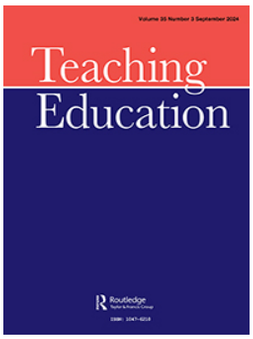

Teaching Education

ISSN: 1047-6210 (Print) 1470-1286 (Online) Journal homepage: www.tandfonline.com/journals/cted20

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To cite this article: P.J. White, E. Mayes, B. Sutton, J.P. Ferguson & M. Green (2024) Teaching and learning in uncertain times: thinking with multiple crises, Teaching Education, 35:3, 259-276, DOI: 10.1080/10476210.2023.2265311

To link to this article: https://doi.org/10.1080/10476210.2023.2265311

Published online: 24 Oct 2023.

TEACHING EDUCATION
2024, VOL. 35, NO. 3, 259–276
https://doi.org/10.1080/10476210.2023.2265311

Routledge
Taylor & Francis Group

Teaching and learning in uncertain times: thinking with multiple crises

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ABSTRACT

Teachers are working in disturbing and challenging times, characterised by coterminous crises, the Covid-19 pandemic and human induced climate change; these are transforming our working conditions and the lives of students and teachers. In this research, we looked to our own pedagogical practices as teacher educators to collaboratively explore what it means to be teachers and learners in uncertain times of multiple crises. We use a collaborative autoethnographic methodology to better understand the kind of educator these times demand and consider the implications for teacher education. Through fictionalised, co-constructed vignettes that act as pedagogical encounters, we explore our collaborative experiences in relation to multiple crises: in the classroom, at climate strikes, and in conversations with teachers during the pandemic. We use these vignettes to think with and through teaching during the global pandemic and the climate catastrophe, and with young people's climate activism. Thinking with these vignettes, we analyse the ways (young) people across the world were *already* creating and are continuing to create, prefiguratively, different possible futures through public and 'everyday' modes of political action for climate justice, and what this might mean for teacher education.

ARTICLE HISTORY
Received 17 May 2022
Accepted 26 September 2023

KEYWORDS
Teacher education; pedagogical futures; Covid-19; climate crisis; climate justice activism

Our call to action

We (the authors) first began talking about how the coterminous crises of climate change and Covid-19 were impacting teacher education and what this might mean for our pedagogical practices early in 2020. We continue to collaborate and write in response to conversations with each other and with colleagues from the Climate Change Education Network (CCEN) community of practice (Wenger, 2006). The 'slow violence' (Nixon, 2011) of climate breakdown and the inequitable distribution of its felt effects continue to be experienced globally through increasing fire weather, biodiversity loss with the sixth mass extinction, global sea level rise, increasing drought, flooding, erosion, salinification of the land, ocean acidification and by individuals and communities enduring displacement,

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disease and mental health issues (IPCC, 2023). We consider these impacts and threats and the ways they have skirted the spotlight and clarity of causality since the emergence of Covid-19 as our call to action.

Our collaboration occurred during and between multiple stay-at-home orders, or lockdowns, declared by the Victorian Government under their State of Emergency powers in response to the public health crisis of Covid-19 which brought shifts to remote teaching, learning, and working during 2020 and 2021. The Covid-19 State of Emergency followed an earlier State of Emergency declaration in response to an extreme climatic event: the unprecedented Black Summer bushfires that raged across South-Eastern Australia for many months in late 2019/early 2020. Multiple bushfires ignited during an extended dry period following longitudinal drought, hotter than average temperatures and reduced humidity. These fires burnt 10 million hectares of land, destroyed more than 3,000 homes, killed 33 people, and resulted in devastating losses of more-than-human species including thousands of endemic animals (Cook et al., 2021).

The Black Summer bushfires and Covid-19 were preceded by an explosion of school-age student climate justice activism across Australia and the world. In solidarity with Greta Thunberg, the Australian chapter of School Strike 4 Climate (SS4C) began in late 2018 with a series of small-scale actions organised by a group of high school students from regional Victoria (White et al., 2021). Following a long history of young people's climate action in Australia, including the work of Australian Youth Climate Coalition, Seed Indigenous Youth Climate Network, and Pacific Climate Warriors, students exited the classroom in mass numbers through 2018 and 2019. They demanded Australian government show leadership on climate change policy: a 'just transition' for workers employed in the fossil fuel industry, funding for projects to transition away from coal to renewable energy, and resourcing for Aboriginal and Torres Strait Islander-led solutions that guarantee land rights (ABC News, May 2021). Through their actions these young people foreground the concept of *climate justice* which understands colonialism, capitalism, and industrialisation as intertwined drivers of the climate crisis and climate inequalities (Whyte, 2020b). They remind us that those who have least contributed to the ecological crises, including First Nations people, low-income earners, communities of colour, women, and young people, have suffered most from the devastating impacts of climate change. They also remind us of our diverse roles as educators faced with unprecedented socio-ecological challenges.

Covid-19, climate change, and perhaps even the climate strikes, are both what Timothy Morton (2013) calls 'hyperobjects': entities so vast and distributed in their temporal and spatial dimensions that they strain and confound established ideas of what a 'thing' is: all the infectious aerosols of Covid-19 in the air, all the nuclear material on earth, all the microplastics in the waters, all the carbon in the atmosphere, all the bodies across the world out on strike (Meis, 8 June 2021). The phenomenon of mass eruptions of climate justice activism – a viral social movement preceding and contemporaneous with Covid-19 (Lobo et al., 2021) – compels us to trouble the boundary-making practices that we as educators and researchers at various stages of our careers are complicit in making. This is especially important given the writers identify as non-indigenous educators from across the Kulin Nations (otherwise known as Australia) who work on unceded lands of the Wadawurrung/Wathawurrung, Boonwurrung, and Wurundjeri peoples. These boundary-making practices include those that separate 'educator' and 'educated' and 'teacher' and 'student', notions of separate bodies and the separation of human from so-called 'nature'.

For thousands of years, diverse First Nations peoples have lived relational ontologies of ethical reciprocity with the human and more-than-human (for example Wright et al., 2020). It is incumbent on educators to commit to finding ways to address complicity in colonialist processes of destruction, to sit with 'a system in decline' and learn 'from its history' (Andreotti et al., 2015, p. 22) as we nurture more reciprocal relations of solidarity with Indigenous political projects (for example, Leboiron, 2021). Therefore, we seek to attune to colonialist, capitalist, settler and extractivist modes of education, research and worldviews that influence and structure our work (Verlie & Flynn, 2022).

In this paper, we reflect on our collective experiences as teacher educators in relation to the question: *What does it mean to be teachers and learners in uncertain times of multiple crises?* We seek to re-read and re-write the consequences of the global pandemic with and through the coterminous climate crisis and young people's activism, as we think together about what we, as teacher educators, can learn and do differently in these uncertain times.

Through collaborative autoethnography we explore the response-abilities we feel as teacher educators to be a small part of the construction of different kinds of educators and practices of educating. In what follows, we elaborate on these multiple crises, the work of the Climate Change Education Network and methodological process of collaborative autoethnography that we employed to consider these complex issues in our own practice situations. We share three fictionalised vignettes composed between the five authors about experiences of teaching and learning during these times of multiple crises, along with a collaborative analysis that was progressed by performing an earlier version of this work at a faculty workshop. We argue for collaborative, intergenerational processes that re-imagine pedagogical practices in these uncertain times.

Educating amidst multiple crises

These are disturbing and challenging times for educators and educational institutions. A burgeoning body of literature is exploring the urgent questions raised for education by the Covid-19 global pandemic. In this journal, Kretchmar (2021) gestures towards cracks in 'the [educational] system under the stress of COVID-19' (p. 12) particularly across vastly differing working conditions and considers the broader implications for the profession beyond this moment. Writing from the context of South Africa, Mudaly and Mudaly (2021) give concrete examples of how Covid-19 has 'rendered the fault lines of educational inequality highly visible' (p. 119) and call for a 'deconstruction of what counts as good education' (p. 120). In Australia, Drane et al. (2021) detail the impact on learners in 'vulnerable' settings from emergency modifications to teaching and learning and mass school closures, situating their analysis in the global context in which Covid-19 has 'exacerbated the multiple and profound educational divisions that already exist globally' (Drane et al., 2021, p. 586). A group of Canadian educators (Hill et al., 2020) raises questions about the 'kind of educator' (p. 565) the world needs today, and what world will be left in the wake of current educational habitual practices for humans and our common more-than-human world. In their introduction to a special issue on Covid-19 and education in the Global South, John et al. (2021) describe the pandemic as a 'wakeup call to deliberate on alternative education imaginaries' (p. 1). Writing across national contexts, Peters et al. (2020) wonder how educators might 'rethink the basic purposes of education,

and the pedagogic models better suited to the ever-present possibilities of insecurity, risk and relentless change' (p. 2).

We build on the important questions these scholars raise for education and bring these into conversation with the overarching crisis of climate breakdown. Feminist geographer and political ecologist Farhana Sultana (2021) eloquently explains the interconnections between climate breakdown and global pandemic: both emerged 'from extractive ecological exploitation of capitalism, systemic discounting of human and more-than-human natures, and the creation of sacrifice zones where profit was prioritized over people and planetary wellbeing' (p. 448). Both crises have surfaced with '[e]ncroachment on the natural world in the name of development' (Selby et al., 2020, p. 18), and both are rooted in advanced capitalism's pursuit of 'infinite growth' at the expense of living ecosystems (Kolinjivadi, 2020). The injustices that render climate change an ethical, political, and social issue overlap and interlink with the injustices laid bare by the global pandemic: that is, the uneven ways in which those who have done the least to contribute to the crisis (whether climate breakdown or the spread of Covid-19) are first and worst affected by devastating impacts (see Sultana, 2021). Describing the findings of a literature review of Covid-education-related scholarship in the Global South, John and colleagues describe the need for 'a holistic, comparative, and interlocking approach to examining crises', that analyses 'different crises as interlocking, intersectional, and inter-relational' (p. 8).

Any conversation about intersecting crises must grapple with how declarations of a 'crisis' have been used by colonial powers to justify 'wrongful actions' with 'devastating impacts on Indigenous peoples across ancestral, living, and emerging generations' (Whyte, 2020a, p. 52), and long-standing injustices that pre-date contemporary declarations of crisis. Any conversation about pedagogical futures, in turn, must question *whose* futures are privileged in the conversation, and interrogate conceptions of temporality; linear conceptions of clock time risk constructing 'universalised futures' abstracted from material and situated conditions of existence (Springgay & Truman, 2019, p. 2). These considerations have implications for all scales of formal and informal, institutional and community, modes of education, and necessitate direct acknowledgement of the legacies and continuities of colonialist capitalist extractivist structures and practices.

Climate Change Education Network: A community of practice

This article emerges from the work of the Climate Change Education Network (CCEN, http://www.climatechangeeducation.net.au), an Australian-based community of practice of academics, teacher educators, community educators, and climate change leaders. Our members share a conviction that Australian society can and must take greater socio-ecological action focused on the stable functioning of Earth systems and ecologies, and the more-than-human entities constituted within them with whom we are forever entangled (Griggs et al., 2013). We are committed to more meaningful, less extractive connections with First Nations knowledges and practices.

CCEN formed in early 2020 to enhance collegial connection and support during the Australian Black Summer bushfire tragedy, seeking to make sense of the horrific events that initially brought us together. More recently we have developed a platform from which to educate individuals and communities to act in response to unfolding climatic catastrophes. Together we have engaged in various forms of

collaborative climate change education practice alongside writing for professional and academic publications. This work has included designing and facilitating embodied public pedagogies, conference workshops with field experiences in times of lockdown to support teachers, and workshops that explore climate discourses via ecological and social frames. In early 2020, while writing this article, the Covid-19 global pandemic cast a profound silence across Australian communities in relation to the continued need for land and community regeneration and support for those who continued to be impacted by the 2018–19 bushfire crisis. Addressing the climate emergency had been, comparably, a significantly slower and more complex process than the Australian government's swift responses to Covid-19. Accordingly, we sought to draw connections between the climate crisis and the Covid-19 pandemic through collaborative research.

Practicing collaborative autoethnography and critical collaborative analysis

In the trusting community of practice (Wenger, 2006) of CCEN we met fortnightly to collectively explore how we feel, cope, and grow in these challenging times and how we collaboratively learn, teach, and live with climate change threats and impacts. Creating knowledge together (Callier & Hill, 2021) felt like a particularly important practice for us during the social isolation of the 2020–21 lockdowns. Our meetings often include explorations of ideas across situated experiences (Palmer et al., 2018). We are located at different universities, in different stages of our careers, and with different disciplinary comfort zones. While we could frame our collaboration as critical friendship (Lomax, 1991), friendship as method (Tillmann-Healy, 2003), or intimate scholarship (Pinnegar & Hamilton, 2015), we choose to honour our collaborations as autoethnography, since it is the cultural milieu in which we co-exist which shapes and refines our collective practice.

Collaborative autoethnography, therefore, methodologically frames our research strategy. Our work is autoethnographic: *auto*, as we are each independently operating a climate change education agenda; *ethno, as* we have overlapping aspirations for supporting school and community with understanding, enacting change, and coping with the climate crisis; and *graphy*, as we value the processes of storying our knowing and ways of knowing. Chang (2013) explains how collaborative autoethnography turns the 'self-interrogation tools on themselves' (p. 39) and generates valuable insights and changes in practice. White et al. (2020) model how this methodology is suited to academic colleagues, exploring ideas that involve our own practice as well as the practice of others, describing pedagogical possibilities for enriching collaboration that cross disciplinary boundaries whilst immersed in the field of teacher education. CCEN has become a space for sharing stories, collectively and reflexively questioning received understandings, and making sense of professional perplexities. We learn from Louise Phillips and Tracey Bunda that storying is 'the act of making and remaking meaning through stories', and that stories can operate 'as theory, as data, as process, as text' (2018, p. 7). Further, as Crate (2017) explains, 'no matter where people live, they are moved by stories that resonate with their sense of place and mode of being on the planet' (p. 66). As teacher educators, questioning who we are in relation to our stories, where our stories come from, how we hear, and what we do with our stories (Phillips & Bunda, 2018, p. 73) is crucial to critical reflexive praxis.

Early in our collaboration we each wrote reflectively (Richardson, 2000) about our encounters with SS4C in response to the provocation, *Have our students changed and are we changing with them*? Four of us wrote prose descriptions and one of us responded using poetry as a form of inquiry (Faulkner, 2019). We shared our reflections with each other via email and then met via Zoom to talk together about what we noticed. We mapped emerging themes, resonances, similarities, and differences in an online whiteboard (Google Jamboard), including questions that guided us through the next parts of our inquiry: does education have the capacity to engage with students in times of multiple crises? Are our teaching practices addressing student needs? How might education be rethought and reconsidered?

Following this, we storied our collective reflective experiences, drawing from our circumstances and memories, including our teacher education practices. We worked in overlapping pairs to collaboratively produce drafts of the three fictionalised vignettes – that is, drafts that drew on details from previously separate responses. Over a series of meetings, each vignette was shared, discussed, and refined to succinctly 'storify' aspects of our individual reflections. Working collaboratively, of course, was not without challenges: we noticed differences across our embodied lived experiences (e.g. where we live and our lived experiences of climate change), politics (e.g. political affiliations and previous experiences of activist participation and/or organising), theoretical preferences (e.g. critical, posthuman and/or decolonial thought) and writing styles (e.g. ways of crafting sentences and tone of authorial voice). Writing meetings were inflected by micropolitical fluxing differences (e.g. power relations shaped by career stage, authorial confidence and/or the immediate experiences we carried into each meeting) – bringing with them, sometimes, tensions, challenges and ethical complexities (e.g. how not to 'overwrite' someone's work). These differences and tensions were productive as we continued thinking through the implications of our teacher education practices and collaborative research processes even, and maybe especially, when there was not a neat answer or complete agreement between us.

During this process, individual pronouns combined and collapsed into a collective 'I' and 'we', destabilising the sense of each of ourselves as self-contained subjects (Davies & Gannon, 2006). We understand the fictionalised vignettes to be both re-narrated accounts of past pedagogical encounters (Davies, 2009; Dixon, 2020), as well as catalysts for further pedagogical encounters as they are shared, read, and discussed, in further forms of collaborative analysis. Pedagogical encounters are dynamic intra-actions of learner, teacher, knowledge, place (Dixon, 2020) and learning 'with all those animate and inanimate others who populate and create the relational spaces we are part of' (Davies, 2009, p. 8). Pedagogical encounters, and our fictionalised vignettes, are events of unlimited becoming produced in the chaos of the multiplicity of 'knowledge, knowing, being, becoming, experiencing and living' (Dixon, 2020, p. 3).

In the process of developing this article, we shared the vignettes with academic colleagues in an online faculty seminar presentation to test their function as pedagogical catalysts and to deepen our collaborative analysis. We invited colleagues to respond in an open discussion to three questions in relation to the vignettes: 1. *What do you notice?* 2. *What do you feel un/comfortable or un/certain about?* and 3. *What do these vignettes bring up for you in relation to your own practice?* We reflected on the discussion with our colleagues as we progressed our collaborative analysis towards responding to our

research question: *What does it mean to be teachers and learners in uncertain times of multiple crises?*

Storying climate change: vignettes

The three vignettes we crafted and shared with our faculty colleagues are presented here as prompts for reconsideration of the adaptations to pedagogical subjectivities as teacher educators, and practices that are necessary in the face of multiple uncertainties. Each vignette is titled/named to frame the situation and time-space it stories.

1. A pre-service teacher classroom, intergenerational engagement, March 2019

Pre-service teachers are our future front line in climate change education. Two of us work with those taking a secondary science focus to education for a seven-week exploration of what has been and what could be 'environmental and sustainability education', a long-standing field of educational research and practice.

We decided to take a scenario approach to exploring the learning possibilities that could be infused into secondary school science and classroom programs. We felt that SS4C provided an important scenario for us to explore. We wanted our students, as pre-service teachers, to engage with what some of their future school-aged students might be experiencing and to consider how to infuse and explore these relevant issues in their teaching.

We contacted the leaders of the SS4C Melbourne March 2019 and invited them to meet with our pre-service teachers via Zoom. They agreed and gave up their lunchtime to meet. They seemed a bit shy at the start, however, as they began to talk, their poise, assuredness, and commitment to their purpose and practice emerged. Each of them spoke confidently sharing insights about their actions and ambitions for the SS4C, embracing their leadership role. They described having read about Greta and her school strike; one had grown up in an activist family and described feeling compelled to also take action. They talked to their friends and local community which led to a lot of enthusiasm and then to their participation in organising the 2019 SS4C Melbourne March, including speaking at the event.

To us, as initiators of this learning experience, the discussion felt a bit awkward and one-sided. We invited our pre-service teachers to ask questions of the SS4C leaders and to become involved in discussion. They seemed reluctant. We found ourselves asking questions to generate opportunities for the SS4C leaders to share their thoughts, experiences, and motivations. We had anticipated that our students would be eager to gain insight about these young people's experiences and actions in ways that would inform their future teaching practices.

Tensions surfaced as we reflected on making decisions about and designing educative encounters for our pre-service teachers, and their potential impact or effectiveness. Our students, pre-service teachers, seemed silenced in this pedagogical encounter. Was their silence due to their dual positioning as students yet also as future teachers? Was the climate crisis focus overwhelming? Were we forcing an encounter where the situation felt too artificial to generate a sense of collaborative inquiry between school-

aged activists and pre-service teachers?

We wondered whether we should have scaffolded the interaction differently or perhaps refined our own expectations. We had hoped to empower our students to come to understand the motivations of some of their future students, and we wondered whether we had initially misinterpreted their silence as apathy. They might also be experiencing apathy in the form of anxiety which can be paralysing. We paused to consider how to support our students to frame their futures as educators.

2. Naarm Melbourne, striking from school 4 climate, September 2019

I watch familiar and unfamiliar faces of all ages and walks of life arrive, meet, and walk north from my vantage point on the steps of Flinders Street Station. I feel conspicuous and uncomfortable here, waiting for my colleague, another teacher educator. Perhaps it's because I'm protesting for the first time since I was a young person. Perhaps it's because I'm revealing my position on climate change by being here, which feels uncomfortable. Perhaps it's the mix of emotions whirling within me. Sadness, grief, anticipation, and love are behind my choice to attend School Strike 4 Climate (SS4C) today.

We meet on Wurundjeri Country, where the first speaker welcomes us. He pays his respects to the traditional custodians of this land, his ancestors, and explains caring for Country involves recognising our actions impact ancestors seven generations into the future. The two high-school-aged SS4C organisers speak next, offering an agenda for the day. They outline three clear demands for government action and express gratitude that we came.

The mood is peaceful as we march, a slow human tidal wave through Melbourne streets. Helicopters hover, filming the sea of student bodies, which I hear later was 100,000 strong. The intergenerational crowd demand climate justice and a better future for young people. There are no 'climate deniers' to be seen, and I feel inspired as I echo the chants of the students who I'm marching beside: 'THIS is what democracy looks like'.

I'm surrounded by clever messages on repurposed corporate packaging: 'Who gives a crap? We do!' and 'If you're messing with my future, why can't I mess with yours?' Pointing at the one that says, 'Civil disobedience doesn't need a permission slip to act', I tell my colleague my daughter is here somewhere with her friends, at their first protest. I approved her absence on the school attendance system, noting 'she is striking for climate with my permission.' Afterwards, a politician describes the protests as disruption, saying students would learn more in school. After the last strike the Prime Minister said he wanted kids back in school for 'more learning, less activism'. I think, they are missing the point.

I noticed the powerful possibilities that disruption offers for troubling the ways we conceive of 'education'. SS4C revealed ruptured boundaries between the roles of 'teacher' and 'student', which challenges the assumptions about who has knowledge, who teaches and learns, and where and how learning occurs. Young people 'know differently' about climate justice, and this knowledge seems to fuel their activism and their ability to create and enact public pedagogies. It also reveals multiple types of knowledge that young people have that they bring to the classroom. A sense of response-ability surfaces, to acknowledge and account for the changing student bodies in my teaching practices, even if it feels uncomfortable.

3. Across Victoria, uncertainty is certainty in the time of Covid-19, June 2020

As COVID-19 continues, differently positioned bodies seem to be operating at different paces, and at differing speed in different spheres; we apprehend conflicting temporalities and evaluations of what is most urgent. Pandemic public health demands compel urgent radical actions to curb the exponential growth of COVID-19 cases: for example, closing schools and moving learning online. Previous and current exponential graphs of the impacts of climate change had not been deemed to be urgent enough – it was argued by some politicians and principals that young people shouldn't miss any school to strike for the climate. In the midst of the COVID-19 pandemic, teachers, whether primary, secondary, or tertiary, rapidly moved between in-school and remote learning, feeling the intense pressures of preparing for both, pivoting flexibly, supporting students and, for some, simultaneously supporting their own children's remote learning. In our pre-service teacher education online classrooms, students appear fatigued and distracted; class numbers have plummeted, and video cameras are frequently left off for a range of overlapping and diverging reasons.

As teacher educators, we experience new challenges in our attempt to maintain our educational research. Australian educational institutional gatekeepers have rightly sought to protect students and teachers from anything deemed inessential – including professional learning and research in schools. Pre-service teachers, too, face similar challenges; not being able to attend practicum placements at schools, learning to design and deliver online learning, and stripping back curricular content to what is most essential. The priority for many teachers in these uncertain times has been to maintain student engagement at the most basic level, whilst acknowledging the overwhelming exhaustion and compromised wellbeing of students.

We have heard from school-based teachers that some of their students, who were previously active participants in SS4C protests, have confessed to exhaustion and a lack of capacity to engage in formal embodied activism; they are just trying to manage each uncertain day. Differentially positioned teacher educators, teachers and students alike are all trying to make sense of what is happening and are learning how to navigate waves of uncertainty – of what is happening, what is to come, and how to teach-learn-relate to each other.

We have reflected on what is continuous, and what is different about the exhaustion, paralysis, gatekeeping, and uncertainty induced by COVID-19. Before COVID-19, educators had also expressed exhaustion and paralysis in considering how to orchestrate climate change education in their classrooms. What has shifted, perhaps, is our attention to how and why pedagogical and research encounters seem to become prematurely foreclosed. We are trying to become more attentive to the multiple conditions that inhibit the capacity of our students and ourselves to teach, learn and relate to each other across differences in difficult circumstances. We sense that, in these climate-changed and pandemic-changed times and places, other forms of subjectivity and relationality are needed to nurture the potentiality for pedagogical encounters.

What we (the authors) are noticing/not noticing

We have attempted to become attuned to the explicit (and implicit) tensions in our practices as teacher educators through our analysis of these fictionalised vignettes in relation to the important questions that surfaced through this collaborative autoethnography. We consider what we notice, and just as importantly what we do not notice, in our encounters with young people and the pre-service teachers who will work with young people in classrooms of the future. What we notice is what we pay attention to, and what we pay attention to is what we value and care about (Nolan, 2012). We are reminded of Tsing's (2014) argument for the 'arts of noticing' in living in blasted landscapes. By colluding with catastrophes, we pay attention to what we notice and care about and better determine what we are compelled to do and what is most urgent. We consider the climate crisis and its entanglements with colonialism and capitalist modes of teaching, learning, living, and relating. Processes of noticing, attending, valuing, and caring support our efforts to facilitate educational opportunities that enable young people and future educators to take informed action regarding issues that matter to them, particularly human-induced climate change. They also disrupt our understandings of the purposes of education, spatio-temporal locations of education, and the sense of ourselves as educators.

In noticing what was happening across these vignettes, we considered our assumptions of what it is to teach and learn, what it is to be a teacher and student, and where learning happens. As Vignette 2 illustrates, young people are co-creating climate justice public pedagogies by enacting 'justice oriented pedagogical processes' (O'Malley & Nelson, 2013, p. 44) which involve complex, everyday modes of intergenerational learning, variously converging with and diverging from classroom learning. Despite being told they would learn more in school, young people demonstrated their capacity to mobilise intergenerational crowds in disruptive acts of solidarity to demand climate justice and a say in the creation of their future. Their well-framed political demands, related directly to Australian federal government policy, demonstrated their strong understanding of Australia's system of government. Their political placards, infused with wit and humour, disclosed their differing positions and personalities. Their knowledge of digital, online, and social media, and the skills learnt collaborating with other climate justice groups (Collin & Matthews, 2021), suggest that these young people are knowledge holders and knowledge creators, more than simply observers and participants in an unfolding planetary crisis (Bowman & Germaine, 2020; Verlie & Flynn, 2022; White et al., 2021). This knowledge can be difficult to perceive in some of our institutionalised pedagogical encounters with young people. Intergenerational participation in pedagogical encounters (Dixon, 2020), such as SS4C, demands that we consider an ethical duty to recognise and value the deep and different knowledges that students bring to their classroom learning (McGregor & Christie, 2021; Verlie & Flynn, 2022).

The strikes have forced us to pause, and to rethink spatial-temporal locations of learning: that is, where and when learning happens. The school strikes were pedagogical events situated in informal, anomalous spaces of learning (Ellsworth, 2005) that had clear intentions of influencing structural change. Calls to walk out of school intentionally disrupted classroom teaching and workplaces, caused city streets to come to a standstill, and slowed public transport. We wondered about what it might look like to

embrace the pedagogical possibilities of such fluid, transitory and ephemeral spaces of learning outside of the classroom as we rethink the relation between the local and global in our teaching. These re-conceptualisations of spatial-temporal locations of learning were further stretched with the move to remote learning amidst Covid-19 described in Vignette 3.

Vignettes 1 and 3 highlight that the concerns of students attending and leading the school strikes are not necessarily universal, reminding us that we should not romanticise the strikes, nor seek to generalise their spatial-temporal implications across educational settings. As Vignette 3 highlights, students and educators have multiple concerns and pressures, compounded by Covid-19, and are positioned across multiple configurations that variously enable and constrain their sense of the capacity to act in the face of contemporary overlapping crises.

The educational conditions surrounding Covid-19, considered alongside the work of young people involved in SS4C, fuel demand for change to government policy and compel a fundamental rethinking of the purposes and modes of education. As Kaukko et al. (2021) suggest, we must begin by 'questioning the goal of unlimited growth', the sense that learning is extracting knowledge, and move beyond the goal of education as spitting out efficient, 'productive workers for the economy' (p. 1565). In response, we argue for pedagogies and practices that help us move towards collaborative, intergenerational, reciprocal processes of co-creating knowledge.

But it is hard to know what the pre-service teachers in Vignettes 1 and 3 might make of this proposition, or how they would respond. Perhaps they have been so socialised, through their own schooling and professional experiences, into a sense that they must maximise their job-future potentiality and, therefore, extract as much as they can from their learning, to successfully navigate unknowable futures. Changes are certainly needed, as is greater attention to what it might look like, pedagogically, to collectivise despair and joy (Nairn, 2019) in our places of learning with the multiplicity of students with whom we work. Addressing these contemporary crises requires 'significant changes to existing arrangements of education systems', from 'the design, ethos and culture of schooling' to 'its curricula, pedagogy and assessment' (Kaukko et al., 2021, p. 1568).

Discomfort and uncertainty

Discomfort and uncertainty are pedagogically present across the vignettes, even as they differ. In Vignette 2, uncertainty fuels climate justice activism: responding to a planet in crisis and young peoples' profound sense that they will bear the brunt of increasing climate-induced catastrophes over the coming decades, including increased socio-political instability and reduced resources compared with earlier generations (Thomas et al., 2019). We notice and acknowledge the sense of discomfort experienced in the moments when we made our activism explicit as concerned citizens alongside school strikers (White et al., 2021). Attempting to foster a pedagogical encounter between high school student activists and pre-service teacher educators in Vignette 1, we were uncertain and uncomfortable with what the pre-service teacher educators made of this pedagogical encounter. If we notice the silences of pre-service teachers in Vignette 1 and attune to the uncertainty of how to proceed when sensing the exhaustion of students and teacher educators in Vignette 3, it may be possible to re-apprehend these events as full of pedagogical potentiality.

Morton and Boyer (2021) describe how 'hypersubjects' have ushered in these contemporary crises. They 'wield reason and technology', 'command and control', and 'seek transcendence' and dominion (p. 14). We include ourselves here as hypersubjects: educators enmeshed in settler-colonialism as an ongoing structure (not a past event) (Phillips & Bunda, 2018). Morton and Boyer (2021) wonder about the possibilities of another subjectivity, what they call 'hyposubjects', who embrace 'that sense of weakness and insignificance and lack of knowledge and agency' (p. 14). The impacts of climate change and Covid-19 are vast and distributed, but viscerally apprehended in immediate and devastating ways: gasping lungs, burning skin, poisoned flesh, choking fish. As each vignette suggests, this unboundedness of climate change troubles certainties (Kirby & Webb, 2021) about whether and how there are educators who know, students who learn, and educators who can grasp what students have learned. The devastating consequences of a 'mastery' way of relating to other humans and the more-than-human must be reckoned with (Singh, 2018); illusions of control and certainty must be suspended, and discomfort and uncertainty acknowledged, pedagogical subjectivities be re-thought and experimented with, intergenerationally, across embodied differences.

There is always uncertainty in pedagogical encounters; what is happening in these moments is not always graspable, and perhaps we should stop wanting to grasp it, and stop resisting institutional imperatives to grasp it. As Martinican poet, novelist, and theorist Glissant (1990/1997, p. 26) writes about the French word *comprendre*: the verb 'to *understand* in the sense of "to grasp" [*comprendre*] has a fearsome repressive meaning' (Glissant's emphasis). We are troubled and want to respond to numerous calls to settler-colonial researchers to stop extractivist modes of research (Leboiron, 2021; Smith et al., 2019). We wonder, too, what it might look like to stop extractivist modes of teaching and learning, or wanting to extract a certain response from our students, and consider instead what reciprocal and regenerative modes of teaching and learning might look like.

We acknowledge there are risks involved both in rethinking pedagogical relationalities, and in embracing uncertainty. These include the risks for a graduate teacher in pursuing exploration of the climate crisis in classroom settings (Vignette 1), as these issues can be considered 'controversial' (Brennan et al., 2021). Similarly, there are risks for young people to take to the streets in their fight for climate justice, for older people supporting these younger people, and in joining these events as teachers and teacher educators in solidarity with young people (Vignette 2). There are risks for those working in tertiary institutions to push back against the colonialist, capitalist, extractivist structures that feed the ongoing inequalities exacerbated by the pandemic and the climate crisis, as revealed in Vignette 3. Yet, as Biesta (2013) cautions, 'if we take the risk out of education, there is a real chance that we take out education altogether' (p. 1). We are not advocating for risk reduction, nor risk aversion. Rather we seek to honour risk. Ross (2021, para. 17), writing about the Covid-19 pandemic and its relationship with the climate crisis, challenges us:

> The temptation is always to say that freedom and democracy are the fundamental requirements for making good collective decisions, and yet the absolute failure of the West over the past two years means that these ideas must absolutely be subjected to critique, where the latter is never a denunciation, but an interrogation of their 'pharmacological' limits'.

It is only through noticing and caring that we can collectively re-think, re-feel, and re-realise the purposes and modes (and potential pedagogies) of education and the spatio-temporal locations that constitute such teaching and learning (Nolan, 2012). This is not about renouncing education but rather critiquing education and noticing its pharmacological nature; that is, education's status as a pharmakon: simultaneously and ambivalently scapegoat, poison, and remedy. We propose that it is only by noticing and caring that we can work with young people and teachers of the future to question the fundamentals of education, and co-design what education might become in these uncertain times.

Practicing pedagogical futures

These differences and tensions have been productive as we continued thinking through the implications of our teacher education practices and collaborative research processes even, and maybe especially, when there was not a neat answer or complete agreement between us. Through this research, the five writers have benefitted from collaborative autoethnographic research into teaching and learning practices, through learning from and with our academic colleagues and our students. We continue to co-exist with uncertainty and bring this as a central focus in our pedagogical practices (cf. Kirby & Webb, 2021) and research. We are keenly aware that this reorientation begins in our classrooms, in intergenerational collaboration with our students. We end this article by returning to the provocations we opened with, and our research question: *What does it mean to be teachers and learners in uncertain times of multiple crises?*

As Verlie and Flynn (2022) write, 'it is time for education to reckon with its role in the climate crisis and its entanglement within colonial-capitalist extractivism' (p. 9). Throughout our research we have considered the implications of young people's climate justice activism for teacher education and schooling during the Covid-19 global pandemic. Created through critically reflexive practice during the separation and isolation of pandemic lockdowns, which parallels the climate crisis as a hyperobject, this project enabled us to collectively ponder the nature and meaning of our work as teacher educators from within lived coterminous climate-pandemic experiences.

Tinkering at the edges of teacher education is insufficient if we are to become the kinds of educators our future students demand of us. As Kretchmar (2021) writes, 'band-aid solutions' cannot fix a 'flawed system' (p. 14). Considering the vast challenges posed by these 'hyperobjects', profound re-design of formal education and the practices of schooling are needed, including changes to policy and curriculum, teacher education, teacher professional learning and resourcing, and school-community relations. Discussions and pedagogical experimentations with and about common uncertain fates (Stirling, 2022) should involve students, school staff and community, while focussing on developing student agency (Rousell & Cutter-Mackenzie-Knowles, 2020). We acknowledge that fundamentally re-designing formal education is no small demand, considering its settler-colonial foundations in Australia, and its contemporary conditions of intense standardisation and measurement. However, we agree with Menzie-Ballantyne and Ham (2022) that the school strikers' work demonstrates how 'transdisciplinary thinking and approaches [are] needed to consider and take action on real world issues' (p. 8), and that this is what curriculum and policy should aspire to nurture in schools. As teacher educators, it is our

role to shape and support our pre-service teachers to enter the teaching profession with clarity regarding these responsibilities.

Amidst the pandemic-climate complexities of 2020–21 (and beyond), we have collectively attempted to engage pre-service teachers in making sense of young people's climate justice activism and in adjusting to new teaching and research realities brought about by the Covid-19 pandemic. These processes have caused us to rethink our sense of who we are, and who our pre-service teachers are becoming, and deliberate on how we might engage with and serve the needs of future students during socio-ecological crises. We continue to question what education might need to look, sound, and feel like as (current and future) pandemics unfold, to best educate and serve the needs of future students. We agree with Kaukko et al. (2021) that the 'nested crises' of the Covid-19 pandemic and contemporary socio-ecological crises including climate change, do not require 'more knowledge, but instead, collective learning to change practices, institutionalized in educational processes' (p. 1559, their emphasis). Further consideration is needed if we are to turn 'away from anthropocentric teacher-controlled pedagogy and curriculum, towards anti-colonial, anti-authoritarian, place-responsive approaches to learning enacted by multigenerational collectives' (Verlie & Flynn, 2022, p. 9).

We extended our responsibility beyond pre-service teachers and our classrooms to teacher education at large through this practice-centred research, and by inviting the reader to reflect on their experiences of teaching and teacher education during uncertain times. We are still asking:

- Does contemporary education in all its forms (formal, informal, community-based, or public) have the capacity to teach into and about the climate crisis, particularly during a global pandemic which has changed the shape of education?
- How might schools and universities be reoriented to critically engage with future students who seek action on socio-climate issues?
- What are our responsibilities as teacher educators and how might we work in solidarity with teachers, students, and communities?
- What support do students, teachers, and teacher educators need to ensure that connection, community, and care of self and others become potential pedagogical futures?

These questions will continue to guide us in our ongoing consideration of how educators like us can support and enable young people, future teachers, and our colleagues in uncertain times. Students' 'common fates' are necessarily entangled with their educators' common fates in common worlds – in shared circumstances of facing the chaos and discomfort of human-induced and multiple planetary tragedies and challenges (Stirling, 2022, p. 39). Embracing complexity, at least for the educators involved in producing this research, has involved coming to terms with the type of educator contemporary students might call for, given their expansive knowledge, actions and concerns around planetary sustainability and its associated injustices (McGregor & Christie, 2021). Such deliberations require continued reflexivity on our part towards pedagogical practices that enable the co-creation of a climate-resilient world. In this work, we take our lead and inspiration from many young people globally, whose courage, resistance, and actions oblige us to engage

more fully with the multiple injustices they continue to identify and bring to our attention. Their actions generate an explicit invitation for educators and communities to support and partner with them in transforming collective pedagogical futures.

Acknowledgments

The authors belong to the Climate Change Education Network https://climatechangeeducation.net.au/. We acknowledge and thank colleagues from the Faculty of Arts and Education at Deakin University for their generative responses to an earlier version of this paper, presented at the 'Thinking with climate change' series in 2021.

Disclosure statement

No potential conflict of interest was reported by the author(s).

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