Introduction

Digital diversity is a concept which has entered into the discourse about our digital world. Its impact has been felt widely, including in education. The Australian Council for Computer Education, for example, devoted its 2010 conference to the theme ‘Digital Diversity’: “Addressing diversity in styles of learning and thinking offers us new pathways for building the right knowledge and skills to adapt to constant change” (Australian Council for Computers in Education, 2010, p.1).

While there is undoubted enthusiasm for digital diversity in education, and probably some value in its adoption in schools, this needs to be tempered by serious consideration being given to some critical questions.

What is digital diversity?

The first problem is of a conceptual kind: what, exactly, is digital diversity? Or, to put it another way, what does the expression ‘digital diversity’ mean? Examining ‘diversity’ before moving on to ‘digital’ will serve as a sound starting point for some conceptual clarification.

In its simplest sense, ‘diversity’ can be defined as ‘variety’, such that across a particular class of things (let us call them X) those things which fall within the class of Xs are characterised by both similarities (which allows us to classify them as Xs) and differences (which allow us to distinguish one sort of X from another). To illustrate,
with a non-digital example: if X is the class of cats then all animals called cats possess certain properties by virtue of which they are cats (and so distinguished from dogs, reptiles, etc) but within the class of Xs there are different sorts of cats with distinctive properties, which allows us to separate lions from tigers from leopards. As will become clear, the same holds true for digital diversity.

What makes something digital? In its simplest, technical sense, ‘digital’ means that information is entered, stored, transmitted and received within and between electronic devices by being converted electronically into binary notation of 1 and 0 (in contrast to analogue which is the wave–like transmission of data that digital is replacing).

So, at the most basic level of definition, that of the technological, digital diversity encompasses all those devices created, or yet to be produced, which are functionally dependent on binary conversion of information for data processing. Diversity of the digital, then, spans but is not limited to computers, cell phones, iPads, play stations, cameras, radios and televisions, provided by a range of manufacturers to a competitive global market. Digital diversity is generated by new forms of existing technology (digital camera), additions to existing digital devices (cell phones given additional functionality of transmitting and receiving text messaging as well as still and moving images), and quite novel new inventions (iPad). To a significant extent their combined functionality is integrated via the internet, by virtue of which email connections and the world wide web permit a global connectedness to communicate and share information in diverse forms, including written, oral, aural and the pictorial, on a scale and by a process which is incredibly efficient and effective.

A Google search of ‘digital diversity’ identified several entries which support this account or definition of digital diversity. For example, an Australian company by the name of Digital Diversity (2006), founded in 1998, is a ‘specialist training and consultancy organization specialising in assisting organizations and individuals to adopt Information Communication Technologies within their everyday operations’. A digital diversity tech blog advocated a competitive market to encourage a diversity of digital technology providers (e.g. multiple internet connectivity providers rather than all
services bundled into one) (Silverman, 2005); and a digital diversity website for special education notes that in the USA the Individuals With Disabilities Education Act of 2004 mandates that all publishers provide a digital version of every textbook they sell. The digital format the law requires, XMc, will allow states, resource centres, and other entities to manipulate almost any kind of content (text, audio, video, image) into almost any kind of format (excerpts, text to speech, Braille, and various fonts) on any platform (computer, website, cell phone, PDA) (Edutopia, 2006).

‘Is’ does not imply ‘ought’

There is no doubt that the technological advances in the digital sphere will continue to throw up a whole range of new devices hither to unavailable and possibly undreamed of by many, adding to those currently available or already made obsolete. However, how they are used and for what purposes cannot be disconnected from their creation, for we can always ask, and should ask, do we need any and all of them, and if we do are there limits to their possession and application? That something is available or may become available in the future is not a sufficient reason for concluding that something ought to be available or become available in the future. In other words, as Hume (1881) observed, that something is so does not logically entail that it ought to be so. We cannot just assume that existing and new technologies are either value neutral or necessarily of value. To be sure, technological devices do function to enhance human interests such as providing near-instant communication (email) and a mass of useful information for learning and problem-solving (world wide web). But they also diminish human interests as well (access to hardcore pornography and other evils on the web, text-messaging obsession, cyber bullying, etc).

The idea that digital diversity, in this narrow technical sense, is a human good needs to be constantly challenged, especially by educators who have a responsibility to assist children to critically examine whether the claimed virtues can be justified and whether the suppressed vices ought to be exposed and critiqued. Considering that the manufacturers, suppliers and committed users are likely to be enthusiastic ideological supporters of digital technology and vigorous dismissers of those critical of it, and not
given to the countenance of educational endeavours aimed at the critical evaluation of their products, services, marketing and the like, then educators do have a moral duty to encourage the young, as current and future users (and not always very discriminating ones at that), to have a very clear appreciation of what the digital realm is about, its uses, misuses and abuses, and to think very carefully about the extent to which they are prepared to ‘buy’ into and embrace digital diversity (eg Facebook and YouTube).

**A wider conception of digital diversity**

Some of the issues just alluded to are beginning to take hold in the wider context of digital diversity. For example, in 2006, a conference on Developing Digital Diversity held in London included academic and industry presentations on such topics as ‘Is the Internet for Everyone?’, ‘Global Connectivity: A Revolution at the Bottom of the Pyramid’ and ‘Mind the Gap: Do Market Forces Drive Innovation?’. Of more interest, from an educational point of view, is the development of university courses on digital diversity, such as that offered by the English department at Washington State University (2007):

This course is called ‘Digital Diversity’. The issues of cultural diversity in relation to new technologies have been tangential to most discussions, both academic and popular, for too long. As more of our marketplace, educational, and informational resources go online, it becomes critical to interrogate what kinds of diversity that world wide web supports and what it ignores or erases.

The purpose of this course is to analyse diversity (issues of race, ethnicity, class, gender and sexuality … to name a few) in relation to computer technologies. This course takes a rhetorical perspective – examining the claims that are made about these new technologies and seeing if such claims are valid. Questions we will consider: Who uses these technologies – who has access,
who is promised access, and what might that mean? Will users really leave behind their race, their gender, class, or sexuality as they interact online? If more and more of our communication is virtual and digital, what will that mean for our situated bodies on this side of the screen? In addition to critiquing the rhetoric surrounding new technologies, we will also explore what potential might exist for these new forums to allow for the suppression of non-dominant discourses.

In this course description, digital diversity extends far beyond the merely technical to encompass the wider sphere of human diversity, such as race, ethnicity, class, gender and sexuality, in relation to access to and use of the various digital technologies and the consequences for users and non-users alike. Investigating these and related issues is very much an empirical matter best left to the social sciences (eg., media studies, psychology, sociology); here, our concern is with the information made publicly available by digital technology and some underlying ethical worries about equality, fairness, justice, harm and good insofar as digital diversity is concerned.

**Epistemological problems**

The fundamental epistemic problem with digital diversity concerns the vast amount of data conveyed by it; in particular, given the sheer quantity of information made available, on the world wide web and by television in particular, how are we to distinguish between that which is true, and hence trustworthy, from that which is false, and so unreliable? We often take things told to us by others (especially by those we take to be an authority on a matter) to be true which later turn out to be false; we give out information about ourselves to others whom we feel we can trust (credit card numbers to businesses) and find out later to our cost that we were victims of a fraudulent scam. If we are to avoid these sorts of dangers (as far as this is possible given the remarkable ingenuity of hackers and deceivers) then honest users of digitally diverse technologies would probably benefit from having some basic understanding of what truth is and would definitely benefit from having a very sound grasp of how to determine the true
from the false. The force of this imperative comes to the fore in educational settings which have a primary duty to assist learners to critically evaluate truth claims made across the digital domain. This raises a critical question: what is truth?

Put simply, while recognising but not entering into the metaphysical debates, we can define truth in the following way: A sentence is true if the world is the way the sentence says it is (and false if it is not), or by way of Tarki’s (1944) example:

‘Snow is white’ is true if and only if snow is white.

This way of formulating a definition of truth reminds us that there is a connection between our sentences about the world (in this case, about digital diversity and the information communicated therein) and something in the world (digital devices and the uses they are put to).

The truth of a sentence in an information claim is one thing, this being an ontological relationship between a sentence about a thing and the thing itself. Of far more practical importance for digital diversity is the finding out whether a sentence or information claim is true or false, which is an epistemological matter. This requires the gathering of empirical evidence, either indirectly from others whom we have reason to trust as reliable authorities or sources (recognised experts) or directly through our own experience. In both cases, while the evidence obtained is usually sufficiently robust to warrant our accepting the digitally transmitted information to be true, we have also learned to our financial cost and emotional dismay that we can and do get things wrong, so in setting out to critically assess the truth claims before us we would do well to be guided less by a desire to find confirming evidence which verifies our thinking that the information is true and more by a determination to discover anomalies or exceptions in order to try to falsify the claims, such that those which withstand our sternest efforts to test their truth value deserve our support for the time being.

The injunction to be critical evaluators of digital information rather than passively accepting consumers of it should not blind us to the enormous amount of information now available, and growing exponentially, which contributes greatly to the public good. The opening up of information and making it widely available to citizens empowers
people in ways not previously open to them. For example, professional information once jealously protected from others is now far more readily accessible, a case in point being medical information once the privilege of doctors and withheld from patients is now available to all and sundry who can use it (hopefully critically) to make better informed decisions about their own health care. And on an almost infinite number of topics generated by, say, a Google search, there is bound to be some information available. Whether it is true or not is, of course, another matter again, as previously discussed, but it all comes down to ‘caveat emptor’ or buyer beware! This is the public face of digital information in its diverse forms. But there is also a private face, which is perhaps more worrying.

A great deal of information is gathered, then digitally stored, about individuals, institutions and the like. What is stored may be stored with or without our being aware. We provide schools, banks, businesses, government agencies and so on with personal information which they may or may not share with others; and others (such as private investigators, police and national security agencies) also collect information more covertly. We rarely are granted access to this information, so we may never know how it is being used or misused, by whom, for what purposes and with what consequences, nor are we able to confirm that which is true and delete that which is false.

These sorts of concerns take us into the ethical realm for they raise issues about good and harm as well as fairness, justice, equality and the like.

**Ethical Problems**

Linking digital diversity to human diversity raises a fundamental question, and a host of supplementary questions. The general question is this: given human diversity across, for example, culture, language, race, ethnicity, religion, class, sexuality, nationality, residential location, family structure and resources, political institutions and economic systems, do all people regardless of their locations in these various diversities have equal access to the digital diversity ranging over computers, internet, cell phone, television and the other technological devices available? The fairly obvious answer is
‘no’, not all individuals and groups have equal access and so do not have equal opportunities to enjoy the benefits of digital diversity and are often disadvantaged, unfairly, as a consequence. Access is neither equally nor fairly distributed across the diverse human groups but is arranged in ways which advantage some at the expense of others.

Access to, use of and benefit from digital diversity can be accomplished in one of two rather broad ways which shape the sorts of policies adopted globally, nationally, regionally and locally to extend the reach of digital diversity across human diversity. The first is leaving it all to the competitive market; the second is to enact some form of intervention. As will become clear, the first promotes choice at the expense of equality; the second promotes equality to maximise choice.

The market approach seeks to extend the marketisation of digitally diverse devices to as wide a range of human diversities as possible provided that they are able to link up with and pay for it, or are permitted to link up and pay. The first, being the ability to link and pay for it, means that access is restricted to those who are not only in a position to make a physical connection (satellite dish, telephone line/modem, cell phone tower, electricity) but are also capable of purchasing the devices and affording the ongoing operational costs (internet provider service, cell phone charges). This means that the poor and the geographically isolated are likely to be the most disadvantaged in terms of access, use and benefit. The second, being permitted to link and pay, is widely accepted as a basic freedom in many countries, but not all. North Korea and, less draconically, China, for example, are two nation states which currently impose severe restrictions on access to, use of and benefit from digital diversity, for ideological and political reasons, thereby limiting the freedom of their citizens to communicate with others and to receive and exchange information in ways available to citizens of so many other nations.

The interventionist approach, on the other hand, sets out to equalise access, use and benefit as far as possible by promoting digital diversity for those who are least advantaged by its availability. Here, a good starting point is Rawls’s (1971) viewpoint on justice: maximise individual freedom which is consistent with maximum freedom for all, and maximise the advantage of the least advantaged such that the advantaged
should only benefit if it also brings about significant advantage for the least advantaged. This maxim serves to remind us that in the distribution of the goods which accrue from digital diversity (assuming the good outweighs the harm), policies for the development and expansion of digital diversity across human diversities ought to be arranged in such a way that the social order is organised to provide the least advantaged with opportunities already enjoyed by the most advantaged, and if this requires the deliberate intervention of the state, so be it.

These ethical concerns are further complicated by the inequalities of power relationships between the extremely powerful multinational globalised conglomerates which provide the digital diversity (computer hardware, operating platforms, software, cell phones), governments not always in a position to withstand the pressures exerted by the global corporations upon them, and citizens left at the mercy of those who, solely in their own interests, control the digital diversity. For example, Microsoft and the Murdoch ‘empire’, along with telecommunication providers, have an almost vice-like monopoly grip on large sections of the digital diversity sphere and because of their economic clout and political influence are able to withstand national policies contrary to their own self-interest (although the Murdoch business has been tested recently in light of their telephone hacking practices). The end-user, the individual watching TV or working online, has choice insofar as, for example, cable TV increases channels to choose from, and Google collects together many websites to pick from, and there may be much to be gained from this range of choice. However, what providers provide and consumers consume is far from neutral or benign, for what the providers provide is often shaped as much by their own ideology as it is from consumer demand. The Murdoch ‘empire’ with its extensive reach into so many branches of digital and non-digital media (newspapers, magazines, Fox Channel, etc) is a case in point, and for the poorly educated consumer of the fruits of digital diversity, the ability to discriminate between the true and the false, the good and the bad, what is in their interests and what is not, may lead to their economic exploitation and psychological alienation rather than their political emancipation and intellectual freedom.
The educational challenge to digital diversity

Digital diversity, in its various guises, has much to offer and the benefits ought not to be denied. But as with many technological advances, digital diversity brings with it substantial harms. Extolling the virtues of digital diversity must not be at the expense of downplaying the vices. An appropriate educational response is several-fold. All children ought to be provided with similar opportunities to experience digital diversity in the classroom as a tool for learning, and this should certainly not be denied on the basis of diversity of race, class, gender, etc. This may require government intervention to achieve so that the least advantaged are, particularly at school, as advantaged as the most privileged. But the disadvantage of digital diversity outside of the school must be made transparent and not glossed over. Children need to acquire a critical disposition towards digital diversity and not only ask but set out to answer the hard questions about digital diversity: Who does it benefit and who does it oppress? Who controls it and who is controlled by it? Should it be available to all or only to some? If we allow digital diversity to advance unfettered, what sorts of individuals and what sort of society will we become? Will the expansion of digital diversity come at a human cost which is more than people will be prepared to bear?

Digital diversity is not going to go away; rather, it will no doubt continue to make the rapid technological advances which have marked its development to date and will continue to expand its global reach as new markets are established in hitherto largely untouched regions of the world – the rush to enter China as it modernises points to the way the promoters of digital diversity are likely to exploit new consumers in ‘growth’ economies in Africa, Asia and South America. All of this will be beyond the control of schools in these continents which are in no position to stem the inroads of digital diversity. But educators around the world need to confront the challenges which digital diversity presents and help the children they teach to learn what it has to offer and concomitantly to adopt an attitude towards digital diversity which not only recognises its virtues but, perhaps even more importantly, to take whatever action they can to eliminate or reduce the vices. From an educational point of view, the very worst thing which could happen is for digital technology to capture the hearts of children while
destroying their rational capacity to critique the very thing which will have such a major influence in shaping their place in the world.

References


