Chinese Whispers: The Nature of Information, Education and Plagiarism

By Dr Barbara Combes

Introduction

The Internet first appeared as a major communications device in the late nineteen eighties (Zakon, 2015) and was closely connected with the military and academic institutions and the information-sharing protocols that existed at that time. These protocols still exist in academia today as the citation process. In the academic environment, information is shared by researchers who provide new insights and/or information to add to the current body of knowledge. They gain kudos from their peers and sometimes the general public, and add to their reputation by publishing/sharing their research, thoughts and ideas in academic journals/publications. Since research in the academic environment has been traditionally funded by government and not tied to commercial enterprise, the Internet as it first appeared became another conduit for the research community to disseminate and exchange information (Barbrook, 1998).

Information exchanges on the early Internet were defined by a complex arrangement of protocols, trust and a sense of community (Coyne, 2001). This arrangement has been called the 'gift economy', because the sharing of information is perceived as a two-way relationship where the most respected academics publish and share their work and, in turn, use and recognise other published works to further their own research. For participants working in this environment, reward is the lasting value attached to their work and recognition by their peers (Pinchot, 1995; Raymond, 1998). While others may use their work to support their own research or expand and use it to generate new ideas, concepts and interpretations, the value of the original work remains intact through the citation process. It is the citation process and peer review of research which gives recognition to the author and authority to the information, ie. it adds value to the informational product. Prior to the establishment of the World Wide Web as a major information communications platform, it was the citation process and review for publication in all areas of the publishing industry that gave authority to information. Since the WWW is still relatively new (20 years old this year), society still adheres to old assumptions about information and its value, even though technology has changed and continues to change the way information behaves in this environment.

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The WWW

Although technology has moved on since the early days of the Web, sharing and collaboration have remained one of the principal values that underpin both the development of core technologies and the philosophy of Internet usage (Stalder & Hirsh, 2002). Indeed, sharing and the ability to interact with others via technology differentiate Web 2.0 utilities and mobile apps (applications) from earlier versions of the Web where information was relatively static and closely resembled print media. So while use of the WWW is now ubiquitous across society, the idea that information shared and the recognition of original authors adds value and authority to the informational product still persists, even though ongoing technological change has signalled a major social and cultural shift in the way people live, work and play (Ito, et al., 2009). This shift has been particularly noticeable in the last five to seven years with the advent of affordable mobile technologies which are multifunctional devices designed to give the user access to the WWW at anytime and from anywhere (Weldon, 2012).

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While users in the pre-WWW days needed to have a certain amount of technical skill to use the technology and services afforded by the Internet, this is no longer the case. Anyone can connect to and publish on the WWW using a mobile phone. The WWW is widely available and easily accessible to the everyday user. It is now a global network and pockets of high use can be found anywhere on the planet. Falling costs of computer hardware and software, coupled with easy-to-use programs and user-friendly web-based utilities and apps, have meant the WWW is now a place to conduct business of all types, including retail, goods and services, government and social service delivery (Burgess & Houghton, 2006; Combes, 2012). The WWW is perceived as a cheap way for business and corporate organisations to expand into a global

marketplace, unhampered by the traditional restraints of geopolitical and economic boundaries. Technology has also been perceived as a panacea for cash strapped education systems, and a free resource or virtual library where access to vast stores of 'free' information is but a click away.

The WWW and Education

In Australia and across the world, the perception by government and the general public that technology, and ICTs in particular, are essential prerequisites for educational success is exemplified by the Commonwealth Government's Digital Education Revolution (DER) scheme (Commonwealth of Australia, 2014). While projects in this scheme purported to address issues on teacher engagement with technology (Education Services Australia, *Teaching Teachers for the Future* and *ICT in Everyday Learning: Teacher Online Toolkit*; the NSW Department of Education and Communities, *Anywhere, Anytime Teacher Professional Learning*, and Principals Australia, *Leading ICT in Learning*), the funding model for participation employed by Government involved an application process by schools. These projects ran from 2010 to 2012. While the initial goals for the widespread uptake of computers in schools appear to have been reached, professional development for teachers and the issue of skills development for students has not occurred. As in the past, the main focus of this and many other programs has been about getting the technology into schools, rather than in-servicing teachers and teaching students how to use technologies effectively and efficiently. Nor have the long-term implications of maintaining levels of technology in schools been addressed (Arthur, 2013; Loader, 2013; Haesler, 2013).

Researchers have described initiatives by both Government and educational policy makers in Australia as part of the 'digital rhetoric' where ICTs are considered to be the main driver for innovative education and training systems (Buchanan, & Chapman, 2009). This attitude is part of a public belief that the WWW is a one-stop-shop for free information that will solve rising costs in education. Buchanan and Chapman argued some time ago that this "imperative to employ technology, the imposition of ICT is taking place within a contentious field containing multiple players with competing agendas, different hierarchical positions and contested power relations" (Buchanan and Chapman, 2009, p. 2). Before the Commonwealth's Digital Education Revolution, Baskin and Williams complained 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" (Baskin & Williams, 2006, p. 455). Bennett et al. referred to this ongoing focus on technology in schools by education systems as a "moral panic that restricts critical and rational debate" (Bennett, Maton & Kervin, 2008, p. 776).

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This continual focus on the technology has meant that both teachers and students have not been engaged in the pedagogy of how to use the tools in an educational setting. Since students are labelled as 'digital natives', the assumption made by the general public, politicians, education departments and teachers is that they do not need to learn how to use the technology or understand how it works (Combes, 2012). Stoerger (2009) contends that the labels and attributes assigned to young people have resulted in the marginalisation of teachers and "imply that the immigrant can never become a native, which may have served to excuse individuals without tech skills". Consequently, the uptake of technologies in universities and schools by many educators has been relatively slow (Combes, 2005; Buchanan & Chapman, 2009), often due to lack of support, resources and teacher expertise. Research conducted over the last ten years is showing that there is no such person as a digital native (Livingstone & Bober, 2005; Nicholas, Rowlands & Huntington, 2008; Lei, 2009; OECD, 2010, 2012; So, et al., 2012; Combes, 2012), and much of the public opinion and educational commentary is not grounded in evidence, but in hype and speculation.

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The impact of the idea of a generation of intuitive technology users or digital natives has been extensive, with major educational funding being allocated away from other resources and staffing to technology infrastructure and equipment. This impact is not limited to Australia, but part of a global push to get technology infrastructure, hardware and software into schools. A result of this technology imperative has been the ongoing pressure by social commentators, some education researchers, systemic decision-makers and politicians onto educators to modify their teaching practices to accommodate this new type of tech-savvy learner (Hay, 2000; Billings, 2004; Jukes & Dosaj, 2004; Millea, Green & Putland, 2005; Gaston, 2006; Oliver & Goerke, 2007; Prensky, 2007; Feiertag & Berge, 2008; Rikhye, Cook & Berge, 2009).

So while there is a push to have the technology in schools, there has been little or no funding for teacher professional development or student education. The focus has been in the provision of hardware (and sometimes software) which has a current shelf life of approximately three years or less. Teachers and students do not understand how the technology works and, as a result, their understanding of information, intellectual property and copyright has been

compromised. In the early days of the Web, Boyle (2003) noted that "intellectual property is now in and on the desktop and is implicated in routine creative, communicative, and just plain consumptive acts that each of us performs every day". For our students, who have never known a world without instantaneous, user-friendly access to information and the ability to share, copy and paste as part of their everyday routine usage of information, the traditional view of intellectual property is very confusing. This confusion is directly related to the changing nature of information and how it behaves in the online environment.

The Changing Nature of Information

The information environment in the twenty-first century appears to be simplified due to the availability of easy-to-use search tools such as Google and user-friendly software that appears to do the 'thinking' for the user. This perception of simplicity is extended to include the following precepts:

- the WWW contains all information (a one-stop-shop);
- everyone can find the information they need, interpret it and use it;
- no-one needs a mediator (self-service) or assistance from an information manager (librarian, teacher-librarian);
- if you can't find information on the WWW then it doesn't exist;
- all information on the WWW is free;
- all information is good information; and
- more information is better.

In fact, the information landscape is incredibly complex and, with developments in technology, it is in a continual state of flux. The current landscape is littered with old and new information artefacts. Floridi calls this new information domain the 'infosphere', an holistic term which refers to the whole informational environment – its structures, constituents, agents, processes and mutual relations (Floridi, 2007, p. 59). This infosphere is not limited to electronic media, and also includes traditional information media such as print, radio, television and video. This new landscape is very dynamic. It includes and is shaped by the humans who inhabit it, intervention activities, developments in technology, ideas, and cultures of technology use, attitudes and perceptions. The technological structures and technologies that drive the components of the new information landscape are also in a constant state of change as the development of technology continues to be more affordable, user-friendly and convergent.

Thus, the new landscape is increasingly complex and contains old fashioned information artefacts such as books, television and radio that are usually stand alone, alongside newer, converging artefacts such as the WWW, interactive tools and utilities (Web 2.0 and Web 3.0) and multifunctional, mobile, hand-held devices that store and retrieve information, provide access to the Internet and a wide range of tools (applications), enable communication using a range of delivery modes, and provide multimedia delivery that can be generated across a number of linked platforms. Developments in new technologies not only change the infrastructure and mode of information delivery, but they also change the way society processes, creates, uses and views information.

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For the user operating in the new landscape, the information artefacts are also access devices, so the technology being used as the delivery mode is also the information resource, eg. the WWW. For the user, the delivery mode or technology is often confused with the information resource and attributes associated with the technology have become associated with the information it stores and delivers, and vice versa. When information was print dominated, the authority of information was verified to a certain extent by the publishing industry and the citation process. Although we now have Web-based multimedia, interactive Web 2.0 tools and utilities, text is still a major component of information on the Internet and how we communicate, a fact which tends to strengthen the perception that information in this environment is 'solid' and authoritative, and has intrinsic value.

In the digital environment, information has two major characteristics which are contradictory in nature, or what Shenton (2007) calls a paradox. On the one hand, digital information is quite fluid. Information on the Web can be copied and pasted, altered slightly and be attributed to a number of different authors and disseminated widely and very rapidly via convergent devices to a number of different locations even though there is a single primary source/author. Hence, information delivered via the Internet is often perceived as having more value and authenticity, because it appears in multiple locations and publications. In this context, the information appears to be solid, authoritative and has value, even though its behaviour and how it is being produced is quite fluid. Information may also be de-contextualised and appear in a condensed or abridged format (RSS feeds and Twitter) or in a social context (blogs, wikis, Facebook, Instagram).

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On the one hand digital information is increasingly solid. It has greater longevity, is available to a wider and more public audience, may be regenerated and re-circulated over a number of years and, in some instances such as social networking sites, very difficult to remove. On the other hand, the same information may be very fluid, subject to multiple copying and minor alterations due to the mode of delivery or by the person who is sending the information on to a wider audience. Since text is still a major component of information on the WWW and a major component of how we communicate using ICTs, the traditional perceptions of authority and validity still resonate with most users. So while information in this environment appears to be solid, its origins may be fluid and the way it behaves is also fluid.

Floridi maintains that ICTs and the convergence of technologies are 'reontologising' (a very radical form of reengineering) the very nature of the infosphere and are responsible for transforming the information landscape at fundamental levels as technology becomes embedded into everyday life (Floridi, 2007, p. 59). Two ways ICTs have transformed and continue to transform the infosphere are the change from analogue to digital data and the burgeoning nature of digital space (Floridi, 2007, p. 60). With developments in cloud computing and the use of convergent platforms/devices and delivery modes, these two facets have become even more evident since Floridi was writing about future developments in 2007. The longevity of information in this medium is further affected by the advent of cloud storage and digital archives (Internet Archive, 2015). The amount and density of information available led Floridi to predict the following in 2007:

> *One thing seems indubitable though: the digital divide will become a chasm, generating new forms of discrimination between those who can be denizens of the infosphere and those who cannot, between insiders and outsiders, between information rich and information poor* (Floridi, 2007, p. 62).

Floridi predicts that society will be divided into those who can understand and participate at a deeper level in the infosphere (information rich) and those who have little understanding and will operate at a superficial level (information poor).

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Thus, the new information landscape is not only increasingly complex and undergoing continual structural change (new technologies), but our traditional perceptions of what constitutes an information resource or form is being altered. The way we/society interact with information is also being altered as the information forms change and develop. How society perceives and uses the new information landscape is directly affected by the technology and vice versa. However, as new technologies appear and users move on to another set of tools, others arrive and, as observed by Vicker (2003) in the early days of the WWW, this constant movement increases the complexity of the information landscape and adds to its evolutionary nature.

Plagiarism

Following a basic, unsophisticated formula when finding and using information in this environment is due to a number of factors such as a lack of instruction, a culture of technology use predicated on how we first teach ourselves to use the WWW (Combes, 2012), and how 'intelligent' software is now directing the information-seeker when using the Internet to find information. While academic research over the last fifteen years indicates that the Net Generation construct, which consists of highly competent digital natives, is simplistic and highly contentious, it is this label that continues to have resonance with the wider public, some educators, politicians and government. As Floridi's prediction about information rich and information poor becomes increasingly apparent, the behaviours exhibited by young people may be more aptly described using Scanlon's term – *digital refugees* (Scanlon, 2009). Successful information-seeking in the digital environment is the result of complex skills that include problem-solving, good literacy and digital literacy skills, critical analysis and higher order thinking, in an information landscape that is in constant state of flux. The complex range of skills needed to deal with information in the infosphere comes under the umbrella term, information literacy.

What was once information can become misinformation . . . and, like Chinese whispers, the end product often bears no resemblance to the original . . .

Is it any wonder then that our students do not have a refined understanding of terms such as copyright, intellectual property and plagiarism? Due to the nature of information and how it behaves on the WWW, coupled with misconceptions that merge old understandings with information published in this new environment, students find the traditional view of intellectual property very confusing. Even the concept of creative commons (Creative Commons Australia, 2015), which was intended to simplify copyright and intellectual property in the digital environment, has introduced another layer of

complexity. In a constantly shifting informational landscape, it is often difficult to determine the original author and when the information was first published. Once the information has been shared multiple times across multiple channels, formats and delivery modes, it ceases to have value as the original integrity of information is lost in the editing, copying and dissemination process. What was once information can become misinformation. There is no audit trail on the Internet. Information is subtly transformed and, like Chinese whispers, the end product often bears no resemblance to the original in form, context or purpose. Conversely, information shared in this manner can very quickly move from being an opinion or observation to an accepted truth or fact. Thus the idea of a digital native was born and continues to have resonance.

The confusion of terms and meanings, the use of catchy labels, the development of user-friendly software, the almost obsessive uptake of technology by educational systems and the resultant change in how we use information in our everyday lives has led to a global culture where the value of information as originally defined by the citation process has been undermined. Information is now so widely and rapidly disseminated and so easily subject to minor alterations, as users cut, paste and copy, that information shared no longer has value or ownership. So Internet plagiarism is of major concern to educators and academics who still operate within a framework where information has value only if its authenticity can be verified. Students are still required to demonstrate the breadth and depth of their research and integrity of their work through the citation process. Academics and educationalists still operate according to the principles of information usage that characterised the early use of the Internet and the print environment. The current generation of students, however, appear to have difficulty in grasping and applying the fundamental concepts that define these protocols, particularly when using information acquired via the Web. It isn't just students who have difficulty when working with information acquired via the WWW. There are numerous cases of journalists, politicians, educators and researchers (*The Guardian*, 2015; *The New York Times*, 2015) who have been accused of plagiarising information. These cases suggest that society in general views information taken from the Internet differently to more traditional print sources.

Schools, the WWW and Plagiarism

Most students present at school with a culture of technology use that is based on personal exploration, ie. they taught themselves. How our students use technology and their understandings of how it works are superficial (Combes, 2012), a fact which supports Shenton's fourth paradox that "despite the sophistication of today's information age, youngsters frequently follow a basic formula for action when finding and using information" (Shenton 2007; Combes, 2012). As the workplace becomes increasingly dependent on the digital exchange of information, schools have a responsibility to educate and graduate students who have the skills and understandings to work effectively, efficiently, legally/ethically and safely in this environment. For students to acquire these skills and understandings, they need to be embedded across the curriculum via proactive teaching.

Digital literacy is understanding the digital environment . . .

Traditionally this has been the role of the teacher-librarian, but with funding cuts and job losses they are increasingly becoming a rare breed. Teacher-librarians need to step up and ensure they have the necessary knowledge and skills to pass onto their students, teachers and executive staff. This means participating in ongoing professional development at a higher level. It also means taking on an active teaching role in the school. Teaching about plagiarism is more than writing bibliographies, referencing and using tools such as Turnitin. It is about teaching and developing students' understandings of how information behaves in the digital environment, ie. digital literacy. Just as the definition of literacy goes beyond the core skills of reading, writing, viewing and listening to include understanding, comprehension and the ability to interpret what you have read, digital literacy is more than being able to use the WWW, ICTs and a computer or digital device (HEA/JISC, 2012). Digital literacy is understanding the digital environment or infosphere and how information behaves as we humans interact within the information landscape.

Conclusion

While the citation process is still the way we authenticate and attach value to information, the process of authentication is no longer simple. Students need to be taught how to locate, evaluate and authenticate information using an increasingly wider range of formats and delivery modes. They need to be able to navigate confidently in the infosphere and understand the complexity of this environment. Greater understanding of how information has changed and how society uses an increasingly wide range of information sources, both static and interactive, will prepare our students for the future and the workplace. The importance of information seeking for individuals and society as a whole is succinctly summarised below:

> *Information seeking must be one of our most fundamental methods for coping with our environment. The strategies we learn to use in gathering information may turn out to be far more important in the long run than specific pieces of knowledge we may pick up in our formal education and then soon forget as we go about wrestling with our day-to-day problems* (Donohew, Tipton & Harvey, 1978, cited in Case, 2002, p. 17).

While this quote comes from pre-WWW days, it is even more relevant to both the current and future information landscape. The strategies the authors are describing here fall under the umbrella term information literacy. Our students' ability to use information effectively, efficiently, ethically/legally and appropriately, will determine how well they are able to navigate and use information in the workplace and for personal needs. To graduate students with these abilities requires a generation of educators who also fully understand the changing culture of information and embed information literacy skills into curriculum programs. Remonstrating with today's students, delivering lectures on ethics and accusing them of criminal intent is ineffective and has little relevance to a generation of users who have a different culture of technology use. When students understand that their work has added value for its demonstration of depth and breadth through the citation process, that explanations in their own words demonstrate their understandings and that we as educators value their work, plagiarism per se will be better understood and perhaps less prevalent amongst current and future generations of Internet users. Working to create curriculum that teaches students and staff about these skills and understandings is an important and proactive role for the teacher-librarian.

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