

# Thinking through a deconstructionist philosophy of technology in education, part 1: 'originary technicity' and the invention of the student body

**Stephen Abblitt**

La Trobe University, Australia

This paper takes the ubiquity of personal mobile technologies today as a provocation to propose a fundamentally new understanding of the relations between knowledge, student bodies and educational technologies. It draws on recent deconstructionist philosophies of technology (principally Stiegler and Derrida) and the concept of "originary technicity" to theorise the relation between the human and the technical as not only mutually constitutive, but also ontologically undecidable. The case is especially so given the spatial and temporal connectivity and flexibility enabled by mobile technologies, the new economy of attention they facilitate, and the motile biological, technological, socio-material and semiotic intersections now endlessly working to produce the student body (individual and collective) in the digital university.

Keywords: deconstruction, mobile learning, mobile technologies, ontology, philosophy of technology, supplement, technics

## I. Technology and knowledge

Education has always been inseparable from technological invention. But today the exponential acceleration of technological innovations and the vast multiplicity of their latent applications, plus the accompanying increase in the rate of social and cultural progress, more than ever alter relations between knowledge, student, teacher and technics.

Personal mobile technologies have fundamentally transformed the practical experience of everyday life, especially aspects of human communication, consumption and production. The student's experience of the university is hardly recognizable compared to ten let alone twenty of even fifty years ago: the apparent ubiquity of personal mobile computing devices amongst the student population and the powerful spatial and temporal connectivity, flexibility and mobility they enable; the amplified access to information both inside and outside the classroom that is a feature of learning in the internet age (and alongside, the teacher's shifting role from custodian, producer and transmitter to knowledge to curator); the multitude of web- and cloud-based applications these technologies can utilize to enable a previously unthinkable range of activities and supercomplex spatio-temporal interactions between students and teachers; the far greater capacity to create and share user-generated content – these technological trends are transforming what it is to be a student.

A new educational economy of attention is arising: the co-presence of face-to-face and online components is breaking down the traditional lecture/tutorial pedagogical model still predominant inside our lecture halls and classrooms (Gourlay, 2012), by radically changing the student's attitude to the acquisition and retention of knowledge. Technologies are training students to read differently – see, for example, N. Katherine Hayle's (2010, 2012) work on how we read and think in the digital age – and so to learn differently. We witness starkly in these developments the shift from notions of learning as the straightforward transmission (by a teacher) and acquisition (by the student) of knowledge, to a more performative learning concerned with the development of cognitive and social processes, to finally a notion of learning as an iterative process of becoming and the integration of knowledge, practical action and being – this is what Ronald Barnett refers to as "an ontological turn" (Barnett, 2004, p. 247). Knowledge, "not reducible to thought or the discursive", is instead "situated within a personal, social, historical and cultural setting, and thus transforms from the merely intellectual to something inhabited and enacted: a way of thinking, making and acting. Indeed, a way of being" (Dall'Alba & Barnacle, 2007, p. 681). Personal mobile educational technologies are crucial to this transformation, to the modelling of this knowing-being that is the intended outcome of higher education today.

## II. Epimetheus in the classroom

I feel there is a gap in the scholarly literature, and it has to do with just how far we have been able to critically interrogate and reevaluate existing models of learning and teaching. Prevailing pedagogical approaches and their supporting bodies of scholarship remain typically conservative and wedded to models based on traditional face-

to-face interactions between students and teachers – often even despite the integration of novel technologies into these practices. I feel as though the literature is a little forgetful, that we are overlooking something. Scholarship on educational technologies is typically comparative, comprising ad hoc case studies comparing learning using some new technological innovation with learning in a more traditional manner, a perfunctory cost-benefit analysis that eschews broader questions about the drastic influences of new technologies on the human – and student – experience, let alone taking account of this ontological turn. Martin Oliver points out this paucity of scholarship on educational technologies, which typically “rests on uncritical or oversimplified accounts of technology” (Oliver, 2012, p. 41), asserting that “technology should not be understood to operate on a causal model; it does not have straightforward ‘impact’ in some simple, mechanical way on the practices that it encounters” (Oliver, 2011, p. 381). I cannot help but feel that Diana Laurillard’s (2002) influential conversational framework exemplifies this trend, with the way it treats educational technologies – particularly personal mobile technologies – as little more than rudimentary tools for the straightforward supplementation or augmentation of traditional pedagogical models. In her later work, despite noting that educational technologies do in fact “shape what is learned by changing how it is learned”, she describes technology as “a shock to the educational system that it has yet to absorb”, potentially overwhelming as “the variety and power of digital technologies probably means they cannot be easily assimilated” (Laurillard, 2012, pp. 2-3), and proceeds then to produce an instrumentalist and functionalist account which leaves aside the most pressing questions of precisely how these technologies are altering the relations between students, teachers and technics – how they are reshaping pedagogy (defined here as “a relational practice through which some kind of knowledge is produced” (Hickey-Moody, 2009, p. 273) and so transforming the student body, both individually and collectively. We need, simply, “to discover new pedagogies for the use of these new technologies to enhance the learning experience” (Herrington et al., 2008, p. 420), and I feel we need urgently to make amends.

And so this paper is in part a polemic, such an uncommon scholarly rhetorical strategy, and one which I hope the conference’s theme of “Rhetoric and Reality” can accommodate. Thinking about rhetoric as a civic art form was best performed by the ancient Greeks, and we can perhaps turn to them for the perfect metaphor to understand our present situation. What I mean to say is that we are like Epimetheus, the brother of Prometheus, twin titans from Greek mythology who were responsible for distributing the traits among the newly created animals. Epimetheus represents “hindsight”, and literally means “after-thinker”, while Prometheus represents “foresight”, literally “fore-thinker”:

Prometheus means he-who-thinks-before, Epimetheus he-who-thinks-after. Before and after. That seems clear enough. If Prometheus was quick and decisive, thinking ahead, his mind leaping swiftly to the essence of things, then Epimetheus must have been slow, perceiving only later or too late where events had been leading and what might have been required of him. His nature was sluggish. He had always to catch up slowly with what had already occurred (Malouf, 1996, n. p.).

The story goes that Epimetheus was responsible for giving each animal a positive trait, but when it was time to give humankind a positive trait, lacking foresight he found that there was nothing left to give. Covering for his brother’s mistake, Prometheus then famously stole fire and the civilizing arts from Zeus, determined that these would be humanity’s positive traits, and later stood trial for his crime. (As punishment, Prometheus is chained to a rock, where his liver is eaten each day by an eagle, regenerating each night due to his immortality.) Prometheus is the hero, ingenious and clever, while Epimetheus is typically portrayed as slow and foolish, a thoughtless body performing thoughtless actions. The fault of Epimetheus is that he initially forgets, and can never make up for this mistake, can never make up this surfeit.

We are like Epimetheus because, when we treat educational technologies as functions simply “bolted on” to or supplementary for traditional pedagogical models, and so negate their creative capacity to be fundamentally transformative, we are after-thinkers. We are after-thinkers because “we do not immediately understand what is being played out in technics, nor what is being profoundly transformed therein”, because we are hardly even now beginning to “understand the process of technical evolution” and “the deep opacity of contemporary technics” we are experiencing in the digital university (Stiegler, 1998, p. 21). We risk in our unconcerned distraction losing, or never receiving, overlooking, forgetting, the most positive traits of these technologies. If we are to overcome this Epimethean mindset, I feel we need to work to understand this personal and mobile technics as it plays out in our lecture halls and classrooms (both actual and virtual) and “what is being profoundly transformed therein” – because, as Donna Haraway notes, “[t]echnology is not neutral. We’re inside of what we make, and it’s inside of us. We’re living in a world of connections – and it matters which ones get made and unmade” (in Kunzru, 1997, n. p.). We need to better understand the multitudinous connections and technical implications which comprise the educational experience, which shape the student body.

### III. Inventing the student body

This is my proposed starting point. In light of both these technological developments and the ontological turn, Sian Bayne and Jen Ross (2013) note the necessity of rethinking the student body: “Technological confusions of the boundary of the ‘conventional’ university are increasingly in evidence ..., asking us to think anew about the ‘student body’ and how its material absence or presence inflects pedagogy, power and institutional formation” (n. p.). What appears missing from the scholarly discourse is a comprehensive philosophical account of “the process of technical evolution” (Stiegler, 1998, p. 21) as it is currently profoundly transforming the object and the subject of the theories and praxes of higher education – the student body.

Contemporary philosophies of technology, collectively critiquing on the one hand anthropocentric or on the other technocentric approaches, will allow us to better apprehend the relation of the human to the technical, the tools of the digital age, and the transformative effects of personal mobile technologies. Two deconstructionist philosophers especially are exemplary for their complication of the ontological relation between bodies and technologies: Bernard Stiegler and Jacques Derrida.

1. Stiegler describes technics – *technē*: craft, technique, praxis, taken to signify any number of supposedly “human” technical or technological prostheses, such as language, memory or time, but also the material tools which became available the moment the human freed her hands by adopting an erect posture – as “the pursuit of life by means other than life” (17). For Stiegler, technics indicates the invention of the human – the notion that, beyond either mere biology or thought, the human “evolves through means other than life, through a coupling with the independent ‘exterior’ evolution of technological objects” (Hansen, 2004, n. p.). It is precisely this break with a purely biological evolution that constitutes the human. Originary technicity is the term used to describe this mutually constitutive relationship of the non-technical entity and the technical supplement. Neither term is actually primary (there is no origin – it is unthinkable, before thought), but the supposedly secondary term (technics) allows the other to be thought, invented. This deconstructive interrogation of the biology/technology binary demonstrates “an artificiality there where the natural founds its priority” (Wills, 1995, p. 16). There is no pure “human”, and no pure “technology”, and technics is “no longer thinkable as a mere prosthesis that is placed in front of life, nature or the human” (Bradley, 2011, p. 14). Now, the “human” does not simply pre-exist its technological supplements, but “the human body ... is itself a kind of prosthetic supplement” (98). This technological prosthesis “is not a mere extension of the human body; it is the constitution of this body qua ‘human’” (152-3). No mere extension or enhancement of enhancing human capacities, the technological prosthesis is that radical otherness constitutive of the “human” self.
2. Derrida speaks of a “logic of technological supplementarity”, declaring that “[t]here is no natural, originary body: technology has not simply added itself, from the outside or after the fact, as a foreign body. Or at least this foreign or dangerous supplement is “originally” at work and in place in the supposedly ideal interiority of the “body and soul”. It is indeed at the heart of the heart” (Derrida, 1995, p. 244-245). Interior and exterior to the body, but also neither, maybe both, the technological supplement marks an addition, an accumulation, and perhaps in this way it is also excessive, marking an exorbitance: “The supplement adds itself, a plenitude enriching another plenitude, the fullest measure of presence. It culminates and accumulates presence” (Derrida, 1997, p. 144). But it also exposes a gap, a lack at the heart of the “natural” or “original”: “But the supplement supplements. It adds only to replace. It intervenes or insinuates itself in-the-place-of; if it fills, it is as if one fills a void. ... Compensatory ... and vicarious, the supplement is an adjunct, a subaltern instance that takes-(the)-place [tient-lieu]” (145). The supplement is typically aporetic, a point of undecidability, “neither a plus nor a minus, neither an outside nor the complement of an inside” (Derrida, 2002, p. 43). Technology-as-supplement interrogates the very limit of the human body; not only can technology not be placed after the human, but it cannot be placed apart or aside from the human. The human – and student – body, ontologically speaking, is defined by this necessarily undecidable interplay between the biological and the technological.

### IV. Afterthoughts

So this is just a starting point. But proposing the mutually constitutive, conceptually and ontologically undecidable relationship of technics to the human, both Stiegler and Derrida already radically complicate our understanding of relations between the student body and educational technologies, forcing the discourse to move beyond its current naïve phenomenographic positivism and infuriatingly reductive functionalism. They also help to lay the theoretical foundation for a radical new techno-ontological model necessitated by both Barnett’s ontological turn and the pervasiveness of personal mobile

technologies, and understanding of the student body as a supercomplex site of biological, technological, socio-material and semiotic connections, both discursive construct and ontological entity. Understanding Barnett's "ontological turn" in terms of both "human" bodies and technical "supplements", it is crucial that we clearly articulate this new techno-ontological model so that we might fully embrace the transformative potential of personal mobile technologies in higher education. Space and time do not permit, and so just what this new techno-ontological model looks like must be the subject of another paper; certainly, there is very rich theoretical material in the writings of Donna Haraway, N. Katherine Hayles and others on posthumanism and the cyborg, and the next step should perhaps be to think about how we might best think about educating this student-cyborg.

Later in life, Epimetheus and his wife Pandora turn out to be the parents of the first mortals; this distracted and forgetful thinking-after is all-too-human from the beginning. But perhaps there are benefits in being like Epimetheus, the after-thinker: "[I]s this really what is intended by thinking-after? Mightn't it equally suggest the opposite? That Epimetheus was not slow but on the contrary impulsive, acting first and only later grasping, by reflection, the significance of what his eager spirit had done" (Malouf, 1996, n. p.). Perhaps it is the too excessive reflection, and the lack of impulse, that most holds back thinking through educational technology.

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