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**Literacy ethics:
Defence against a technology of literacy for the military**

CUSHLA KAPITZKE
Queensland University of Technology

Introduction

The OECD Programme for International Student Assessment outcomes indicates that compared to their international counterparts Australian practitioners hold relatively sophisticated views of literacy education. Nonetheless, this article seeks to complicate current understandings of technological literacy by examining its ontological ground and problematizing the parameters of its meanings. Young people's penchant for mobile media places digital literacies at the heart of meaning making for them. Quite simply, there is no other way of being. Whilst parents and teachers would do well to embrace and celebrate the communicative and cultural possibilities these media offer, the technological literacies they embody and mandate are not innocent. Following Foucault (1984), my argument is not that technological literacies are good or bad. It is that they are potentially dangerous.

This position—that their practices are simultaneously perilous and beneficent—stops short of negative judgment and moral panic because it opens space for productive critical reflection encouraging professional activism. As Foucault (p. 343) noted: 'If everything is dangerous, then we always have something to do.' Given the inequities of wealth and well-being within and across minority and majority worlds, there is indeed much to do.

The article therefore outlines the discursive trajectory of technological literacy by examining the historical conditions of its emergence and exploring a contemporary iteration of it: namely, the Aerospace Studies Senior Syllabus developed in Queensland through a public private partnership with Boeing Incorporated. The shift from comprehensive to industry-driven curricula, and from print to skills-based digital literacies this educational initiative entails, raises important questions for educators. Considering the paucity of discussion in policy and education arenas, the paper closes with some thoughts on the need for a literacy ethics to inform the emergent paradigm of enterprise curricula and its handmaiden, technological literacy.

The other cold war: Militarism, information technology and a new literacy

The army will target fans of *The Simpsons* and *South Park* as well as Internet chatrooms as part of a drive to recruit young people. (Burke, 2007, p. 3)

In professional literatures, print literacy is defined not so much as sets of cognitive skills but as social practices with technologies of inscription. In the same way, technological literacy can be described as cultural practices around and with tools of digital inscription. Current discourses of literacy learning are filtered through the imperatives of innovation for so-called knowledge economies (cf., Lewis, 2005). This economy emerged, in large part, prior to World War II from the marriage of industrial technology with research and development (D. F. Noble, 1979). How did this happen and to what effect for educators today?

Irrespective of whether the activity is called *computer literacy*, *technological literacy*, *digital literacies*, or *multiliteracies*, meaning making with computerized technologies is an effect of a particular sociohistorical and political moment. That moment—twentieth-century north America during the Cold War—rendered literacy education both enabled and constrained by a selective tradition of tools, texts, languages, genres, literacy events, social relations and political economies, all of which produced certain beliefs about textuality, the world and the individual's place in that world. In the latter half of the twentieth century, the Cold War contributed to a conflation of higher education with technology, instructional design and literacy pedagogy. Early critical work on this alliance drew attention to the militarization of instruction and the mutual development of information technologies and cognitive science, a field funded largely by the US Department of Defense (see Douglas Noble, 1991). Elsewhere, Noble (1989, p. 34) asserted that public education had become 'laboratory and locus of legitimation' for the information economy, as well as 'site for the design and manufacture of 'intellectual capital' ' required by corporate capitalism. This work shows how fear of communism and the subsequent nuclear arms race motivated research on artificial languages and machine intelligence, out of which theories of constructivist learning were developed.

The present focus on the United States as a force for global integration requires a statement of researcher positionality. As a form of social intervention, education symbolises what society values and, consequently, what it means to be human. Nevertheless, as modes of identity formation and social (re)production, education systems today compete with the current wave of economic globalization. The ideal human subject of global capital is the cosmopolitan consumer. Indeed, some theorists view globalization and war as two sides of the same imperialist coin (Pieterse, 2004). By contrast, following Larner and Walters (2004), I view globalization not as an external force that imposes itself upon individuals and nation states but as an effect of global 'social imaginaries.' Individuals and nation states speak and enact global integration into being—albeit with differential degrees of power—through language (e.g., of innovation policy) and participation in discursively imagined material worlds.

There is no room for a culture of complaint here because, as teachers and learners, producers and consumers, each has agency in and through the paradox of submission to local and global discursive formations (Butler, 1997). Through subjection and/or resistance to those processes and forces we satisfy desires, obtain goods, achieve aims and so on. This agential theoretical framework precludes attribution to the author of either pessimism or essentialist anti-American sentiment (Revel, 2003). Far from it, the aim here is to prise open an ethical space of reciprocal understanding and action for all in the face of rapid social, technological, economic and educational change.

Having established this, the work of educationist Seymour Papert is used here as a locus for analysis of the convergence of technology and literacy pedagogy. Papert combined Piaget's developmental studies of human intelligence with his own ideas on logico-mathematical thought to develop his educational software program, LOGO, and best-selling book, *Mindstorms: Children, computers, and powerful ideas* (1980). Funded partly by The Lego Group, these products were highly influential in popularizing computer-based learning through commercial programs. Much of this work was undertaken in laboratories of the Massachusetts Institute of Technology (MIT) and funded by the National Science Foundation (NSF) in affiliation with the US Air Force Office of Scientific Research (cf., Der Derian, 2001; Edwards, 1996; Geiger, 1994; Leslie, 1993). It is notable also that the US Department of Defense funds around sixty percent of total funding for university research today. This is in contrast to the NSF which allocates just three percent (Lhee, Kovalchick & Godin, 2004).

The reality is that computer-based education is an enterprise developed first and foremost for military purposes. It is an invention of computer scientists, experimental psychologists, information processing specialists and virtual reality artists funded by the Defense Advanced Research Projects Agency (DARPA). DARPA is the research and development arm of the US Department of Defense. It is common knowledge in those organisations that the purpose of technologized education at a philosophical level is to understand the human factor in the domain of military science. At a practical level, its objective is to develop sophisticated man-machine systems for 'defense' purposes.

A more recent second generation of critical theoretical literature highlights the embedding of military culture within schooling through such means as the command and control logic of standardized curricula, skills-based literacy approaches, and the increasing marketization of educational provision (McLaren & Hammer, 1996; Saltman & Gabbard, 2003). Foucault (2004, p. 266) argued that civil order is based on an 'order of battle.' Normalizing practices such as induction into acritical technological literacies and the techniques of standardized testing to monitor and surveil modern students are integral to this governmental process.

Civilianizing militarism through curricular reform

The trend toward corporatized curricula driven by the need to make the world safe for the US economy is evident in Australian education reform today. Education Queensland, for example, has developed and implemented a new senior syllabus, Aerospace Studies, through a public private partnership with Boeing Australia Incorporated and a number of other partners such as Brisbane Airport Corporation. Boeing Inc. is the world's leading aerospace company and manufacturer of military aircraft, missiles, satellites, launch vehicles, electronic defense systems, and advanced information and communication systems. Clearly, the aerospace sector encompasses an innocuous domestic domain as well as defence materiel. Nevertheless, Queensland state high schools are now nodes of its global organizational network.

To date, seventeen schools have adopted the Aerospace Studies syllabus as part of the Gateway Schools to Industry Program. The program provides 'new educational opportunities for students to ensure they have the skills and experiences to effectively transition into ICT and related industries' (DETA, 2006, p. 35). With the aim of enhancing employment pathway options for students, Education Queensland has formed similar partnerships with the wine tourism, information technology, and minerals and energy sectors. Undoubtedly, there will be positive outcomes from these initiatives. They are developing productive community links and industry-relevant curricula through school-based apprenticeships that will help schools struggling with declining student numbers. Employment opportunities will expand for school-leavers seeking careers in Queensland's burgeoning aviation and aerospace industries sector. Indeed, the benefits are deemed so great that in one participating school Aerospace Studies is no longer one element of curricular provision but it drives the entire program.

Macroeconomic pressure and policy reform have contributed here to the regovernmentalisation of schooling through modification of the relations between a state education bureaucracy and a global aerospace business organisation. As the education officer who managed the syllabus design process commented in an interview:

Usually [syllabus design is] quite a long process but the industry said “Well, you know, we need this done fairly quickly and also we need it done a bit differently.”... And it went from go to whoa, to being passed in 11 months which was pretty unique.

Whatever the long-term effects of these partnerships, they signal a profound shift in the structure of state schooling and its relation to the industries and communities it serves. This shift is an intrinsically political and ethical issue.

Toward a literacy ethics

I think that the ethico-political choice we have to make every day is to determine which is the main danger. (Foucault, 1984, p. 343)

These kinds of historic changes—from comprehensive to industry-based curricula and from print to skills-based digital literacies—raise important questions for public scrutiny.

As a branch of moral philosophy dealing with values relating to human conduct, the question of ethics is at once socially important yet fraught with danger. The foregoing claim about the thunderous silence on the ethics of literacy needs to be qualified in light of a recent article written by the President of the International Reading Association (see Shanahan, 2007). This article provides a counterpoint to the theoretical framework used here because it makes a case for an ethics of literacy through a ‘rights and responsibilities’ approach in which literacy practitioners are urged to develop a ‘formal code of literacy ethics’ (p. 18). The proposal for best practice through norm-referenced principles (i.e., a set of rules) embodies a universal value system and normative ethical practice.

By contrast, the framework used here is informed by feminist ideas and the work of Foucault (1984). Based on self-transformation and mutually respectful intersubjective relations, this approach turns moral work in upon the self rather than focusing on obedience to authorities, or to systems of permissions and proscriptions.¹ The focus of inquiry and analytic mode used here are forms of ethical work because the task is ultimately relational. That is, it requires asking how the self is framed (as teacher and learner of technological literacies) with what one knows (to be sustainably productive, benign, just etc.) through relations with others (military-based industries). The proverbial invisible hand of the market has no moral agency and will not do this work for us. Unless educators reinforce social and educational values such as the peril and potential of honest, critical dialogue with self and others, ultimately these values will be corroded by economic and ultimately military imperatives.

Governmentality theory posits that modern forms of governance promote the freedoms, desires and motivations of individuals to mobilize them for administrative and managerial ends. A reciprocally responsible and ethical agency thus requires understanding one’s own needs and goals, and reflecting upon the ramifications of achieving those ends. Such agency places the onus on policy makers, administrators, industry representatives, and educators to examine the costs of attaining personal, political and professional aspirations and strategies in and through governance measures, and to consider what is yielded as able to be compromised or co-opted in the desire to obtain those ends.

This ‘post-virtue’ principle of ethical agency also lays to rest the last vestiges of technological reductionism by asserting that technological literacies are not determined by the military cultures that gave birth to them. Far from it, techno-rationalities are dangerous

only to the extent that they have power to speak and enact into being a certain kind of subject (e.g., an ordered, competent, precise, acritical student). Indeed, ethically informed and agentic educator subjects will reconstitute those rationalities by embodying speaking and learning spaces that trouble and disrupt their intended intelligibilities and subjectivities. Such reconstitution entails ethical reflection and action through fearless dialogue on the costs and benefits of tactics and strategies deployed by parties involved in their respective wills to power, pleasure, profit and performance.

Closing comments

This paper argues that technological literacy is ‘dangerous’ by examining the historical ontology of its constitution and by exploring a contemporary manifestation of it. With the gutting of critical practice in education discourses, I have engaged in the risky ethical work of ‘refusal, curiosity, innovation’ (Foucault, 1988, p. 1). *Refusal* in accepting that the status quo around current forms of literacy learning are necessarily innocent; *curiosity* about how the object of analysis was normalized as the status quo; and *innovation* because an ethical intellectual imagination can find other ways of being and doing, whilst understanding that those ways have their own benefits and dangers.

The reality of technological literacy is that, without a critical literacy ethics as an exercise in demilitarization, literacy education may become little more than an instrumentalist technology of curricula for corporate capitalism. Within that sociohistorical context, subtle forms of war-like logics and practices will continue to infiltrate public school culture, which once was considered exempt from the vested interests of church, market, and ‘defence’ forces and industries. Given the insanity of military weaponry capability today, can schools afford not to provide time and space for thinking outside of, and against, coercive curricular codes masquerading as neutral or exciting employment opportunities in the aerospace industries?

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¹ See Foucault's (1984) four techniques for how individuals work at constituting themselves as moral subjects.