

## *Leading Schools in the Digital Age: a clash of cultures*

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### Abstract

A cultural gap is widening in English secondary schools: between a twentieth century ethos of institutional provision and the twenty-first century expectations and digital lifestyles of school students. Perhaps disaffected by traditional teaching methods and the competitive target culture of schools, many students have turned to social networking through the cluster of computer-based applications known as *Web 2.0*. Here, they can communicate, share and learn informally using knowledge systems their elders can barely understand. Some of their contemporaries have turned away altogether, rejecting school and contributing to record levels of truancy and exclusion. This paper identifies a set of challenges for school leaders in relation to the growing digital/cultural gap. The Government agenda for personalised learning is discussed, alongside strategies which schools might adopt to support this through the use ICT, and both figure in scenario projections which envision how secondary education could change in the future. The paper concludes by recommending three priorities for school leaders.

### Introduction

*Students can no longer prepare bark to calculate problems. They depend instead on expensive slates. What will they do when the slate is dropped and breaks?*

*Teachers' Conference, USA, 1703*

*Students depend on paper too much. They no longer know how to write on a slate without getting dust all over themselves. What will happen when they run out of paper?*

*Principals' Association Meeting, USA, 1815*

*Students depend too much upon ink. They no longer know how to use a knife or sharpen a pencil.*  
*National Association of Teachers, USA, 1907*

We are witnessing a clash of cultures in British secondary schools: between an institutional culture grounded in twentieth century traditions of public service, and the postmodern individualism of students, expressed in fashion, music and latterly in social computing websites such as *MySpace*, *YouTube* and *Second Life*. From the 1944 Education Act to the recent past the culture of secondary schools was imbued with an excluding professional focus dubbed by its critics as the 'secret garden'. The reforms heralded by James Callaghan's Ruskin speech in 1976 led to a change in emphasis, so schools must now embrace output measures, league tables and the litany of choice. However, the institutional introspection of the past has continued; schoolteaching in England remains a conservative profession possessed of a massive inertia which has enabled it to remain largely impervious to the reform agendas of successive governments. Current attempts by the Department for Education and Skills (DfES) to develop personalised learning is a case in point, revealing a widening gap between the twenty-first century *Zeitgeist* of individualism and informality, and what remains an essentially Fordist model of secondary schooling shored up by a regimen of national curriculum imperatives, the school inspectorate (OfSTED) and standardised testing (which, ironically, were all introduced by a Thatcher government bent on reform). These tensions seem likely to have contributed to the growing problems which now beset many secondary schools.

The purpose of this paper is to explore implications for school leaders of the rapid growth of social computing and electronic communications which are referred to as *Web 2.0*. It will be argued that their widespread informal use is creating further distance between digitally-supported youth culture and the institutional culture of schools. The earlier moves from bark to slates and from slates to paper

were incremental developments in writing technology which had limited impact upon taught content and teaching methods. By contrast, the dynamic of Web 2.0 and its associated developments in information and communications technology (ICT) is such that transformative change is likely to result – and evidence already points in this direction – which will carry profound implications not only for content and methods but for the very institution of schooling. The paper will first analyse the nature of Web 2.0. It will go on to examine the current problems experienced in British secondary schools, with a particular focus on the widening digital/cultural gap between students and teachers. Ways in which ICT can support the agenda for personalised learning will be considered, followed by scenario projections of how secondary education might develop in the future. The paper will conclude by recommending three priorities for school leaders.

## Web 2.0

'Web 2.0' is a recent and loosely-used term to refer to a phenomenon which has developed out of the use of the World Wide Web as an applications platform (Graham, 2005). Conventionally, application programs (such as Microsoft *Word* and *Excel*) have been installed on personal computers; *Web applications*, by contrast, are accessed remotely via the Internet and provide (usually free) services not available locally. Green & Hannon (2007, p.13) define Web 2.0 as

*a 'second generation' of internet-based services that emphasise online collaboration and sharing among users, often allowing users to build connections between themselves and others.*

However, other commentators see Web 2.0 more as embodying the original spirit of the World Wide Web as articulated by its inventor, Tim Berners-Lee:

*We should be able not only to interact with other people, but to create with other people. Intercreativity is the process of making things or solving problems together. If interactivity is not just sitting there passively in front of a display screen, then intercreativity is not just sitting there in front of something 'interactive'.*

(Berners-Lee, 1999, p. 182)

So perhaps it is not the Web which has changed, but the popular idea of what it is. Initially, the World Wide Web was seen by many as a sort of television – a one-way broadcast medium in which corporate bodies presented information to the passive individual. But as the Web is becoming ubiquitous in homes and schools, and even basic computers now possess multimedia capabilities, intercreativity has become realisable. The effect is to shift from a broadcast model to peer-to-peer interaction, in what Scott (2002) calls a 'democratisation of expertise', reflecting wider changes in relationships between the individual and authority in society which have been the focus of Postmodernist writers (Baudrillard, 1983; Lyotard, 1984). A far-sighted invention of the twentieth century, the Web may be coming of age in the twenty-first.

What principally distinguishes Web 2.0 from earlier uses of the Internet is the generation and sharing of *user generated content*, and many Web applications now support this, including:

- *blogs* – personal Web diaries;
- *wikis* – collaborative sites for information pooling, the most widely-known being *Wikipedia* (2007);
- *social bookmarking* – the tagging of Web pages with brief descriptions, as a mutual way of organising information, for example *del.icio.us* (2007);
- *folksonomies* and *collabularies* – an extension of the above, for the development of collaborative taxonomies and collective vocabularies for Internet-based information;
- *media sharing* – in which users contribute photographs and videoclips to websites such as *YouTube* (2007);
- *social networking* – services such as *MySpace* (2007) through which users post personal information and may join communities sharing common interests; and

- *virtual worlds* – websites such as *Second Life* (2007), which are three-dimensional immersive virtual reality environments where users operate personal avatars to interact with others in communities, build environments, join social events and engage in forms of trading (while some commentators would not classify *Second Life* as a Web 2.0 application on the grounds that it requires an application program to be installed on the user's computer, it is included here because it shares many of the social networking characteristics of Web 2.0).

Anderson (2007) identifies six "*big ideas*" of Web 2.0. Through these runs a common thread of the novel and sometimes unpredictable effects of mass participation, and he uses terms such as "*data on an epic scale*" and the "*wisdom of crowds*" to support the contention that these massively collaborative systems can result in new ways of generating and exchanging knowledge, simultaneously supporting individual expression and community consensus.

How secondary school students employ Web 2.0 applications is the focus of the *Demos* report *Their Space* (Green & Hannon, 2007). As the report's title suggests, social networking is heavily colonised by the young, but the main finding of the project is articulated in the prefacing observation "*Young people are spending their time in a space which adults find difficult to supervise or understand*". The project collected data from academics, commentators, school leaders, secondary school students and their parents. The intensive home use of ICT was found to be commonplace, with four types of student users identified:

- *Digital pioneers were blogging before the phrase had been coined*
- *Creative producers are building websites, posting movies, photos and music to share with friends, family and beyond*
- *Everyday communicators are making their lives easier through texting and MSN*
- *Information gatherers are Google and Wikipedia addicts, 'cutting and pasting' as a way of life.*  
(Green & Hannon, p.11)

No evidence was found of students using the Web dangerously or inappropriately; they seemed to be well aware of potential dangers and how to avoid them. This contrasted with many parents' views, influenced by what the authors refer to as the "*moral panic*" of tabloid newspaper accounts of the Internet. Overall, the report concludes that students are completely confident with the Web, using it recreationally and productively to create, maintain friendship networks, and to assist with their school studies. However, it does comment upon a gulf which is growing between this emerging digital youth culture and the institutional culture of schools, and a number of recommendations are made for policy and practice which are discussed later in the paper. Many students are also using the burgeoning *Second Life*; this is not a game but an environment constructed and directed entirely by its 6.7 million (at the time of writing) *Residents*, located in a variety of common-interest communities. There is a reserved area for 13-17 year-olds (*Teen Second Life*, 2007) where in 2006 a virtual summer school (Camp Global Kids) was held, in which school students from the UK, Canada and the USA learned about global issues and engaged in collaborative activities. Examples of the considerable educational possibilities of this virtual space are presented on the *Second Life: Education* (2007) website, which lists the schools and universities engaged in *Second Life* projects.

The notion of a generation gap between students and older adults in their attitudes to and use of ICT was first advanced by Prensky (2001). He saw young people who have never known a world without computers as *digital natives* whose early experience with ICT has shaped neural patterns to the extent that they really do think and learn differently to their *digital immigrant* parents. This notion is developed by Oblinger & Oblinger (2005) in their book *Educating the Net Generation*, which reports a similar facility with ICT among 'Net Gen' university students in the USA, and a gap between students' preferred methods and the practices of their teachers.

*The Net Gen often prefers to learn and work in teams. A peer-to-peer approach is common, as well, where students help each other. In fact, Net Generators find peers more credible than teachers when it comes to determining what is worth paying attention to.*

*The Net Gen is oriented toward inductive discovery or making observations, formulating hypotheses, and figuring out the rules. They crave interactivity. And the rapid pace with which they like to receive information means they often choose not to pay attention if a class is not interactive, unengaging, or simply too slow.*

Oblinger & Oblinger (2005, §2.7)

The voracious, multi-tasking media consumption of this age group has been the subject of a large-scale study by Roberts *et al.* (2005), concluding that young people are comfortable with the simultaneous use of two or more media inputs to an extent which their parents would find intolerable. Digital immigrant parents grew up in a print-dominated world of one-thing-at-a-time linear narratives, so by this account are less likely to be able to cope in complex situations involving multiple and fast-moving sensory inputs. Conversely, they are more comfortable with lecture-style teaching methods which their children would find unstimulating. The socially mediated knowledge generated using Web applications is distinct from the formal, propositional knowledge of the textbook. This distinction draws upon the ideas of Schön (1983) and is developed by Williams (2007a), who argues that strong similarities exist between the skills and preferred learning styles of Web 2.0 users and the emerging occupations of the knowledge intensive services sector of the economy. Key in this new economy are what Reich (1991) called 'symbolic-analytic workers', and Castells (1997) 'self-programmable workers'. These roles require the abilities to identify and solve problems and to create new knowledge products through the analysis and synthesis of existing information. Another important feature of knowledge working is the high frequency and extent of communication and team collaboration, in which problem resolution by project teams is a critical success factor, and effective collaboration requires both the cognitive abilities fostered by formal education and a range of

general and interpersonal abilities (Ducatel, 1998). Green & Hannon (2007, p. 22)

take the view that

*Rather than thinking about specific areas of knowledge, we need to start to focus on the kinds of skills that enable people to thrive in a changing environment and come to terms with and adapt to change in creative ways. This is not a question for the future: many employers are already demanding these 'soft' skills. Literacy and numeracy are still seen as core requirements, but employers are increasingly asking for proof of a range of skills from creativity, ideas generation and presentation, to leadership, team-building and self-confidence.*

Twelve trends in learning are proposed by Natriello (2007), who argues that learning is becoming more contextual and is moving out of institutional settings and into shared community spaces. Here, where a higher proportion of adults than ever before are well educated and connected online, a growing educational resource is being provided which spans institutional and professional boundaries. The potential of computer-based games to provide rich simulations within which learners can develop collaborative problem solving and "embodied empathy" with scenario characters is explored by Francis (2006), who proposes a game based pedagogy linked to classroom work which retains a central role for the teacher. Seely Brown & Thomas (2006) also comment on the potential of games, in an anecdote about the interviewee for a senior post in the Yahoo! company; this person was hired on the basis of his prowess in the complex role of guildmaster in the online multi-player game *World of Warcraft*. The convergence of work and leisure through the medium of ICT has begun to generate profound implications for formal schooling.

## Schools in the 21st Century

Since the Education Act of 1988 English schools have become ever more centrally controlled. Edwards *et al.* (2002, p. 97) note

*In England the regulation of classroom teaching is evident through inspection processes, national curricula, frequent national*

*assessments, target setting for pupil performance, systems of long- and short-term planning for curriculum delivery, prescribed pedagogies for the teaching of literacy and numeracy and performance related pay.*

This national prescription has generated a competitive climate celebrating high academic achievers, and the publication of league tables of 'school achievement' has strongly discouraged headteachers from interpreting and adapting national imperatives to meet local needs. The result is a system which an increasing numbers of students appear to be abandoning. DfES figures state that 54,000 students per day are absent from school without permission (DfES, 2007a); however, there is evidence that the real figure may be 18% higher and rising – but most rapidly in the Government's new flagship schools. According to a BBC report (2007), "*The biggest jumps between the old and new figures were in academies and city technology colleges, where unauthorised absences were shown to be 26.7% and 29.6% higher - compared with the overall 18.3% difference.*" In an earlier article for the BBC, Eason (2006) points to a 40% increase in the number of secondary pupils in England playing truant at some point. Skidmore (2007, p.14) reports that 11,000 students were suspended more than five times in the same year, and blames the DfES target culture as the reason for increasing truancy and exclusion.

*By calculating the number of hours pupils who fail to gain 5 A\*-C grades including English and maths at GCSE spend in the classroom, the extent to which our relentless focus upon an academic curriculum is letting down hundreds of thousands of students whose talents and abilities lie elsewhere is fully revealed.*  
(*ibid.*)

By this analysis, the present 'one-size-fits-all' secondary curriculum lacks the flexibility – perhaps in both content and delivery – to meet the more diverse needs of contemporary society. This is a view also taken by Williams (2005), who argues that perpetuation of central control is stifling opportunities for schools and teachers to engage in a necessary 'broad conversation' about the changing nature of the social, economic and cultural environment in which they operate. The

present system is failing both the state agenda of developing knowledge workers, and an inclusiveness agenda of meeting the needs of individual learners.

Against this continuing *dirigiste* legacy of Thatcherism have arisen recent attempts to personalise schooling – but so far these have not been clearly articulated. In the Personalised Learning section of The Standards Site (DfES, 2007b) is a definition drawn from the Report of the Teaching and Learning in 2020 Review Group:

*Put simply, personalised learning and teaching means taking a highly structured and responsive approach to each child's and young person's learning, in order that all are able to progress, achieve and participate. It means strengthening (sic) the link between learning and teaching by engaging pupils - and their parents - as partners in learning.*

These are laudable sentiments, and the speech of David Miliband, then Minister of State for School Standards (Miliband, 2004) was strong on aspiration but much less specific on the practical steps to be taken to implement personalisation. The Association of Teachers and Lecturers Position Paper on personalised learning is critical of the way the concept is being stretched to embrace inclusion and the achievement of gifted and talented students, and conclude that in its current formulation “*the term has no utility for policymakers or practitioners*” (ATL, 2006, p. 6). They argue that the combination of target culture and the heavy policing of OfSTED have placed major restrictions on school leaders’ room for manoeuvre in adapting provision to meet local needs, and that schools must first be given greater autonomy over curriculum, pedagogy and assessment. However, personalised provision may politically prove a very dangerous genie to have released from the bottle as, however vague and ill-defined it may be at present, it seems likely to grow in importance. Leadbeater (2004) discusses a gradation of personalisation, from ‘shallow’ to ‘deep’. At the shallow end is *bespoke service* built entirely around the needs of the user, but not economically scalable. At the

deep end is the idea of *personalisation through participation*: involving users actively in determining the aims and mode of delivery of the service.

*Personalisation through participation allows users a more direct say in the way the service they use is designed, planned, delivered and evaluated. This involves the following steps: intimate consultation, expanded choice, enhanced voice, partnership provision, advocacy, co-production, and funding.*

(Leadbeater, reported in OECD, 2006, p. 6)

Leadbeater goes on to observe

*The context and the pressure for personalisation across a wide range of services is seen to be the chasm which has opened between people and large organisations, public and private. Hence, in education as in other sectors this agenda is seen as a way of reconnecting people to the institutions which serve them. As far as education is concerned, this implies far-reaching changes in the role of professionals and schools.*

(*ibid.*)

This form of personalisation offers a way forward, but it would be a complex process requiring considerable preparedness on the part of educational institutions to embrace radically new ways of working. Harnessing ICT to enable change shows substantial potential as a way of opening this debate.

Some possibilities of using ICT to support personalised learning are advanced by the British Educational Communications and Technology Agency under the headings of curriculum, learning and teaching strategies, assessment for learning, institutional organisation, and community engagement. (Becta, 2005). The focus here is on support rather than transformation, however, and the purpose of ICT is seen as enhancing existing ways of working rather than replacing them with new ones. Using ICT does not necessarily entail changing pedagogy, as it can be employed to support existing practices, and the use of interactive whiteboards in schools provides an example of this guarded approach. On this subject the Association of Teachers and Lecturers comment:

*England is the only country to have adopted the interactive whiteboard to the extent that it is fast becoming a standard tool in secondary schools and commonly used in primaries. It is clearly designed for a class teaching scenario. It could also be viewed as a doomed attempt to make lessons eye-catching and*

*fast moving like TV programmes or computer games. It is difficult to envisage a version of personalised learning in which the whole class lesson predominates; the question for the IT industry is not whether it can continue to expand its presence in schools, but whether group or individual pedagogies will become the norm.*  
(ATL, 2006, p. 4)

Recent research into interactive whiteboards commissioned by the DfES and undertaken by the Institute of Education in London made a two-year study of the progress of 9,000 secondary school students (Moss, *et al.*, 2007). No evidence was found for learning improvements – largely, it seemed, because of the restrictive ways in which teachers were using the boards.

Interactive whiteboards provide an example of how the conservative profession of teaching has mediated the introduction of new technologies to render them 'safe' (and no doubt many teachers are on record bemoaning the loss of their old conventional whiteboards). This may be partly a distrust of novelty and partly a lack of basic familiarity with the ways of new technology, but a major reason could be the threats the technology poses to teachers' existing practices and to their perceived maintenance of control. The issue of how teachers move from initial familiarisation with educational technology to its confident and productive use is explored by Fisher *et al.* (2006). They take a broader view than the idea that more 'training' in ICT is needed, but instead ask

*... whether we want a mere 'retooling' of teacher competences for specific purposes, or an approach which supports a renaissance in teacher development for an uncertain future. This is not about making an industrial process more efficient; rather, it is about enabling cultural change in the profession.*  
(*ibid.*, p. 4)

The potential of ICT to enable such a "renaissance in teacher development" through transformative change does exist – and Web 2.0 provides one source of ideas for a 'democratisation' of the roles of teacher and learner. A related idea is that of Personal Learning Environments (PLEs). Virtual Learning Environments (VLEs) are their precursor: ubiquitous in universities and increasingly used in schools, they provide online access to digitised materials and resources for

learning and its management. Where the focus of VLEs is on the institution, PLEs are built around the individual learner. Thus, one VLE links to a number of learners, but one (learner's) PLE may link to a variety of nodes including other PLEs and the VLEs of many institutions. The distinction is not a trivial one, and can be seen as consonant with the underlying philosophy of Web 2.0, based upon a peer-to-peer rather than centre-periphery model of interaction. van Harmelen (2006) discusses examples of how PLEs such as *Colloquia* are beginning to be used to personalise learning in these ways.

Another potential for personalisation lies in new methods of assessment. The shaping of assessment to the individual needs of learners is not new, and underpins Socratic method and the Oxford University tutorial; however, these involve high teacher to student ratios and are not economically scalable. The report *Effective Practice with e-Assessment* (JISC, 2007) identifies the key benefits of using ICT to support assessment. Thus, teacher time may be freed up from the routine tasks of marking and recording; assessment may be made *in situ* or through authentic replications of real contexts; and tasks may be embedded in games, simulations and virtual worlds. Williams (2007b) discusses how ICT-based performance tracking systems can be used to create rich profiles of learner achievement for both formative and summative purposes, and notes how some British universities are successfully implementing such methods. The Joint Information Systems Committee report speculates that "*By 2017, a drive for inclusivity and personalisation in assessment will have challenged the 'one-size-fits-all' assumption that dominated assessment practices in the 20th century*" (JISC, 2007, p.36).

## Future Scenarios for Secondary Education

A number of possibilities were outlined in the previous section for the employment of ICT to enable radical change in schools. This section explores three scenarios for schools of the future, and it will be seen that ICT plays a significant part in each.

The *Teaching 2012* group comprises members from English universities, government agencies and external bodies such as *Demos* and the Organisation of Economic Cooperation and Development (OECD), with the professed aim of being “*an exercise in collective speculation*” (Newby, 2005). Newby outlines three scenarios, developed by members of the group, which were derived from a set of six created by the OECD (2001). In the first scenario, schools have failed to keep pace with the demands of middle-class parents for personalised provision, so most have closed. Their former teachers now work either as freelance *portfolio educators* or as the more common *learning coaches*. A smaller number of élite education professionals are *educational diagnosticians* who enjoy consultant status (and commensurate levels of pay). ICT has made possible an informal, flexible and personalised provision of learning support through a variety of networks operating at community, interest group and global levels, and *home schooling* is everywhere. In the second scenario, schools remain as institutions – but with a changed purpose. The growth of Internet-based learning materials has made redundant a large part of the traditional purpose of schools, so in order to avoid closure they have moved into the niche market of community values and work-related competences. This is generally welcomed in order to combat a growing self-centredness of society.

*Schools now focus on meeting young people’s social development needs, and so help shape and develop their immediate communities. ... A wide range of adults work in the school. People and groups are encouraged to offer their services free. ... Pupils can learn all the subject content they need on the internet, and certification of their progress and abilities is issued by outside*

*agencies, greatly reducing the assessment burden on schools. Concentration is now on non-cognitive outcomes: above all, on 'values' and good citizenship.*  
(Newby, 2005, p.258)

The third scenario is highly market-focused. Schools remain, but their old-fashioned uniformity of provision has gone. Personalised learning drives the agenda and the focus is not upon subject knowledge – that can be found on the Internet – but on *knowing how to learn*.

*... the days of the subject teacher are long gone – subject experts can be accessed on line as and when they're needed. What's wanted in school are professionals able to work with programmes which allow multi-speed learning and assessment within the same age group.*  
(*ibid.*, p. 259)

These three scenarios represent the best informed guess (or “*collective speculation*”) as to how British schools may change. In all three there is the anticipation of radical rather than incremental development, and the schools which remain are predicted to have very different missions. All three scenarios foresee the catalytic effect of ICT in enabling the transformation of what many commentators regard as a twentieth-century institution which has failed to respond to a changing world.

So what must be done? If transformation is inevitable, then urgent action must be taken to anticipate and minimise the disruption which will ensue. But even if the view is taken that these scenarios overstate the case, there remain the present problems of school dropouts, how to respond to increasing parental awareness of personalised learning, and the growing cultural gulf between the legacy-bound institution and the digitally-enabled individual. The final section of the paper attempts to address these issues through the identification of new priorities for school leaders.

## New Priorities for School Leaders

This paper has argued the case that Web 2.0 and associated developments are a manifestation of ICT use which holds radical implications for schools. Their particular significance is that they are the first applications to have widely permeated school populations and to show a potential to upset power relationships; for whereas in the past schools and teachers held considerable authority over parents and students, a change is now taking place (in common with other public institutions) in which this authority is far more likely to be challenged. The fact that students now control powerful ICT systems which enable them not only to reduce their dependency on schools as primary sources of information but also to express and identify themselves through the informal information networks of social computing, can be seen to be eroding the authority of both schools and teachers. Not only are many social computing systems more powerful and technically versatile than security-bound school computer networks, but students in many cases possess far greater skill and assurance with them than their teachers are able to demonstrate in their own pedagogical use of ICT in the classroom. Taken with the fact that social computing involves types of online collaboration which model the needs of occupations in the knowledge-intensive services sector further shifts the power balance towards students, who may come to see their teachers as peddling an arid, non-interactive diet of outdated academic information which seems of little utility to future needs.

If schools are to overcome some of the current problems of disaffection and truancy and to bridge the cultural gap between their digital immigrant teachers and digital native students, then the decisions taken by school leaders must not only be well informed, but enterprising. Moyle (2006) investigated the views of 400 Australian school principals on the management of ICT and found a clear consensus on its potential to shift emphasis from a teacher-centred to a learner-

centred curriculum, and upon the need for a whole-school strategic focus in which the role of the principal was pivotal. The present paper takes the view that what is needed is far more than incremental change (such as the incorporation of Web 2.0 applications into the curriculum), but a radical, strategic reappraisal of priorities to transform the ethos and culture of secondary schooling. The paper advances three priorities for school leaders, but these are interconnected, and may be best viewed as components of a common strategy.

The first priority is very much a necessary condition for the other two: it is for school leaders to take a wider perspective on change than is traditional. Bottery (2004) argues for an informed awareness of the supra-educational pressures which locate schools at global, cultural and national levels. Schools should become true learning organisations (Senge, 1990), and their leaders

*... need to possess the political and pragmatic astuteness to help balance a grounded morality, and personal and epistemological provisionalism, and an ecological awareness, leading to the ability to work with others towards the formation of real learning communities.*

(Bottery, 2004, p.25)

Bottery contrasts *banking schools* with *community schools*. The former are ones in which knowledge is regarded as a commodity to be 'deposited' in the learner for subsequent 'withdrawals'. Such schools are likely to be relatively value neutral in their ethos, existing to provide no more than organisational infrastructures to support the expression of individual achievement and diversity within the broader context of a market-oriented society. In contrast, community schools have a distinctive ethos determined by shared beliefs, with an emphasis upon collective rather than individualistic values. Bottery (*ibid.*, pp. 170-171) lists a number of key themes to characterise community schools, including

- *They are concerned with both individual and minority viewpoints.*
- *Relationships within them are informal, meaningful and non-bureaucratic.*
- *They involve relationships of considerable interaction and participation.*

- *Such relationships occur in multiple contexts which are mutually reinforcing.*

If these themes are related to the second of the *Teaching 2012* scenarios described above, it can be seen that the institutions outlined are clearly *community schools*. It is also apparent that their informal, supportive and interactive nature is similar to Green & Hannon's (2007) descriptions of students' social networking with Web 2.0. There would appear, then, to be not only congruence of values but also the potential for school leaders to actively embrace new technologies in bridging the digital/cultural gap to strengthen their schools as communities, and thereby attract back some of the estranged casualties of the target culture.

The second priority for school leaders is for their staffs to learn more about what Web 2.0 applications can offer, and to plan how to harness them. The latter part of this is no easy task, as it will require not only considerable enhancement of teachers' ICT skills before they can become confident enough to work flexibly and interactively, but also the preparedness for cultural change (Fisher *et al.*, 2006) and a less controlling, didactic role. Green & Hannon (2007, p. 58) recommend:

*Rather than thinking of themselves as only directors, teachers need to re-imagine themselves as facilitators. Technology in the classroom currently does little to promote this shift; interactive whiteboards are too often employed as a high-tech version of chalk and talk. Children's independent, exploratory behaviour when learning with digital technologies can conflict with this approach, leaving them frustrated with the pace of pre-planned lessons directed by the teacher. Meanwhile, the expectation that teachers will always know more than pupils is disrupted by the fact that children are often more confident users of digital technologies than adults. Schools need to use technology more creatively so that teachers feel empowered enough to let children set the pace.*

Natriello (2007, pp. 14-15) also makes a case for reshaping the role of teaching, but goes much further in envisaging a radical break with present practice. In a knowledge-rich society in which educational and community resources are readily

available, he argues that teachers will have to do more to defend their role in the face of growing competition from other sources of educational support.

*The new teacher will need to manage more diverse learning styles with more diverse teaching strategies. The new teacher will need to function outside institutional settings and disciplinary boundaries and orchestrate learning in contexts more relevant to learners and learning tasks. The new teacher will need to span professional and institutional sectors, reach beyond national boundaries ... and operate in face-to-face and online modes.*

While the purpose of the first two priorities for school leaders has been to narrow the digital/cultural gap between schools and their students, the purpose of the third priority is to reduce the likelihood of such gaps developing in the future. Leadbeater's (2004) notion of *personalisation through participation* is worthy of serious consideration as a process by which schools emerging (it is to be hoped) from the micro-management of central control could be able to engage with parents, students and their communities in an arrangement more resembling partnership than 'provision'.

*Users should not be utterly dependent upon the judgement of professionals; they should be able to question, challenge and deliberate with them. Nor are users merely consumers, choosing between different packages offered to them; they should be more intimately involved in shaping and even co-producing the service they want. Through participation users have greater voice in shaping the service, but this is exercised where it counts, where services are designed and delivered.*

(Leadbeater, 2004, p. 60)

Again, this vision makes a good fit with the expanded community role of schools in the second scenario, and again, it is strongly compatible with the multiple social networking facilities of Web 2.0. For it to be realised, school leaders will need the determination to dismantle the institutional edifice of the secret garden and make their schools more open and responsive, to invite wider participation and to draw upon the knowledge resources of their communities, underpinned by ICT. Only enterprising leadership, informed by a wider perspective on change and prepared for substantive cultural remodelling, can manage this transition from

traditional schooling to the redefined role of a responsive and proactive educational service for the future.

The celebrated management consultant Peter Drucker said: "*The greatest danger in times of turbulence is not the turbulence: it is to act with yesterday's logic.*"

ICT may be part of the problem in secondary schools – but a bold and imaginative reshaping of its use could prove key to the solution.

## References

- Anderson, P. (2007) *What is Web 2.0? Ideas, technologies and implications for education*, JISC Technology and Standards Watch, Joint Information Systems Committee, London, <[www.jisc.ac.uk/media/documents/techwatch/tsw0701b.pdf](http://www.jisc.ac.uk/media/documents/techwatch/tsw0701b.pdf)> (Accessed 20 May 2007).
- ATL (2006) *Personalisation*, position paper, Association of Teachers and Lecturers, <[www.atl.org.uk/atl\\_en/images/Personalisation%20position%20statement\\_tcm2-30351.pdf](http://www.atl.org.uk/atl_en/images/Personalisation%20position%20statement_tcm2-30351.pdf)> (Accessed 20 May 2007).
- Baudrillard, J. (1983) *Simulations*, Semiotexte, New York.
- BBC (2007) *School Truancy Worse Than Thought*, BBC News, 29 March 2007, <[news.bbc.co.uk/1/hi/education/6506339.stm](http://news.bbc.co.uk/1/hi/education/6506339.stm)> (Accessed 20 May 2007).
- Becta (2005) *Personalising Learning with ICT: Becta's View*, British Educational Communications and Technology Agency, <[www.becta.org.uk/corporate/publications/documents/personalised\\_learning.pdf](http://www.becta.org.uk/corporate/publications/documents/personalised_learning.pdf)> (Accessed 20 May 2007).
- Berners-Lee, T. (1999) *Weaving the Web*, Orion Business Books, London.
- Bottery, M. (2004) *The Challenges of Educational Leadership: values in a globalised Age*, Sage, London.
- Castells, M. (1997) *End of Millennium*, volume three of *The Information Age: economy, society and culture*, Blackwell, Oxford.
- del.icio.us (2007) <[del.icio.us](http://del.icio.us)> (Accessed 20 May 2007).
- DfES (2007a) *Tackling it Together - Truancy Sweeps*, Department for Education and Skills, <[www.dfes.gov.uk/schoolattendance/truancysweeps/index.cfm](http://www.dfes.gov.uk/schoolattendance/truancysweeps/index.cfm)> (Accessed 20 May 2007).

- DfES (2007b) Personalised Learning, The Standards Site, Department for Education and Skills, <[www.standards.dfes.gov.uk/personalisedlearning](http://www.standards.dfes.gov.uk/personalisedlearning)> (Accessed 20 May 2007).
- Ducatel, K. (1998) *Learning and Skills in the Knowledge Economy*, DRUID Working Paper No 98-2, Danish Research Institute for Industrial Dynamics, Aalborg University, <[www.druid.dk/wp/pdf\\_files/98-2.pdf](http://www.druid.dk/wp/pdf_files/98-2.pdf)> (Accessed 20 May 2007).
- Eason, G. (2006) *More and More Pupils Play Truant*, BBC News, 21 September 2006, <[news.bbc.co.uk/1/hi/education/5367240.stm](http://news.bbc.co.uk/1/hi/education/5367240.stm)> (Accessed 20 May 2007).
- Edwards, A., Gilroy, P. & Hartley, D. (2002) *Rethinking Teacher Education: collaborative responses to uncertainty*, RoutledgeFalmer, London.
- Fisher, T., Higgins, C. & Loveless, A. (2006) *Teachers Learning with Digital Technologies: a review of research and projects*, Report 14, Futurelab, Bristol, <[www.futurelab.org.uk](http://www.futurelab.org.uk)> (Accessed 20 May 2007).
- Francis, R. (2006) *Towards a Theory of a Games Based Pedagogy*, conference paper for JISC Innovating e-Learning 2006: Transforming Learning Experiences, Joint Information Systems Committee, <[www.jisc.ac.uk/whatwedo/programmes/elearning\\_pedagogy/elp\\_conference06/elp\\_conference06\\_programme.aspx](http://www.jisc.ac.uk/whatwedo/programmes/elearning_pedagogy/elp_conference06/elp_conference06_programme.aspx)> (Accessed 20 May 2007).
- Graham, P. (2005) *Web 2.0*, Paul Graham website, November, <[www.paulgraham.com/web20.html](http://www.paulgraham.com/web20.html)> (Accessed 20 May 2007).
- Green, H. & Hannon, C. (2007) *Their Space: education for a digital generation*, Demos, London, <[www.demos.co.uk/files/Their%20space%20-%20web.pdf](http://www.demos.co.uk/files/Their%20space%20-%20web.pdf)> (Accessed 20 May 2007).
- JISC (2007) *Effective Practice with e-Assessment: an overview of technologies, policies and practice in further and higher education*, Joint Information Systems Committee, London <[www.jisc.ac.uk](http://www.jisc.ac.uk)> (Accessed 20 May 2007).
- Leadbeater, C. (2004) *Personalisation Through Participation - a new script for public services*, Demos, London, <[www.demos.co.uk/files/PersonalisationThroughParticipation.pdf](http://www.demos.co.uk/files/PersonalisationThroughParticipation.pdf)> (Accessed 20 May 2007).
- Lyotard, J-F (1984) *The Postmodern Condition: a report on knowledge*, Manchester University Press, Manchester.
- Miliband, D. (2004) *Choice and Voice in Personalised Learning*, conference speech at Personalising Education: the future of public sector reform, <[www.standards.dfes.gov.uk/personalisedlearning](http://www.standards.dfes.gov.uk/personalisedlearning)> (Accessed 20 May 2007).
- Moss, G. et al. (2007) *The Interactive Whiteboards, Pedagogy and Pupil Performance Evaluation: an evaluation of the Schools Whiteboard Expansion (SWE) Project: London Challenge*, Research Report RR816, Department for Education and Skills, London, <[www.dfes.gov.uk/research/data/uploadfiles/RR816.pdf](http://www.dfes.gov.uk/research/data/uploadfiles/RR816.pdf)> (Accessed 20 May 2007).

- Moyle, K. (2006) *Leadership and Learning with ICT: voices from the profession*, Teaching Australia - Australian Institute for Teaching and School Leadership, <[www.appa.asn.au/cms/uploads/articles/leadership%20and%20learning%20with%20ict.pdf](http://www.appa.asn.au/cms/uploads/articles/leadership%20and%20learning%20with%20ict.pdf)> (Accessed 20 May 2007).
- MySpace (2007) *MySpace* website, <[www.myspace.com](http://www.myspace.com)> (Accessed 20 May 2007).
- Natriello, G. (2007) Imagining, seeking, inventing: the future of learning and the emerging discovery networks, *Learning Inquiry*, Vol. 1, No. 1, pp. 7-18.
- Newby, M. (2005) Looking to the Future, *Journal of Education for Teaching*, Vol. 31, No. 4, pp. 253-261.
- Oblinger, D, & Oblinger, J. (2005) Is It Age or IT: first steps toward understanding the Net Generation, in Oblinger, D, & Oblinger J. (eds.), *Educating the Net Generation*, Educause 2005, <[www.educause.edu/educatingthenetgen](http://www.educause.edu/educatingthenetgen)> (Accessed 20 May 2007).
- OECD (2001) *What Schools for the Future?*, Organisation for Economic Cooperation and Development, Paris <[oecdpublications.gfi-nb.com/cgi-bin/OECDBookShop.storefront/EN/product/962001111P1](http://oecdpublications.gfi-nb.com/cgi-bin/OECDBookShop.storefront/EN/product/962001111P1)> (Accessed 20 May 2007).
- OECD (2006) *Schooling for Tomorrow: Personalising Education*, Organisation for Economic Cooperation and Development, Paris <[213.253.134.29/oecd/pdfs/browseit/9606031E5.PDF](http://213.253.134.29/oecd/pdfs/browseit/9606031E5.PDF)> (Accessed 20 May 2007).
- Prensky, M. (2001) Digital natives, digital immigrants, *On the Horizon*, 9(5), NCB University Press.
- Reich, R. (1991) *The Work of Nations*, Vintage Books, New York.
- Roberts, D., Foehr, U. & Rideout, V. (2005) *Generation M: Media in the Lives of 8-18 Year-olds*, Kaiser Family Foundation, Menlo Park, California, USA <[www.kff.org/entmedia/upload/Generation-M-Media-in-the-Lives-of-8-18-Year-olds-Report.pdf](http://www.kff.org/entmedia/upload/Generation-M-Media-in-the-Lives-of-8-18-Year-olds-Report.pdf)> (Accessed 20 May 2007).
- Schön, D. (1983) *The Reflective Practitioner: how professionals think in action*, Basic Books, New York.
- Scott, P. (2002). The future of general education in mass higher education systems, *Higher Education Policy* Vol. 15, pp. 61-75.
- Second Life (2007) *Second Life* website, <[secondlife.com](http://secondlife.com)> (Accessed 20 May 2007).
- Second Life: Education (2007) Education section of *Second Life* website, <[secondlife.com/education](http://secondlife.com/education)> (Accessed 20 May 2007).
- Seely Brown, J. & Thomas, D. (2006) 'You play World of Warcraft? You're hired!', Why multiplayer games may be the best kind of job training, *Wired*, 14 April, <[www.wired.com/wired/archive/14.04/learn.html](http://www.wired.com/wired/archive/14.04/learn.html)> (Accessed 20 May 2007).

- Senge, P. (1990) *The Fifth Discipline*, Century Business, London.
- Skidmore, C. (2007) 20,000 Leagues Under A\*-C: The untold story of failed education, 'Invisible Nation', Special Issue of *Crossbow*, 1 May, 2007 <[www.jacklopresti.com/files/pdf\\_pdf\\_86.pdf](http://www.jacklopresti.com/files/pdf_pdf_86.pdf)> (Accessed 20 May 2007).
- Teen Second Life (2007) *Teen Second Life* website, <[teen.secondlife.com](http://teen.secondlife.com)> (Accessed 20 May 2007).
- van Harmelen, P. (2006) *Personal Learning Environments*, conference paper: Sixth International Conference on Advanced Learning Technologies (ICALT'06) <[octette.cs.man.ac.uk/~mark/docs/MvH\\_PLEs\\_ICALT.pdf](http://octette.cs.man.ac.uk/~mark/docs/MvH_PLEs_ICALT.pdf)> (Accessed 20 May 2007).
- Wikipedia (2007) *Wikipedia: the free encyclopedia*, <[en.wikipedia.org](http://en.wikipedia.org)> (Accessed 20 May 2007).
- Williams, P. (2005) Lessons From the Future: ICT scenarios and the education of teachers, *Journal of Education for Teaching*, Vol. 31, No. 4, pp. 319-339.
- Williams, P. (2007a) Valid Knowledge: the economy and the academy, *Higher Education* (in press).
- Williams, P. (2007b) Assessing Context Based Learning: not only rigorous but also relevant, *Assessment & Evaluation in Higher Education* (in press).
- YouTube (2007) *YouTube* website, < [www.youtube.com](http://www.youtube.com)> (Accessed 20 May 2007).