Chapter 1
An Overview of Technology in Society: An Introduction to Technoliteracy

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ABSTRACT

Being literate is vital for learning and working, possibly more so in the digital age than in the industrial age, given society's reliance on digital technologies. Individual and societal reliance on technology has in turn created problems and opportunities. The associated problems concern who has access to what forms of technology and when and how it is used. The opportunities centre on the interconnectedness of digital technologies, which ultimately transform how and when we communicate. When technology and communication are joined together they form another literacy commonly referred to as technoliteracy. This chapter will provide a brief overview of some of the ways in which literacy and technology interconnect and will provide the reader with sufficient understanding of the field to enable them to grasp some of the more theoretical and practical applications of technoliteracy discussed in the following chapters.

INTRODUCTION

We live in times of rapid technological change. New forms of technology--such as the Internet, personal digital assistants and mobile phones, to name but a few--require further understandings and capabilities to comprehend and conform to new ways of doing things. New technology has the capacity to shape and reform societal norms, often dictating how things are done. It can also be said that the reverse is often true, in that society shapes and forms new technologies (Pullen, 2008). In this information rich society information and communication technologies (ICT) are at the heart of human life and social developments. People have always worked together and communicated via speech, writing and the printed word (Scouter,
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2003). The rapid advancement of computers and communication technologies has reached a point where technology is omnipresent in almost every facet of our lives. This has enabled individuals and society to become interconnected in ways that were previously unimaginable, making access to information easier and transforming how we communicate (Finger, Russell, Jamieson-Proctor & Russell, 2007).

The advancement of the Internet in the early 1990s, resulted in the concept of the global village and subsequently new ways of teaching and learning involving hypertext, multimodality and virtual classrooms. This rapid rise in fast, mass communication has reached the point that in order to live, learn and work successfully we must learn to use technology efficiently and effectively. This has lead to a new term called technoliteracy which in effect refers to how literate one is with technology and how they use the technology to communicate.

Strongly associated with the rise of digital technologies, specifically computers, which are becoming more affordable and available, society has had to change to keep pace with technological developments. This upsurge of technologies can be attributed to how society has changed from an ‘industrial-based’ economy, referred to as the industrial age, to a ‘knowledge-based’ economy, known as the information age (Cepeda, 2006; Davenport & Prusak, 2000). As a result of these technologically driven changes, labour markets are changing from an industrial base to a knowledge production process, where work practices are being transformed. This context demands a more specialised, highly educated, flexible and technologically savvy workforce (Meredyth, Russell, Blackwood, Thomas & Wise, 1999). Corresponding with the transformation from an industrial age to an information age, society in general has also had to adapt to technological advancements, just as labour markets have and are continuing to do. The implications and global scale of this change have significant global, regional, local and individual repercussions. To varying degrees, all individuals, organisations and societies are affected by this change and “only those who realign their practices most effectively to the information age ... will reap ... benefits. Those who do not will be ... diminished by ... competitors” (Dolence & Norris, 1995, p. 2).

Parallel to the increase in technology in our workplaces and homes is the presence of technology in schools. Technologies such as computers and the Internet are increasingly being made available to teachers and schools, to the point that their presence in schools would be considered to be normal and their absence would be a rarity. Indeed many governments around the world have made the public provision of technology, specifically computers, fundamental education policy. For instance, in the United States, the No Child Left Behind Act of 2001 has the goal of maximising technology’s contributions to improving education (US DoE, 2009), whilst in Australia the focus is on a one-to-one student to computer ratio for every student from grade nine onwards (Australian Labor Party, 2007). Whilst both policies have their merits and faults each has a common fundamental belief that technology access and skill development is an essential requirement for a well-rounded education and the subsequent advancement of a country’s economic prosperity.

Within an educational environment the classroom is no longer a room within a school that is isolated from other classrooms or indeed from its local context or global society. Indeed it could be argued that the classrooms of today are global. That is to say that the classrooms of today are places where the educational uses of technology are coming together in terms of development and application and new ways of teaching and learning are becoming apparent. At the cutting edge of this change is the relationship between human users of technology and the technology itself. This relationship between humans and technology, or machines, is termed humachine. For example, recent technological innovations have increased