Australian Journal of Teacher Education

Volume 36 | Issue 2 Article 6

3-2011

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Recommended Citation
Buchanan, R. (2011). Paradox, Promise and Public Pedagogy: Implications of the Federal Government's Digital Education Revolution. *Australian Journal of Teacher Education, 36*(2).
http://dx.doi.org/10.14221/ajte.2011v36n2.6

Paradox, Promise and Public Pedagogy: Implications of the Federal Government's Digital Education Revolution

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Abstract: The use of digital technology in the classroom is a significant issue for teachers as they are under increasing pressure to teach in technologically mediated ways. This 'digital turn' in education has culminated in the Australian federal government's Digital Education Revolution, which represents a multi-billion dollar commitment to putting computers in schools and the implementation of technological pedagogical practice. This paper focuses on the confluence between globalised economic process, the Digital Education Revolution, and the discourse of the digital native; and describes the way in which students' use of digital technologies is identity forming. I examine the Digital Education Revolution policy and related discourse in order to sketch out some of the educational implications. Drawing upon Giroux's (2004) notion of 'public pedagogy' I argue that using digital technologies could potentially open up an educative space to allow students to author their own digital identity. While the Digital Education Revolution is a product of the influence of globalisation upon education, it, nonetheless, contains contradictory prohibitions and possibilities that can be utilised to take the use of digital technology beyond that of preparing students for work in a globalised information economy.

Introduction

Over the last two decades, Education has been undergoing a process that could be understood as a 'digital turn'. That is to say, education policy can be seen to be placing an increasing emphasis on the importance of digital technologies in the classroom. The Rudd/Gillard government's 'Digital Education Revolution' [DER] can be understood as the culmination of the digital turn. Rather than simply understanding this as the latest manifestation of the 'technologisation of education' (see Laura & Chapman, 2009) I seek to demonstrate that the DER can also be understood as the latest educational permutation in the process of globalisation. To this end, I draw on the work of Michael Apple and others to show that education is an important part of the process of globalisation, and that the push for computers in schools is not unrelated. Paradoxically, while the emphasis on the use of computers in schools can be understood as a capitulation to globalisation, digital technology does open up spaces for education to be more socially just rather than merely educating for human capital in a global economy. The use of digital technology could potentially open up an educative space to engage with what Giroux refers to as 'public pedagogy' (2004). I argue that this would involve allowing students to author their own digital identities, rather than imposing upon them the 'digital natives' identity found in some educational discourse (a discourse, it could be argued, that furthers the globalisation agenda). The aim of this paper is to show that while the Australian government's DER is a product of the influence of globalisation upon education, it, nonetheless, contains contradictory prohibitions and

possibilities that can be utilised to take the use of digital technology beyond that of preparing students for work in the information economy.

Globalisation, Education and the 'digital turn'

Globalisation has become a topic of increasing importance in education. Indeed, Apple asserts that it is crucial to consider globalisation in education as most policies and educational practices are underpinned by the increasing influence of an integrated global economy (Apple, 2010). For Apple, although the processes of globalisation are enacted differently across diverse settings, locations and educational systems, convergences and homogenisation are evident and can be discerned; particularly in policies that 'privilege choice, competition, performance and individual responsibility' (p. 2). Within the Australian context, the educational policies of the Howard, Rudd, and Gillard governments reflect the global emphasis on choice, competition and performance – and these concerns are plainly evident in the successive Labor governments' educational agendas - in the nationalisation of the K to 12 curriculum, the ascendancy of NAPLAN testing, and the accountability and transparency promised by the 'Myschool' website. I argue that the Labor government's DER is likewise a manifestation of the process of globalisation.

Collin and Apple (2010) argue that the 'official' narrative of globalisation portrays it as the inevitable and irreversible process of corporate-led reorganisation of not only world economies but also world cultures and political systems. Schools, they maintain, feature prominently in this story as globalisation, so the rhetoric goes, will lead to the development of a technological "informational" knowledge economy and schools serve as not only the sites where the future workforce for this economy will be prepared, educated and trained, but the increasing technologically mediated education of the future workforce will steer the unfolding process. Although the global information economy is portrayed as being disruptive of traditional social and cultural practices, the work engendered by the future knowledge economy is envisioned as being more remunerative and intellectually engaging than previous economic regimes. (This narrative is not new; see, for example, Neill's 1995 critique). Apple (2010) makes clear that such an account is ahistorical and hegemonic, and that the dominant understanding of globalisation fails to make clear the asymmetric power relations underpinning it and the fact that the profits of the neoliberal globalisation agenda are spread unevenly across the globe and dependent on the labour of those who are unable to access and benefit from the informational economy.

The dominant belief in globalisation as the path to the knowledge economy has resulted in developed nations seeing technology dependent education as the means to 'outsmart' others in the race for scientific knowledge and technological innovation. This utopic vision has led to the 'common-sense' view that national prosperity, justice, and social cohesion 'rest on the creation of a high skilled workforce, with the knowledge, enterprise, and insights required to attract the global supply of highly-skilled, high-waged employed' (Lauder, Brown, Dillabough & Halsey, 2006, p. 3). So ingrained is this narrative that the necessity of information technology in education is regarded as political orthodoxy (Selwyn, Gorard & Williams, 2001); proclaimed not only as the driver of economic growth and efficiency but also touted as cure for social exclusion, (Selwyn, Gorard & Williams, 2001) and the key to national development (Boas, Dunning & Bussell, 2005).

Selwyn (2007) describes the public, private and political interests that are invested in education in which adding digital technology to the classroom represents a 'highly symbolic' gesture that demonstrates the strong economic imperative to increase the nation's competitiveness; A notion reiterated by Baskin and Williams who note that 'like Western

governments worldwide, in Australia computing technologies are considered a motherhood solution to the needs of a highly skilled and technologically capable workforce' (2006, p. 455). Tracing the elevation of ICT in Australian schools within education policy over the last 20 years Baskin and Williams document the increased 'digital rhetoric' from the AEC documents in 1989 which contains discussion on the need to teach computer skills, to MCEETYA 2005 where the goal is a 'leading edge education and training system' so as to drive the 'development of an innovative society' (2006, p. 455). The push for the increased use of digital technologies in the classroom involves more than just rhetoric, for instance, Moyle (2005/2006) discusses the wider social, financial and educational consequences of the current push to transform schools through a technological education revolution. The changes envisioned by the government require broad structural changes to the school environment; including teaching and learning, the physical infrastructure of schools and universities, policies and administration and organisational changes within the education system to accommodate the envisioned transformation. These would involve students, parents, administrators, teachers, teacher educators, and various business groups.

Thus, within the Australian context schools must no longer simply teach computer skills. Digital technology must be embedded in the process of education, such that education itself is technologically mediated across the curriculum as a matter of urgency. This digital turn has culminated in the Labor government's 2.2 billion dollar 'Digital Education Revolution' (DER) initiative where 1.9 billion dollars have been pledged to the National Secondary School Computer Fund with the aim of bringing the ratio of computers to students in years nine to twelve to 1:1 by the end of 2011 (DEEWR, 2009a). 100 million dollars have been committed to the development of fibre connections to Australian schools and for the Professional Development for Teacher program to train teachers to deliver educational outcomes technologically, both through the explicit teaching of ICT and the embedding of technological practices within current pedagogy, and provide them with access to online curriculum materials (DEEWR, 2009a, 2009b). The Federal Government 'Strategic Plan to guide the implementation of the Digital Education Revolution' and related initiatives (DEEWR, 2008) is based on the premise that ICT technologies can 'improve educational opportunities, boost outcomes and energise the learning experience' (p.3) by primarily addressing the computer to student ratio. The DER is a commitment that will enable schools to better access the benefits of technologies for their students.

Various educational government policy initiatives such as the 'Australian Blueprint for Career Development' (MCEETYA, 2008a) and the 'Melbourne Declaration on Educational Goals for Young Australians' (MCEETYA, 2008b) are underpinned by the unquestioned assumption that a technologically mediated education will generate the creation of a workforce ready to participate in the global knowledge economy. The Melbourne Declaration, for example, makes explicit the connection between globalisation, economic competitiveness in a global economy and the role of the Australian education system to produce future workers:

> Schools play a vital role in promoting the intellectual, physical, social, emotional, moral, spiritual and aesthetic development and wellbeing of young Australians, and in ensuring the nation's ongoing economic prosperity and social cohesion. […] Globalisation and technological change are placing greater demands on education and skill development in Australia and the nature of jobs available to young Australians is changing faster than ever. Skilled jobs now dominate jobs growth and people with university or vocational education and training qualifications fare much better in the employment market than early school leavers. To maximize their opportunities for healthy, productive and rewarding futures, Australia's young people must be

> encouraged not only to complete secondary education, but also to proceed into further training or education (MCEETYA, 2008b, p.4).

With the assumption that technological skills are essential for economic participation digital technologies are now advanced as 'a core policy requirement' in the provision of schooling in Australia (Moyle, 2008, p. 1). This is not only changing schools, universities, teaching and learning, infrastructure, policy and administration (Moyle, 2005/2006); the substantial change being ushered in by the introduction of the DER is 'reauthoring' the relationships between the Australian federal and state governments and opening up public school education to corporate forces (Moyle, 2008). As Moyle notes 'the provision of an IT infrastructure requires public schooling to be dependent, in unprecedented ways, upon the private sector and on the efficiency of the telecommunications and other commodity markets' (2008, p. 15). The DER policy not only reflects the influence of globalisation – in that the policy itself is based around preparing students for the envisioned information economy – but the implementation of the policy requires the involvement of various corporations for the provision of the necessary facilities, which now includes access to telecommunications, electricity, computers and local and wide area networks (Moyle). Kritt and Winegar (2007) note the vested interest in classroom digital technology of global companies such as Apple and Microsoft; such corporations are entering the classroom and changing the nature of what constitutes a free public school education (Moyle, 2008).

The digital native – imposition of an identity

The political agenda which has culminated with the DER dovetails rather neatly with current discourse that describe the current high school or university cohort as 'digital natives' or the 'net generation' cyberkids' and the 'Millenials' who, it is claimed, have appreciably different learning styles and more of an affinity for digital learning than previous generations of students (Pesce, 2009; Prensky, 2001, 2004; Toledo, 2007). Marc Prensky (2001) coined the term 'digital native'; a concept that that has been uncritically accepted into some educational discourse. Sweeping statements and audacious claims are often used to characterise this generation, and it is worth reviewing some typical examples of this discourse in order to appreciate the penetration of this concept. Oliver and Goerke state that digital natives are

> typically intuitive visual communicators who can integrate visual and physical environments, learn better through discovery than by absorption, respond quickly to visual stimulus and shift attention rapidly, particularly if they feel bored. They are 'doers' rather than 'knowledge acquisitors' and they know that knowledge is constantly changing (2007, p. 8).

Similarly, Prensky makes such blanket statements as:

> Today's students have mastered a large variety of tools that we will never master with the same level of skill. From computers to calculators to MP3 players to camera phones, these tools are like extensions of their brains. Educating or evaluating students without these tools makes no more sense to them then educating or evaluating a plumber without his or her wrench (2005/2006, p.10).

Such assertions are also found in the work of Jukes and Dosaj who compare digital proficiency to language acquisition.

> This is the first generation that has ever mastered a multitude of tools essential to society before the older generations have. They have grown up digital – its their native tongue. They were born to. It's a language in which they are digitally fluent. They are DFL, they speak Digital as a First Language (Jukes and Dosaj, 2006, p. 11).

I contend that the digital native description encompasses three aspects. Firstly, the youth of today are not just familiar with, but are voracious users of digital technologies. Secondly, this technological saturation has altered their brains. Thirdly, this change means that educational practices have to change to accommodate the new learning styles preferred by this generation. While no direct evidence is offered to support the assertion that digital saturation has changed the brain structure of the digital natives, Prensky (2001) claims that there is indirect evidence to suggest that through mechanisms such as neuroplasticity the brains of today's youth are 'almost certainly' physiologically different. Prensky offers an impressive list of the 'radical' ways that digital natives are interacting with the world differently due to their technological proficiency – they are communicating, sharing, buying and selling, creating, meeting, collecting, co-ordinating, evaluating, gaming, learning, searching, analysing, reporting, programming, socialising, evolving and growing up differently (2004). The assertions made about the need to educate this generation differently due to their lifelong immersion in technology which has rendered traditional modes of teaching useless and necessitate other ways of teaching is evident in the work of educators such as McLoughlin and Lee (2008), Oliver and Goerke (2007), Prensky (2005/2006), Carlson (2005), and Pesce (2009). Typical of those who make such claims, Jukes and Dosaj state that:

> when students walk in class and listen to their teachers speaking to them… there's an immediate disconnect.
>
> Consciously or unconsciously, they sense that many of their teachers aren't a part of, not in synch with, and probably don't understand the world the digital natives in (2006, p. 12).

Implicit (or explicit in Prensky's case) in these accounts is the corresponding notion that those over thirty are 'digital immigrants' (See Prensky, 2001). Rather than grown up with digital technologies, they have come to them later in life and are subsequently never going to be as proficient or confident with computer use as their native counterparts. The argument further implies that digital immigrants are therefore out of touch with the educational needs and interests of the digital natives.

Researchers such as Kukulska- Hulme and Traxler (2005) and Gee (2006) offer a more sophisticated analysis, suggesting that there is a fundamental mismatch in the learning processes involved in educational settings and those out of the classroom. They attest that outside formal education settings individuals act as active participants navigating their way independently through complex multimodal environments; while in school they are expected to submit to a pedagogic regime that is fundamentally premised on the transmission and testing of decontextualised knowledge and skills, and which is dominated by technology underpinned by a radically different philosophy. Although more nuanced in its account of the 'mismatch' between the capabilities of students and the expectations of the educational system, this analysis is still premised by an expectation of universal access and usage of technology by young people, a premise that I suggest is not borne out by research.

The characterisation of those under twenty (or thirty) years old as universally better with ICT - whether described as digital natives, cyber-kids, the net or millennium generation - is not unchallenged and I now turn to the critiques that have been made of this depiction. Donnison (2007), Helsper and Eynon (2009) note that there is little consensus in the literature as to who the digital natives are and Helsper (2008) questions the appropriateness of describing a global generation based primarily on observations and literature from North America. Within the Australian context, for example, research does not support the claims being made (Kennedy, Judd, Churchward, Gray, Krause, 2008).

Surprisingly, since the 'digital native/net generation' descriptor has been used for at least a decade, there has been remarkably little empirical research into the claims of different

thinking patterns and learning styles allegedly preferred by today's students (Margaryan & Littlejohn, 2008; Rikhye, Cook & Berge, 2009). The empirical research that has been conducted reveals that young people are not using technology in the manner that is being claimed (Valentine & Holloway, 2002; Zimic, 2009); there is a lack of homogeneity in young people's techno-literacy (Bennett, Maton & Kervin, 2008; Kennedy, Judd, Churchward, Gray, Krause, 2008); not all students have access to the technological devices that young people are supposedly universally using and those with access are not necessarily using them for educational purposes (Margaryan & Littlejohn, 2008; Oliver & Goerke, 2007). According to Owens (2004) it is not the so-called digital natives making the most use of ICTs, rather it is professional adults and the highest usage of the internet is among 35-44 year olds.

Furthermore, it has been suggested that the digital native motif creates a false dichotomy between teachers and students and undermines teachers' confidence in their ability to impart knowledge (Bayne & Ross, 2007; Helsper, 2008; Helsper & Eynon, 2009) and it ignores the reality that students' learning is influenced by the approach taken by their educators (Margaryan & Littlejohn, 2008). Facer and Furlong (2001) attest that information poverty will likely emerge as an indicator of social exclusion – and depictions of young people as naturally better computer users obscures the information poverty faced by some. Their research reveals that not all students believe that computers have relevancy in their lives, not all students have access to ICTs and there is a potential in formal educational settings to exacerbate existing inequalities in access, ability and students' anxieties around computer use.

The discourse around the digital native - with its implicit suggestion that the education system is failing today's youth through the technophobia of educators – has been described as an educational moral panic (Bennett, Maton & Kervin, 2008). I contend that the digital native motif not only imposes a particular identity upon the current generation of learners, but that in so doing, it confounds the social justice goals of education by erasing key differences between young people – such as differences in access to technology, gender, race, ethnicity, geographic location, and socio-economic status (Buchanan & Chapman, 2010). Helsper (2008) notes that the claims made about the digital generation do not stand up to scrutiny, resting as they do on rhetorical rather than empirical evidence.

This is not to say that young people are not using digital technology – but I urge the rejection of the imposition of the digital native (and synonymous) identities that erase the differences between young people's usage and access to digital technologies and which proffer the uncritical assumption that digitally mediated education will automatically result in better educational outcome for students. Young people's participation in digital culture needs to be articulated in more nuanced terms in order that the differences between them are not lost with the affixation of a generational stereotype. Work by boyd (2007), boyd and Ellsion (2007), and Ellison, Stenifield and Lampe (2007) suggests that young people (at least a sample of those with access to the necessary technologies) utilise web 2.0 technologies to facilitate their own processes of identity formation. This identity formation remains firmly grounded in students' 'real life' social connections (boyd & Ellison, 2007). The use of social network sites (such as Facebook and Myspace) plays a large part in this; Mallan (2009) refers these sites as an *intersubjective space* (not limited by geographical location or time) that mediates social relations. Social network sites with their facilitation of 'public displays of connection' (boyd & Ellison, 2007) have been described as serving an important purpose for young people, as the creation of a profile on a social network site can serve as a rite of passage – where one can 'type oneself into being' (Sundén, 2003, p.3). While it can be concluded that students do use technology in ways that are identity forming, I maintain that

the identities of those young people who do participate in digital culture are not as simplistic as the digital native trope would suggest.

'Public Pedagogy' and the Paradox of the Digital Education Revolution

Young people are participating in increasing numbers in the cultural milieu offered by technology (boyd, 2007). Drawing upon the work of Giroux, I suggest that the DER would be a logical educational means of capturing their involvement in digital culture. Giroux (2004) makes clear that within developed societies, larger forces (such as television, advertising, media, video games and popular press) compete with formal educational institutions as sites of learning. He notes that

> profound transformations have taken place in the public space, producing new sites of pedagogy marked by a distinctive confluence of new digital and media technologies, growing concentrations of corporate power and unparalleled meaning producing capacities. Unlike traditional forms of pedagogy, knowledge and desire are inextricably connected to modes of pedagogical address mediated through unprecedented electronic technologies (2004, p. 75).

Giroux makes clear that although education, schooling and pedagogy have become synonymous in the public mind, popular culture is a site of great learning and that formal education should be better equipped to contest the learning engendered by public pedagogy. He laments that public pedagogy has been captured by 'a powerful ensemble of ideological and institutional forces whose aim is to produce competitive, self-interested individuals vying for their own material and ideological gain' through the corporate take over of public culture (2004, p. 74). For Giroux, this corporate 'public pedagogy has become an all-encompassing cultural horizon for producing market identities, values and practices' (Giroux, 2004, p. 74) which exists to teach people to consume. Once it is understood how much is learnt through public pedagogy, Giroux insists that this makes what is learnt through formal schooling all the more important, as schooling can counter the mis-education being perpetuated by corporate public pedagogy and formal education

> must provide citizens with those critical capacities, modes of literacies, knowledge and skills that enable them to both read the world critically and participate in shaping and governing it. Pedagogy at the popular level must now be a central concern of formal schooling itself....In spite of their present embattled status and contradictory roles, institutional schooling remains uniquely placed to prepare students to both understand and influence the larger educational forces that shape their lives (p. 77).

Once the notion of public pedagogy is taken into account, one can see that providing digital technologies to students could be a means of critically engaging with public pedagogy. Web 2.0 developments offer students more than merely the means to facilitate identity formation and social networking. Students could use computer technology to engage with corporate culture, to appropriate aspects and scrutinise it, play with it, create and re-create their own textual forms, and mash-up aspects of culture to create new meanings. This is not to claim that these practices are not already happening, but rather, I am advocating the incorporation of such activities into classroom practice as a means of consciously critiquing the lessons engendered by public pedagogy. Such engagement with public pedagogy would not only develop critical thinking skills and foster political engagement, but could potentially be a site for progressive and counter-hegemonic actions (Apple, 2010). Paradoxically, with students being given computers (a result of a policy influenced by globalisation) they can potentially use those tools to critique the very culture that placed the tools in their hands.

The Promise and the Possibilities

I have argued that the Digital Education Revolution can be understood as the latest manifestation of a globalised culture – that the Labor government's policy initiative, underpinned by human capital theory, can be seen as a means of training the workforce for the future knowledge economy. Further exploration of globalised culture suggests that this culture forms a pervasive public pedagogy and that is it the role of educators in the formal education setting to engage with public pedagogy and to teach students to be critical thinkers and politically engaged. While DER can be seen as being a product of globalisation, that is not to say that laptops and broadband connected schools cannot be used to as a means of creating an educative space with the potential to disrupt the dominant framework and use digital technologies in ways that transcend their design of workforce preparation.

I can report that to some extent this process is already taking place. Not only are teachers informally promoting the use of social network sites in order to facilitate participatory democracy (See Ledesma, 2010, for example of teacher led discussion about the use of Facebook to further student democracy and governance) but digital technologies further the potential of schools to become sites of social activism. One such example of politically engaged action is the student walk out that took place in California in 2006 (Collin & Apple, 2010). Students were protesting the anti-immigration actions of the government of the time. The students' participation in the pro-immigration political action was facilitated by their use of digital technologies – support was garnered through websites, and social network sites and strikes were organised via text message. 'In pursuing such strategies, then, immigrant students and other activists exploit key tensions in high-tech global capitalism so as to advance causes of social justice' using digital tools (Collin & Apple, 2010, p. 53). The ubiquity of digital technology means that 'students who live in impoverished neighbourhoods and who attend under-resourced schools, therefore, are nonetheless able to access forms of high-tech knowledge and reappropriate the tools of global capitalism to organise themselves for social justice work' (Collin & Apple, 2010, p. 54). For Collin and Apple the contradictory aspects of new literacies and identities facilitate their use in ways that undermine corporately sponsored globalisation and facilitate social justice and political engagement. Through the utilisation of digital technology and their 'articulated social networks' (boyd & Ellison, 2008) social engagement and political action can be facilitated or supported. Giving students the very digital tools that can be used for such actions is a move that offers great promise for counter hegemonic action.

Conclusion: The possibility and the prohibition

> The narratives of identity and agency that have traditionally been available to young people are being complemented by new possibilities that are the direct outcome of their participation in the larger technologically mediated world (Mallan, 2009, p. 53).

While research highlights the many advantages and opportunities of social network sites and other online activities to students - such communicating and co-ordinating social relations, creating outlets for self-expression, developing new textual forms and social practices, and accessing computer-supported community - networks - there remains evidence of fear and anxieties around young people's use of digital technologies (boyd, 2007; Mallan, 2009). In this regard, the implementation of the DER by the NSW DET, which has seen laptops being given to students in Years 9 through to 12 under strict policy conditions, can be understood as being shaped by a response to the fear that young people will engage in inappropriate activities online, or make themselves vulnerable to online predators. DET

issued laptop use is bounded by strict policy rules (see NSW DET, 2006). These rules prohibit the use of laptops for non-learning activities and the laptops have strict security settings which lock students out of social network sites. It seems that although the DER holds much promise for students in terms of supplementing their identity formation and participating in political activities, such promise is somewhat negated by policy prohibitions. The way that students will negotiate these prohibitions and the security settings remains to be researched; however, I maintain that the DER offers a powerful means to teach students to critically engage with public pedagogy and to begin to create their own digital culture/s and identities.

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