


Education in a 'neoliberalised' online teaching and learning space: Towards an affirmative ethics



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The sudden mass migration of teaching, learning and assessment to the digital terrain because of the COVID-19 pandemic resulted in the global proliferation of scholarship. This scholarship ranges from romantic notions of the opportunity to revivify curriculum and pedagogy in what was deemed an underutilised educational technology (online) resource space to scholarship contemptuous of this newfound romance. This has exposed the potential affordances of online teaching and its adjunctive exclusionary effects. Whilst the authors recognise the short-term benefits of adapting advanced technology for educational purposes, they provoke the question as to the obliterative potential of technology for the human (university academics in this instance) and the non-human/more-than-human. It is, however, without contention that the neoliberal university, driven by the economic viability and sustainability imperative, gives precedence to curriculum delivery and student support to secure degree completion targets even within academic timeframe (year) constraints. As such, it is likely to neglect the cogent matter of the affective as it relates to both academics, students and the non-human. In this conceptual article, Rosi Braidotti's critical posthumanist perspective is drawn upon, offering both critical and affirmative propositions for moving forward in engagement with technologies in emerging educational online spaces. Firstly, critical perspectives are offered on some challenges of the neoliberal contouring and new regimes of accountability and surveillance that appear to have become more efficacious in the digital space. Secondly, it is acknowledged that humans live in a technologically mediated world and need to navigate this world in productive ways. Braidotti's philosophy of affirmative ethics helps us to invigorate affordances of educational technology that are hopeful. This article's contribution lies in alternative imaginings of educational technology, so that technology can be used in ways that advance pedagogical lives and social relations.

Keywords: affirmative ethics; COVID-19 pandemic; critical posthumanism; educational technology; neoliberal university; online education.

Introduction

With the onset of the COVID-19 pandemic and the resultant closure of higher education institutions for extended periods of time, educational technology associated with online education was seen as the primary mechanism to continue with teaching, learning and assessment remotely. The use of educational technology in times of crises is not new in the education landscape. For example, the #FeesMustFall campaign that saw residential university campuses closed for extended periods of time necessitated the pivot to online education and the development of associated infrastructure for students to complete their modules without having to attend classes in person (Walwyn 2020). Before the #FeesMustFall period and the pandemic, many universities had already experimented with hybrid models known as a blended mode of provision (Bernard et al. 2014; Le Grange 2020a). These hybrid models of teaching and learning were in response to a move towards a student-centred approach to higher education, with its evolution located in the advancement of technology that was adapted for education in attempts to find solutions to student throughput, dropout and success challenges. Hence, educational technology was seen as an innovation to both distance and contact teaching, learning and assessment processes in a supportive rather than a dominant mode of delivery. The concept of educational technology is not limited to hardware and software, digital or otherwise, but does include resource accessibility, process issues such as pedagogy and ideological issues related to socio-economic concerns around the nature, form, use and diversity of users, including diversity of access to technology. Khoza (2016) (citing Bansilal 2015) suggested that educational technology be considered as a framework that positions all new technologies on contextual educational goals rather than a definition based on hardware and software. In this article, educational technology is understood to be any form of technology that is used in educational processes. Many advanced

technologies and Internet-based platforms (including Microsoft Teams, WhatsApp and Zoom) that were not primarily or uniquely designed for educational purposes have morphed to become actants in pedagogical processes.

Burns (2020) emphasised that the transition to online education happened rapidly, and some lecturers were given as little as 48 hours to convert study material to online content. This rapid transition from face-to-face to online education exposed major problems in higher education (Obi & Ticha 2021). Some of these problems are inappropriate educational technology, the possibility of lowering the quality of education and 'further entrenching of inequality in an educational system that was already faced with the problem of gross inequalities' (Obi & Ticha 2021:17263).

At the start of the pandemic, it was assumed that technology would bring relief to face-to-face interactions and reduce COVID-19 transmission rates (Alkhalil et al. 2021; Burns 2020). Burns (2020) argues that:

[T]his perspective relies on a 'techno-utopian imaginary that veils the deeply rooted social and political foundations of the pandemic'. It is not merely 'biological' or 'natural', requiring technical knowledge to solve, but emerges from and indeed contributes to socio-political processes. (p. 246)

Burns (2020:247) argued that 'the dominant framing is that technology will "save us"'. Many South African universities wanted to 'save' the academic year (Dlamini & Ndzinisa 2020:54; Le Grange 2020a:2) and 'save lives' (Obi & Ticha 2021:17263). It was believed that 'to ensure the continuation of the smooth running' of online education, lecturers resorted to emergency remote learning (Moluayonge 2020:480). Demuyakor (2021:27) argued that most countries were trying to cope with closures of schools by 'trying out online learning as a way of ensuring that there is continuity of knowledge acquisition amongst learners'. In Ghana, for example, the COVID-19 pandemic revolutionised the use of educational technology in the higher education system (Demuyakor 2021). In countries such as Singapore, it is likely that the COVID-19 pandemic has brought a permanent transition to online education (Watermeyer, Crick & Knight 2021). This transition is in line with the digitalisation of the global economy (Schwab 2017; Unger 2019; Watermeyer et al. 2021). However, there is resistance to this transition or digital transformation of higher education amongst academics (Watermeyer et al. 2021). The sudden mass migration of teaching, learning and assessment to the digital terrain because of the COVID-19 pandemic globally resulted in the proliferation of scholarship, ranging from romantic notions of opportunity (Verhoef, Du Toit & Du Preez 2020) to revivifying the curriculum and pedagogy in what was deemed an underutilised educational technology (online) resource space (Passey 2019), to scholarship contemptuous of this newfound romance (Teräs et al. 2020).

Having access to educational technology does not guarantee a revolutionised online classroom. A systematic approach that is informed by curriculum principles is

needed to have an impact on the quality of online education (Dlamini & Ndzinisa 2020; Khoza & Biyela 2020). In their editorial notes, Fataar and Badroodien (2020) described the use of educational technology during COVID-19 as a rapid vision of default authority in educational life under the pandemic, irrespective of the unequal terrain that dominates its scope of vision. Institutions across the globe made educational technology, uncritically, a dominant pandemic pedagogy, irrespective of the infrastructure and capacities of institutions to transition into emergency remote teaching, learning and assessment modes of continuing with education (Cicha et al. 2021; Fataar & Badroodien 2020).

Drawing from the given limited exposition, two key issues emerge. Firstly, pandemic pedagogy (Fataar & Badroodien 2020) dominated by educational technology is very far from providing equitable access to technology and infrastructure to support the use of technology within a starkly unequal society such as South Africa. Secondly, educational technology became the uncritical vision for education, fuelling a neoliberal agenda of performativity, accountability and demand (Peters et al. 2020). The authors' concern is with the unquestioning belief that 'technology will save us', not only the 'saving of the academic year' during the pandemic but the idea that technology is a panacea for societal and planetary ills, including the solution to many educational ills.

Therefore, in this conceptual article, a critical perspective is offered of educational technology as it is unfolding in present times and the purported central role it is taking in facilitating teaching, learning, assessment and research within higher education. Although separated in social constructions (particularly constructions produced in Western thought) humans, non-human nature and technology are materially connected. Elements extracted from the earth in assemblage with human labour are used to develop the hardware of advanced technologies (Reading 2014). Furthermore, the effects produced by technologies are determined by the assemblages that they form part of, and broadly speaking, there are assemblages that thwart life and assemblages that advance life. The authors' critical (dis)position in this article is in relation to assemblages of control, neoliberal assemblages in which technologies in interaction with humans give rise to forms of surveillance and accountability and the domestication of the self and destruction of non-human nature. Assemblages of control give rise to the negative form of power, *potestas*, which is hierarchical, colonising, imposed from the outside and results in unfreedom. The first section of the article, following the introduction and brief comment on methodology, captures the authors' critical (dis)position in relation to assemblages of control. However, it is argued that alternative assemblages could be constructed where the effects of such assemblages of humans, non-human nature and technology (later referred to as *zoe/geo/techno* relations) could be productive in the sense that they advance life, decolonise and open up pathways for the becoming of lives (including pedagogical lives). In this respect, this article offers a mediated perspective

in which the distinctions between humans and technology collapse and that humans can imagine new ways of how technology can transcend its usage in assemblages of control. In the second major section of the article, educational technology is discussed as well as Braidotti's critical posthumanist perspective, which is followed by parting thoughts on affirmative propositions for educational technology that are generated for higher education.

Methodological (dis)position

This article's conceptual exploration is framed within the realm of speculative philosophy, more specifically, Braidotti's (2013) critical posthumanism. Braidotti's (2013) critical posthumanism is informed by her anti-humanist roots and aims to develop affirmative perspectives on the posthuman subject, that is, to affirm the productive potential of the posthuman predicament, as humans are caught between the Fourth Industrial Revolution and Sixth Extinction. Genealogically, Braidotti's critical posthumanism can be traced back to post-structuralists, the anti-universalism of feminism and the anti-colonial phenomenology of Frantz Fanon and his teacher Aimé Césaire. Braidotti (2013) argued that what all these intellectual endeavours have in common is a sustained commitment to work out the implications of posthumanism for mutual understandings of the human subject and humanity as a whole. Importantly, she points out that the situated cosmopolitan posthumanism produced by these intellectual endeavours are supported by both the European tradition and by 'non-Western' sources of moral and intellectual inspiration. Braidotti (2013) pointed out that another powerful source of inspiration for present-day reconfigurations of critical posthumanism is ecological and environmentalist. This relates to the larger sense of the interconnections between self and others, including the more-than-human-world (Le Grange 2018). When one does critical posthuman work, the aim is to understand the actual and to hypothesise the virtual (what could be) (Koole 2020). In the article, two methodological moves are made: (1) conceptual critique of the actual, (2) generating affirmative propositions of the virtual (what could be).

Educational technology and the neoliberal university

Technological advancements in all spheres of human existence have been a phenomenon since time immemorial. There is little contention that technology has significantly improved the quality of life of people over time and that it continues to have enormous potential to change the conditions in which people live. This brought about scholarship exploring not only the close relationship between technology (e.g. robotics) and people – relationships that move beyond mere physical interaction but also embrace cognitive relations (Hinks 2021). Technology and its advancement in the 'infinite' realms of human existence, however, is not innocuous or untainted, as the track record of human atrocity-related technological abuse has shown (Mahan 2021). Whilst the need to dissuade unhealthy and

unproductive technophobia is recognised (Nimrod 2018), one must remain cognisant of technology's obliterative potential. Of concern in this article is the extent to which the selection and application of technology has rendered territorialising effects (Deleuze & Guattari 1987) – effects that purport to enrich the world of academia (teaching, learning, research and scholarship), but at the cost of a reconfiguring that has steadily eroded what William Von Humboldt (1767–1835) envisaged for the university. The Humboltian conception was one of academic freedom, where academics had freedom of choice as to curriculum and pedagogy and students also enjoyed autonomy of choice of teacher and curriculum (Karseth & Solbrenke 2016). Importantly, Humbolt emphasised 'the need for universities to keep a distance from the market in order to encourage and maintain a critical academic awareness' (Karseth & Solbrenke 2016:220). The Humboltian vision has, however, waned in recent years with the boundaries between universities and the corporate world becoming much more porous (Duruflé, Hellmann & Wilson 2018).

This article is concerned with how technology has been used to subvert the Humboltian vision for universities and the traditional work of university academics, in particular, and how technology might be used to (re)imagine what could be. The authors remain acutely aware of the critique of adopting an exclusively anthropocentric gaze – that is, an embedded focus on the (human) academic as the bearer of the brunt of technology's obliterative potential. It is, however, recognised that educational technology and the assemblages within which it is conceived, fabricated, marketed, consumed and eventually disposed of have adverse and undesirable consequences for the more-than-human. Its spillover effect or externality is felt in the value chain (from fabrication to disposal). The manufacture of computers, mobile phones and other educational technological devices comes at some cost to the environment – the obliterative effect of the mining industry (waste and effluent) is evident in the long and notorious history of ecological devastation (Marimuthu et al. 2021). Similarly, little attention is paid to the enormous energy consumption that is associated with educational technology usage – energy that largely relies on the use of fossil fuels.

In an insightful play on the word 'technology', Ong (2007) described how an intangible ideology (neoliberalism) might work as a mechanism of control and manipulation. He asserted that:

[N]eoliberalism ... is a technology of governing 'free subjects' that co-exists with other political rationalities. The problem of neoliberalism – that is how to administer people for self-mastery ... for optimal gains in profit. (p. 3)

A layered complexity that this article attempts to expose is the entanglement of neoliberalism as technology (of control) with advances in technology that sustains such control. In a fascinating piece titled *Postscript on the Societies of Control*, Deleuze (1992) cautioned more than three decades ago that:

[S]ocieties of control operate with machines of a third type, computers, whose passive danger is jamming and whose active one is piracy and the introduction of viruses. This technological evolution must be, even more profoundly, a mutation of capitalism ... (p. 5)

Capitalism here is an economic system in which societal control gets increasingly administered through markets.

In the last two decades, the relation between educational technology and the objective of South African universities have altered. This alteration has largely been driven by a strong market-like (Ball 2012) disposition – an ideological adjustment that in its early days of infiltration (the period following the advent of democracy) had moved with a fair degree of stealth, but now exhibits itself, in plain unapologetic sight, in almost every sphere of higher education institution in South Africa. Educational technology was deemed a key enabler in the social project of emancipation by enabling access to and success in higher education for those (students) who were socially and economically excluded. That educational technology has delivered on this ‘promise’ is a moot point. The COVID-19 pandemic made face-to-face programme delivery unworkable and has enabled the flourishing of markets for educational technology (Teräs et al. 2020). The neoliberal university machinery adapted existing technology with relative ease to enable syllabus completion and student throughput and output with only relatively minor adjustments to the academic calendar. This move to a completely online mode of programme delivery was deemed necessary and effective in accomplishing the market goal of graduate throughput. The impact, however, on students, curriculum and pedagogy has been disparate, with poor students in remote rural areas having severely restricted access to basic technology and data. For academics unfamiliar with the digital space for programme delivery, the expedited transition continues to present as a challenge – what receives little critique, however, is the subtext of this move. The issue, then, is the extent to which educational technology is understood as an enabler of and for learning versus its expedient use to keep the neoliberal university machinery functioning (Teräs et al. 2020). The longstanding critique of educational technology’s reductionist effect on pedagogy also remains a cause for concern (Teräs et al. 2020).

At another level, it might be argued that online teaching platforms such as Moodle and Blackboard, whilst affording a physically and socially distanced space from which to offer university programmes, have also had the effect of rendering both student, teacher, curriculum, pedagogy and assessment more visible – akin to a Foucauldian post-panopticon of sorts (Veroz 2013). Accountability and surveillance regimes are now regularised in the online space – digital records of all programme delivery and student participation activity are automatically generated for public scrutiny (judgement) of performance. Educational technology, in essence, then, has simply enabled a more sophisticated regime of perpetual surveillance and control – a case of performance in a virtual, yet very visible space.

Neoliberalism’s preoccupation with performance assessment, however, has become somewhat unstuck in the online space. Despite the sophistication of different learning platforms and constantly evolving methods of attempting to verify test-taker authenticity, currently educational technology has not been able to develop a fool-proof system to prevent cheating on performative tests in contexts where the test-taker is far removed from the point of test administration (García-Peñalvo et al. 2021). It does raise the issue as to the usefulness and effectiveness of high-stakes once-off performance assessment and the need for the use of educational technology for more qualitatively disposed modes of assessment and learning.

At a macro level, however, the rapid swing towards the commodification of university education (as marketable knowledge packages) with economic utility value has altered the character of university education. Graduate attributes, for example, a neoliberal conception (Wald & Harland 2019) that speaks to the extent of the articulation of the competence set of the university product (student) with the expectations of the market (commerce and industry) has become part of common-speak unchallenged performative discourse. The application of neoliberal principles as they relate to university governance is increasingly evident (Bleiklie 2018). The need to survive in a competitive neoliberal market for university education has seen university financial managers and human resource managers now securing powerful seats at the proverbial academic table – at university senates, a space that was once the preserve of academe. These non-academic entities have, over the years, systematically infused industry-inspired models for the management of academic personnel, for example, developing and implementing ‘sophisticated’ performance management systems designed to quantify and measure the rich qualitative work of academe. Accountability, surveillance and performance regimes for university academics are commonplace in South African universities (Maistry 2015). Of concern for this article is the extent to which educational technology is implicated in performance pedagogy, where entrepreneurial subjects engage a pedagogy and academic culture enabled through technology (Hall 2016) that is driven by a performance discourse – time-to-completion, throughput and output.

The authors attempt in this article to debunk the notion of (education) technology’s neutrality in the neoliberal pedagogic transaction. In recognising educational technology as a key more-than-human actant in the Deleuze and Guattari (1987) higher education assemblage, alongside (less visible) actants such as neoliberal ideology and human actants, the incorporation of other desires that open other pathways (trajectories of flight) are envisioned:

[N]ew assemblages ... (as) fit(ting) together all the ways in which the world is characterised by flows, connections and becomings, whose functioning logic is about folds than structures, more complex than linear, more recursive than dialectical, more emergent than totalising... are more multiple and ephemeral ... unstable and heterogeneous ... enabling us to unpick the structures, dynamics and ruptures ... mediating seriously, and with due agency, the non-human ... an alternative ontological unit for thinking the social. (p. 149)

Educational technology and Braidotti's critical posthumanist perspective

Braidotti (2013) depicted the current times as a posthuman condition. The posthuman condition concerns a qualitative shift in thinking about what the unit of reference for human now is, given how human lives are imbricated with other inhabitants of the planet and with advanced technologies. Human lives have, of course, always been imbricated with other inhabitants of the planet. Haraway (2003) argued that the distinction between biophysical and social is flawed, and she depicted the synthesis between the two by her concept of natureculture. Appreciating this synthesis has become important in contemporary times, because human arrogance has produced false dualisms between nature and culture that have resulted in human destruction of the Earth and the possibility of the Sixth Extinction. As technologies produced by humans have advanced, human lives have become entangled with such technologies. Haraway (2003) went as far as to aver that humans have become cyborg, because the distinction between humans and technology has already collapsed and there is no turning back. Braidotti (2013) therefore proposed that the posthuman condition is characterised by a posthuman predicament. Le Grange (2020b) summarised Braidotti's posthuman predicament as follows:

The (post)human predicament relates on the one hand to a historical moment in which global society finds itself, where the human has become a geological force capable of affecting all life on Planet Earth, giving rise to the Anthropocene. And it is in the Anthropocene that we now contemplate what it might mean to live in the post-Anthropocene. On the other hand, the predicament relates to the fact that advanced technologies produced by humans might have capabilities of destroying all life on the planet. In other words, the predicament relates to how one adopts the positive dimension of the (post)human condition by embracing all of life and its interconnectedness, and, at the same time, how one resists the potential negative effects of advanced technologies (robotics, drones, artificial intelligence, biological warfare, commodification of the human body, and ecophages) without being technophobic. (p. 142)

Although the focus of this article is on technology, it is argued that human, biophysical and technology cannot be separated and so acknowledge the important synthesis of the three in what Braidotti (2019:158) termed 'zoe-geo-tech relations'. The latter concept will be returned to later in the article.

In a world dominated by the Anthropocene (human impact on the planet), humans and technology have advanced life through using technology for biotechnology, robotics, artificial intelligence, nanotechnology and the Internet of Things as some of the ways to make life comfortable, compatible and convenient for humans. These technological advancements have also accelerated what Haraway (2015) termed Capitalocene. Coined by Jason Moore in 2009, this term rests well with Haraway (2018) because she deems the humanist universalism of Anthropocene as false and arrogant. Capitalocene signifies neoliberal capitalism as the

core of immense and irreversible destruction for humans and non-humans because it is driven by processes:

[F]or making wealth through radical simplification, rooted in global transportations of peoples, plants, animals and microbes and in slavery, colonialism, hetero-normative familialism, racism and other forced systems of production and reproduction. (Haraway 2018:80)

Such assemblages of human and biophysical technology are destructive because these ensembles are driven by human arrogance and greed through the negative form of power, *potestas*.¹ These assemblages invite justified critical responses, such as what is captured in the critique of technology in the earlier section of this article that focuses on neoliberalism.

Staying with Haraway for a moment, in order to overcome Capitalocene, Haraway (2018:79) argued that people should become chthonic, 'of and for the earth, of and for its unfinished times'. She avers that life on Earth should not have a Capitalocene gaze but rather a Chthulucene one that recognises 'a kind of time-place for learning to stay with the trouble of living and dying in responsibility on a damaged earth' (Haraway 2018:81). When life on Earth is not dominated by a neoliberal capitalist agenda, it could demonstrate and perform 'the material meaningfulness of earth processes and critters' as entangled 'myriad temporalities and spatialities and myriad intra-active entities-in-assemblages – including the more-than-human, other-than-human, inhuman and human-as-humus' (Haraway 2018:81–82). What this could mean is that as cyborg, humans become entangled with the tensions created by a world that stands in the cracks of power forces (such as advanced technologies) of a more destructive Capitalocene and that recognises the Chthulucene as one pathway to navigate this space in a manner that is productive. In thinking about this, one might ask: How does one accept that 'we are cyborg', namely that human lives are entangled in advanced technology and will continue to be entangled? How can advanced technologies be engaged with in ways that are not destructive to humankind and planet, so as to advance all of life productively? Haraway opens the door to the affirmative ethics that Braidotti (2019) argued for.

As mentioned, for Braidotti (2013), the posthuman predicament contemplates how people might engage productively with technologies when these technologies have the potential to destroy all of life. The posthuman predicament is 'an opportunity to empower the pursuit of alternative schemes of thought, knowledge and self-representation' so that generative experimentation may be undertaken to 'think critically and creatively about who and what we are actually in the process of becoming' (Braidotti 2013:12). The natureculture continuum creates one possible avenue to think about who and what people are becoming in the posthuman condition. As a continuum, nature and culture are not seen as binaries but rather

1. *Potestas* is often contrasted with *potentia*, which is an immanent power: a productive power that connects and advances life. These Latin words are now commonly used in academic literature to distinguish between the two forms of power. The French words for *potestas* and *potentia* are *pouvoir* and *puissance*, respectively. The distinction between the two forms of power has its origins in the Fifth Part of Spinoza's (2001, first published in 1677) seminal work entitled *Ethics*.

multiple assemblages, 'the self-organising (or auto-poietic) force of living matter' that blurs any boundaries between the given (nature) and constructed (culture) so that they are in intra-action with each other (Braidotti 2013:3). Boundaries between nature and culture have been blurred or displaced by the complex configurations entangled in scientific and technological advances and in ways that have shifted the anthropocentric gaze that has long sustained life on earth (Braidotti 2013:145). This continuum invokes a new image of the subject and of knowledge as 'a complex assemblage of human and non-human, planetary and cosmic, given and manufactured' (Braidotti 2013:159). A matter-realist image which accounts for the workings of power in advanced and cognitive capitalism, grounded in specific locations and immanent relations, is proffered as it foregrounds transversal connections amongst and within the material and symbolic (Braidotti 2013:159). Matter-realism, according to Braidotti (2013:158), is central to understanding the natureculture continuum because it recognises all life (human and all other) 'as a non-essentialist brand of contemporary vitalism and as a complex system'. Viewed in this way, it makes it possible to invigorate lines of flight that creatively embrace the challenges of advanced technology, without giving into melancholy or panic at its potential to destroy all life, as the planet remains on the brink of ecological disaster and the Sixth Extinction of both human and non-human inhabitants is looming.

Braidotti (2019) positioned herself within critical posthumanism as framed by feminist theory and neo-materialist philosophy. In other words, she affirms and advances feminist theory, not only within the social constructivist approach but also through emphasising the non-human, acknowledging the vital force present in all life, which she encrypts as *zoe* (life of all living beings). Braidotti's (2022) posthuman feminism renders woman, man, technology imperceptible or molecular – all modes of life are placed on an immanent plane so that there is no molar entity that enjoys ontological privilege. Critical posthumanism necessitates the importance of learning to think differently about what people are in the process of becoming in an ever-changing world engendered by advanced technologies, climate change and capitalism. The unprecedented degree of technological intervention and intimacy humans have developed with technology, 'cannot be reduced simply to an acute case of technological mediation' because it is planetary and multi-scalar and 'it affects social and environmental ecologies and individual physic and shared emotional landscapes' (Braidotti 2019:3). Humans live in a technologically mediated world that cannot only be understood, challenged or even embraced as intellectual or discursive, because it also evokes tensions, paradoxes, anxiety and excitement on an affective level. The 21st century presents a 'multi-dimensional complexity' that recognises an affective relationality between humans, technology and all other forms of life that yearns for 'a sustainable present and an affirmative and hopeful future'

(Braidotti 2019:3). Braidotti's (2019:156) critical posthumanism presents a highly generative moment underpinned by affirmative ethics 'as a collective practice of constructing social horizons of hope, in response to the flagrant injustices, the perpetuation of old hierarchies and new forms of domination'. One aspect hereof is about becoming posthuman. When humans become posthuman they invigorate affordances of advanced technologies that are hopeful through decentring *Anthropos* [human as distinct and superior species] and *bios* [life of humans organised in society] in favour of *zoe*-*geo*-*techno* relations as a transversal entity that is 'fully immersed in and immanent to a network of human and non-human relations' (Braidotti 2019:158). When *Anthropos* and *bios* are decentred, then the human is removed from its ontological pedestal and placed on an immanent plane with animals and non-humans, *bios* becomes *zoe* and *Anthropos* becomes *zoe*-centred egalitarianism. Assemblages in which *zoe*-*geo*-*techno* relations are invigorated are the ones where the human (as *Anthropos* and *bios*) becomes imperceptible.

The affirmative ethics that Braidotti (2019) argued for are a *zoe*-driven ethics of affirmation. Such an affirmative ethics requires people to think differently about themselves, that ethics cannot be restricted to relations with other humans, but open to intra-actions with non-human, posthuman and inhuman forces. It is an ethics that overcomes moralistic notions such as the normative distinction between good and evil. Good and evil are replaced by that between affirmative and negation, which could also be expressed as negative and positive affects and that an affirmative ethics does not deny negativity but instead reworks it outside dialectical oppositions (Braidotti 2019). The posthuman subject therefore invigorates lines of connection with other humans and non-humans, recognising the vital force of life present in all entities, which makes such entities (modes of life) endure and continue so as to become other-than-itself. The posthuman subject does not deny that human lives are entangled with technology and that advanced technologies produce negative affects in neoliberal capitalist assemblages. Instead, the posthuman subject reworks such negative affects and invigorates lines of connection and desire that empowers so that life (in all its forms) is advanced. As Braidotti (2019) wrote:

[A]ffirmative ethics is a clinical practice about detoxing from the poison of un-freedom, servitude and betrayal of our inner nature as dynamic entities of desire. The ethical good is accordingly equated with radical relationality aiming at affirmative empowerment. (p. 167)

In the context of higher education, the ethical project is to rework assemblages where education has become the handmaiden to technology and where *Anthropos* thrives. Such reworking creates new assemblages in which both the human (as *bios*) and technology become imperceptible. In other words, assemblages of *zoe*-*geo*-*techno* relations can be generated that ensure the enduring and becoming of all life (including pedagogical lives).

Affirmative propositions for educational technology in higher education

It was observed earlier in the article that the usage of educational technology is generous, so that it includes all technologies that are used in advancing education in universities. Although the initial impetus for writing this article related to the increased use of technology in teaching, learning and assessment with the pivot to online education during the COVID-19 pandemic, affirmative propositions shall be generated for educational technology use that transcends the pedagogical domain.

An assemblage in which neither humankind nor technology dominate could open new possibilities to rethink and reimagine educational technology in the university. Hopeful propositions are provided and not a rejection of technology or a technophobic standing. The intent is not to provide answers or solutions, but to hypothesise what could be. The authors' propositions are generative and productive (positive force of power, *potentia*) so as to rethink and reimagine how people might 'escape' the neoliberal university and the uncritical acceleration of online learning. 'Escape' is placed in scare quotation marks because the neoliberal university cannot simply be wished away. Posthuman desires might have to be invigorated within the neoliberal university. 'Escape' from neoliberalism might only be possible by working through it. It is believed that invigorating hopeful affordances of educational technology is one way to create new assemblages in which both the human (as *bios*) and technology become imperceptible and in so doing ensure the enduring and becoming of all life (including pedagogical lives).

The first proposition relates to the reality that the neoliberal university cannot be wished away. Working through the neoliberal means that as lecturers (and as students), all the competencies (technical and pedagogical) needed to navigate the neoliberal university should be developed. The neoliberal university, as has been the case with all other incarnations of the university, is not homogeneous, and there always exists within the university multiple desires, whether potentially (virtually) or in actualised forms. Being able to competently navigate the neoliberal university enables one to see its cracks, and in Bottrell and Manathunga's (2018) terms, to seek out the cracks to prise it open. The first proposition is that posthuman desires can (and should) be invigorated in the neoliberal university through standing in its cracks and prising it open.

In teaching, learning and assessment in higher education, the focus is on the human subject, the competencies the human subject acquires, its achievements and so forth. The human and social sciences are concerned with social constructions of the human subject, and in natural sciences disciplines such as anatomy and physiology, the human subject is viewed as biological. However, Braidotti (2022) argues that the

posthuman subject cannot be reduced to biology or a social construction and is a site of becoming where its relations and affects take primacy. The second proposition is that greater ecological consciousness and the reality of a technologically mediated world serve as entry points for understanding posthuman subjectivity, so that higher education pedagogy could become the unfolding of desires that generate positive relations with technology and the non-human, so that life is enhanced and sustained. The posthuman subject is ecological, embodied, embedded, enacted and extended (Le Grange 2018). Reimagining the subject as ecological (in a technologically mediated world) also opens up new opportunities for research in the humanities and education, whereby the unit of analysis shifts from human subjects to posthuman assemblages that humans form part of.

Posthuman inquiry is by definition transdisciplinary and calls for disciplinary boundaries and the binary of natural sciences and the human and social sciences to be transcended. Le Grange (2017) pointed out that in the contemporary university assemblages of disciplinary knowledge are seen to be fragmenting and losing coherence, giving rise to transdisciplinary knowledge networks. Many universities across the world now have transdisciplinary programmes, units or schools, as professors are witnessed leaving their disciplinary homes full-time or for part of their working weeks. In such units or schools, research is conducted and courses are taught on transdisciplinarity and themes such as sustainability. The third proposition is that these developments provide further opportunities to invigorate posthuman desires and to resist potential harmful constructions of transdisciplinary assemblages such as transhumanist ones. Scientists such as the CEO of SpaceX, Elon Musk, place faith in science and technology to transcend humans beyond their natural abilities through technological advancements of brain-machine inferences, such as the development of robot surgeons (Willmott 2022).

Posthuman inquiry involves ethics that is relational. The fourth proposition is that posthuman theory, which invites a (re)turn to *zoe-geo-techno* relations, opens up possibilities for reimagining ethics in higher education, both in actual research studies and how ethics is managed in the university. In most university ethical risk mitigating processes, ethics research committees operate in silos, where separate committees exist for research on or with animals, human research and biomedical research. Opportunities now exist for rethinking such arrangements.

When educational technology is an embodied screen in support of critical posthuman scholarship, it must accept that 'thinking and knowing are not the prerogative of humans alone' and how universities imagine knowledge creation should aptly embrace 'the coexistence of multiple organic species and technological artefacts alongside each other' (Braidotti 2019:101). *Zoe*, the non-human vital force of life, is the 'transversal entity that allows us to think across previously segregated species, categories and domains' (Braidotti 2019:101). Lykke (2018) foregrounds

postdisciplinarity for posthuman knowledge and education practice in universities. One reason for this is because of its aspirations for 'radical transformations of current knowledge production' through transgressive ways of producing academic knowledge and engaging in educational activities that 'destabilise, deconstruct and disrupt the hegemony of disciplines and [other] classic academic divides' that compartmentalise knowledge into distinct disciplines or other canonised categories (Lykke 2018: 332–333). The fifth proposition is that *zoe-geo-techno* egalitarianism, which is central posthuman feminist theory makes possible much-needed rethinking and reimagining of different institutional modes of organising, new curricula and methodological tools. The possibilities vested in transversal conversations are invoked as hopeful and affirmative to create new assemblages in which both the human (as *bios*) and technology become imperceptible.

The authors do not wish to conclude by dumping what was said in a nutshell for the reader. Critical questions have been raised regarding the myth that educational technology might be the panacea, and an attempt has been made to break the frame of neoliberal capitalist higher education assemblages; affirmative propositions of *zoe-geo-techno* relations are offered. Much more could be said on this topic and more affirmative propositions could be proliferated. The reader is invited to join the authors in doing so as new ways of becoming in higher education are mapped in the (post) Anthropocene.

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