and hence perhaps much harder to resist^{xi}.

As I have implied, these developments are not simply a consequence of technological changes. In many ways, they reflect much broader social processes. Many social theorists would agree that the contemporary world has been characterised by a growing sense of mobility, fragmentation and individualisation^{xii}. It appears that established traditions and ways of life are being eroded, and familiar hierarchies overthrown; while individuals are increasingly being held responsible for monitoring their own behaviour and securing their own identity. Developments in the media both reflect and contribute to this – for example, through the growth of niche marketing, the promotion of more individuated forms of identity and lifestyle, and the emphasis on customised or personalised uses and interpretations of cultural goods. One could argue that the resources of a shared or common culture, and the means that we have to engage in dialogue with each other, are disappearing or at least fragmenting. How much of this is just superficial appearance, and how far it really undermines existing social structures, is of course debatable. Even so, it is clear that these developments are not simply to do with technology – and that, when it comes to education, they require more than a 'technological fix'.

Implications for education

These developments raise significant questions about the relationship between children's everyday cultures and practices outside school and those they encounter in the classroom. In relation to digital technology, there is now a significant – and perhaps widening – gap between what children do in school and what they do in their leisure time. I have referred to this elsewhere as 'the new digital divide'^{xiii}. Outside school, children's everyday lives are increasingly saturated by media and technology of many kinds. Yet despite massive investment in technology in schools, and despite the far-reaching enthusiasm that has accompanied it, education has signally failed to engage with young people's everyday uses of contemporary media and technology. To a large extent, this merely reflects a broader historical disconnection between young people's popular culture and the culture of the school.

To identify a 'new' digital divide is not to imply that the 'old' divide has been superseded. On the contrary, there are still significant inequalities both in access to technology and in the skills and competencies that are required to use it; and like existing inequalities in access to books, these inequalities are principally related to social class^{xiv}. While the costs of access will continue to fall in the coming years, it would be false to assume that the market will somehow provide for all: inequalities are likely to be sustained, and we may even see the emergence of a 'digital underclass' whose technological exclusion both reflects and accentuates other forms of social exclusion. As such, the digital divide will represent a continuing problem that schools urgently need to address.

Even so, when we look at what children are doing with this technology outside school, it is clear that it is primarily a medium for popular culture. Children who have access to computers at home are using them for playing games, surfing entertainment sites on the internet, instant messaging, social networking, and downloading and editing video and music. Beyond doing functional tasks for homework, very few of them are using technology for anything that much resembles school learning. By contrast, what they are doing with technology in school is very limited. The subject of Information and Communication Technology (ICT) is largely focused on 'office' applications such as word processing, spreadsheets and file management. It offers little more than decontextualised training in functional skills. This is not to say that these skills may not be important for some people at some stage in their lives, although it is certainly debatable whether it is necessary, or even a particularly effective use of resources, for children to be trained in them in school.

There is now growing evidence that children generally find the use of technology in school boring and unimaginative^{xv}. Some are resigned to this, seeing it as an inevitable fact of life, but others are positively disaffected, and some actively resist it. Particularly for those who are most engaged with technology in their everyday lives, and who may well go on to seek technologically-focused employment, the use of technology in school is largely perceived as irrelevant.

How should schools be responding to this situation? In my view, we need to be wary of a superficial response. For example, there are some educational theorists who seek to celebrate children's engagement with computer games^{xvi}. They point out (quite correctly) that playing games can involve a whole series of complex learning processes, to do with information processing, hypothesis testing and strategising. Yet they argue that it is here that the most significant learning is taking place, and they appear to regard the school as almost a lost cause. This celebratory argument typically entails a wholly positive, uncritical stance towards popular culture. Those who extol the benefits of computer games for learning tend to ignore the commercial dimensions of games, and avoid awkward questions about their values and ideologies. They also engage in a rather ill-defined valorisation of 'informal learning', in which formal learning is seen as something inherently bad. This argument takes very little account of the realities of schools and classrooms, and indeed of the very many problems that would be entailed in using games for learning.

This approach is symptomatic of what we might call the 'edutainment' strategy – the idea that we can take elements of entertainment and use them as a way of making the traditional curriculum more palatable or engaging, particularly for disaffected children (who in this context are increasingly assumed to be boys). This is what the media industries typically call 'fun learning', and it is a growing market both in homes and in schools. The idea that we can sugar the pill of education with a little dose of fun has a long history. Yet it is a superficial approach that almost invariably fails. Our research suggests that children can easily see through it: they know the difference between a real computer game and an educational game, and they know which they prefer – and they become very adept at taking the sugar while leaving the pill behind^{xvii}.

By contrast, I would argue that we need to develop a much more rigorous and indeed challenging response to these new forms of digital culture. What is needed here is a coherent conception of 'digital literacy' – in other words, of what children *need to know* about these media – that goes well beyond mere technical know-how or functional skills. Children certainly need technical skills, but they also need a form of critical literacy that will enable them to understand how information is produced, circulated and consumed, and how it comes to have meaning. As I have suggested, new participatory media raise new questions about the credibility and quality of information sources, and about how information is circulated and used. They also invoke new concerns about children's (and indeed adults') awareness of commercial activities, and about privacy and the formation of identity.

The notion of 'literacy' is often used here because it implies that there are skills and understandings that cut across different forms of communication: while different media have their own 'languages' (for example, one can talk about 'visual language'), there are also key aspects (such as narrative, representation, or design) that apply both to 'old' media such as books and to new media. Much of the verbal language that children encounter today is in a mediated form; and much of their reading takes place on screen. This is already the case now; and as technologies and forms of communication increasingly converge, it will no longer make sense for the school curriculum to separate 'new' and 'old' media, or to regard 'technology' as a separate subject. 'Literacy' or 'English' as a school subject will need to be comprehensively extended and rethought in order to take account of these changes. The subject of ICT as it is currently defined is hopelessly ill-equipped to address the social and cultural aspects of media and technology. What is required is a fundamental reconsideration of how we teach about communication in the modern world.

Such an approach implies a move *beyond* technology – a focus not on hardware and software, but on culture and communication. In my view, media education – or 'media literacy' – provides a much more rigorous and systematic framework for investigating these phenomena than is currently available in the curriculum either for ICT or for English^{xviii}. Media education is an established area of the school curriculum, both in the form of the specialist subject of Media Studies (at GCSE and A-level) and in small elements of the National Curriculum at Key Stages 1-3. However, the National Curriculum still typically defines literacy in terms of print; while the Literacy Hour and the National Literacy Strategy make very little reference to media literacy (even though this is a key priority for Ofcom). Despite the fact that the UK is seen as a world leader in terms of media education, there has been a striking lack of recognition of its importance within educational policy: the compulsory curriculum still largely neglects the key forms of culture and communication of the twentieth century, let alone those of the twenty first.

To date, there has been little research or evaluation of media education; and there is very little sustained practice occurring at the primary school level – which is arguably where it is needed most. There is also a growing need to adapt and extend the field in the light of the emerging challenges posed by digital media, and particularly the new forms of participatory media identified above^{xix}. It is also important to note that the changes identified here apply not just to teenagers but also to very young children: children are surrounded by these technologies from birth, and research suggests that children as young as two or three are

already developing awareness and competence in handling devices such as video recorders and mobile phones^{xx}. To this extent, media education must clearly involve parents as well as schools, and seek to develop partnerships between them; and it may entail new ways of thinking about the relationships between schools and the wider community (thinking which is already apparent in some of the debates around the notion of 'extended services'). These issues are dealt with in more detail in Cary Bazalgette's Challenge Outline Paper on 'New Literacy, New Democracy'.

Questions for investigation

This changing situation therefore presents some significant new questions for investigation. These questions would include:

- How can schools and parents balance the opportunities offered by new and emerging technologies against the risks they may entail? Indeed, how can we ensure that these opportunities and risks are effectively identified in the first place?
- How can schools and parents enable children to make best use of the participatory and communicative possibilities of these technologies? How can they combine this creative potential with a critical understanding of the social and cultural dimensions of media and technology?
- How can schools address the continuing inequalities in children's relationships with digital technology? What role can they play in equalising access, both to equipment and to the skills and competencies that children need if they are to use technology critically and creatively?
- How can schools and parents address the more complex cultural problems posed by technological change – to do with trust and credibility, privacy and identity, and the role of consumer culture?

In terms of research and academic debate, these are questions that require multidisciplinary investigation. They will involve looking well beyond the field of Educational Studies, to the kinds of research that are currently being developed within Cultural Studies, Social Studies of Technology, New Literacy Studies and Cultural Psychology. While there may be insights to be gained from the natural sciences, and indeed from areas such as infant neuroscience, it is important that we look at children's relations with technology in a broader social context.

Some notable examples of such interdisciplinary work are now emerging from the MacArthur Foundation's \$50 million initiative on Digital Media and Learning^{xxi}. A series of six 'state of the art' volumes of research has recently been published by MIT Press; and this initiative is continuing in the form of several funded research projects, and a new journal *The International Journal of Learning and Media*. (The present author is involved in several of these aspects of the MacArthur initiative.) The development of this Challenge could usefully make connections with this work, and informal discussions with representatives of the Foundation suggest that this would be welcomed.

However, the UK can also draw on some examples of innovative educational practice in this field. The work of key institutions such as FutureLab and the London Knowledge Lab, as well as teacher networks such as the Media Education Association and the United Kingdom Literacy Association, and organisations such as Ofcom and the Media Literacy Task Force, can all point to documented instances of grassroots practice. It is clearly vital that teachers (as well as children and parents) are centrally involved in developing any response to the Challenge discussed here, and that such a response is grounded in the realities of educational practice.

Specific activities

In developing the Challenge in this area, I would propose the following sequence of activities. These suggestions should fall within the projected time-scale and budget identified in the briefing document, although more detailed planning would obviously be required.

- 1. Formulating the questions.** The Challenge would need to be directed by a small steering group of around 4-6 individuals, including researchers and practitioners with relevant specialist expertise. The key questions to be addressed would need to be formulated by this group at an early stage.
- 2. Online consultation and dialogue.** Given the issues to be addressed, it would make sense to use new media technologies throughout the process in order to facilitate consultation and debate. This could best be accomplished through the establishment of a website with facilities for collaborative writing (wikis), invited blogs and online discussion. Outcomes of the Challenge process (e.g. discussion papers, reports, podcasts of public meetings) would be posted online, and responses sought. At the same time, this kind of activity would need to be moderated in a very proactive way, with particular individuals invited to contribute, and 'real-time' events devised in order to maximise discussion of specific issues.
- 3. Reviewing existing research.** Several reviews of research about young people and new media technology have been conducted in recent years (including studies commissioned from the present author and others by Ofcom, and as part of the DCSF Byron Review). There have also been several recent reviews of the implications of these developments for education (including those undertaken for Futurelab and Creative Partnerships). It would be useful to update and summarise these reviews, but pointless merely to duplicate them. I would propose that a brief and focused 'review of reviews' should be commissioned at an early stage, in order to help formulate the Challenge.
- 4. Developing themes.** The steering group could then commission a set of short and sharp consultative papers on specific themes. Among the issues identified above, these might include commercialisation, credibility/ethics, early childhood and parenting, participatory media, and identity/self-representation. A maximum of six papers would be commissioned, in some cases from international experts (e.g. Kathryn Montgomery (American University, Washington), Kirsten Drotner (University of Southern Denmark), Henry Jenkins (MIT)). The steering group would act as a 'commission of enquiry', meeting with the authors of these papers and raising questions about issues arising: additional attendees would be invited to participate in these meetings as appropriate, in the interests of ensuring a robust debate.
- 5. Stakeholder dialogues.** In parallel with developing broader conceptual themes, a series of three half-day meetings could be held with selected groups of relevant stakeholders. These could bring together educational practitioners (teachers, youth workers), industry representatives (from technology and market research companies), and relevant interest/lobby groups focused on children and parenting. These could take the form of deliberative dialogues on the model of citizen's juries, with focused input and structured group activities.
- 6. Engaging parents and young people.** Six half-day meetings could also be held with groups of parents and young people, again using the citizen's jury approach. While this would not represent in-depth empirical research, it could allow the voices of those most affected by these developments to be accessed – ideally in a manner that is neither patronising nor tokenistic. All these meetings could be recorded, and analytical reports produced identifying key findings.

7. Production of a consultative policy paper. On the basis of all the above, the steering group and a small group of additional experts could then engage in a focused two-day seminar with the aim of producing a consultative paper identifying likely outcomes for public policy. A draft of this paper could form the basis of a subsequent half-day meeting, in which policy-makers from relevant national and international bodies (DCSF, DCMS, UNESCO, UN, EC) could be invited to respond in the light of likely policy scenarios. The paper could then be revised for inclusion in the final report.

8. Final report. The various components of the Challenge could then be written up for a final report: this would present a succinct summary (maximum 5000 words) of the key themes and issues, research findings (3 and 4 above) and consultative activities (5 and 6), together with policy recommendations (7). The report could be published in hard copy, with appendices in the form of literature reviews, background papers and reports on consultations published online. All this material could then form the basis of further online consultation and debate.

Potential participants

Nationally, there are several leading research centres that would need to be involved in developing this Challenge: these include childhood research centres such as the Centre for the Study of Children, Youth and Media at the Institute of Education, and the Centre for Research on Children and Youth at Sheffield University, and educational technology research centres such as Futurelab and the London Knowledge Lab. The work would also need to draw in individual academics with an interest in this field, such as Professors Sonia Livingstone (LSE), Lydia Plowman (Stirling) and Jackie Marsh (Sheffield).

Internationally, the Challenge could draw upon the work of the MacArthur Foundation initiative on Digital Media and Learning, the United Nations Alliance of Civilisations initiative on Media Literacy, the European Commission's Expert Groups on Media Literacy and Digital Literacy, and the UNESCO Clearinghouse on Children, Youth and Media. There are also numerous key groupings of researchers at institutions such as MIT, the University of Southern California, ITU Copenhagen, the University of Oslo, the Norwegian Centre for Child Research, McGill and Concordia Universities (Montreal), University of South Australia, University of Tokyo, and others.

Credibility of the Challenge

This issues raised in this paper have been addressed, directly and indirectly, in numerous recent policy initiatives. These would include: the Children's Society's 'Good Childhood' initiative; the DCSF Primary Review, convened by Professor Robin Alexander; the European Commission's recent 'Communication' on media literacy; Ofcom's ongoing work in this field, including its Media Literacy Audits; and the DCSF Byron Review on Children and New Technology. The Challenge also relates to popular debates that have focused on the (somewhat generalised and melodramatic) notion of 'toxic childhood', as well as popular concerns about the role of the media in childhood obesity, the promotion of consumerism and the sexualisation of childhood. There would be little difficulty in convincing ministers, policy-makers and the general public of the importance of such issues: the challenge would be in ensuring that the debate would be rigorous, level-headed and informed by a critical assessment of the available evidence, and that it would lead to realistic policy outcomes. I believe the approach I have outlined – which would involve drawing on national and international expertise, as well as on systematic consultation and deliberation – should go a considerable way towards ensuring this.

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NOTES AND REFERENCES

ⁱ See, for example, Alan Prout *The Future of Childhood* (Routledge, 2007).

ⁱⁱ For an overview of popular debates on these issues, see David Buckingham *Beyond Technology: Children's Learning in the Age of Digital Culture* (Polity, 2007): Chapter 3.

ⁱⁱⁱ See David Buckingham 'Is there a digital generation?' in D. Buckingham and R. Willett (eds.) *Digital Generations: Children, Young People and New Media* (Lawrence Erlbaum, 2006); and Susan Herring 'Questioning the generational divide: technological exoticism and adult construction of online youth identity', in D. Buckingham (ed.) *Youth, Identity and Digital Media* (MIT Press, 2008).

^{iv} For overviews of these issues, see David Buckingham *After the Death of Childhood: Growing Up In the Age of Electronic Media* (Polity, 2000); Dafna Lemish *Children and Television: A Global Approach* (Blackwell, 2006); and Sonia Livingstone *Young People and New Media* (Sage, 2002).

^v See Tara McPherson (ed.) *Digital Youth, Innovation, and the Unexpected* (MIT Press, 2008).

^{vi} Good examples of such work from the UK can be found in: Keri Facer et al. *Screenplay: Children and Computing in the Home* (Routledge, 2003); Sara Holloway and Gill Valentine *Cyberkids: Children in the Information Age* (Routledge, 2003); Sonia Livingstone and Magdalena Bober *UK Children Go Online* (London School of Economics, 2005); Jackie Marsh et al., *Digital Beginnings: Young children's use of popular culture, media and new technologies* (University of Sheffield, 2005). Recent reviews of research can be found in David Buckingham et al. *The Media Literacy of Children and Young People* (Ofcom, 2005), and *The Impact of the Media on Children and Young People* (report for the DCSF Byron Review, 2008).

^{vii} See Livingstone *Young People and New Media*.

^{viii} A key text here is Henry Jenkins *Convergence Culture* (New York University Press, 2006).

^{ix} For further discussion, see Buckingham *Youth, Digital Media and Identity* (MIT Press, 2008).

^x For recent research on this broad issue, see Miriam Metzger and Andrew Flanagin (eds.) *Digital Media, Youth and Credibility* (MIT Press, 2008).

^{xi} For a useful discussion of these issues, see Kathryn Montgomery *Generation Digital: Politics, Commerce and Childhood in the Age of the Internet* (MIT Press, 2007).

^{xii} See, among many others, Ulrich Beck *Risk Society* (Sage, 1992); Anthony Giddens *Modernity and Self-Identity* (Polity, 1991); Nikolas Rose *Governing the Soul* (Free Association, 1999).

^{xiii} For more detail on this argument, see David Buckingham *Beyond Technology*.

^{xiv} For evidence on these points, see Livingstone and Bober *UK Children Go Online*; and for a more general discussion, Mark Warschauer *Technology and Social Inclusion: Rethinking the Digital Divide* (MIT Press, 2003).

^{xv} See, for example, D. Levin and S. Arafeh 'The digital disconnect: the widening gap between internet-savvy students and their schools' (Pew Internet and American Life Project, 2002); and for further discussion, Buckingham *Beyond Technology*, Chapter 5.

^{xvi} See particularly James Gee *What Video Games Have To Teach Us About Learning and Literacy* (Palgrave, 2003); and for a critical discussion, Buckingham *Beyond Technology*, Chapter 6.

^{xvii} See David Buckingham and Margaret Scanlon *Education, Entertainment and Learning the Home* (Open University Press, 2003); and Buckingham *Beyond Technology*, Chapter 7.

^{xviii} For a comprehensive discussion, see David Buckingham *Media Education: Literacy, Learning and Contemporary Culture* (Polity, 2003).

^{xix} An insightful discussion of this issue can be found in Henry Jenkins et al. *Confronting the Challenges of Participatory Culture: Media Education for the 21st Century* Occasional paper for the MacArthur Foundation, 2007.

^{xx} See Marsh et al. *Digital Beginnings*.

^{xxi} See <http://digitallearning.macfound.org>.

ABOUT THE AUTHOR

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Professor Buckingham taught and lectured in more than 25 countries around the world, and his work has been published in over 15 languages. His key publications include *Children Talking Television* (Falmer 1993), *Moving Images* (Manchester UP 1996), *The Making of Citizens* (Routledge 2000), *After the Death of Childhood* (Polity 2000) and *Media Education* (Polity 2003). His most recent books include *Beyond Technology: Children's Learning in the Age of Digital Culture* (Polity, 2007) and *Global Children, Global Media; Migration, Media and Childhood* (with Liesbeth de Block, Palgrave, 2007). He has also conducted consultancy for a range of organisations including the MacArthur Foundation, the BBC, Ofcom, the DCSF (for the Byron Review on Children and New Technologies), The Institute for Public Policy Research, the European Commission, UNESCO and the United Nations.

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