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Are there Digital Natives in your Classroom?

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As a primary educator, are there some children in your class or group who already have their own tablet computer, or smartphone? Or others who, perhaps, live in smart homes controlled by a voice activated computer network? Or who can fix the interactive whiteboard while you are still looking for the instruction manual? Are you dealing with 'digital natives'?

A few years ago, a short video was widely circulated on the internet. It showed a very young child looking at a magazine, and tapping and swiping at its pages with some evident frustration. This was widely interpreted in terms of the child being a 'digital native' for whom the magazine was simply a tablet computer that didn't work. Incidents like this are taken as evidence of a generational shift that has taken place over the past few decades, with children now, in the words of Don Tapscott, 'grown up digital'. But is this true, and what are the implications for educators? Is every primary classroom really full of 'digital natives'?

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The idea of 'digital natives' is attributed to Marc Prensky who, in 2001, suggested that, as a result of their exposure to ubiquitous digital technologies and the ease with which they could interact with huge amounts of information, young people now thought and learned differently and were "no longer the people our educational system was designed to teach". Educators, Prensky suggested, for all their enthusiasm for new technologies, would always remain 'digital immigrants', visiting from an analogue past and struggling to translate their practice to make it relevant, accessible and interesting to a new generation of young learners.

Writers like Prensky and Tapscott may have caught something of the *zeitgeist* of the turn of the millennium, and certainly the rhetoric of young people perennially being 'ahead' of their elders in technology adoption seems to have been widely accepted, to the point where it has occasionally led to outbreaks of panic as to its possible impact on their language development, their capacity for social interaction, and the ease with which they might access inappropriate content.
This is compounded by a belief that in comparison to their digitally-rich lives beyond school, what they experience in formal educational settings is disappointing and demotivating.
By extension, it is argued that it is the disconnect between advanced 'native' use of personal technologies and predigital schooling that is *contributing* to disaffection and disengagement from education.

Clearly, there have been changes in the digital technologies which many children (even very young ones) encounter, and different patterns of experience among people of different ages; but there are other significant factors at work here. As Chris Jones has demonstrated in a number of critical studies of the 'digital natives' debate, experience and confidence in the use of technologies is differentiated not only by age, but also by gender and socio-economic background, and the centrality of digital technologies in the social lives of young people varies widely. While some may well grow up surrounded by electronic toys and digital home assistants, and have tablets, smartphones and other personal technologies from an early age, others may have upbringings in which digital technologies are less central, or are actively discouraged. Educators should be wary of making assumptions that all children have equal access to digital technologies in their homes, or even that such access is even seen as desirable.

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Even for those young people who do seem to have easy access to digital technologies, their experience may be restricted to specific devices and software. The same 'just-in-time' and 'just-enough' learning that is celebrated by advocates of the 'digital natives' argument, means that children's knowledge of digital technologies may be limited. Perhaps more significantly, it may place them as passive consumers of digital content, whether in the form of online video, games or (purportedly) educational content. While there are some excellent digital resources for children of primary age which encourage active engagement and collaborative learning, there are also many electronic toys, software applications and online resources which have little or no pedagogical underpinning and offer no more than drill-and-test reinforcement activities, albeit presented with multimedia content, adorable cartoon characters and sparkly rewards for task completion. Such technologies make it comparatively easy to demonstrate progress and so an impression of technological wizardry may be reinforced.

Damien O'Sullivan, of the ECDL Foundation (an international organisation concerned to raise levels of digital competence), describes these patterns as aspects

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of a 'digital native fallacy' and argues that the skills and practices that young children develop through informal use are no substitute for the complex digital literacies that can be developed through well-designed educational activities. By digital literacies, I mean here more than 'computer skills' or sets of competences that reside in an individual person. Rather, they involve what Lesley Gourlay and Martin Oliver call 'complex assemblages' of people and technologies. While many children may seem to have great confidence and expertise in the use of their favoured technologies, it is the role of educators to broaden this knowledge and to develop understandings of the underlying concepts and the social aspects of their technology use.

When I worked as a teacher of primary ICT, I was always interested in exploring how children thought computers and other devices and software worked. Even with quite young children, this was a good way of beginning a dialogue about the conceptual underpinnings and some of the social dimensions of digital technologies. For example, an interesting question to ask children working with software to generate images or texts was "where is your picture (or story) kept on the computer?" Some children would indicate the computer monitor: these would be those who would typically let out a forlorn wail of 'my picture's gone!' if they accidentally turned the monitor off, or it went into power-saving mode and the screen went blank. Others, a little more savvy, would indicate the processing unit of the computer or would talk about 'disks'; while the best-informed would make a hand-waving gesture to indicate "it's on the network ... somewhere".

Now, while the idea of 'the network or 'the cloud' as a place to which one's digital creations 'go' is part of common parlance, a digital literacies perspective would mean going beyond children simply learning the technical skills required to save and retrieve data. It might additionally explore questions of who has control of these data, whether they are secure and private, whether one has to pay to store and retrieve them in some way, and so on. This is the kind of learning that requires careful mediation and scaffolding by educators, if children are to develop a more secure and comprehensive understanding. It is debatable whether it would emerge through self-directed and informal learning.

The digital technologies that feature in the lives of most young people are with us to stay, but so too are differences in the patterns and outcomes of their engagement with these technologies. And just as educators recognise that young people will experience varying levels of engagement with print media or music, or participation in outdoor activities, and take account of this in their practice, perhaps this is how we should address the issue of diverse experiences and emerging digital literacies.

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Rather than asserting the existence of a generalised, generational shift, it may be more productive and rewarding for educators to recognise and explore the wide diversity in young people's engagement with digital technologies; acknowledge that this is highly variable and shaped by social and cultural contexts; and draw on the diverse experience and expertise that their classroom may contain. Rather than assertions of unbridgeable generational difference, young people and their teachers need, in the words of Michael Oakeshott, conversations 'between the generations' if we are each to make sense of a rapidly changing digital world.

Pen Portrait

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His research and writing is concerned with the role of digital technologies in learning; teacher inquiry; and the relationship between education and changing patterns of work.

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