

5.6

PROMOTING FIRST NATIONS UNDERSTANDINGS OF SUSTAINABILITY IN BOTH TEACHER PROFESSIONAL DEVELOPMENT AND IN UNDERGRADUATE COURSE LEARNING

*Aleryk Fricker, Grant Cooper, Shannon
Kilmartin-Lynch and Rachel Sheffield*

Key concepts for sustainability education

- Australian First Nations people have different sustainability-related understandings and connection to Country than Western understandings of land use and sustainability.
- Indigenous and local place-based knowledge systems promote sustainable ways to live and care for community and intrinsically place ‘care of Country’ as one of many core values that First Nations people live by.
- Higher education professional learning models are needed that promote both the valuing and teaching of First Nations’ perspectives to undergraduate students as well as important First Nations’ knowledge and thinking around caring for Country, of which, sustainability and sustainability responsibility is an outcome rather than a focus.
- Core sustainability values are embedded in story, lore, song, dance, ceremony, and law. They are part of First Nations’ ontologies and not easily separated from concepts of language, culture, community, and Country. To attempt this is to simplify and distort the complexity of understandings and culture that both reflects and constructs First Nations’ cultural understandings and practices.

First Nations’ sustainability-related understandings and teaching the next generation

A common theme across all First Nations’ cultures in Australia is a connection to Country (Moreton-Robinson, 2015; Rose, 1996).¹ At the heart of this connection is a focus on the relationality between the person, their community, culture, language, and Country (Pierotti

& Wildcat, 2000; Rose, 2005; Ingold, 2006; Muir et al., 2010; Bawaka Country et al., 2013; Muller et al., 2019; Steffensen, 2020; Russell et al., 2020). Together, these also contribute more broadly to the person's 'Dreaming'.² For First Nations Peoples, the relationship with Country is complex. For many, the relationship with Country differs from non-Indigenous people in terms of what it is not. Country is not a commodity to be bought, sold, mined, extracted, and exploited (Chan et al., 2018). It is also not a mechanism to be used to stratify society. It is also not conceptualised in the relationship being one way; that is Country only being owned (Bawaka Country et al., 2013; Kealiikanakaoleohaililani & Giardina, 2016). For many, the relationship with Country is so much more. It is our food, medicine, our lore, and law. It is our stories, language, community, dances, songs, and ceremony. It is our culture, sacred places, ancestors, past, present, and future. It is also our responsibility; we are Country.

Before colonisation, our relationship with Country was a central part of our learning. Engagement with Country was both a specific and unique part of our traditional pedagogies, as well as profound and central knowledge that would shape many lessons relating to all parts of our cultural, community, and family learning (Jackson-Barrett & Lee-Hammond, 2018). For First Nations Peoples, there was, and still is, a strong understanding that individual and collective wellbeing was entirely dependent on how well Country was cared for. As such, First Nations' conceptualisations of caring for Country was a central focus and outcome of caring for Country. For many, caring for Country was indistinguishable from caring for self (Bawaka Country et al., 2013; Kealiikanakaoleohaililani & Giardina, 2016; Steffensen, 2020).

Caring for Country was also a way of showing respect for the spirits and ancestors that formed and cared for Country in the previous generations and who also created and shared the important stories, songs, dances, and ceremonies that continued to guide the people in the present to maintain the landscape. Caring for Country was also a way of showing respect for the spirit generations yet to be born (Muller et al., 2019; Steffensen 2020). By caring for Country, one can draw comparisons to Western-formed practices of sustainability. Through cultural artefacts like song and dance, a pedagogy of caring for Country is nourished in the next generation, which could be compared to the intergenerational teachings of sustainability education. Forms of First Nations' storytelling and how they may be included into sustainability education are timely to explore. Such exploration aligns with a broader research focus examining how educators can effectively design learning experiences that embrace First Nations' representations (Cooper et al., 2023).

In this chapter, we explore how an innovative professional learning model called *Yarning to Learn*³ can promote First Nations' perspectives of sustainability in undergraduate courses. The structure of the chapter is as follows: First, we briefly unpack the *Yarning to Learn* model, providing further context for this research. We make the case for decolonising partnerships as a strategy for promoting effective sustainability education. Second, we discuss methodology, participants, and our research questions. As part of our learning journeys, we finally evaluate themes in our own reflections as we work towards modelling how Indigenous and non-Indigenous educators can collaborate to decolonise⁴ our teaching about sustainability.

'Yarning to Learn': a model for improving the teaching and delivery of sustainability education in Australia

There is a wealth of research that has explored the efficacy of yarning⁵ as a method and methodology when considering research in a variety of disciplines (Bessarab & Ng'andu, 2010; Poirier et al., 2022; Osmond & Phillips, 2019; Rider et al., 2021; Kennedy et al., 2022;

Hughes & Barlo, 2021). There has, however, been limited engagement with this technique as a pedagogical approach to support learning and teaching, particularly in university environments (Brigden et al., 2020; Mills et al., 2013; Fleming et al., 2020). Yarning is defined as an 'informal and culturally safe way of communicating with First Nations people which is an 'informal and relaxed discussion' where the 'researcher and participant journey together visiting places and topics of interest relevant to the research study' (Bessarab & Ng'andu, 2010).

In terms of Yarning to Learn, we were inspired by research such as Mills et al. (2013) who used yarning as a pedagogical approach to facilitate understanding, reflection, comprehension, and inspiration. In the context of this research, we consider ways to decolonise STEM teaching within a higher education context. Yarning to Learn is a model where we have sought to consider how the act of yarning together can be used to support student learning and experience as part of a dynamic, cross-institutional model that is designed to mutually support university educators. Our model consists of the creation of a circle, either online or in person. In the Yarning to Learn circles that are in person, the object is usually a ball of yarn that is unwound as it is passed around and across the circle, and this is a visual representation of participants' communication and interactions; this could also be an important cultural object used to communicate like a message stick as well. In the online space, this is usually represented through the use of an online interactive whiteboard and the drawing tool which allows for a virtual presentation of the learning.

The model usually has three stages. The first is the pre-yarn expectations-setting phase. From experience, this is necessary more for the non-Indigenous participants, as this is often a new experience for them. The expectations usually focus on the yarn being a non-judgemental, authentic, and safe space to reflect and share thoughts and learnings. This is also a point where the instructor is explicit around the concept and experience of being mutually vulnerable in order to breakdown the hierarchical structures inherent in learning environments.

Once this phase is completed, beginning with the convener of the yarn, begins by providing the first provocation. This is often a 'low-stakes' and light-hearted prompt to build engagement and ease any concerns of the participants. An example is to request the participants to introduce themselves and then respond to the question, 'if you could be any animal other than human, what would you be and why?' The convener answers first and then passes the yarn, while holding onto the end of the yarn and unwinding it to the person sitting in the circle next to them. From this point each participant responds to the provocation while unwinding and passing the yarn to the next person until the circle is complete with every person holding the thread from the ball of yarn.

This leads to the third phase of the Yarning to Learn model. At this phase, the instructor states that the yarn will now be thrown around the circle as participants wish to speak. The convener states that this is entirely voluntary, and no one will be forced to speak if they do not wish to. The convener then provides the topic of the yarn, in this case, First Nations STEM, and the participants consider and respond as they wish.

This model provides ample opportunity for participant reflection – a sense of safety through mutual vulnerability that helps to disrupt the formal classroom hierarchy and the cultural limitations of sharing that are often placed on non-Indigenous people. We consider this process a slow pedagogy as defined by Collett et al., (2018), where we have broken from an 'instrumentalist approach to teaching and learning' that creates space for 'an authentic and deep level of engagement and support' to 'disperse time and bring in aspects of collaboration, attentiveness, responsibility, competence, responsiveness, and trust' (p. 121). We also acknowledge that this approach has provided additional support for the

participants and how they are able to engage with First Nations content (Fleming et al., 2020). This approach can also support a dialogic structure that is required in sustainability problem solving where various views and opinions are necessary to help unpack the complexity of the problem and to better understand multiple perspectives.

‘Yarning to Learn’ development and participants

The current study draws on autoethnographic methodologies as a way of promoting deep reflection of our involvement in Yarning to Learn. Autoethnography is a form of self-narrative that places the researchers’ experiences at its centre (Cohen et al., 2009), exploring relationships and connections with communities and cultures (Adams et al., 2015). Consequently, we delve into our own stories, thoughts, and feelings (Ellis et al., 2011). We embrace the former as we take a journey of not just pedagogical but concurrent self-discovery. Authors Al (Fricker) and Shannon (Kilmartin-Lynch) explore their own stories related to leading, delivering, and mentoring the Yarning to Learn program. And authors Grant (Cooper) and Rachel (Sheffield) self-reflect on their pedagogical and personal reconciliation journey. Our reflections are presented as tidy vignettes for the purposes of this chapter, but please note our pedagogical and personal reconciliation journeys do not conclude with the publication of this research. It is only the beginning of a life-long mission. The research questions that guided this study are as follows:

Research Question 1: What was it like to be a mentor and mentee in Yarning to Learn?

Research Question 2: How might Yarning to Learn have implications for how universities advance efforts to decolonise their syllabus, practices and priorities?

Before progressing further, it is important to make the cultural identity of the research team transparent to give the reader a better understanding of why the team can tell both Indigenous and Western stories:

- Al is a proud⁶ and sovereign⁷ Dja Dja Wurrung man whose ancestors come from the Central Goldfields region of Victoria and European colonists and is a lecturer in Indigenous education at Deakin University.
- Grant identifies as Anglo-Saxon and has expertise in equity-related challenges in education-including how to improve STEM participation of under-represented groups, including First Nations cohorts, at Curtin University.
- Shannon is a proud Taungurung man whose ancestors are from the Yowong-illam-baluk and Natarrak-baluk clans located within the Mansfield and Heathcote regions of Victoria and is an Associate Professor in the Department of Civil Engineering at Monash University.
- Rachel identifies with predominately an Anglo-Saxon ancestry and is relatively new to exploring Indigenous perspectives of science at Curtin University.

Al’s reflection: yarning, discomfort, decolonisation, and solidarity

Yarning is a practice that is as old as the people of the Australian continent. It is a process that has been passed on for countless generations and has helped to support the cultural continuity which has contributed to the First Nations Peoples being the oldest continuing

cultures in the world. For me, yarning is something that I have done my whole life and is something that I experience as an authentic and vulnerable way of communicating with another person or group of people to encourage trust and relationships. When we yarn in social contexts, we have an opportunity to share parts of ourselves that we feel are important. In a professional and pedagogical context, this is about being able to explore topics considered by some to be ‘unsafe’ in a space that is collaborative, collegial, and supportive.

In this context, as part of a more formal discussion relating to decolonising sustainability education, many of these same principles remain, but with the shared outcome being educational reform in addition to the establishment and maintenance of meaningful relationships with each other. My experiences of yarning with non-Indigenous people has provided me with some contrasting experiences and insights that were not immediately apparent from my experiences yarning with First Nations people. The first is an understanding of the context of the people I am yarning with. I have never been able to take for granted the contexts of the non-Indigenous people I am yarning with, and this has often required me to provide some explanations relating to the expectations, experiences, and outcomes of the yarning process with them. For some, this is such a different experience that they leave the yarn commenting about how different it was compared to the colonialist ways they communicate on a daily basis. For others, there is a realisation that there can be different ways of communicating that they could use to better connect with others.

At the beginning of the yarning session, I articulate what the processes, aims, and outcomes of the yarn would be and make a point that this would be a session where safety was prioritised, both in a cultural sense for Shannon and myself but also in a professional sense for the benefit of Grant and Rachel. Shannon and I had met prior to the yarn to set our expectations and were able to articulate that we were comfortable to invite Grant and Rachel to ask ‘unsafe’ questions but were also comfortable that if these became inappropriate or malicious⁸ that we would end the yarn accordingly. We recognised that this was not a likely outcome, but it is one that I have experienced in many yarns with non-Indigenous people over the years I have been doing this process.

I knew that establishing the safety for all parties at the beginning of the yarn was important, because one of the first topics that we discussed was the First Nations’ concept of Country and how sustainability related to it. From my perspective, this was a possible risk, as I was, with the support of Shannon, challenging the Euro-centric Western perception and understanding of this content on an ontological and epistemological level, and in doing so, providing a direct provocation that the Western concept of sustainability was not complete. As expected, Grant and Rachel responded with authentic curiosity and reflection, and both agreed that there was a need to expand their relatively limited understanding of sustainability from a Western perspective.

Once we had explored the ontological and epistemological contexts, reasons, and justifications for the adjustment of Grant’s and Rachel’s STEM subjects within their respective programs to include the First Nations’ concept of caring for Country and sustainability, the yarn shifted to the question of how they would be able to apply these adjustments. This part of the yarn covered many different subtopics relating from sector-wide reforms to exploring the week-to-week topics and how First Nations’ contexts could be included. It was a heartening experience to experience my non-Indigenous colleagues respond to this project with such enthusiasm, and it was also heartening to be able to contribute to this yarn and process with another ‘deadly blackfulla’⁹ on the collaborative team.

Once we had yarned about the potential places where First Nations' contexts could be integrated into Grant's and Rachel's respective subjects, the yarn moved onto a discussion about progress and timing. Shannon and I were both in agreement that any significant changes would have to be consulted with the local First Nations' community where their university was situated to ensure that the local protocols had been followed. As such, we advised that they should get in contact with the relevant people and begin the engagement process. One aspect that we did acknowledge was that this process would likely take some time and there would be expectations that the relationships formed as part of this approach would last beyond the scope of the adjustments of the subjects.

The yarn finished with a great amount of enthusiasm from Grant and Rachel, and for Shannon and I, we felt that it had been successful as we had been able to establish a safe space to yarn, had used the process to support the authentic engagement of us all, and had been able to articulate the ontological and epistemological foundation for the justification to adjust their subjects to include more First Nations' contexts. We all left the yarn knowing that this was always going to be a marathon rather than a sprint, but nonetheless, there was a great sense of positivity and optimism.

Grant's reflection: this stuff takes time

I need to adjust my pace. By this, I mean the speed at which I can usually establish collaborations, build working relationships, get insights from stakeholders, design learning content for students, action changes to units, etc. The rules are different in this space. I sent a lot of emails and got few responses. I reached out far and wide, with few acknowledgements. Thinking about the hyper-paced speed of my academic life and the neo-liberal university, one of the most significant challenges I experienced in Yarning to Learn was recognising the need for and importance of *pedagogically slowing down*. In most other aspects of the university environment, a brisk pace works for me – it gets the paper submitted, the project completed in time, it gets the job done. In this space, I think it might be a burden. A stark reminder that significant change like embedding First Nations' perspectives into my teaching was never going to happen in one semester. A realisation that I am on a much bigger personal and professional journey of self-discovery.

Grant's reflection: embedding First Nations themes also involves rethinking pedagogy

Another key insight from yarning was the importance of adapting pedagogy when exploring non-Western perspectives of sustainability. First Nations people represent understanding of the environment through various modalities such as oral history, songs, pictures, and dance. These forms of storytelling have been used for thousands of years by First Nations people to represent understanding and relationality between people and the environment. The challenge for non-Indigenous educators is drawing on these rich forms of representation in an authentic way that goes beyond the trivial or tokenistic. In my delivery of the unit, I was inspired to embed the '8 Ways of Learning' framework (8-ways herein). 8-ways emphasises narrative-driven learning, land-based learning, and connectedness to community. The pedagogical model aligned with exploration of Country, a strong synergy between the content of examining non-Western perspectives of sustainability. It made sense to me to emphasise the use of narrative and oral history using 8-ways when teaching about

non-Western perspectives of sustainability. From the trust I had built up with staff who worked with Indigenous students in my faculty, they suggested several strategies. One strategy suggested was to reach out to various people from various universities in the state. Most never responded, and I shared my disappointment when yarning. Al and Shannon said don't be offended, email reach-outs might not be the best technique for connecting with the 'Indigenous Mob'.¹⁰ Another strategy suggested was to embed and expand on stories shared on YouTube, for instance: *Noongar Stories from Forrestdale Lake* (Perth Region NRM, 2014). Genuine, carefully planned experiences need a strong synergy between pedagogy and content. While the use of story is something I am comfortable with, I am reluctant to try more ambitious pedagogy like dance or song. I'm not there yet, and to be honest, I'm probably never going to be comfortable dancing in a tutorial. However, I've learnt that there are ways of embedding First Nations' perspectives into my teaching that align with my educator identity. For example, the use of narrative, drawing on media clips, and inviting First Nations people to share their stories are strategies I feel comfortable to draw on.

Grant's reflection: advocates for change without speaking for First Nations people: a complex professional tension

From some conversations I had outside the yarning circles about my ongoing reconciliation journey, I was quietly cautioned several times about discussing First Nations' perspectives of sustainability as a non-Indigenous person. This caution didn't always appear in words, but typically in micro-communications via prosody and body language. I experienced similar reactions from people who, despite the best of intentions, cautioned me when they enquired about my intentions. "Oh Grant, just be careful in this space"; they took the chance to remind me of my non-Indigenous ancestry. Thanks for the reminder, I quietly thought. I usually responded with the argument that most university educators are non-Indigenous: *we need to advocate for First Nations Peoples but not speak for them*. It is a complex professional tension. In our teaching and research, if we don't advocate for First Nations people, we rob our students of something special. We should learn from First Nations' perspectives of taking care of Earth, by understanding different perspectives, we can understand the notion of sustainability in a deeper, and richer way. From these conversations, I did think about what students might be thinking in my class, "who is this white guy trying to teach me about Aboriginal knowledge?" Especially if they themselves identified as First Nations. Here we go again, a white person telling people about First Nations issues. It's tricky stuff. How do we include First Nations students in this learning experience without first knowing who are First Nations people in the class? I don't feel comfortable asking students if they identify as First Nations or accessing universities records that might hold this information.

I know teaching First Nations and Western sustainability concepts alongside each other allows students to see how the two knowledges are both of value and important to society. Al and Shannon emphasised during yarns that decolonising education must be a shared aspiration, "we are not going to achieve this without non-Indigenous people making changes". Throughout my participation in Yarning to Learn, my confidence moved like a pendulum, on one side feeling empowered to effect change and on the other, moments of despair and hopelessness. This pendulum is still in motion. It is fair to say that there is less force in the pendulum, after my many discussions with Al and Shannon. "Don't be afraid", they both said at different times when yarning. It's a constant tension in my teaching, and there is a sense of fragility here. I wouldn't have been able to adapt my pedagogy without

having the confidence Al and Shannon gave me. I continue to be on this pedagogical journey; depending on the day, I feel more confident than others. Some days, I can move beyond fear. On other days, I tread more carefully.

Shannon's reflection: why are we learning this?

Some of the most interesting conversations come from spontaneous decisions; being a proud Taungurung man from northeast Victoria, my mindset regarding sustainability aligns nearly identical to Al's, in such ways that sustainability from an Indigenous context should be looked at as an outcome of specific actions of caring for Country opposed to as an aim in and of itself. Initially when meeting with Grant and Rachel for a yarn, the complexities of navigating Indigenous topics and ideologies became very noticeable. However, when people demonstrate a willingness and a positive mindset to learn, I believe it is essential to reassure non-Indigenous people that we operate in a safe place. There is a vast difference between slipping up with good intentions, having the willingness to learn from mistakes, and being wilfully ignorant. We operate in colonised worlds and are seen to be fragile in the mind of the coloniser or maybe that's how they want us to think, too ashamed to admit that they themselves are too timid; people are too hesitant to comment or even ask questions in a willingness to learn as they don't want to offend, thinking that every Indigenous person is going to criticise them on the slightest slip-up.

Another critical insight into our yarns was the dedication brought forward by our non-Indigenous colleagues to be able to take a step back from a Eurocentric way of thinking and operating in a predominately white academic space and gain a deeper understanding of the complex cultural contexts that relate to Indigenous culture. To be able to incorporate these contexts into courses developed primarily for non-Indigenous people, I explained to Grant and Rachel that firstly there was a need to understand what Country is and what Country means to an Indigenous person; it is not simply a place, but an identity. It embodies lore, culture, place, language, and spirituality among much else. It is also critical to understand that the Eurocentric university system or the educational system doesn't cater to Indigenous people. As such, there is a recognition of a deficiency in these education systems, and there are efforts being made to incorporate First Nations' knowledges and cultural beliefs into these education systems, especially given that they were not initially designed for us to learn in.

There have been many times on my own educational journey, whether it be as a lecturer or as a student, where there are common remarks in seminars questioning the relevance of First Nations' knowledges. My students and peers will often ask: "why are we learning this?", "how does this affect us?", and claim that "this isn't science". This was a point of similarity and between us as a research team, and it is clear that this isn't something that only I have dealt with.

When I consider an approach to embedding First Nations' contexts into course work, especially from a STEM perspective, there first has to be a discussion around rethinking curriculum and the theoretical positioning of STEM; both student and teacher have to be willing to unlearn the standard Eurocentric outputs on sustainability and STEM as concepts. What is commonly taught in schools and embedded into the classroom, and, in turn, the minds of students is a very Eurocentric version of STEM, where science is all about physics and chemistry, engineering is all about technology and new ways forward, and astronomy is related to

a branch of space science. When we explore sustainability from an Indigenous perspective, we need to understand that it is as much about the science as it is with humanity at the centre of it all, and we can see the relationship between caring for Country and caring for self. There is a holistic relationship present between Country and mob, and this was recognised as something that needed to be further explored. Within our discussions, the Eurocentric ideology of sustainability became very relevant; everything is about results and sustainability performance. Whether it is looked at from an environmental point of view or an economic point of view, results are the key factors and sustainability is the aim. To highlight sustainability approaches from an Indigenous perspective I found it important to draw from a story, not from my mob particularly, but a story by Boon Wurrung Elder Na'rweet Aunty Carolyn Briggs: *The Filling of the Bay – The Time of Chaos* (Couzens, 2014). For me, this story highlights the importance of caring for Country; it demonstrates how neglecting Country not only affects the environment and the ecology of Country but also affects the people on Country, and when Country is cared for with an eco-centric view it results in a sustainable balance of Country. This was a turning point within our discussion as we navigated the fine balance of sustainability between the importance of centring sustainability as an outcome of caring for Country as well as the Western concept of an overall outcome of land management.

I first raised awareness of these issues within our yarn by stating when we talk of astronomy; someone taught a white version of STEM would initially think toward Galileo Galilei, commonly referred to as the 'father' of observational astronomy; however, First Nations people were reading and mapping the stars long before this so-called 'father' of astronomy. Coming from a First Nations perspective, and I share these thoughts strongly supported by Al, the first things that come to my mind when astronomy is mentioned are storytelling and knowledge; the learner doesn't necessarily need to be looking at the stars through a lens to gain an understanding of how Country is speaking and how that knowledge is being translated. The stars were being used as a navigational tool long before the Eurocentric application of astronomy; there is continuing knowledge held within the stars that have travelled through generations of First Nations Peoples relating to law and lore, stories detailing how to live our lives appropriately giving us life lessons around our relationships, and our relationality to each other and to Country. There is a deep interconnectedness between First Nations Peoples, Country, and stars, but this information is bypassed within the colonialist education system. By bridging these barriers and introducing First Nations themes into coursework, we are not only acknowledging First Nations people, but we are also acknowledging First Nations culture beyond the contemporary colonial oppression. And by framing this coursework with the Country as a core focus throughout the ideation, we can continue to further the importance of First Nations' knowledge systems, ways of thinking, and cultural practices together on one journey.

Rachel's reflection: sustainability mindset and First Nations' knowledges

Teaching about environmental education or environmental sustainability has been challenging, especially when trying to determine how people feel about the environment and how it is valued. In the research there have been models, one recently looked at behaviour, attitudes, and knowledge towards the environment. The issue with knowledge is that it is specific, and sometimes students do not have the knowledge to support their assessment. Broadening the framework to capture Indigenous perspectives has led to the consideration

Sustainability mindset framework

<i>Content areas</i>	<i>Principles addressed</i>	<i>Desired outcomes</i>
Ecological worldview	Eco-literacy Contribution	Protective and restorative actions
Systems thinking	Long-term thinking Flow in cycles Interconnectedness	Stakeholder engagement Sense of interconnectedness with others
Emotional intelligence	Creative innovation Reflection Self-awareness	Compassion Sensitivity to others
Spiritual intelligence	Purpose Oneness with nature Mindfulness	Contemplative practices

of a mindset and what a sustainability mindset should include. The sustainability mindset framework (Kassel & Rimanoczy, 2018) includes:

- Ecological worldview
- Systems thinking
- Emotional intelligence
- Spiritual intelligence

The sustainability mindset framework encompasses spiritual intelligence, and this connects to the deep spiritual connection to Country that First Nations Peoples possess. I found that I have come to this position traversing the landscape from two opposing directions. What this demonstrates is that to measure and make changes to people's thinking around environmental sustainability requires a deep spiritual connection to Country.

Finding a space to embed the thinking

Embedding First Nations' knowledges into the first-year unit around inquiry has been much more complex than I anticipated. I was able to embed the 8-ways more easily into the first unit inquiry in the 'On Country' program working with First Nations students. Many of the First Nations students didn't need me to explain the 8-ways; they were comfortable in this space. They found inquiry topics easily as their connection with Country was so strong, they were interested in the lives of the animals and the issues around the lakes and rivers. The topics were diverse and included dugongs and how they were hunted and sustained on the Dampier Peninsula; the history of the sawfish and how these animals created the Fitzroy and other rivers in the north of Western Australia (WA); and finally, an examination of Lake Ewlyamartup, 17 kilometres east of Katanning, exploring its cultural importance and the environmental significance.

Embedding indigenous knowledge into the course

I thought I would be able to include data collection from a First Nations perspective, that is encourage students to reflect on collecting data that was not traditionally gathered. However, I found adding this into the weekly topic on big data and data in Topic 4 was trickier,

and I wasn't able to embed it. I felt, rightly or wrongly, that the current undergraduates were more comfortable with less traditional forms of knowledge, but some of the knowledge they used was less reliable and included the challenges of large data estimates and averages. I felt that this would be a challenge for first years as they were struggling to drill down to a concrete level and work with data and evidence rather than focusing on broad generalised statements. I did wonder that the idea of stories and the data in First Nations stories would be more nuanced than I feel that first years can handle at this stage. This may be incorrect, but students already struggled with this unit and therefore providing them with additional structure seemed to be helpful.

In this unit I have been working with two First Nations students that have been identified by the Indigenous coordinator, and I have been encouraging them to embed their traditional stories into the rationale into the why have they chosen their topic. This, I hope, encourages them to feel that this brings relevance, and their story is accepted and valued, and the information held by Indigenous rangers and Aunties would be included.

Mindfully not my story to tell

I feel that choosing a story is challenging, and I do feel more comfortable asking First Nations colleagues to share their knowledge on what story to pick and then confer their deep knowledge to provide me with the expertise to step up with confidence. Creating a space to share and encourage students to sit in class in a circle to share a story of sustainability practices is an aim to show that the 'sustainability' is not new and has been around for thousands of years. It may also be an opportunity to discuss where the knowledge can come from and how it can be presented.

Learnings from the 'Yarning to Learn' and ways forward

From the previous reflections, it is clear that the yarn was experienced quite differently between all the participants. For Al and Shannon, the yarn had two broad focuses: the first was to ensure safety for all participants, and the second was to explore the ontological and epistemological contexts of First Nations conceptions of sustainability, and by extension, those for STEM. Al and Shannon wanted to ensure that they could provide a foundation for their non-Indigenous colleagues to consider the underpinning philosophical concepts that we were sharing in order to empower them to craft resources and learning experiences, as well as to engage with the relevant literature that would support both their and their students' authentic engagement with Indigenous concepts of self and Country being inextricably entwined and core to concepts of sustainability.

Al and Shannon felt that by articulating and exploring the ontological and epistemological positions of First Nations sustainability as a direct outcome of caring for Country, rather than as a stated managed aim like in a Western STEM context, they would be able to support Grant and Rachel to also avoid tokenistic incorporation of this as a concept with their students. As such, the yarn also included conversations about working in partnership with local First Nations people, as well as specific pedagogical approaches that they could implement in their subjects to support the outcomes and engagement of all their students.

Finally, this was also an opportunity to explore how this model would not require a complete 're-invention' of their subjects and the content within it and that the incorporation of First Nations' contexts would initially only require some small adjustments to the

weekly topics. In addition, we were also able to explicitly comment that this would be an ongoing project, and one that would likely take several years, and several iterations of their subjects to build effective ongoing threads in the content.

For Al and Shannon, it was heartening to see the enthusiasm of Grant and Rachel, our non-Indigenous colleagues, and their willingness to gain confidence from the ‘Yarning to Learn’ process, that they were able to immediately implement into their practice and planning for their subjects.

For Grant and Rachel, this process provided insight into the different ways of conceptualising sustainability education as well as providing confidence and advice to be able to build First Nations perspectives into their subjects. By exploring the different epistemological and ontological contexts of First Nations sustainability, they were able to consider how to weave these into the subjects alongside the Western concepts of sustainability without the risk of positioning one type of knowledge above another.

By doing this as well, it allowed Grant and Rachel to observe and consider how the colonial concepts of STEM and sustainability education have dominated this space and how it continues to seek to legitimise western concepts, and in turn the Australian colonial education system by either ignoring or placing at a deficit First Nations’ knowledges, ontologies, and epistemologies.

Conclusion

The ‘Yarning to Learn’ model highlights the important difference between Western concepts of sustainability as an outcome-focused activity and First Nations’ concepts of sustainability as an outcome of the process of caring for Country. Beyond providing an opportunity to consider the different ways of conceptualising sustainability, Yarning to Learn also provided a valuable opportunity for non-Indigenous teachers of sustainability to engage with First Nations’ knowledges and gain comfort and confidence when considering how they could begin to revise their STEM subjects to include more First Nations contexts.

Educators must do more to promote First Nations students’ sense of belonging (Cooper & Berry, 2020; Cooper et al., 2018), in part by explicitly critiquing forms of knowledge and the hegemonic positioning of Western perspectives in sustainability education, and other STEM fields more broadly. We acknowledge that some educators in higher education may be resistant to embedding First Nations’ knowledge into their sustainability courses, and therefore institutional supports must be in place to support educators to embed such perspectives.

Secondly, whilst the changes to pedagogy and curriculum we are advocating for in this chapter are not easy: they take time, effort, capacity to think critically about pedagogy, and a university environment where educators are supported to meaningfully embed First Nations’ knowledge. Another significant challenge is an over-casualised teaching workforce in contemporary universities, who are less likely to have access to this kind of professional learning model, even if it was offered. Despite these challenges, we argue that First Nations’ perspectives and experiences in their sustainability courses are too valuable to leave out.

‘Yarning to Learn’ empowered Indigenous university educators, decolonised Western framing of sustainability teaching, promoted undergraduates’ understandings of First Nations’ worldviews, and valued-added meaningfully to their university experience. This First Nations professional development learning model provides a more holistic definition of sustainability, whereby ‘caring for Country’ becomes the focus of sustainability management.

This knowledge and way of thinking we believe should be central to all sustainability education across the globe.

Notes

- 1 Throughout this chapter we use the terms Indigenous and First Nations interchangeably. We acknowledge that these terms include both Aboriginal and Torres Strait Islander people, but they are not without problematic connotations. We use these terms with respect.
- 2 The origins of this term stem from a problematic translation of a concept that has many different names in First Nations languages across the continent of Australia and the adjacent islands. In short, the concept of 'dreaming' relates to the ontological, epistemological, axiological, and methodological concepts that inform belonging, identity, and relationality with self, community, language, culture, Country, time, ancestors, creation, spirituality, and the cosmos, among many other aspects. Dreaming informs all aspects of First Nations life including law, lore, story, song, dance, art, science, teaching and learning, and all the aspects of ourselves and our environments that constitute existence. At the centre of Dreaming is the love, respect, and honouring of all things and an understanding that we are only ever temporary caretakers as we navigate from the non-living to the living worlds and back. Our Dreamings are our inspirations and our legacies.
- 3 Yarning is a concept that describes a type of informal, yet authentic communication that is widely practiced by First Nations people in Australia. It is a uniquely First Nations Australian way of communicating that fulfills many community requirements including, collaboration, therapy, research, and social interactions. It is based on listening, reflection, consideration, and vulnerability that facilitates the creation or maintenance of relationships and trust between community members. For over two centuries in Australia, the inability of non-Indigenous people to communicate with First Nations people in authentic and culturally appropriate ways has been a source of much frustration and misunderstandings. For more information about this concept please see: (Bessarab & Ng'andu, 2010).
- 4 This is based on the premise that the Higher Education system in Australia is a colonial construct that has specific agendas that negatively impact the outcomes of both First Nations students and their success, and the continued lack of awareness of First Nations contexts by non-Indigenous students. This creates a context where Higher Education itself becomes a barrier to First Nations students choosing to access or stay in that system. Decolonising education seeks to remove these barriers and position First Nations contexts as having equal ontological and epistemological value as western contexts.
- 5 This is a common structure often used when yarning with non-Indigenous people. The circle supports the creation of relationships, where everyone has the potential to communicate with every other participant without obstructions, as well as being a structure that will flatten and disrupt common hierarchical power structures present in classrooms across the entire education system in Australia.
- 6 The term proud in relation First Nations heritage fulfils an important response to historical and contemporary contexts of race and racism in Australia. For over two centuries, being associated with, or as, a First Nations person was positioned as something to be ashamed of. As such, for many First Nations people in Australia today, it is important to directly challenge the historical legacy of shame and the associated trauma this contributed to the community by openly and proudly identifying as First Nations.
- 7 The term sovereign relates to the unfinished business in Australia relating to the dispossession of land and genocide committed against First Nations Peoples across the continent and adjacent islands. Australia still does not have a treaty with the First Nations people, and by asserting sovereignty, First Nations academics are able to maintain awareness of this ongoing struggle and ensure that this issue remains in the public consciousness in the hope it will lead to a resolution.
- 8 These would consist of malicious questions or comments made with the intent to harm other members of the yarning circle. All questions were welcome from a place of unknowing rather than from a place of bigotry.
- 9 This is an Aboriginal English phrase that denotes a male First Nations person who has been deemed excellent in a particular context.

- 10 Mob is an Aboriginal English word that can be used as a collective noun for First Nations people. It can also be used in more specific way when seeking to find out a First Nations person's cultural affiliations, i.e. Who's your Mob?

References

- Adams, T. E., Jones, S. L. H., & Ellis, C. (2015). *Autoethnography. Understanding Qualitative Research*. Oxford University Press: New York.
- Bawaka Country, S., Suchet-Pearson, S., Wright, K., & Burarrwanga, L. (2013). Caring as Country: Towards an ontology of co-becoming in natural resource management. *Asia Pacific Viewpoint* 54(2), 185–197. <https://doi.org/10.1111/apv.12018>
- Bessarab, D., & Ng'andu, B. (2010). Yarning about yarning as a legitimate method in Indigenous research. *International Journal of Critical Indigenous Studies* 3(1), 37–50. <https://doi.org/10.5204/ijcis.v3i1.57>
- Brigden, C., Fricker, A., Johnson, R., & Chester, A. (2020). Speaking together: Reflections on reconciliation, yarning circles, and signature pedagogies. In: McLaughlin, T., Chester, A., Kennedy, B., Young, S. (eds.) *Tertiary Education in a Time of Change*. Springer: Singapore. https://doi.org/10.1007/978-981-15-5883-2_11
- Chan, K., Gould, R., & Pascual, U. (2018). Editorial overview: Relational values: What are they, and what's the fuss about? *Current Opinion in Environmental Sustainability* 35, A1–A7. <https://doi.org/10.1016/j.cosust.2018.11.003>
- Cohen, L., Duberley, J., & Musson, G. (2009). Work – life balance? *Journal of Management Inquiry* 18(3), 229–241. <https://doi.org/10.1177/1056492609332316>
- Collett, K., van den Berg, C., Verster, B., & Bozalek, V. (2018). Incubating a slow pedagogy in professional academic development: An ethics of care perspective. *South African Journal of Higher Education* 32(6), 117–136. <http://dx.doi.org/10.20853/32-6-2755>
- Cooper, G., & Berry, A. (2020). Demographic predictors of senior secondary participation in biology, physics, chemistry and earth/space sciences: students' access to cultural, social and science capital. *International Journal of Science Education*. <https://www.tandfonline.com/doi/abs/10.1080/09500693.2019.1708510>
- Cooper, G., Berry, A., & Baglin, J. (2018). Demographic predictors of students' science participation over the age of 16: An Australian case study. *Research in Science Education* 50(1), 361–373. <https://doi.org/10.1007/s11165-018-9692-0>
- Cooper, G., Fricker, A., Sheffield, R., & Tang, K. (2023). *Representations of Creativity: The Importance of Storytelling in First Nations Science*. Brill: Leiden, The Netherlands. https://doi.org/10.1163/9789004532571_006
- Couzens, V. (2014). *Nyernila—Listen Continuously: Aboriginal Creation Stories of Victoria*. Victorian Aboriginal Corporation for Languages: Melbourne.
- Ellis, C., Adams, T., & Bochner, A. (2011). *Autoethnography: An overview*. <https://www.qualitative-research.net/index.php/fqs/article/view/1589/3095>
- Fleming, T., Creedy, D., & West, R. (2020). The influence of yarning circles: A cultural safety professional development program for midwives. *Women and Birth* 33, 175–185. <https://doi.org/10.1016/j.wombi.2019.03.016>
- Hughes, M., & Barlo, S. (2021). Yarning with country: An indigenist research methodology. *Qualitative Inquiry* 27(3/4), 353–363. <https://doi.org/10.1177/1077800420918889>
- Ingold, T. (2006). Rethinking the animate, re-animating thought. *Ethos* 71(1), 9–20. <https://doi.org/10.1080/00141840600603111>
- Jackson-Barrett, E., & Lee-Hammond, L. (2018). Strengthening identities and involvement of aboriginal children through learning on country. *Australian Journal of Teacher Education* 43(6). <http://dx.doi.org/10.14221/ajte.2018v43n6.6>
- Kassel, K., & Rimanoczy, I. (2018). *Developing a Sustainability Mindset in Management Education*. Routledge: Milton Park.
- Kealiikanakaoleohaililani, K., & Giardina, C. (2016). Embracing the sacred: An indigenous framework for tomorrow's sustainability science. (report). *Sustainability Science* 11(1) 57–67. <https://doi.org/10.1007/s11625-015-0343-3>

- Kennedy, M., Maddox, R., Booth, K., Maidment, S., Chamberlain, C., & Bessarab, D. (2022). Decolonising qualitative research with respectful, reciprocal, and responsible research practice: A narrative review of the application of Yarning method in qualitative aboriginal and Torres Strait Islander health research. *International Journal for Equity in Health* 21(1), 1–22. <https://doi.org/10.1186/s12939-022-01738-w>
- Mills, K., Sunderland, N., & Davis-Warra, J. (2013). Yarning circles in the literacy classroom. *The Reading Teacher* 67(4), 285–289. <https://doi.org/10.1002/trtr.1195>
- Moreton-Robinson, A. (2015). *The White Possessive: Property, Power, and Indigenous Sovereignty*. University of Minnesota Press: Minneapolis.
- Muir, C., Rose, D., & Sullivan, P. (2010). From the other side of the knowledge frontier: Indigenous knowledge, social–ecological relationships and new perspectives. *Rangeland Journal* 32(3), 259–265. <https://doi.org/10.1071/RJ10014>
- Muller, S., Hemming, S., & Rigney, D. (2019). Indigenous sovereignties: Relational ontologies and environmental management. *Geographical Research* 57(4), 399–410. <https://doi.org/10.1111/1745-5871.12362>
- Osmond, G., & Phillips, M. (2019). Yarning about Sport: Indigenous research methodologies and transformative historical narratives. *International Journal of the History of Sport* 36(13/14), 1271–1288. <https://doi.org/10.1080/09523367.2019.1691532>
- Perth Region NRM. (2014). *Noongar Stories from Forrestdale Lake*. YouTube. <https://www.youtube.com/watch?v=mOenwAfq8OE>
- Poirier, B., Hedges, J., & Jamieson, L. (2022). Walking together: Relational yarning as a mechanism to ensure meaningful and ethical Indigenous oral health research in Australia. *Australian and New Zealand Journal of Public Health* 46(3), 354–360. <https://doi.org/10.1111/1753-6405.13234>
- Pierotti, R., & Wildcat, D. (2000). Traditional ecological knowledge: The third alternative (commentary). *Ecological Applications* 10(5), 1333–1340. [https://doi.org/10.1890/1051-0761\(2000\)010\[1333:TEKTTA\]2.0.CO;2](https://doi.org/10.1890/1051-0761(2000)010[1333:TEKTTA]2.0.CO;2)
- Rider, C., Mackean, T., Hunter, K., Coombes, J., Holland, A., & Ivers, R. (2021). Yarning up about out-of-pocket healthcare expenditure in burns with Aboriginal families. *Australian and New Zealand Journal of Public Health* 45(2), 138–142. <https://doi.org/10.1111/1753-6405.13083>
- Rose, D. (1996). *Nourishing Terrains: Australian Aboriginal Views of Landscape and Wilderness*. Australian Heritage Commission: Canberra.
- Rose, D. (2005). An indigenous philosophical ecology: Situating the human. *Australian Anthropological Society* 16(3), 294–305. <https://doi.org/10.1111/j.1835-9310.2005.tb00312.x>
- Russell, S., Ens, E., & Ngukurr Yangbala Rangers. (2020). Connection as country: Relational values of billabongs in Indigenous northern Australia. *Ecosystem Services* 45, 1–11. <https://doi.org/10.1016/j.ecoser.2020.101169>
- Steffensen, V. (2020). *Fire Country How Indigenous Fire Management Could Help Save Australia*. Hardie Grant Travel: Melbourne.