

Impossible Dreaming: On Speculative Education Fiction and Hopeful Learning Futures

Shandell Houlden

George Veletsianos

Abstract¹

In this paper we grapple with the possibility of rethinking education futures by arguing for the continued use of speculative education fiction in critical education studies, a method which has the potential for radical imagination. However, we note that as a research method such fictions need to rely less on what we identify as pessimistic visions of the future, which are visions exploring themes such as disconnection, lack of autonomy and sovereignty, and technological, corporate, state and/or authoritarian control, as these visions and themes are currently over-represented in recent publications using this method. We further demonstrate the limits of these thematic visions by tracing the relationship between the ways in which pessimistic storytelling, related as it is to apocalyptic storytelling, risks reinforcing inequality, especially with respect to settler colonial injustice. Alternatively, we propose using this method to help develop hopeful futures. These are futures shaped by themes such as connection, agency, and community and individual flourishing, and suggest a turn to the genres of hopepunk, solarpunk, and visionary fiction as models of storytelling grounded in hope which imagines more liberatory education and learning futures.

Introduction

Global education systems face enormous economic, demographic, political, environmental, and social challenges, leading to numerous global institutions to call for the reimagining of these systems, especially in light of the profound and negative impacts of the pandemic, increasing global conflict, and the ongoing and anticipated impacts of climate change (e.g., OECD 2022; UNESCO 2021; United Nations 2020). One of the ways education researchers have responded to such calls is to engage speculative research methods, which afford creative and exploratory ways to examine, produce, and rethink both futures and relationship to futures, with this type of work mushrooming since the Covid-19 pandemic. No doubt, the uncertainty and instability generated by the Covid-19 pandemic has been a substantial cause for this engagement. Within a short few weeks in March and April of 2020, life as it was lived radically changed, including how education was practiced, as public health mandates put entire nations, including their schools, into lockdown and transitioned to emergency remote learning. While much could be said about how this moment has impacted cultural understanding of ourselves and the world, we suspect it's too early to say

¹ This is a preprint. Published version available at <https://doi.org/10.1007/s42438-022-00348-7>

anything with real certainty, except that what was once thought to be given is no longer given, and this awareness has created a kind of opening, an invitation, even an insistence upon questioning how we move, come together, and learn in the world, and what futures might be opening before us.

While such questioning isn't necessarily new, it emerges now with an urgency inflected by the myriad and compounding crises unfolding around the world. Calls to avoid returning to the way things were have been made from many quarters, with some emphasizing that a return to business as usual means a return to unjust systems of oppression which disproportionately harm Black, Indigenous, and people of colour both within the context of education and beyond (Brand 2020; Veletsianos 2021). With respect to education systems, many have argued that such a return is unwelcome given the inequality within, and unsustainability of those systems, replete as they have been with capitalist and colonialist agendas (Hall 2021).

There is perhaps also a deepening unease with operating under the assumption that a return to some pre-catastrophe time is even possible (at least for those for whom life prior to the pandemic was not experienced as catastrophe), as the global instability which followed the initial waves of the pandemic has made painfully evident. Even without the pandemic, given the rapidly increasing and irreversible effects of climate change impacting more people in more locations across the planet, business as usual, whatever shape that might have once taken, appears increasingly and more obviously untenable (IPCC 2022). Thus, the context of this historical moment, particularly as a nexus of social and environmental uncertainty and possible collapse, has perhaps fostered the conditions for which speculative methods are uniquely suitable, and thus has contributed to their rising popularity (Ross 2017, 2021). Indeed, such methods are particularly appropriate for the 'not yet-ness' of moments characterized by emergent technologies and emergent education practices more generally (Ross and Collier 2016; Veletsianos 2016).

In this paper we first offer a brief introduction to speculative methods used in education research with an emphasis on fictional forms of storytelling that explore education futures. While there are many different forms and techniques of speculative methods (Ross 2017), because we are interested in those which specifically imagine education futures, we are interested in work that uses stories, or the 'recounting of a series of events' in which change occurs (Magilchrist 2021), and which are necessarily fictional in nature, i.e., that uses invented events and people, as futures exist as imagined possibilities in the first place. These qualifiers—futures-oriented and fictional—are not accidental, and as we explain next in the paper, are connected to the possibility of the radical imagination they engender, and the space this creates for hopeful futures.

We have focused on examples of this type of research which have been published in 2020 and beyond and can thus be considered in light of the pandemic influences mentioned above; however, this research method itself is not entirely new and further research could endeavour to track how these stories have changed over time. Next, we consider themes within this recent research. Drawing on this thematic analysis we argue that this type of research needs to pay greater attention to and imagine more hopeful education futures, which we strategically define as those that make space for the possibility of truly just, livable, and even joyful lives for everyone on this

planet. Imagining these hopeful education futures is necessary, to avoid reinforcing structures of injustice and inequality such as settler colonialism, and to invite more radical imagination into our work as a means to seed the worlds we want to create and live in.

Speculative Research Methods in Education

While speculative research methods in education may appear to be predominantly about examining the possible futures of education, engagement with the openness and emergent nature of futures isn't simply about what might be or could be. While such engagement can propose possibilities for what could happen, both in terms of risks or threats, as well as in terms of positive change, it also informs our understanding of present moments as the very conditions for those possible futures. Indeed, an argument could be made that the imagined possibilities of futures so impact the way we behave in the present that futures are indeed made manifest now, and thus futures fictions are not strictly an imagined or fictional endeavour but are concurrently somehow nonfictional in nature.

Accounting for such arguments in terms of the specific relationship between fiction and nonfiction vis-a-vis imagined futures and lived presents are not the focus of this paper. Nevertheless, both lines of inquiry—inquiry into the future and the present—are possible simultaneously with imagining fictional futures given that futures are never just about the future: as Ross (2017: 220) notes, ‘the pedagogical futures we envisage inform us about what matters now in this field, what issues and problems we have inherited and what debates define what can and cannot currently be thought about or imagined’. This sentiment is echoed elsewhere in the literature: Costello and Girme (2021: 26), for example, note that while speculative fiction takes ‘us out of the known’, it is not about *arriving* at the unknown, but bringing us ‘indirectly back to where we already are. Its purpose is not to know the future but to predict the present.’ Similarly, Hillman et al. (2020: 8) use speculative methods both to think through the possible trajectories of current technologies, as well as to ‘take diagnosis of the present as a starting point’. In other words, through imagining the future, we deepen our understanding of where we already are as a point of departure for engaging this moment as well as those possible futures.

Like many other critical education researchers in recent years, we are particularly interested in methods using fictional storytelling to imagine the future. We keep our definition of this method broad as noted above, but certainly it overlaps or intersects with the methods of social science fiction (Jandrić and Hayes 2021; Selwyn et al. 2020) and design fiction (Cox 2021). Drawing on an established body of work in the social science literature, Selwyn et al. (2020: 92) define social science fiction as the creation of stories ‘related to key themes and ideas from contemporary sociology and how they might play out in different local contexts and cultures’, with a focus on what doesn't yet exist. Design fictions, as Cox outlines,

create a speculative space in which to raise questions about whether a particular technology is desirable, the socio-cultural assumptions built into technologies, the potential for

different technologies to make different worlds, our relation to technology in general, and indeed our role in making the future happen. (Cox 2021: 3)

Neither type of fiction insists upon speculation about or imagining futures per se, but instead emphasizes possibilities and potentialities, which may or may not already exist. That is, speculative thinking doesn't require an orientation to futures—we can speculate about many things (e.g., what would happen if next week a disease killed almost all of one sex of the human species?)—and there is indeed a growing body of work in this vein (Suoranta et al. 2021). However, both social science and design fiction do emphasize the use and development of related types of imagination: the former highlights sociological imagination, and the latter foregrounds critical imagination, which are key tools and practices for deepening understanding of the worlds we live in.

A third type of imagination particularly interests us. This type is situated at the intersection of imagining futures and using fictional methods for research: radical imagination, which can subsume both the sociological and critical imaginations, and which is necessary for not just understanding worlds but for making positive change and resisting oppression in the worlds we seek to create.

Radical Imagination and the Power of Story

We use radical imagination in a related sense to social movement scholars Khasnabish and Haiven (2014: 3, emphasis original), who initially identify it as a courageous 'ability to imagine the world, life and social institutions not as they are but as they might otherwise be' and that it is not just about dreaming futures, but about 'bringing those possible futures "back" to *work* on the present, to inspire action and new forms of solidarity today'. In other words, radical imagination is intended to work upon the present moment while it engages with the future. Furthermore, these authors highlight that the radical imagination isn't strictly something an individual possesses, but something groups do together, meaning it is a communal effort and an act of community. They further argue that to be radical, imagination must be oriented to the foundations of systems, to an understanding that, for example, even as we work for something like reform, that reform must alter the fundamental tenets of how systems operate. Notably, radical imagination isn't by their definition necessarily used to foster positive change towards collective justice, but can also be aimed at changes that benefit only a few in radical ways, i.e., it's dependent on the goals and dreams of the people and movements practicing it.

By focusing on fictional futures stories as tools for radical imagination, we are intentionally excluding more scenario-based futures research, where we define scenarios as more instrumental in their objectives for strategic planning and 'are used to encapsulate contrasting possible futures' (Cox 2021: 3). Examples of scenario-based writing are often found in literature that explores education futures with an audience that typically includes administrators and other stakeholders in decision-making positions (e.g., Alexander 2020; Pelletier et al. 2022), but have also been used to aid in reflection on learner circumstances (e.g., Veletsianos et al. 2022) as well as a pedagogical

strategy (e.g., Ertmer et al. 2019). In other words, the contexts often delimit the imaginable futures. Instead, we take futures fiction as more exploratory, and thus less bound to institutional outcomes and norms, which better enables the exercise of radical imagination, thereby inspiring and ideally participating in the kinds of changes we hope for our educational systems. To illuminate further the differences between the two, we juxtapose them in Table 1.

<p>Scenario-based future from 2022 Educause Horizon Report (Dickson-Deane et al. 2022)</p>	<p>Speculative fiction future excerpt from ‘Subroutine’ in <i>Educational Fabulations: Teaching and Learning for a World Yet to Come</i> (Conrad & Wiebe 2022).</p>
<p>Constraint scenario: ‘With the continued increases in severe weather events and catastrophic wildfires over the past 10 years, as well as ongoing shortages in important natural resources, new social and political movements have emerged to help organize and spur global efforts to improve planetary health. College and university leaders have had to align institutional goals, practices, and cultures with these efforts and offer educational experiences explicitly in service to global well-being. It’s an era of renewed global awareness and sacrifice, as institutions learn to operate more efficiently, to embrace their own responsibility for being good stewards of our natural resources, and to educate their students and equip them to be global leaders committed to and capable of addressing the world’s ecological challenges.’ (Pelletier et al. 2022: 37)</p>	<p>Gene stared off to the side. ‘Focus, focus—the last thing I need is them collecting data for me being off-task.’ His neuroactivity levels went down, the taskload energy bars slipping dangerously close to the redline. ‘Focus focus.’ Gene looked back to the screen—a question in the chat bubble— thank Christ.</p> <p>It was one of the learners assigned to him this cycle, Ryan.</p> <p>‘Hello, this is Gene—welcome to LearningHorizons. How may I support your success today?’ (Nellis 2022: 81)</p>

Table 1. An example of a scenario-based future and speculative fiction future

As Dunne and Raby (2013: 3) argue, speculative thinking is an ‘aid to imaginative thought’ which enables critique and shaking off of ‘reality’s grip on our imagination’. In the context of

scholarly work, reality's grip on our imagination is deeply tied to power and the highly regulated and enclosed ways in which we produce knowledge *in* the academy and *for* the academy (Khasnabish and Haiven 2014)—an enclosure that seems to be entirely at odds with the possibility of just education futures. Such enclosure functions as a kind of institutional disimagination machine, which is to say as a space of foreclosure of thinking alternate possibilities, which 'short-circuit[s] the ability of individuals to think critically, imagine the unimaginable, and engage in thoughtful and critical dialogue' (Giroux 2014: 27). Practices which sustain the disimagination machine include disciplinary norms, canon, methodological constraints, the fundamentals of what counts as sensible knowledge vis-a-vis meaningful 'data', and the university *on balance* as 'a cruelly optimistic and life-negating social form' (Amsler 2021: xx).

Some education futures fiction has the potential to disrupt the machine. With such fiction, both in producing it and reading it, we enter a creative space in which the imagination can expand, can go a bit feral, where ideas are no longer reducible to their disciplinary context, and potentially become unruly as invitations to something with fewer illusions of control, with more disruptive prospects, something more akin to the possibilities suggested by Moten and Harney's (2013) undercommons of the university, in which knowledge isn't strictly beholden to the professionalization and norms of the academy. In other words, there is liberatory potential in the radical imagination.

To be sure, liberation isn't without responsibility, and in fact the two are mutually constitutive. There is a powerful agency enacted in using fictional stories as a research method, particularly if we deepen our understanding of stories and storytelling as something more than just a method in the service of the production of scholarly knowledge, but instead as an ontological endeavour. Stories aren't just objects to think with, or data for analysis, but are in fact the place where we meet and create ourselves, each other, and the world, all in relation to each other and the world. That is, story is what we are made of, and story is always in the process of *doing* something (Anson 2020). Ojibwe writer Richard Wagamese argues:

All that we are is story. From the moment we are born to the time we continue on our spirit journey, we are involved in the creation of the story of our time here. It is what we arrive with. It is all we leave behind. We are not the things we accumulate. We are not the things we deem important. We are story. All of us. (Wagamese in Janssens 2017)

Wagamese isn't the only Indigenous writer to know and share this. King (2003: 2) has said something similar, noting that the 'truth about stories is that that's all we are'. Stories, in other words, are ontological. Machado de Oliveira (2021: xiii) further reminds us that though 'we are socialized to treat stories as tools of communication that enable us to describe reality, prescribe the future, and accumulate knowledge ... stories are living entities that emerge from and move things in the world'. This means that though we can create taxonomies and spectrums for our stories (e.g., from fiction to nonfiction; from short story to novel; from everyday stories to ceremonial stories; from personal narratives to cultural narratives; from hero to carrier bag stories

(Le Guin 1989) etc., and though specific stories and forms of stories have unique culturally specific roles, they all to varying degrees operate with more or less power to ‘move things in the world’.

Taking these assertions seriously offers us insight into the power of story as a tool, a means, a practice, an opportunity, a gift for radical imagination and cultural change, while also reminding us of the deep responsibility that comes with storytelling. The kinds of stories we tell are not neutral, and can never be isolated from the worlds we live in and would or will live in. This is perhaps why Wagamese (Wagamese in Janssens 2017) reminds us that it’s important to consider what types of stories we create, to create ‘the best possible story we can while we’re here; you, me, us, together’, and that by sharing our stories ‘we see each other, we recognize our kinship—we change the world, one story at a time’ (Wagamese in Janssens 2017).

The Stories That Dominate

The question then becomes what kinds of stories do we, as education researchers, but more importantly as beings made by and living stories together, want to tell about the possible futures for education and learning together on this planet? What kinds of stories ought we to tell, given the ontological power of story? What responsibility do we have with these stories, and what do we *want* to do with them? These are not meant to be prescriptive questions. They are provocations in order to consider where we have been so far with these education futures fictions, and where else we might go, and why. What are the stories currently being told offering us, who do they belong to, what futures are they seeding, and what presents do they obscure? In other words: What are these stories doing?

For the purposes of better understanding the stories being told, we collected as many examples of research using speculative education fiction (whether called social science fiction, design fiction or something else altogether) we could find at the time of writing (August 2022). We did so to read all of the stories and assess what themes dominate the published imaginings of education scholars using this method. The data collection process was not systematic, rather it started by sifting through recent publications of known authors working with these methods, reviewing references, and Google Scholar searches, including terms ‘speculative research methods’ combined with ‘education’. As noted, we excluded scenarios-based speculative publications from this analysis. Since writing this paper, we have uncovered further relevant readings as well, though they are not included in this analysis, as this area appears to be attracting growing interest. Further, the literature we examined excludes stories that are told in other formats, such as those written for broader audiences in the mass media (e.g., Silova 2021), or stories told orally.

In future research, it would be worthwhile to undertake a systematic review given the expansive ways in which this type of research is proliferating. This could deepen the thematic analysis undertaken here and track how this ecology of futures fictions and other speculative methods in education is developing, both in the scholarly literature being published in a variety of journals and beyond. Since writing we have uncovered further relevant readings as well, including

further articles in forthcoming special issues in *Policy Futures in Education*² which develops this kind of work, though it is not included in this analysis (e.g., Benz 2021; Fjellman and Haley 2021). We identified thirteen relevant papers and one edited book, all published in 2020 or later. We include a * next to this corpus in the reference list. The format of fictions in these articles vary quite extensively, with some being complete short stories with rich worldbuilding, and some being shorter dramatic scenes. Some of these papers include multiple fictions.

The analysis was completed by one author using a literary approach to assess the degree to which the fictions under review were thematically oriented towards hopeful or pessimistic futures. Hopeful futures, as we understand them in this context, explore themes such as connection, agency, and community and individual flourishing. Pessimistic futures explore themes such as disconnection, lack of autonomy and sovereignty, and technological, corporate, state and/or authoritarian control. Analysis revealed that the latter far outweighed the former. It's worth noting that while in the current form this analysis is quite binary in its approach, a more formal systematic analysis could explore further relevant themes, including different types of utopia and dystopia, for example, as well as approach the analysis through a more formal coding process. A number of papers also self-designate the kind of futures they imagine, which we note as well.

Of the thirteen papers, only two can be easily characterized as hopeful futures per our definition (Bell et al. 2020; Molitorisz 2020). The first, by Bell et al. (2020), which is published in *Transnational Curriculum Inquiry*³ rather than a specifically education technology journal, focuses less on the digital technologies we often discuss in our field, and instead brings to the fore different social technologies, which remain relevant to imagining the future. The second, the author self-identifies as post-dystopic, meaning the events of the story take place after the dystopia of the 2020's when a more hopeful future has emerged (Molitorisz 2020).

Five papers were less easy to categorize: the paper by Macgilchrist et al. (2020) contains three fictions, one of which has more hopeful themes, while the other two are pessimistic. Similarly, Cox's (2021) article on AI similarly has multiple fictions, most of which focus on the challenges that AI implementation might mean to various aspects of academic institutional operations. Costello's (2022: 4-5) recent foray into speculative fiction is difficult to characterize as either hopeful or pessimistic, particularly given its more experimental form as hybrid autoethnographic fiction focused on 'the strangeness of the lived realities of education', where strangeness is not by definition bad or good, harmful or supportive, but perhaps usefully disorienting. The paper by Hillman et al. (2020: 13) also has multiple short fictions, which the authors do identify as scenarios, but as these scenarios unfold across three decades and feature a number of characters, they come together to create a not overly hopeful story of the future. Finally, Jandrić and Hayes (2021: 3) suggest their fiction is 'neither utopian nor dystopian; it simply presents one possible future which [they] find interesting for analysis'. As our analysis is focused on themes of hopeful and pessimistic futures, we read this paper through that lens, rather than through consideration of its relationship to utopias and dystopias, but again note that this could be

² See <https://journals.sagepub.com/home/PFE>. Accessed 30 September 2022.

³ See <https://ojs.library.ubc.ca/index.php/tci>. Accessed 30 September 2022.

another way of analysing these types of fictions, and which would offer different insights into the type of things this kind of work is doing. In that context, we conclude that given that the story takes place in a time of an increasingly uninhabitable planet, when military generals guide education systems meant to augment humans to prevent and win large-scale wars between the West and the East, we include it with the pessimistic futures papers, of which there are eight.

Such futures include near futures (Selwyn et al. 2020), in which students are managed and surveilled by ‘companion’ robots (Collier and Ross 2020) and live-in supervisors (Krutka et al. 2021), as well as farther futures in which post-truth realities have resulted in the collapse of higher education as we know it, as well a ban on reading and the written word altogether (Costello et al. 2020; Costello and Girme 2021).

The recent spate of education futures fiction therefore seems to lean towards pessimistic futures. These futures aren’t, by and large, catastrophic in nature—we found no papers in which billions of people die over the next fifty years as Machado de Oliveira (2021) explores in one education futures scenario, for example. Rather, for the most part, they read as though in the future if things aren’t great for everybody, they could probably be worse for some. There is perhaps good reason for this, as many of these papers outline.

Selwyn et al. (2020), for example seek to provide alternative visions to the transformation-oriented techno-optimism that pervades both scholarly literature and mainstream educational technology discussions, which is a topic that Selwyn has long highlighted, explicitly exemplified by his editorial, ‘*In praise of pessimism—the need for negativity in educational technology*’ (Selwyn 2011). Costello and Girme’s (2021) story, which literalizes the student body as a figure through which we can understand the violence of datafication, uses a kind of body horror to prompt readers to think about ways to avoid grim futures. What many of these stories share in common is a desire to show what could happen following the logics and agendas of the current moment. They are, in effect, in the vein of ‘if this goes on’ thought experiments (Gaiman 2014), that ask us to imagine and feel what current circumstances and technologies could do *to* our education systems (and ourselves), rather than *for* our education systems, as the techno-optimists would otherwise suggest.

However, even if such pessimistic futures fictions are no doubt meant to be in the service of something other than the futures of authoritarianism, ignorance, and control, as so many of these fictions depict, they may not be as helpful as we might think. In the introduction to Freire’s re-released *Pedagogies of Hope*, Giroux (2021: 2) asserts that Freire ‘understands pessimism as the underside of apocalyptic thinking and functions largely to depoliticize people’. Pessimistic visions may not go as far as apocalyptic ones in terms of the level of destruction and devastation they depict, but pessimism and apocalypticism are not unrelated, as they can be thought of in terms of degrees of difference rather than kind. Indeed, Frederic Jameson (2003: Para. 38) once said, ‘someone said that it is easier to imagine the end of the world than to imagine the end of capitalism’. The difficulty of imagining the end of capitalism, always already a racist colonial project itself (Gilmore 2022), before the end of the world, belies a lack of imagination itself a deep symptom of the entrenchment and resiliency of white colonial institutions and racist ideology.

Imagining the end of the world understood in this manner, is in some ways a depoliticized act. Further, as Freire (2021: 16) reminds us, ‘hope is an ontological need’, and when hopelessness ‘becomes a program, [it] paralyzes us, immobilizes us. We succumb to fatalism, and then it becomes impossible to muster the strength we absolutely need for a fierce struggle that will recreate the world.’ When apocalyptic or even merely pessimistic visions dominate, we must ask ourselves what that work is doing and for whom.

Fortunately, these too are not new questions. Where there is apocalypticism in our stories (and its relative pessimism), as Potawatomi scholar Kyle Whyte (2018) argues, there is a deep risk and high likelihood of colonial logics at play, in which settler narratives of a catastrophic future erase Indigenous experiences of historical and ongoing colonial catastrophe. As Whyte suggests, Indigenous ancestors would look upon many of the current conditions of Indigenous people and already see apocalypse for their descendants. Anson (2020) clarifies this position when she names ‘settler apocalypticism’ as a way for settler colonialism and the people who benefit from it to obscure, and perhaps forget, the extractive roots taken hold in land stolen through the destruction and attempted annihilation of Indigenous people and lifeways.

As both Whyte and Anson note, this apocalypticism shows itself in fictional narratives that depict the collapse of climate as the end of, if not *all* things, many of the things that make certain kinds of life (i.e., settler life) liveable and meaningful. Too often in such stories, Whyte observes, the people whose lives are centred, the protagonists who continue to survive, are those whose ancestors’ actions created and participated in the very systems which originated the catastrophe in the first place, and, most saliently, there is little account for this history in such futures.

It may seem a stretch to suggest that pessimistic education futures fiction is doing the same thing as fictions that rely on apocalyptic tropes that naturalize settler futurity in the face of disaster. Stories about digital surveillance of educators are not the same as stories that feature desperate cannibalism in a post-apocalyptic nightmare, a la Cormac McCarthy’s (2006) *The Road* and its like. Nevertheless, Giroux (2021) notes that these stories are related, and while the intention may not be to reinforce settler colonial or imperial perspectives, caution around imagining the permanence and increasing power of colonial institutions, including educational institutions like schools and universities, must be a concern for scholars who aim to have their work contribute to more liberatory futures.

Such liberatory futures, to be just, must be anti-colonial, as liberation is impossible in colonial and imperial regimes (Mignolo and Walsh 2018), which fundamentally turn on power-over dynamics, including power over peoples, and power over land, waters, and nonhuman species, rather than power with (Assante 2006). The trends dominating the literature to date do not seem to be working toward that end, even if the authors of this work intend otherwise. If that is indeed the case, what else can be done with the speculative fiction method in education research to work toward liberatory and just futures?

Hopeful Stories and The Creation of Hopeful Futures

While the fictions present in the literature and the critical framing that surround them don't claim themselves as radical, we urge education researchers to consider that, given the profound power of story especially as understood in terms of non-Western and specifically Indigenous ontology, the stories we do tell offer a space of possibility that can and *should* engage in and develop more hopeful futures than trends in the literature suggest. If hope is an ontological need, as Freire suggests, and stories are ontological in nature, there is a powerful opportunity in this work. These stories, in other words, should be far more intentional about exercising radical imagination, particularly if those involved in this research have a sincere interest in disrupting the reach of the disimagination machine, particularly if imagination is to be taken seriously for the transformative potential it has. Indeed, Imarisha (2015: 4) reminds us, 'once the imagination is unshackled, liberation is limitless'. What could be more hopeful than that?

To be clear, this is a kind of hope that 'requires clarity—seeing the troubles in this world—and imagination, seeing what might lie beyond these situations that are perhaps not inevitable and immutable' (Solnit 2004: 22). The 'if this goes on' of speculative thinking can indeed be oriented towards liberatory visions, if we so choose, without being overrun by the vested interests of technocapitalists, as is often the logic behind avoiding (techno)optimism in critical education technology scholarship. The 'if this goes on' *can* be a reaching for a kind of hope, perhaps better stated as 'when this ends', or even 'as this ends', as Machado de Oliveira (2021) suggests in thinking about the end of Modernity/Coloniality as a hospicing process that we can participate in right now. Ross (2017: 218) notes the hopeful possibilities of speculative methods like we are discussing here when she says digital education researchers 'can offer counter-visions which address, for example, issues of equality, diversity and social justice'. Even among all of the pessimism in so many of these articles is an apparent desire for these counter-visions of hopeful futures (Selwyn et al. 2020). Costello et al. (2020: 625) for example, invite other perspectives, suggesting that '[p]erhaps there are brighter post-human histories, which shine light on different paths, avoiding the deadly pedagogies of the depressed'.

We want to push this desire further and suggest that it is actually an ethical imperative for those of us interested in education futures, and these particular methods, to do the hard work of imagining what we think of as possible hopeful education futures, and that these hopeful education futures must be fundamentally anticolonial and antiracist. To be certain, it *is* hard work to imagine hopeful futures with all of the ongoing suffering, extinction, and destruction, to imagine a way forward to something hopeful, especially given the feeling of ineluctable permanence late-stage capitalism fosters, and the crises unfolding all around us. Solnit (2004: 7, emphasis added) says as much about hope: 'Hope is the story of uncertainty, of coming to terms with the risk involved in not knowing what comes next, which is *more demanding* than despair and, in a way, more frightening.' This isn't necessarily a tame kind of hope, an easy kind of feeling. Hope is not without teeth, and can include feelings of hate and rage, but hate and rage directed at the systems of oppression (McLaren and Jandrić 2020). Indeed, hope alone, Kohl (1998: 10) also tells us, while 'not sufficient to provide a good life or even guarantee of survival, it is a necessity'. He adds, 'to teach hope, you yourself must be hopeful', which does not preclude anger.

We are not suggesting that the speculative fictions cited above are entirely without hope. Instead, given the power of story, we argue that it is necessary to be intentional to create fictions that generously invite hope through imagining hopeful futures. To be clear, this is not a comfortable kind of hope, or drawing from Berlant (2011), cruelly optimistic writing, to wrap us up into passive uselessness. Macy and Johnston (2012: Para. 11) differentiate between types of hope stating that '[p]assive hope is about waiting for external agencies to bring about what we desire. Active hope is about becoming active participants in bringing about what we hope for.' This argument echoes Freire (2021: 16), who says hope 'is necessary, but it is not enough; ... [it] demands an anchoring in practice. As an ontological need, hope needs practice in order to become historical concreteness.' In other words, much like love, this hope 'is a practice', 'something we *do* rather than *have*' (Macy and Johnston 2012: 12) (XX, emphasis original), an argument which is also highlighted in Σαμαράκης (1954) collection of short stories illustrating the anxieties that existed in post-World War II Greece, in which he emphasizes people's search for hope amidst despair.

Learning From and With Hopeful Fiction Genres

Fortunately, there are already established literary forms that we can work with as models to facilitate this practice of active hope. In recent years, the related genres of hopepunk, solarpunk, and visionary fiction have begun to take hold in the broader science and speculative fiction literature. Romano (2018: Para. 7) describes hopepunk as a storytelling trend and literary movement in which 'choosing hope becomes both an existential act that affirms your humanity, and a form of resistance against cynical worldviews that dismiss hope as a powerful force for change'. Given the name 'hopepunk' by Alexandra Rowland in 2017, the genre continues to develop and with it certain characteristics have emerged as common, including 'a weaponized aesthetic of softness', an orientation to building just societies and systems, the role of healthy community and just community building, an ongoingness to the process of change, i.e., that the fight for improvement does not end, and 'a sense of self-awareness about weaponizing kindness and optimism' (Romano 2018: Para. 16).

This isn't naive optimism. As Hull observes in the context of hopepunk and climate change,

[t]he narratives we construct, the stories we tell ourselves must acknowledge that, while there's a scientific consensus that the atmosphere is warming due to our fossil fuel emissions, many aspects and extents of climate change remain uncertain. Writing non-apocalyptic climate change narratives can make room, intellectually and emotionally, for our failures to act sooner. Some things will be lost; much already has been. (Hull 2019: Para. 10)

What such narratives enable then is a recognition of the tragedies that have come and are yet to come or are already inevitable⁴, while also embracing the possibility for something other than just pain to emerge. In short, there is no denial of the grief of this moment, the weight of history, and that the future remains emergent and worth fighting for.

Similarly, according to Hannah Steinkopf-Frank (2021: Para. 3), solarpunk is ‘a more optimistic regenerative vision of the future’, and ‘imagines an end to the global capitalist system that has resulted in environmental destruction seen today’ (Para. 4). Key themes include decentralization, justice for all, and regenerative ecological and agricultural practices. A kind of degrowth is also emphasized, in which understanding that development should be decoupled from growth because ‘more is not better’ (Flynn 2017), a perspective already emergent in critical education technology scholarship (Piattoeva 2021; Selwyn 2021).

Visionary fiction, a term coined by author and organizer Walidah Imarisha, circulates in similar waters, but can include more fantastical elements. In a recent interview she says it ‘reimagines our world without prisons, poverty, and inequality’ (Glover 2020: 1:16), emphasizes the perspectives and stories of marginalized people, and centres Black voices and the voices of other people of colour. Visionary fiction is a term for fiction ‘that would enable us to build new just worlds’ from the perspective of radical community organizing and activism (Glover Blackwell 2020: 09:24). It is about refusing to accept what people say is impossible, and rooting ‘in what we actually want for the future’ (Glover Blackwell 2020: 13:30). In short, rather than giving our energy and resources to imagining disaster (whether climate disaster or socio-cultural disaster), these approaches invite us to create something worth fighting for, rather than against.

There are also significant subgenres of science and speculative fiction and their related theories that have much to offer to imagining education futures beyond pessimism and apocalypticism, including cyberpunk, Afrofuturism, Africanfuturism, Indigenous futurisms, queer and queer ancestral futurisms, and disabled futurisms, for example, which offer compelling alternative narratives for imagining futures beyond the subtle under-analysed perpetuation of the status quo scholars like Whyte (2018) and Anson (2020) critique. While such genres might not on the whole be explicitly connected to hope as we are using it here or in the way hopepunk, solarpunk, and visionary fictions are, they offer rich alternatives to those types of pessimistic futures inflected by (however intentionally or not) settler and even white futurity. Future research into the speculative methods examined here, and speculative methods in education more generally, could stand to benefit from deep engagement with these perspectives where they are absent, particularly as an effort to further disrupt the disimagination machine discussed above and to develop critical futurities and embrace the futurity of another (Philips 2021).

A Concluding Call

The work of visionary fiction, hopepunk, and solarpunk, imagines worlds not forgetful of the flow of histories in which we find and create ourselves, but instead recognizes and honours the struggle

⁴ In the sense that certain aspects of climate change are inevitable given the relationship between the already released atmospheric carbon and its resultant outcomes.

and the ancestors that have brought us here, while also directing the incredible power of our imaginations, and thus our movements towards something other than continued oppression and despair. It doesn't just make space for anticolonial and antiracist perspectives, but *begins* with the ongoing undoing of colonial and racist structures of power, driven by the experiences and voices of those historically marginalized to the outside. These are future stories of Black and Indigenous people, and all other people of colour. These are queer and disabled future stories, not just for the sake of inclusion, but because to imagine otherwise is to fail to appreciate that, as Leah Lakshmi Piepzna-Samarasinha (2018: Para. 9) reminds us, the 'brilliance of disability comes from [the] innovation and commitment to not leaving each other behind'. While at times this may feel impossible, as Imarisha further contends, impossible dreams are necessary. She reminds us that

all real substantive social change was considered to be utterly unrealistic at the time, people who are trying to make it, we're told again and again, this is a fantasy, this will never happen ... And folks rejected that, again and again and said, we will dream impossible dreams and we will change this entire world if necessary to make them reality. And that's what they did. (Glover Blackwell 2020: 12:53)

The stories that we ought to tell in education research need to do this impossible dreaming. They need to practice this hopeful work as a refusal of the disimagination machine of the academy, as a refusal to reinforce settler apocalypticism (and its cousins white supremacy, ableism, and cis-hetero-patriarchy) in these times of demise and transformation. They need to become a part of enabling the end of such systems. These stories don't have to be about education technology in any conventional sense of what that might mean but might rather foreground (or perhaps background) the challenging postdigital technological realities of this historical moment in order to better consider what living in, and through, and with, catastrophic climate collapse and increasing existential risk means now and for future humans and nonhumans on this planet.

These stories might come in many forms [let your imagination run wild, let your heart rewild (Costello 2022)]: stories that don't just highlight injustice but also consider and entertain the beauty and messiness of healing and transformative justice (Dixon & Piepzna-Samarasinha 2020); stories that slow us down and offer what Bayo Akomolafe (2020) calls sanctuary; stories that invite us to better understand the relationship between praise and grief (Prechtel 2015); stories that enable us to recognize ourselves and each other, and to bear witness even when we can't recognize ourselves and each other; stories that are so powerful they change us and thus change culture. If speculative education fiction and critical education research more generally has anything to offer to the worlds of what might be, let it be this.

Funding

This research was undertaken, in part, thanks to funding from the Social Sciences and Humanities Research Council and the Canada Research Chairs Program.

References

- Akomolafe, B. (2020). A rehearsal of the concept of making sanctuary. The Emergence Network. <http://www.emergencenetwork.org/a-rehearsal-of-the-concept-of-making-sanctuary/>. Accessed 27 August 2022.
- Alexander, B. (2020). *Academia next: The futures of higher education*. Baltimore, MD: John Hopkins University Press.
- Amsler, S. (2021). Foreword. In R. Hall, *The hopeless university: Intellectual work at the end of history* (pp. xix-xxv). Exeter: Mayflybooks.
- Anson, A. (2020). “‘Master metaphor’: Environmental apocalypse and the settler states of emergency. *Resilience: A Journal of the Environmental Humanities*, 8(1), 60-81. <https://doi.org/10.1353/res.2020.0037>.
- Asante, M. (2006). Foreword. In G. J. Sefa Dei & A. Kempf (Eds.), *Anti-colonialism and education: The politics of resistance* (pp. ix-x). Rotterdam: Sense.
- *Bell, R., Downey, A., Noriega, A. F., & Pyrke, C. (2020). Speculative fictions and curricular futures: Envisioning rural educational utopia. *Transnational Curriculum Inquiry*, 17(2). <https://doi.org/10.14288/tci.v17i2.195967>.
- Benz, T. (2021). A possible review by the European ministry of education in 2050—by a reluctant manager of Europe’s path towards educational dependency. *Policy Futures in Education*. <https://doi.org/10.1177/147821032111049755>.
- Berlant, L. (2011). *Cruel optimism*. Durham, NC: Duke University Press.
- Brand, D. (2020). On narrative, reckoning and the calculus of living and dying. Toronto Star, 4 July. <https://www.thestar.com/entertainment/books/2020/07/04/dionne-brand-on-narrative-reckoning-and-the-calculus-of-living-and-dying.html>. Accessed 29 September 2022.
- *Collier, A., & Ross, J. (2020). Higher education after surveillance? *Postdigital Science and Education*, 2(2), 275–279. <https://doi.org/10.1007/s42438-019-00098-z>.
- *Conrad, D., & Wiebe, S. (Eds.). (2022). *Educational fabulations: Teaching and learning for a world yet to come*. Cham: Palgrave Macmillan. <https://doi.org/10.1007/978-3-030-93827-7>.
- *Costello, E. (2022). Rewild my heart: With pedagogies of love, kindness and the sun and moon. *Postdigital Science and Education*. <https://doi.org/10.1007/s42438-022-00318-z>.
- *Costello, E., Brown, M., Donlon, E., & Girme, P. (2020). ‘The pandemic will not be on Zoom’: A retrospective from the year 2050. *Postdigital Science and Education*, 2(3), 619–627. <https://doi.org/10.1007/s42438-020-00150-3>.
- *Costello, E., & Girme, P. (2021). ‘Choice Is Yours’: Anatomy of a Lesson Plan from University V. In A. MacKenzie, I. Bhatt, & J. Rose (Eds.), *The Epistemology of Deceit in a Postdigital Era: Dupery by Design* (pp. 265–281). Cham: Springer. https://doi.org/10.1007/978-3-030-72154-1_15.
- *Costello, E., Soverino, T., & Girme, P. (2022). Books (are not like people): A postdigital fable.

- Postdigital Science and Education*, 4(2), 519–539. <https://doi.org/10.1007/s42438-021-00256-2>.
- *Cox, A. M. (2021). Exploring the impact of Artificial Intelligence and robots on higher education through literature-based design fictions. *International Journal of Educational Technology in Higher Education*, 18(3), 3. <https://doi.org/10.1186/s41239-020-00237-8>.
- Dixon, E., & Piepzna-Samarasinha L. L. (2020). *Beyond survival: Strategies and stories from the transformative justice movement*. Edinburgh: AK Press.
- Dunne, A., & Raby, F. (2013). *Speculative everything: Design fiction and social dreaming*. Cambridge, MA: The MIT Press.
- Ertmer, P. A., Quinn, J. A., & Glazewski, K. D. (Eds.). (2019). *The ID casebook: Case studies in instructional design*. Abingdon: Routledge.
- Fjellman, A.-M., & Haley, A. (2021). The plague of privatization: A future analysis of the zombification of education. *Policy Futures in Education*. <https://doi.org/10.1177/14782103211029491>.
- Flynn, A. (2017). *On the need for new futures*. Solarpunks, 5 May. <https://medium.com/solarpunks/on-the-need-for-new-futures-91d2430a5470>. Accessed 25 August 2022.
- Freire, P. (2021). *Pedagogy of hope: Reliving pedagogy of the oppressed*. London: Bloomsbury.
- Gaiman, N. (2014). Ray Bradbury, *Fahrenheit 451*, and what science fiction is and does. In N. Gaiman (Ed.), *View from the cheap seats: Selected non-fiction* (pp. 177–182). New York: William Morrow.
- Gilmore, R.W. (2022). *Abolition geography: Essays towards liberation*. Brooklyn, NY: Verso.
- Giroux, H.A. (2014). Introduction: Paulo Friere’s pedagogy of hope in dark times. In P. Friere, *Pedagogy of hope: Reliving pedagogy of the oppressed* (pp. 1–17). London: Bloomsbury.
- Giroux, H.A. (2014). *The violence of organized forgetting: Thinking beyond America’s disimagination machine*. San Francisco, CA: City Lights Publishing.
- Glover Blackwell, A. (2020). Visionary fiction: Writing our future (2.3) [Audio podcast episode]. *Radical Imagination*, 9 April. <https://radicalimagination.us/episodes/visionary-fiction>. Accessed 25 August 2022.
- Gough, N. (2012). Complexity, complexity reduction, and ‘methodological borrowing’ in educational inquiry. *Complicity: An International Journal of Complexity and Education*, 9(1). <https://doi.org/10.29173/cmplct16532>.
- *Hillman, T., Bergviken Rensfeldt, A., & Ivarsson, J. (2020). Brave new platforms: a possible platform future for highly decentralised schooling. *Learning, Media and Technology*, 45(1), 7-16. <https://doi.org/10.1080/17439884.2020.1683748>.
- Hull, A. (Nov. 22, 2019). *Hopepunk and solarpunk: On climate narratives that go beyond the apocalypse*. LitHub, 22 November. <https://lithub.com/hopepunk-and-solarpunk-on-climate-narratives-that-go-beyond-the-apocalypse/>. Accessed 27 August 2022.
- Imarisha, W. (2015). Introduction. In a.m. brown & W. Imarisha. (Eds.), *Octavia’s brood* (pp. 3-6). Edinburgh: AK Press.

- IPCC. (2022): Summary for Policymakers. In H.-O. Pörtner, D. C. Roberts, E. S. Poloczanska, K. Mintenbeck, M. Tignor, A. Alegría, M. Craig, S. Langsdorf, S. Lösschke, V. Möller, & A. Okem (Eds.). *Climate Change 2022: Impacts, Adaptation and Vulnerability. Contribution of Working Group II to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change*. Cambridge: Cambridge University Press. <https://www.ipcc.ch/report/ar6/wg2/>. Accessed 30 September 2022.
- Jameson, F. (2003). Future city. *New Left Review*, 21. <https://newleftreview.org/issues/ii21/articles/fredric-jameson-future-city>. Accessed 30 September 2022.
- Janssens, C. (2017). Remembering Richard Wagamese. *Sheridan Sun*. 21 March. <https://sheridansun.sheridanc.on.ca/2017/03/21/remembering-richard-wagamese/>. Accessed 22 August 2022.
- *Jandrić, P., & Hayes, S. (2021). Postdigital education in a biotech future. *Policy Futures in Education*. <https://doi.org/10.1177/14782103211049915>.
- Khasnabish, A., & Haiven, M. (2014). *The radical imagination: Social movement research in the age of austerity*. London: Bloomsbury.
- Kohl, H. R. (1998). *The discipline of hope: learning from a lifetime of teaching*. New York: Simon & Schuster.
- King, T. (2003). *The truth about stories: A Native narrative*. Toronto: House of Anansi Press.
- Knox, J. (2022). The Metaverse, or the serious business of tech frontiers. *Postdigital Science and Education*, 4(2), 207-215. <https://doi.org/10.1007/s42438-022-00300-9>.
- *Krutka, D. G., Caines, A., Heath, M. K., & Staudt Willet, K. B. (2021). Black Mirror pedagogy: Dystopian stories for technoskeptical imaginations. *The Journal of Interactive Technology and Pedagogy*, 20. <https://jitp.commons.gc.cuny.edu/black-mirror-pedagogy-dystopian-stories-for-technoskeptical-imaginations/>. Accessed 22 August 2022.
- Le Guin, U. K. (1989). *Dancing at the edge of the world. Thoughts on words, women, places*. New York, NY: Grove Press.
- Macgilchrist, F. (2021). When discourse analysts tell stories: What do we ‘do’ when we use narrative as a resource to critically analyse discourse?. *Critical Discourse Studies*, 18(3), 387-403. <https://doi.org/10.1080/17405904.2020.1802767>.
- *Macgilchrist, F., Allert, H., & Bruch, A. (2020). Students and society in the 2020s: Three future ‘histories’ of education and technology. *Learning, Media and Technology*, 45(1), 76-89. <https://doi.org/10.1080/17439884.2019.1656235>.
- Machado de Oliveira, V. (2021). *Hospicing modernity: Facing humanity’s wrongs and the implications for social activism*. Berkeley, CA: North Atlantic Books.
- Macy, J., & Johnston, C. (2012). Active hope in a changing world. *Utne Reader*, 6 September. <https://www.utne.com/mind-and-body/active-hope-ze0z1209zsch/>. Accessed 21 August 2022.
- McCarthy, C. (2006). *The Road*. New York: Alfred A. Kopf Inc.

- McLaren, P., & Jandrić, P. (2020). Revolutionary Critical Rage Pedagogy. In M. F. He & W. Schubert (Eds.), *Oxford Encyclopedia of Curriculum Studies*. New York: Oxford University Press. <https://doi.org/10.1093/acrefore/9780190264093.013.1124>.
- Mignolo, W., & Walsh, C. (2018). *On decoloniality: concepts, analytics, and praxis*. Durham, NC: Duke University Press.
- *Molitorisz, S. (2020). 2020. *Surveillance and Society*, 19(4), 480-488. <https://doi.org/10.24908/ss.v19i4.15170>.
- Moten, F., & Harney, S. (2013). *The undercommons*. Edinburgh: AK Press.
- Nellis, R. C. (2022). Subroutine. In D. Conrad & S. Wiebe (Eds.), *Educational fabulations: Teaching and learning for a world yet to come* (pp. 79-87). Cham: Palgrave Macmillan. https://doi.org/10.1007/978-3-030-93827-7_6.
- OECD. (2022). *Trends shaping education 2022*. Paris: OECD Publishing. <https://doi.org/10.1787/6ae8771a-en>.
- Pelletier, K., McCormack, M., Reeves, J., Robert, J., & Arbino, N. with Al-Freih, M., Dickson-Deane, C., Guevara, C., Koster, L., Sánchez-Mendiola, M., Skallerup Bessette, L., & Stine, J. (2022). 2022 EDUCAUSE Horizon Report, Teaching and Learning Edition. Boulder, CO: EDUCAUSE. <https://library.educause.edu/-/media/files/library/2022/4/2022hrteachinglearning.pdf?la=en&hash=6F6B51DFF485A06DF6BDA8F88A0894EF9938D50B>. Accessed 27 August 2022.
- Phillips, P. (2021). Critical Black futurism: Affecting affinities within curriculum studies. *Journal of the American Association for the Advancement of Curriculum Studies*, 14(2), 1-23.
- Piattoeva, N. (2021). On the tight grip of the modernist sentiment and the need to decenter the human in critical studies of digital education technology. RED, 14 October. <https://www.edu-digitalinequality.org/2021/10/14/on-the-tight-grip-of-the-modernist-sentiment-and-the-need-to-decenter-the-human-in-critical-studies-of-digital-education-technology/>. Accessed 29 August 2022.
- Piepzna-Samarasinha, L. L. (2018). To survive the Trumpocalypse, we need wild disability justice dreams. Truthout, 20 May. <https://truthout.org/articles/to-survive-the-trumpocalypse-we-need-wild-disability-justice-dreams/>. Accessed 27 August 2022.
- Prechtel, M. (2015). *The smell of rain on dust: Grief and praise*. Berkeley, CA: North Atlantic Books.
- Romano, A. (2018). Hopepunk, the latest storytelling trend, is all about weaponized optimism. Vox, 27 December. <https://www.vox.com/2018/12/27/18137571/what-is-hopepunk-noblebright-grimdark>. Accessed 19 August 2022.
- Ross, J. (2017). Speculative method in digital education research. *Learning, Media and Technology*, 42(2), 214-229. <https://doi.org/10.1080/17439884.2016.1160927>.
- Ross, J. (2021). The landscape of speculative methods in digital education. jenrossity, 9 September. <http://jenrossity.net/blog/?p=13437>. Accessed 27 August 2022.

- Ross, J., & Collier, A. (2016). Complexity, mess, and not-yetness: Teaching online with emerging technologies. In G. Veletsianos (Ed.), *Emergence and innovation in digital learning: Foundations and applications* (pp. 17-33). Edmonton, AB: Athabasca University Press.
- Ross, J., & Wilson, (2022). Data stories: speculative methods for researching digital surveillance in higher education. In J. Jaldemark, M. Håkansson Lindqvist, P. Mozelius, A. Öberg, M. De Laat, N. B. Dohn, & T. Ryberg (Eds.), *Proceedings for the Thirteenth International Conference on Networked Learning 2022*. https://www.networkedlearning.aau.dk/digitalAssets/1159/1159064_nlc2022_contribution_48.pdf. Accessed 27 August 2022.
- Σαμαράκης, Α. (1954/1998). *Ζητείται ελπίς*. Ελευθερουδάκης: Εκδόσεις Καστανιώτη.
- Selwyn, N. (2011). In praise of pessimism—the need for negativity in educational technology. *British Journal of Education Technology*, 42(5), 713-718. <https://doi.org/10.1111/j.1467-8535.2011.01215.x>.
- Selwyn, N. (2021). Ed-tech within limits: Anticipating educational technology in times of environmental crisis. *E-Learning and Digital Media*, 18(5), 496–510. <https://doi.org/10.1177/20427530211022951>.
- *Selwyn, N. Pangrazio, L., Nemorin, S., & Perrotta, C. (2020). What might the school of 2030 be like? An exercise in social science fiction. *Learning, Media and Technology* 45(1), 90-106. <https://doi.org/10.1080/17439884.2020.1694944>.
- Silova, I. (2021). If nonhumans can speak, will humans learn to listen? Slate, 30 January. <https://slate.com/technology/2021/01/speaker-response-essay-nonhuman-communication-climate-change.html>. Accessed 27 September 2022.
- Solnit, R. (2004). *Hope in the dark: Untold histories, wild possibilities*. Chicago, IL: Haymarket Books.
- Steinkopf-Frank, H. (2021). Solarpunk is not about pretty aesthetics. It's about the end of capitalism. Vice, 2 September. <https://www.vice.com/en/article/wx5aym/solarpunk-is-not-about-pretty-aesthetics-its-about-the-end-of-capitalism>. Accessed 12 August 2022.
- Suoranta, J., Teräs, M., Teräs, H., Jandrić, P., Ledger, S., Macgilchrist, F., & Prinsloo, P. (2022). Speculative Social Science Fiction of Digitalization in Higher Education: From What Is to What Could Be. *Postdigital Science and Education*, 4(2), 224-236. <https://doi.org/10.1007/s42438-021-00260-6>.
- United Nations. (2020). UN Research Roadmap for the COVID-19 Recovery. <https://www.un.org/en/coronavirus/communication-resources/un-research-roadmap-covid-19-recovery>. Accessed 27 September 2022.
- UNESCO. (2021). *Reimagining our futures together: A new social contract for education*. Paris: UNESCO. <https://unesdoc.unesco.org/ark:/48223/pf0000379707.locale=en>. Accessed 27 September 2022.
- Veletsianos, G. (2016). Defining characteristics of emerging technologies and emerging practices. In G. Veletsianos (Ed.), *Emergence and innovation in digital learning: Foundations and applications* (pp. 3-16). Edmonton, AB: Athabasca University Press.

- Veletsianos, G. (2021). *A 'return to normal' on campus? 5 ways university students and faculty hope for better*. *The Conversation*, 12 August. <https://theconversation.com/a-return-to-normal-on-campus-5-ways-university-students-and-faculty-hope-for-better-157547>. Accessed 27 September 2022.
- Veletsianos, G., Childs, E., Cox, R., Cordua-von Specht, I., Grundy, S., Hughes, J., Karleen, D., & Wilson, A. (2022). Person in environment: Ecological aspects of online and distance learning. *Distance Education*, 43(2), 318-324. <https://doi.org/10.1080/01587919.2022.2064827>.
- Whyte, K. P. (2018). Indigenous science (fiction) for the Anthropocene: Ancestral dystopias and fantasies of climate change crises. *Environment and Planning E: Nature and Space*, 1(1-2), 224-242. <https://doi.org/10.1177/2514848618777621>.