Beyond technology
Rethinking learning in the age of digital culture

This article is a short summary of some key arguments in my book Beyond Technology: Children's Learning in the Age of Digital Culture (Polity Press, 2007).

Technology, we are frequently told, is fundamentally transforming education. It challenges existing definitions of knowledge, offers new ways of motivating reluctant learners, and promises endless opportunities for creativity and innovation. There has been a long history of such grandiose claims, dating back well before the advent of computers. Early advocates of the use of film and television in education, for example, made similarly fantastic predictions that these media would lead to far-reaching changes in the nature of learning – and indeed that the school itself would soon become redundant.

The current push to insert computers in classrooms is principally driven by commercial companies seeking new and predictable markets for their products; and by governments that are apparently desperate to solve what they regard as the problems of public education. Both typically espouse a form of technological determinism, and a belief in the all-conquering power of technology. This in turn results in an instrumental view of technology's role in education. Technology is seen as a neutral mechanism for delivering information; and information itself is regarded as a kind of disembodied object that exists independently of human or social interests. This has led to a neglect of basic educational issues, not only about *how we teach* with technology, but also about *what children need to know* about it.

Despite the claims of the marketers, there is now a growing body of research that suggests that the impact of technology on teachers' everyday practice is quite limited. Many teachers resist the use of technology, not because they are old-fashioned or ignorant, but because they recognise that it does not help them to achieve their objectives. There is very little persuasive evidence that the use of technology in itself improves students' achievement. Of course, some teachers are using technology in very thoughtful and creative ways; but most uses of technology in schools are narrow, unimaginative and instrumental.

When faced with this evidence, advocates of technology tend to say that it is still early days, and that real and lasting change is just around the corner. Yet digital technology has been in schools for more than a quarter of a century: the promised revolution has not yet happened, and there is little reason to believe that it will arrive any time soon. However, my own position is not one of outright opposition to technology. I feel there has been an unhelpful polarisation in the popular debate between the dewy-eyed enthusiasts who regard technology as the saviour of education and the gloomy pessimists who believe we are all going to technological hell. It is surely time for a different approach.

The new digital divide

As a media educator, one of my primary interests is in 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. This is what I call the new digital divide. Despite massive investment in technology in schools, and despite the far-reaching enthusiasm that has accompanied it, much of what takes place in education has remained relatively untouched by technology. Yet outside school, children are living increasingly media-saturated childhoods. Children's independent access to media technology has grown significantly; and they are participating in an increasingly diverse and increasingly commercialised media culture – a culture that some adults are finding it difficult to understand and control.

I am not suggesting that the old digital divide has been superseded. On the contrary, there are still significant inequalities in access to technology, and in the skills and competencies that are required to use it; and these are inequalities that schools absolutely must address. Indeed, we should be wary of the easy rhetoric of the so-called 'digital generation' – the notion that young people are all busily communicating and creating online, and that they have a spontaneous affinity with technology that older people do not.

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 is largely about word-processing, spreadsheets and file management – in effect, the *Microsoft Office* curriculum. 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. 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. This is hardly surprising. Historically, schooling has often been characterised by a blank rejection of students' everyday popular culture – and indeed there is a kind of paranoia about the loss of control that happens when popular culture enters the space of the school. To this extent, what I am calling the new digital divide merely reflects a broader historical disjunction between young people's everyday leisure culture and the culture of the school.

Addressing the new digital divide

Can we do anything about this situation – and indeed, *should* we? Some would argue that what children do outside school is not the proper concern of teachers: children get enough of this popular culture in their daily lives, so why should they need to think about it in school – let alone study it? Many would argue that what happens in school is necessarily different from what happens outside – that schooling is a form of induction into high-status knowledge, and that school learning is necessarily formal in a way that out-of-school learning is not. While I have some sympathy with this argument, it is obviously one that sees little scope for change: it seems to assume that high-status knowledge is to be taken for granted, and it accepts as given distinctions between high culture and popular culture that are in fact historically and culturally relative.

For my part, I feel that schools have a responsibility to address the realities of children's lives outside school – which self-evidently includes their engagement with popular culture, and their leisure uses of technology. However, we need to be wary of a superficial response. For example, there are some who seek to celebrate children's engagement with computer games. They point out (quite correctly) that playing games can involve a whole series of complex learning processes. Yet they argue that it is here that the most significant learning is taking place, and that the school is 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 these days are increasingly 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 also become very adept at taking the sugar while leaving the pill behind.

Towards digital literacy

The problem with the strategies I have described is that they lead to an uncritical, unreflexive use of technology. They see technology as an instrumental teaching aid, a tool or a technique. In the process, fundamental questions about how technologies

mediate and represent the world, about how they create meaning, and about how they are produced, are inevitably marginalised.

Many years ago, the Italian semiotician Umberto Eco wrote that if you want to use television to teach somebody, you first have to teach them about how to use television. As this implies, education *about* media is an indispensable prerequisite for education *with* or *through* media. I would argue that the same is true of digital media. If we want to use the internet or games or other digital media to teach, we need to equip students to understand and to critique these media: we cannot regard them simply as neutral means of delivering information, and we should not use them in a merely functional or instrumental way. What is needed here is a coherent and rigorous conception of 'digital literacy' – in other words, of what children *need to know* about these media. This is much more than a matter of technical know-how or functional skills. Children 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.

The 'key concepts' of media education – representation, language, production and audience – provide a comprehensive and systematic framework that can easily be applied to digital media such as the internet and computer games. For example, in relation to the internet, this approach raises challenging questions about *representation* – about bias, authority and ideology – that are typically neglected in accounts of information technology. It calls for a systematic analysis of the *language* (the grammar or rhetoric) of the web as a medium – for example, in relation to links, visual design, mode of address, and so on. It includes an analysis of *production*, of the commercial and institutional interests at stake, of how web texts are produced, and of how they relate to other media. And it looks at how all this impacts on the *audience* or the user, how users are targeted and invited to participate, and what they actually do, what they find meaningful and pleasurable. I believe this approach takes us beyond limited questions about whether or not the information on the web is true, or whether it can be trusted. It addresses the social and cultural dimensions of technology in a systematic and rigorous way; and it seeks to engage very directly with students' out-of-school experiences – not in order to celebrate them, but to interrogate them critically.

However, just as print literacy is about both reading and writing, so digital media literacy should also be about both critical reading and creative production. The advent of digital authoring tools has created significant new opportunities in this respect: students can now make high-quality websites or digital videos with easily accessible tools. Nevertheless, media education is not just about developing technical skills, or about some half-baked notion of creativity. It is about developing a critical understanding of cultural forms and of communication processes. Here again, technology does not precipitate change in and of itself. It needs critical interrogation – and its value depends crucially on the educational contexts in which it is used.

The end of technology?

Media education provides a challenging, rigorous and engaging perspective on technology that the subject of Information and Communication Technology transparently does not. It offers a way of connecting in-school uses of technology with out-of-school, popular culture – albeit in a critical rather than a celebratory way. It raises critical questions that take us well beyond a merely instrumental or functional use of technology. I believe that media literacy should substantially replace the compulsory specialist subject of ICT in schools, and also be much more centrally integrated within the core subject of English.

Digital technologies are an unavoidable fact of modern life. Teachers are bound to use technology in some form or another – and the book is just as much a technology (or a medium) as the internet. We cannot simply abandon media and technology in education and return to a simpler, more natural time. Digital media like the internet and computer games do have enormous potential for learning; but it will be difficult to realise that potential if we persist in regarding them merely as technologies, and not as forms of culture and communication.

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