ARTICLE

Teaching about climate change: Possibilities and challenges in Australian adult literacy programs

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The impact of climate challenges to humans and their environment is being felt globally, albeit unequally, by different groups of people in different places. The complexity and far-reaching risks of climate change are confronting to all people, but particularly so for people with limited knowledge and resources to mitigate the effects of their changing environment. The situation suggests urgent interventions on multiple fronts, not least of which should be educational.

Behavioral changes and actions among adults to effect positive environmental change rely on individuals and communities taking initiatives based on research and further learning. However, resources for learning about and mitigating the impact of climate change are neither equally distributed nor accessible to all members of the community. Adults with limited literacy knowledge and resources may be particularly disadvantaged in accessing information about climate change and different ways of mitigating its effects.

Australia has a history of over 40 years of providing literacy education for adults in adult basic education (ABE) and English for speakers of other languages (ESOL) programs for adults (Osmond, 2021). Although adult literacy provision in Australia, much like in many other OECD countries, has narrowed its focus increasingly to employment outcomes (Yasukawa & Black, 2016), long-time teachers in the field have continued to hold onto the earlier ethos of learner-centeredness and social justice as the field's raison d'etre (Osmond, 2021). It was from a discussion I had with a teacher who has been in the field for over 35 years that the question of literacy teachers' role in climate change literacy emerged. This teacher, Jean (pseudonym), argued that adult literacy teachers ought to be incorporating issues of climate change in their teaching because it was such an important social issue and, that indeed, the topic of the environment was one that she and other teachers often used as a theme to teach literacy to their students. Following this discussion, Jean, another colleague (who had completed research on climate change literacy in a non-formal learning setting) and I presented a short workshop for practitioners on some ideas and strategies for developing climate change literacy in adult literacy classes. The practitioners' enthusiasm for including climate change literacy into their teaching led to this study to investigate: How do adult literacy teachers see their role in supporting their learners' literacy about climate change and the environment?

LITERATURE REVIEW

Climate change and environmental literacy

Research suggests that adult literacy education is an important site for education about the natural environment and, in particular, the looming climate change crisis (Damico et al., 2020; Dentith & Thompson, 2017). Literacy educators, therefore, have a crucial role to play, and various frameworks for addressing the complex social justice dimensions of environmental education in literacy programs have been proposed. For example, Dentith and Thompson (2017) outline a framework for ecojustice education that is 'mainly concerned about social justice for those marginalised people most affected by climate change and pollution' (p. 66). Appleby (2017, 2020), while acknowledging the particular vulnerabilities of marginalized communities, highlights the impact of alienation from nature that is a broader societal phenomenon and may be associated with apathy toward issues of climate change and environmental conservation, especially in modern

technology-focused societies. She argues for literacy educators to design programs that invite adult learners to re-engage with nature at their local level as one way of mitigating against this alienation. Damico et al. (2020) propose an inquiry-based framework for climate justice literacy based on the work of Stibbe (2015), which uses the tools of ecolinguistics: the interrogation of the discourses that have been shaping the destructive and unsustainable ways humans interact with the natural environment (Stibbe, 2015).

The literature also emphasizes that environmental education must lead to action, not only on an individual basis, but actions linked to wider community and social movements (Clover, 2002). Thus, programs need to take a situated and critical approach that involves 'developing and participating in the social practices likely to change the way our societies think about and act upon ecological issues' (St Clair, 2003, p. 77).

Contemporary context of adult literacy education

For over two decades, adult literacy academics in many OECD countries have been critiquing the narrowing of adult literacy policy in their countries. Osmond (2021), in her history of adult literacy in Australia, laments that a field 'rooted in ideas of social justice' in its early days has 'in the wake of neoliberalism … been re-cast as being almost entirely in the service of the economy' (p. 107). Allatt and Tett (2019) from the United Kingdom and Belzer (2017) from the United States concur with Osmond's assessment of the shift in adult literacy policy in relation to their own countries. In all of these countries, the moral purpose of adult literacy provision appears to have been transformed into a largely economic one.

While none of the adult literacy researchers are dismissing the importance of employment focused literacy programs, many are critical that adult literacy programs had traditionally also addressed broader learner goals, needs, and interests. Adult literacy learners are not just workers or aspiring workers, but have multiple roles: parents, citizens, and volunteers in the community which can be enriched by improved literacy skills (Belzer, 2017). This is one of the reasons why researchers and policy activists are calling for a renewed lifelong and lifewide literacy education (Reder, 2020; Yasukawa et al., 2021). Rose (2012) argues that for society as a whole too, a broader education that embraces 'the intellectual, civic, social, moral and aesthetic motives' is needed to support adults' greater participation in a democracy (p. 103).

Both Belzer (2017) and Osmond (2021) observe that a contributing factor to the narrowing of the field has, ironically, been the success and legitimization of adult literacy as a field within the vocational education sector in their respective countries. This has meant that adult literacy programs, particularly those subsidized by government, are subject to increasing accountability requirements. Researchers in the United Kingdom (Tusting, 2009), United States (Pickard, 2021), and Australia (Osmond, 2021) all report the high volume of 'form-filling' that is required by teachers to demonstrate that they are addressing curriculum outcomes. Moreover, the idea of curriculum as something negotiated around learner needs has shifted to an externally produced, standardized 'product' with a heavy focus on assessment. This shift takes time away from planning and supporting learning (Tusting, 2009), thus creating challenges for teachers committed to supporting their learners' diverse needs and goals (Taylor & Trumpower, 2021).

Forms of resistance

The disempowering impact on teachers who need to relinquish active involvement in curriculum and assessment design to implement externally produced curriculum products has been reported in studies such as by Varey and Tusting (2012) and Allatt and Tett (2019). They show, however, that despite the denial of their professional agency at the official level, some teachers find ways to mediate, reframe, and creatively translate the official requirements towards programs and resources that they can use to continue to work in pedagogically principled ways. They do so while also ensuring that what they do appears to be compliant with the policy requirements. In Australia too, studies have found teachers who remain committed to prioritizing the learners' needs and goals, and who have little patience for the endless form-filling: 'Give me a box and I will tick it for you. I won't let it impinge on the way I teach' (Yasukawa & Osmond, 2019, p. 204).

Tett and Hamilton (2019) have shown that acts of resistance can be seen in all levels of education, particularly in OECD countries. They argue that increasingly, educators are finding themselves in environments where 'efficiency and monetised values are prioritised over other pedagogical and social values, such as equity, well-being and care' (p. 2). However, rather than capitulating to the economistic ethos, their volume presents examples of teachers actively, but discreetly, exercising everyday resistance (Johansson & Vinthagen, 2016).

A metaphor for the kind of everyday resistance exercised by educators is the 'hidden transcript,' a concept introduced by Scott (1990). Scott explains that the 'hidden transcript' represents the kind of quiet and invisible but deliberate acts of resistance that workers enact in response to hegemonic powers. He contrasts this with the 'public transcripts,' the visible acts of compliance or obedience that the same workers might exhibit to

maintain their security of position within the organization. Educational researchers (Choi, 2017; Sonu, 2012) have found the metaphor useful in their studies of teacher resistance in contemporary educational workplaces. In Allatt and Tett's (2019) study of 'everyday resistance' of adult literacy teachers, the hidden transcripts could be seen as teachers working around the narrow employability focus that the program funder required by organizing the class to leave time to attend to the learners' broader interests such as literature, or creating ways to prevent the loss of a successful family learning program by pitching the program as 'parental engagement in employment' (p. 48). Such studies are not about an open rebellion by the teachers; rather they examine the teachers' very local and discreetly enacted efforts to reconcile the conflicts between their own commitment as educators with the imposed mandates from the funders.

Given the contemporary employability-focused context of adult literacy, teaching about climate change and the environment would not appear to be an obvious or natural part of the curriculum. Indeed, this backdrop made it all the more interesting to investigate not only what kind of learning the teachers designed, but how they found or created the space for climate change and environmental literacy teaching.

METHOD

Research design

This research was designed as a qualitative case study based on five teachers' perspectives. The study was 'particularistic' in its focus on the particular situation of adult literacy teachers integrating the topic of climate change or the environment into their teaching; 'descriptive' in seeking to interpret the meaning of the teachers' views in relation to the contemporary Australian norms of adult literacy practices which has been found in previous research to be increasingly instrumental and employability focused; 'heuristic' in illuminating understanding of the situation where the place of climate change literacy may not be obviously compatible with education for employability; and 'inductive' in building knowledge from the data (Merriam, 1988, pp. 11–12).

Context and participants

The teachers were employed in a metropolitan vocational education college in Australia which delivers courses leading to qualifications in a wide range of industries, mostly at a pre-university qualification level, as well as a number of programs for adults who come to improve their literacy and numeracy skills for a diverse range of personal, educational, and employment purposes and general English for Speakers of Other Languages (ESOL) courses. Within the department in which the teachers were employed, there was an adult literacy (known also as adult basic education and foundation studies) section and an ESOL section. The research participants were recruited from these two sections. Some of the research participants were teaching literacy in ESOL courses for migrant learners and others in what is called 'foundation skills' courses focused on developing literacy, numeracy, and digital skills for vocational pathways or work.

The teachers in these sections could be teaching in different types of programs including as support teachers in vocational courses and teachers in workplace programs. However, the particular teaching contexts in which the research participants integrated climate change literacy were in the career and further study pathway courses and in the ESOL courses. These courses consisted of a number of units on spoken English, literacy, numeracy, digital skills, and in some cases one or more humanities electives drawn from externally produced and accredited training packages.

Participants

The recruitment of participants used purposive sampling. Jean, who is one of the research participants, and head teachers in the English language and literacy sections were asked to invite any of the teachers in their sections who had integrated topics on the natural environment or climate change into their teaching and who were interested to participate in this study. Out of more than 40 teachers in the department, five teachers: four female teachers (Jean, Laura, Rita and Alice) and one male teacher (Maurice) volunteered to be interviewed and were recruited. Pseudonyms were assigned to the research participants for anonymity. Jean, Laura, and Maurice worked in the adult literacy section, and Alice and Rita in the ESOL section. At the time of the study, all had been working at the college for over 10 years with the exception of Maurice who had been there for one and a half years, although he had more than 10 years of prior teaching experience as an English teacher in China. Jean had been at the college the longest: 35 years.

The learners in the classes of four of the teachers were at beginner or post-beginner literacy levels: learning to read and write short everyday texts on largely familiar and some unfamiliar topics, while the learners in the fifth teacher's class was at intermediate level, thus learning to negotiate longer texts not exclusively in familiar or predictable contexts. The learners in the ESOL program included people who had migrated or sought asylum in Australia as refugees. The learners in the career and further study pathways

program included both Australian born adults and migrants with generally higher levels of spoken English proficiencies than the learners in the ESOL programs. Both programs were designed around outcomes-based curricula built from units chosen from a training package ('a set of nationally endorsed standards and qualifications for recognising and assessing people's skills in a specific industry, industry sector or enterprise units' https://www.voced.edu.au/vet-knowledge-bank-getting-know-vet-overviews-training-products), with assessment tasks developed and validated externally to the teaching section.

Data collection

Institutional ethics approval was obtained. Permission to conduct research was granted by the college in which the teachers were employed. Written informed consent was obtained from the participants.

The semi-structured interviews were conducted by a research assistant. Due to both the participants and the researchers being subject to COVID-related lockdown at the time, each participant was interviewed once online, each lasting between 30 and 45 min. All interviews were audio-recorded and fully transcribed.

After asking the participant to briefly share their history and current role as an adult literacy teacher, the interview explored six key areas: their course and curriculum, the demographics of their learner group, their reasons for embedding topics on climate change and the environment, their method of including these topics in the course; the experience for them as a teacher and for the learners, and finally a way of defining climate change or environmental literacy (see Figure 1).

Data analysis

The transcripts were read by the researcher firstly to develop familiarity with the data and then to identify emerging themes. The interview data were categorized into three broad areas that were recurring and elaborated upon in the participants' responses (Merriam, 1988, p. 133): the teachers' rationale for including the topics of climate change and environment in their teaching, their pedagogical approaches, and the context in which they were teaching. Re-reading of the data after this categorization brought out salient themes about the teachers' personal meaning about adult literacy education, learner-centered literacy pedagogy, and resistance to the dominant ethos shaping their pedagogical work. These themes led to further reading of literature related to environmental education, adult literacy pedagogies, and the sociology of resistance to assist the interpretation and theorization of the findings.

Trustworthiness

Lincoln and Guba (1985) suggest the concept of 'trustworthiness' (p. 290) rather than reliability is appropriate in relation to qualitative research and explain that this

What are your reasons for including / wanting to include the topic of climate change in this unit?

    a. What specific benefits do you think this will have for your learners?
    b. Do many learners come with some interest about learning more about climate change; what motivates them?

How have you integrated / would integrate the topic?

    a. Relationship with the unit outcomes
    b. Your teaching approach
    c. Materials
    d. Assessment

What has it been like/ do you think it would be like to include climate change as a topic in your teaching?

    a. What has been/ would you expect would be the learner's reaction: any resistance?
    b. What understandings of climate change do / would the learners bring to their learning; do / would you know how they have developed this understandings: experience, reading, social media?
    c. What have/ would you expect to be the reactions of your colleagues been?
    d. What English language, literacy and/or numeracy development do / would you see among the learners from this?

FIGURE 1 Interview questions.

can be understood in terms of: 'credibility' (p. 301) of the data, 'dependability' (p. 316) of the data, 'confirmability' (p. 318) that the author's interpretation is drawn from the data and not the author's biaises, 'transferability' (p. 316) of the findings, and 'authenticity' (p. 315). To ensure correct interpretation of the teachers' accounts of the teaching contexts and courses, public information about the curricula and courses was accessed from the website of the college and the national repository of accredited training units (training. gov.au). A draft of the paper (with pseudonyms in place) was shared with the teacher Jean and a colleague who was involved in the original design of the study (but who subsequently retired before the study was completed), and findings of the study at the initial and the final analysis stages were presented to a small group of education researchers in the author's workplace and to researchers at an adult education research conference.

FINDINGS

The teachers in this study saw a role as literacy teachers to teach their learners the skills and knowledge to engage with issues surrounding the changing environment. They assumed this role because of their own sense of climate emergency and because their literacy teachers' role included reducing the learners' social vulnerability and supporting them to make connections in the wider community. They devised ways of introducing the topics into their literacy teaching using strategies that were pedagogically defensible to them. This role, however, was not what is envisaged in the increasingly economistic curriculum that the teachers were required to follow. The five teachers' accounts showed how they resisted, a total submission to the demands of curricula so that they could deliver the education they believed the learners needed and deserved, while remaining compliant with the institutional and curricular requirements. Their quiet acts of resistance which were never intended to openly challenge the official status quo resonate with the low-profile ways in which the Chinese English language teachers in Choi's (2017) study resisted the English only policy that had been mandated for certified teachers, for example, by continuing to use Chinese in the privacy of their English language classes where they deemed that to be pedagogically beneficial.

Bringing the environment and climate change into the literacy classroom

As mentioned in the Introduction, the teaching environment in which the teachers were working is a sharp contrast to the traditional adult literacy context; the curriculum is externally produced and mandated rather than developed by the teachers in negotiation with their learners (Osmond, 2021). The negotiated curriculum in past years allowed teachers to support learners holistically, addressing their affective and social as well as skills needs. However, as Osmond's (2021) account of the changing face of adult literacy shows curriculum development has been progressively outsourced and packaged into 'products,' thus diminishing both teachers' and learners' agency in shaping the education focus and process. Introducing a topic not prescribed in the curricula is therefore not straightforward, particularly in the teaching environment where assessment reporting against required curriculum outcomes is subject to both internal and external auditing.

While one of the participant teachers (Maurice) was teaching two elective units whose focus was the environment, the other teachers were devising ways to include the topic of climate change into skills-focused units from the ready-made curriculum, for example, 'Read and respond to basic workplace signs and symbols' (https://training.gov.au/Training/Details/FSKRDG02), 'Read and respond to basic workplace instructions' (https://training.gov.au/Training/Details/FSKRDG03), and 'Read and listen to simple information texts' (https://training.gov.au/Training/Details/SWELRT00). Despite the mostly instrumental curricula, the research participants found ways and, indeed felt an imperative to teach about climate change to support learners in using their learning to take individual and collective action on climate change in their social practices, what Clover (2002) and St Clair (2003) argue is needed in environmental education.

The teachers held a strong personal sense of emergency about climate change and saw a role for the learners in addressing the issue. Rita explained:

> For me it cuts across everything that we consume but also how we treat our planet. … because it's in dire straits every day with every action … each and every one of us can do whatever we can and we need to start now.

Laura similarly asserted:

> I think that climate change is the primary issue facing humans. … it's kind of – it's imperative, we've got to do something otherwise we're all going to burst into flames.

For Rita and Laura, therefore, teaching about the environment was not just an academic exercise but about the urgent need to helping learners to reflect on their own relationship with the wider world: a view shared by Alice who said that it was about 'developing the idea and encouraging the idea of interconnectedness, how interconnected everything is'.

Showing the learners the interconnectedness between their lives and the world was one of the ways in

which the five teachers saw a coherence between their role as adult literacy teachers and teaching about climate change. Maurice said that teaching the units on the environment was 'an opportunity. So they know what's going on, … it was interesting for them to make connections, like deforestations and things like that here.' Alice added that there was a critical literacy dimension when the learners engaged with environmental issues, saying: 'it's part of critical literacy and numeracy, looking at what's going on and just being aware and noticing world issues.' Jean elaborated further on the importance of supporting critical engagement with social issue saying, 'it needs to be there, so that people aren't just left to be blown about by political discourse.' She explained that this means

> Being able to look at graphs, being able to look at statistics, being able to read about things with a critical eye … That includes … vocabulary … some fundamentals of science … I try to make students aware of, to critically evaluate websites as well. That's something we need to do.

Jean expressed the coherence between teaching about climate change and the environment and her role as an adult literacy teacher in terms of reducing the learners' social alienation:

> I always thought when I started teaching adult basic education that part of what we do is help people feel less alienated from the society, because people … felt that they were left out in terms of literacy and numeracy, …, and felt a bit left out. … Environmental education is helping people feel not only not alienated from society but not alienated from their environment.

Her perspective resonates with Appleby's (2020) argument that drawing learners' attention to the natural world around them can reduce people's sense of alienation from the highly technologized world in which they live.

However, Maurice and Rita found that their learners did not always find it easy to see the connections between the impact of climate change and importantly, taking action. Both teachers found that many of their learners were aware of climate change impacts in other countries including the countries where they came from through social media posts, WeChat and news from their country. However, these students had not realized that climate change was adversely affecting lives and the environment in Australia 'like deforestations and things like that here' (Maurice) and 'they didn't know that sometimes Australia actually experiences water shortages' (Rita). All five teachers talked about working to help learners make connections between wider social issues and what

was familiar to the learners frequently required significant scaffolding:

> we try to relate to people's everyday life, try to relate climate to people's everyday life, to write about the weather… To make it not just about the bigger issues but also to bring it home for people. (Jean)

Rita said she used some very concrete, everyday examples to lead the learners to see the small differences they could make to lessen their harmful impact on the environment. In an approach that echoes Janks's (2014), she gave the example of teaching about the waste produced by bottled water after noticing how students would purchase and bring bottled water to class. It was a lesson that led to the learners challenging how they had unknowingly and uncritically submitted to the consumption of bottled water without ever questioning their assumption that there was something inferior about tap water or thinking about the impact of bottled water consumption on the environment. Rita described the class activity in the following way:

> We did something really fun. … with the water bottle. … Blindfolded them …'… Okay so taste this one, what's it taste like? Good, yes and what's that one? Okay, which one is the bottled water?' Nobody can tell, you know what I mean?

Her account may be an example of teaching the learners to critically interrogate what Stibbe (2015) calls 'the stories we live by': those 'stories' about economic growth and prosperity, consumer culture, and technological progress that proliferate beneath and between so many aspects of people's lives.

Alice, while reiterating the importance of taking a questioning approach, explained that many of her students had arrived in Australia as asylum seekers and refugees from political persecution: backgrounds 'where they can't ask questions' so she was teaching them 'to ask and to look a bit deeper and wonder.' This reference to critical literacy was expressed by Maurice as a way of empowering the students because

> if you're talking things like environment, you're going to be looking at Orwellian doublespeak. I mean words that are, for example, pro-mining might define a certain thing in one way which is politically loaded. … So it's a political thing. … teaching them how to read these texts critically to see how the author is trying to convey his or her purpose or values to the reader.

The five teachers' accounts indicate the coherence between personal concern about climate emergency

and their role as adult literacy teachers who had a key responsibility in helping learners see the connection between their lifeworlds and wider social issues. Making these connections involved teaching critical literacy skills needed to interrogate the 'stories they live by' (Stibbe, 2015). These teachers therefore saw their role as environmental educators in the sense of Clover (2002) and St Clair (2003): creating spaces for learners to make changes in their own social practices to address the climate emergency facing humanity.

A learner-centered literacy pedagogy

The research participants' descriptions of the resources and strategies to teach literacy around the theme of the environment and climate change exemplified many of the pedagogical principles of learner-centered adult literacy pedagogy including closely attending to the affective needs of their learners (Osmond, 2021). Alice, for example, spoke about finding readings on the environment which included something the learners could readily relate to, 'something that's actually interesting and … connected.' As part of raising the learners' awareness about the environmental problems of plastic wastes, Alice said

> We got students to collecting plastic bags. When they got 500, we built a costume for a plastic bag monster who carried a sign saying '500 plastic bags. That's one shopper one year who accumulates 500.'

Alice also recounted inviting to class a woman from Kiribati who came to raise awareness about the impact of rising sea levels for people in her country. Because many of the learners in the class were from refugee backgrounds, they readily identified with the plight of the people of Kiribati and expressed their thanks to the speaker for informing them about the issue. Later, the learners sent the speaker a Powerpoint presentation showing what they had learned, and the learners received a reply saying 'she was crying as she wrote the reply … and asked them if she could show it at the climate summit she was going to.' Alice said 'it was mind blowing.'

While teachers were passionate to see their learners take action on climate change, they were also aware that the issue of climate change 'can sometimes feel like a very heavy issue' (Laura). Laura's concern, shared by Jean, not to overwhelm the learners is an example of the deep concern for the learners' emotional welfare. Jean indicated one of the factors that may contribute to learners feeling overwhelmed is when they perceive climate change being something much larger and outside the lifeworld that is familiar to them. Thus, even though climate change is a global crisis and emergency, Jean said:

> You can't just impose things on people that are completely outside of their experience. It has to connect and relate to people and … their experience and then to build on that. That's what adult education – what education is about.

Thus 'making connections' between climate change and the learners' lifeworld is, for teachers like Jean, a fundamental pedagogical principle.

As shown in greater detail below, the teachers scaffolded their chosen texts about environment and climate change to ensure accessibilty, paying attention to the amount of new vocabulary, attending to the English language learners' pronunciation practice needs, and thinking about how learning about topical social issues could help them participate more confidently in the community. While developing the learners' awareness and knowledge about the environment and climate change, the five teachers were conscious about their role and responsibility in developing the learners' literacy skills. They also saw, as mentioned already, opportunities to develop their learners' critical literacy.

Maurice explained how he spent a considerable amount of time researching the environmental topics on the internet for suitable resources. Considering that his primarily Chinese migrants were 'pretty well educated [and] from well-to-do backgrounds,' but for whom 'English was a struggle,' he found some children's encyclopedia and websites for early secondary school students 'perfect' for his students 'because if you tried to go on other websites, it was just gobbledygook and it was just badly written.' He said that his 10 years of prior English language teaching in China meant that he was able to respond to the needs of his students and knew how to make complex texts accessible to the students by 'breaking things down,' pre-teaching new vocabulary, working on their pronunciation, and speaking to them at a slow pace.

Maurice was not alone in putting effort into making the texts accessible to the learners. The other teachers also spoke about the work they did to scaffold the learners' comprehension of the texts. Jean said that she preferred to use authentic texts such as news reports or extracts from books about the environment, rather than textbooks created for literacy learners. However, she said that the learners she taught were diverse in their literacy levels and so it was important

> to adapt those texts and to adapt the activities that will cater for that broad range. It would be terrible to give students something that was too challenging and have them overwhelmed by it. … We want students to feel engaged, that they are following something that might be a bit complex but that they are able to follow.

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Technical terms associated with climate change were ever present in authentic texts. Pre-teaching the vocabulary was a recurring strategy; however, the teachers noted many of the words were associated with complex scientific ideas that were conceptually unfamiliar to the learners. Jean explained that 'rather than just learning a list of words …, we'd actually go to an article and dive into it and prep students with the vocabulary that they'll need to understand that article. Over time, … you build up a word bank.' Laura also acknowledged the barriers presented by technical words in climate change related texts but said it was not difficult to address them head-on; for example, she said, 'trying to explain the greenhouse effect …, there are great diagrams that you can use that really are very simple.'

Likewise, Rita used authentic texts from TED talks as well as relatively accessible texts that the college librarians would find. She also encouraged other teachers who were teaching the same students to re-enforce what she was teaching:

> I worked with other teachers on the class so that I was able to say to them, listen teacher, come on, you find some really good listenings that they can listen to. That was really helpful because then that meant there was a bit of recycling of language … you're on a good wicket then because they are then practising and then using it and becoming more comfortable.

Because learners in her class were at an intermediate level, Rita explained that it was important for the students to learn to use the technical language not only to develop familiarity with the words and the concepts, but 'because if we're going to move them, especially for writing, they can't stay in the vernacular and the slang and the informal.'

These accounts of teachers' strategies exemplify skilled and defensible literacy pedagogy that addresses a wide range of necessary language and literacy skills development. The teaching approaches described by the teachers reflect the need for teachers of literacy to respond to the learners' needs to negotiate the text in front of them, and to ensure that they are also taught the skills to negotiate similar types of texts and other texts about the same texts in future (de Silva Joyce & Hood, 2009). As shown in the previous section, the teachers also treated the affective dimensions of learning – reducing alienation and helping them make connections with the wider world – as a central aspect of their pedagogical practice and design.

Exercising teacher agency

While Maurice said he taught the two environmental units as the learners' elective units, the other four

teachers devised what might be called work arounds to bring environmental and climate change topics into a crowded curriculum. Rita recalled that during the United Nations Decade of Education for Sustainable Development from 2005 to 2014, her college had a policy of ensuring that there was a unit about sustainability embedded in every course. She was a member of a team implementing this policy; however, when the Decade ended, so did the college policy. Rita said that

> it's quite hard to get some of this stuff running at the moment because the climate at [the college] has changed. There's a lot more pressure to get more done in less time or to follow a different sort of curriculum.

Also reflecting on the past, Jean lamented the 'different sort of curriculum' that had emerged:

> There was a change over the years into [using a] more vocationally oriented … training package: reading basic texts for work, doing basic calculations for work. Everything was … for work, which a lot of us found theoretically diminished the scope of what we do, … adult basic education is a broader discipline than that.

Jean explained that despite the restrictive curriculum, she still tried to reflect the principles of negotiating the curriculum with the learners and to 'fit the training package around the students' requirements.' However, she said,

> I feel as though we are like a square peg in a round hole in terms of trying to fit our discipline into competency based training. But in order to stay in [the college], … [we] need to be able to fit in that framework in some way. (Jean)

An additional feature of the current curriculum that Jean talked about was the emphasis on assessments: 'just to get this assessment done and [that] assessment done.' The assessment requirements of the curriculum were felt to be a significant hurdle to engage students, a problem exacerbated by the lack of teacher control over the assessment design. Alice said that it had become harder for teachers to select and incorporate topics and materials because

> When you want to teach it … you're told you have to do a reading assessment where they read about shingles. I think, oh God, I could think of something much more interesting to engage them than shingles.

However, Alice added that 'there are people trying to work their way around it.' Laura, for example, spoke about what she did when she had to teach and assess a number of units that she had been given to teach:

> they were really specific units and we had to complete them and those units were really huge. … So, it was kind of at the end of that period when I didn't have anymore assessments to do. … I just went, yay, I've got four weeks, …, I'm going to incorporate the climate change stuff. (Laura)

Deviating from the strictures of the official syllabus may be perceived as risky for some teachers, especially new teachers, according to Jean. However, she said this could be overcome if

> Some of us long-time teachers, …. get a chance to work with the newer teachers and show them – look, you've got this training package. Don't be oppressed by it. Use it in a way that is not just some kind of defined thing.

Rita also noted that there was work needed to 'train the teachers to feel confident enough and in that sort of mind space that they can do this. It's not just the students, it's also the teachers.' Thus the sustainability of the role of adult literacy teachers in climate change education appears to rely on new and existing teachers' willingness to be guided and mentored by the kinds of teachers who participated in this study. Exercising agency to integrate content not specified in the mandated curriculum appears not to be easy in an environment where the official curriculum and reporting requirements suggest little room for teachers to take any initiatives that could broaden the learners' knowledge beyond what needs to be assessed.

DISCUSSION AND CONCLUSION

The teachers in this study could be said to be teaching for life-wide and perhaps life-deep learning outcomes that Taylor and Trumpower (2021) argue are afforded in literacy programs aiming for humanistic and citizenship goals. The five teachers' devised ways to help the learners see not only how the global climate emergency could be experienced in their own lifeworld but that they could take actions in their everyday practices, for example, limiting their contribution to plastic wastes. In Alice's account, the learners' awareness of the impact of rising sea levels on the people of Kiribati made a deep emotional impact on the learners. For the learners in Jean's, Laura's, Alice's, and Rita's classes,

these social and affective outcomes that the learners experienced resulted from the teaching that was deliberate but outside that prescribed by the official curriculum.

The dissonance between the teachers' and the official purpose, content, and pedagogical philosophy is negotiated by the teachers' initiatives that are aligned with their own beliefs about the role of adult literacy teachers. Thus, they are visibly working with, in Scott's (1990) theory of resistance, the public transcript, while simultaneously with additional self-initiated curricula that is not visible in any of the formal reporting. Scott (1990, p. 15) characterizes this way of working as 'tactical prudence' that is exercised by subordinate groups, while they simultaneously 'manage in a thousand artful ways to imply that they are grudging conscripts to the performance of the public transcript.' As Laura explained, they find spaces to teach the climate change and environmental content in a manner that they believe is aligned with their own beliefs about what adult literacy education should be about. The teachers would be aware that openly defying the official curricula would extinguish all opportunities to work with and support the learners. In this sense, the resistance of the teachers who worked around and beyond the official curriculum resonates with the teachers in Choi's (2017) study cited earlier.

It is perhaps surprising in the conflicted context of their work that teachers provided coherent accounts of including topics on climate change in their work-focused programs. Their accounts are coherent because of the alignment between their teaching philosophy, pedagogy, and the urgency of action on the issues they are teaching. They know their learners and know the affective and socio-cultural needs that must be addressed in the teaching and learning environment. They are expert literacy educators who choose texts that are appropriate and accessible to their learners, and to teach them literacy using these sound pedagogical principles. They have a strong conviction that all of us on the planet, including their learners, must act on climate change. Their belief about their responsibilities as adult literacy teachers appear to enable them to transcend the magnitude of the obstacles presented to them by the public transcript and to do what they need to do for their learners.

Thus, the climate change literacy initiatives of the five teachers in this study revealed the artful ways in which teachers navigate the treacherous contemporary policy environment of adult literacy education. The word 'connection' featured strongly in the teachers' accounts: connecting with the learners, helping the learners connect with the wider community and helping the learners to see the connections between what they were learning and their everyday practices. The artful ways described in the teachers' accounts appear to be founded on these strong connections. Finding a way to integrate the topic of climate change

into their literacy teaching was not an isolated act of teaching an 'extra-curricular' current issue, but part of a deeper commitment to the learners.

These artful ways may come more easily for the more experienced teachers such as those who had known a time – four or five decades ago – when what might now be called the teachers' hidden transcripts resembled the public transcripts of the time. While the study was limited in size and scope, it adds to the research on 'everyday resistance' that adult literacy teachers are enacting in a field where their professional agency is increasingly diminished. The notions of hidden and public transcripts provide a way of rendering visible the tension that these teachers navigate in their everyday work. Whether the beliefs and practices in which these teachers are so invested will be written into and enacted as hidden transcripts by newer teachers is unknown from the findings of this study. If the policy environment does not change, and if the initiatives of teachers such as those in this study remain hidden from the newer teachers, the imagination and power to embark on similar initiatives in the future may be diminished and, possibly with it, the opportunities for a literacy education that speaks to the learners' needs and lifeworlds.

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CONFLICT OF INTEREST

Not applicable.

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