

Empathy and Imagination in Education for Sustainability

Sally Jensen, Independent Scholar, Victoria, Australia

Abstract

The importance of imagination in understanding sustainability has often been overlooked. This paper examines acts of imagining in teaching and learning that elicit and enable the emotive experience of empathy. I frame ways of thinking about imagination and empathy through theoretical perspectives of otherness. I report on research findings into the nature of imagination in environmental education contexts in Australia, explored through interviews with educators and participant observation. Analysis pays attention to how teachers and students imagine and empathize in order to more fully understand. The importance of being able to imagine other places, times, and perspectives in environmental education emerged strongly. In this paper I highlight how feeling empathy involves actively imagining the other, and how the relations between self and others can become contiguous through empathic and imaginative ways of understanding.

Résumé

On néglige souvent l'imagination dans la réflexion sur le développement durable. Le présent article dépeint des façons dont elle peut être mise à profit dans l'apprentissage et l'enseignement, par les prismes théoriques et émotifs de l'empathie et de l'altérité. Je présente les résultats d'une recherche sur la nature de l'imagination dans des contextes d'éducation à l'environnement en Australie qui a comporté des entretiens avec des éducateurs et des observations des participants. L'analyse est axée sur les façons dont les professeurs et élèves font preuve d'imagination et d'empathie pour approfondir leur compréhension. L'importance de pouvoir imaginer d'autres lieux, d'autres moments et d'autres perspectives en éducation à l'environnement est apparue très nettement. Dans cet article, j'explique que ressentir de l'empathie implique d'imaginer activement l'expérience de l'autre, et j'explore comment les liens entre soi et autrui peuvent être redéfinis grâce à une compréhension née de l'imagination et de l'empathie.

Keywords: imagination, sustainability education, qualitative research, empathy

This paper draws on my recent PhD research into the nature and workings of imagination in education for sustainability, explored through interviews and participant observation. I focus on empathy. I argue that empathy is an imaginative act that supports deep understanding of environmental knowledge and enhances sustainability awareness. The theoretical framework underpinning the research draws on environmental and feminist philosophies that critique the dualist contractions of self and other, including human and

nature, in environmental and educational discourses (Fawcett, 2000; Haraway, 2003; Kaplan, 1997; Latour, 1993; McKenzie, 2005; Minh-ha, 1989; Plumwood, 1993; Rose, 1996; Russell 1999, 2005; Whitehouse, 2011). I identify, rather than define, otherness, empathy, and imagination as I investigate moments in teaching and learning. While these are indefinite and ambiguous issues, I explore how empathy and imagination co-emerge in processes of coming to understand some of the critical dimensions of education for sustainability. My analysis of interviews and participant observation examines how educators and learners experiment with the relations between self and other through imagining and empathizing. Affectively, these learning stories explore the nature of empathy and imagination in education for sustainability.

I first discuss theoretical perspectives of otherness. I then introduce imagination as a way of knowing and learning in education for sustainability that has been neglected. I discuss historical and contemporary research perspectives that consider empathy as an imaginative act. These contexts frame how imagination is conceived of in this study, before I share and analyze the learning stories of the data.

Otherness and Environmental Education

The emergence of “otherness” and “the other” in philosophy has worked to identify the myriad ways in which anthropocentric and colonial worldviews continually marginalize those who are “other” than the status quo. Otherness is a condition of power and position, determined by forming binaries or dualistic frameworks with which to construct understanding. The expository identification of “the other” in critical theory identifies those who are not represented in generalizations made by those in power. Critiquing and theorizing otherness seeks to witness and include “other” beings, races, genders, and ways of knowing. Women, native peoples, and animals are often among “the others” (Haraway, 2003; Kaplan, 1997; Minh-ha, 1989). Eco-critical perspectives also recognize that nature is often objectified as something peripheral, voiceless, fixed, and external, so becomes positioned as “other” than culture, “other” than humanity and without intelligence. In environmental philosophy, positioning nature as other is one of the central yet concealed assumptions at the heart of environmental and humanitarian injustice (Plumwood, 1993; Rose, 1996; Weir, 2008, Whitehouse, 2011).

The Illusion of Otherness

Considering nature as other is obviously an illusion because nature constitutes all things. While forming opposites assists understanding by distinguishing one thing from another, the binaries formed in this process polarize each to extremes and create illusionary and false worldviews (Latour, 1993; Plumwood,

1993). This polarization affects environmental attitudes and education (Rose, 1996; Weir, 2008; Whitehouse, 2011). Despite the influence of postmodernism, these binary discourses remain unresolved in contemporary education. Educators and theorists have criticized how educational settings often reproduce conceptual orientations that position self as separate from all else, where the learner is separate from knowledge, and where “the environment,” other beings, and knowledge too, arises as other than self.

David Orr (1991) points out that the transmissive positioning of teaching “about” “the environment” and “about” environmental issues constructs a categorized world independent from, rather than interdependent with, human selves, learners, and teachers. Importantly, this contradicts the connective aims of environmental education. Australian environmental educator Hilary Whitehouse (2011) perceives that this “fictional divide” between humans and nature governs education for sustainability. Key environmental scholars and educators argue that positioning students as a singular self learning “about” “the environment” sets up an externalized world: a highly flawed worldview, incompatible with the aims of education for sustainability. The inherent separations, distances, and difficulties of “otherness” (Minh-ha, 1989) become polarizations that limit the way environmental knowledge is imagined, constructed, and understood.

Oppositional Ways of Understanding Reduce Empathy

The conceptual dualisms that polarize humans and nature are ways of thinking that not only inhibit being able to understand ecological integrity but also limit being able to respond with empathy. Australian ecofeminist Val Plumwood’s (1993) deeply considered philosophical stance states that the concepts that consider human selves separate, distinct, and removable from nature cause indifference and a detached disregard for (environmental impacts on) others:

[When] we hyper-separate ourselves from nature and reduce it conceptually in order to justify domination, we not only lose the ability to empathise and to see the non-human sphere in ethical terms, but also get a false sense of our own character and location that includes an illusory sense of autonomy. (Plumwood, 1993, p. 9)

Plumwood highlights how the ability to empathize is lost through the dualisms set up between humanity and the other. This illusionary separation makes our crucial dependency on nature invisible, affecting ambivalent perceptions of environmental ethics and producing uncertain and disorienting ontological consequences (Weir, 2008).

The influential criticism of ecofeminist and eco-critical perspectives suggests that an apathetic, rather than empathic, response to environmental problems can be sourced in conceptual frameworks that consider perspectives that are not human as “other,” and therefore peripheral. Not only is the concept of human independence from the environmental crisis false, it produces oppositional

ways of understanding and a “false sense” of being in relationship with the world resulting in good-intentioned efforts to “save the environment,” or worse, ambivalence. Scholars call for more accurate, integrated, and beneficial ways of understanding, teaching, and learning environmental knowledge, aware of the affect of otherness and being (Rose, 1996; Whitehouse, 2011; Weir, 2008).

The Need for Better Ways of Understanding the Other

In environmental education around the world, the need for understanding others occurs as an integral part of understanding sustainability (UNESCO, 2002; UNGA, 2010). However, there is still a deep need for new ways of considering what sustainability involves, including what kinds of thinking, feelings, and knowings are affective in coming to understand sustainability concepts. The assumption that knowing “about” environmental issues will affect changes in students’ attitudes and behaviours has been found to be inaccurate (Cutter-Mackenzie & Smith, 2003; Kollmuss & Agyeman, 2002; Murphy, Watson, & Moore, 1994; Russell, 1999). Even when issues are known about, understanding can be limited. Becoming aware of the needs of future generations, all life forms, and perspectives of equity and fairness that are shared across local and global communities help to define what sustainability means in formal curriculum priorities (ACARA, 2015). Here, otherness extends to other people, global communities, and future generations, highlighting how awareness and becoming aware of other perspectives and experiences is an ability that needs to be educated and developed. My research attends to how imagination is involved in these processes and how empathy, as an imaginative act, can bridge the spaces between the immediacy of the local self as learner, and global other.

Imagination and Empathy

The emotional activity of imagination in education has been widely recognized (Dewey, 1902/1990; Egan, 1997; Greene, 1988; Steiner, 1954; Warnock, 1976), yet the importance of imagination in processes of understanding has been neglected and misunderstood. Environmental educator Gillian Judson (2010) writes: “We rarely acknowledge that ecological understanding requires imagination, that it has, indeed, an emotional and imaginative core” (p. 1). A growing research voice argues that notions of understanding and learning in environmental education need to include students’ and teachers’ imaginative capacities (Blenkinsop, 2012; Egan, 2005; Judson, 2010; Stewart, 2009). Canadian scholar Kieran Egan (1986, 1997, 2005), whose seminal texts have advocated imagination in education for three decades, argues that imagination recognizes the affective dimensions of education that allows teachers “to emotionally engage students in their world” (1997, p. 1).

There are many interpretations of imagination. Rather than seek definition,

this study draws from a range of perspectives to qualitatively identify imagination for this educational research. Imagination emerges as a way of thinking, an intertextual language and a way of seeing that involves feeling, meaning making, and internal imagery. My interdisciplinary research regards imagination as a language of images, metaphors, and stories that can express and encourage imaginative knowing (Egan & Nadaner, 1988; Jensen, 2015; Lakoff & Johnson, 1980; Steiner, 1954; Sutton-Smith, 1988).

In the following section I outline the long-standing links between imagination and empathy. Contemporary and historical perspectives suggest that empathy, through imagination, crosses the boundaries between self and other to enable deeper levels of holistic understanding.

Understanding through Feeling: The Ability to Imagine the Other

Contemporary author J. K. Rowling (2015) positions the critical yet neglected importance of imagination as the power that enables empathy. She states that true and deep understanding is learned through imagination:

In its arguably most transformative and revelatory capacity, it is the power that enables us to empathise with humans whose experiences we have never shared... Unlike any other creature on this planet, humans can learn and understand, without having experienced. They can think themselves into other people's places. (p. 18)

This points to the idea of understanding through feeling. Empathy is an emotional way of knowing and can be identified as an imaginative act: an emotive way of coming to know “the other” that may involve care and understanding.

Throughout European history the creative imagination was linked to divine inspiration, fuelling notions of the “creative genius.” However, the Romantic push for imagination was also connected to ideas of empathy and an affective dimension of democratic goodwill. Romantic thinker Jean-Jacques Rousseau believed in liberating the human imagination as a political stance to enable empathy. This advocacy was to promote equality. In his *Discourse on Inequality* (Rousseau, 1755/1984), he wrote that to be able to imagine the plight of other beings is an essential quality of a fair and just society; to imagine the other is required in order to help those in need, and to make decisions that benefit all rather than prioritize the elite. From Rousseau’s legacy, imagination emerges as entwined with an empathic compassion as well as a force of creativity.

Also during the Romantic period, the critic John Ruskin articulated a connection between “caring about” and imagination. He commented idealistically: “people would instantly care for others as well as for themselves if only they could *imagine* [italics in original] others as well as themselves” (Ruskin, 1899, p. 231). Caring and empathy may not be synonymous, but interestingly imagination is positioned here as involved in an extension of the self in understanding the other. In a similar tone, the British Romantic poet Percy Bysshe Shelley advised: “A man, to be greatly good, must imagine intensely

and comprehensively; the pains and pleasure of his species must become his own. The great instrument of the moral good is the imagination” (Shelley, 1840, p. 17). To imagine the perspectives and experiences of others occurs as an affective practice of imagination and as a part of humanitarian justice. Imagining the other means understanding with feeling, to the point when another’s pain becomes one own. These Romantic authors suggest that intense affective engagement is necessary for integrating other perspectives and experiences into one’s personal understanding.

Thinking into Otherness in Education

Contemporary research perspectives elaborate on these insights. Environmental educator and researcher Alistair Stewart (2009) described imagination as a neglected, “essential element” of outdoor education. His research found imagination primarily involved in “thinking about the lives of individuals from different periods” (pp. 3-4). He examined how students imagined others, using historical narratives, paintings, and photographs as stimuli. Here imagining is an alternative to direct experience in order to understand “what might otherwise be difficult to observe” (p. 4).

Educational researcher Vicki Macknight’s (2009) classroom-based study found a variety of ways in which imagination occurs as learning and in thinking. She observed that imagination is an ability that emerges as thinking becomes extended *into* “other perspectives” and contexts. Among her other interpretations, Macknight described imagination arising as “thinking into other perspectives” or “thinking of otherness” (p. 132).

For hundreds of years, writers and researchers have associated imagination with empathy, as a resistance to a detached tendency to be unaffected by other beings and issues other than our own. Contemporary research also describes an expanded becoming where imagination occurs as a connective, border-crossing capacity that enables a person to understand perspectives beyond themselves without physically sharing experience. The possibility of imagination as another way of knowing, and of empathy as an act of imagination and an emotive pathway to understanding, is the platform that guides this research. I now report on how this study investigated the nature of imagination in teaching and learning sustainability issues and concepts.

This Study

To research how imagination is involved in understanding sustainability for teachers and learners, a combination of interviews and participant observation was undertaken. Fourteen weeks of participant observation at a ResourceSmart AuSSI Vic accredited primary school in a Grade 3-4 class of 24 students focused on observing the practices of the teacher, Eva, and the students. Eva was also interviewed to gain insight into her perspectives as the workings of imagination

were examined over this timeframe. Additionally, seven educators from primary, secondary, and tertiary educational settings were interviewed. Educators were self-identified as “education for sustainability educators” by virtue of their focus on sustainability in their teaching practice and programs. Interviews were open-ended and focused on the educators’ pedagogical aims and interests, without specifying any focus on imagination. Photographs, video, notes, student work samples, and voice recordings form the data set. All participants have been given pseudonyms.

Analysis was informed by diffractive, new materialist frames (Barad, 2007; MacLure, 2013; St Pierre, 2013) to question the nature of knowledge and allow for multiple interpretations and ways of knowing. This allowed many voices to emerge from and within the data by considering knowledge as “distributed” (MacLure, 2013) across, through, and in between beings and matter, rather than a construction within the human mind. This epistemological position guided how themes emerged as matter communicated in non-lingual, less rational ways. The connective nature of knowledge, knowing, and imagination emerged through this lens and formed learning stories that are analyzed as narratives with many players.

Empathy and Proximity

Students Don’t Care

Many educators interviewed expressed concerns for making the complexities of sustainability issues seem real and relevant to learners. This brought into question how some sustainability concepts may occur as unreal, irrelevant, or abstract.

Simon, an educator who worked with primary and secondary students in workshops, showed an interest in his interview in what students care about. He determined that students’ caring relates to their physical proximity to an issue. “One of the things I’ve learnt is that people effectively care about what is involved in their immediate environment...They largely don’t care about what’s happening over the next hill.” “Care” is oriented in terms of environmental proximity, as though his students were not able or inclined to care about other, more distant spaces. This view was informed by his observations of what students do and can care about. He described how this influences his understanding of learning and his approach to teaching:

So sometimes when you try to talk to kids or to adults about “big picture” issues... they largely seem to not care. But, if they have that same impact on their immediate environment...they will care a lot more about it because it directly affects them.

Simon concluded that immediate experience is the best way his students learn because it makes learning visible and apparent, and enables them to care.

This valuing of the primacy of direct experience results in hands-on, student-centred learning priorities as effective strategies for teaching and learning. Somerville and Green's (2012) survey of approaches to education for sustainability in the region reflect this trend toward immediacy and direct experience. They found a prevalence of place-based, hands-on, project-based activities. From the critical perspective of otherness, these positions other, more distant places and perspectives as largely inaccessible.

During my analysis, I began to question if the assumptions that value hands-on immediacy are predicated on rational forms of empirical knowing and learning. I further questioned how resulting pedagogical practices reinforce a reliance on immediate, visible results to confirm knowledge making. How might this be reflected in nature? In what other ways do we rely on immediacies? Does this relate to difficulties in understanding and appreciating more concealed, distant, hidden otherness? Investigating assumptions about how caring is generated may be required. Again, caring may not be synonymous with empathy. How can imagination facilitate better understanding of the other?

Traditional pedagogue John Dewey (1902/1990) writes: “[I]magination is a way by which we mentally present to ourselves things that are not present” (p. 246). As experience refers to visible, empirical knowledge, imagination refers to ways of understanding the other, in other places and times. This speaks to a co-evolving partnership between experience and imagination that may afford new dimensions to understanding affective pedagogies of education for sustainability.

Limits of Immediate Experience

Jamie, a secondary school teacher, also focused on real-life, hands-on immediate and relevant experiences for his students to encourage their understanding of “big picture” waste and litter issues. He approached waste and litter issues by incorporating them into his maths and senior applied learning classes, aiming to make the issue of plastic litter real and relevant by focusing on activities in the local school environment. Jamie's group spent several weeks collecting litter from a local beach and the school site, classifying types of plastic and conducting audits of the waste. They showcased thousands of plastic bottle tops they collected over two terms and had an anti-plastic festival. At the end of this comprehensive and well-regarded program, Jamie realized something was missing for his students:

We organized thousands of plastic bottle top data into tables and graphs—it was my maths class. And they [students] said, ‘well what's the problem, why are we talking about it? Why? Why is litter such a problem?’ They didn't get it. They didn't get it.

Jamie described how his students' questioning showed their ambivalence. This disrupted his expectations that their hands-on experiences would result in immediate and relevant understanding. Jamie expressed being confronted with

the fact that a fundamental understanding was missing, despite the visible, tangible nature of their learning experiences. He reflected: “So even the experience of picking up rubbish, classifying it in terms of colour...it wasn’t quite enough. No it wasn’t.” This inspired Jamie to show his students an image (see Figure 1):

I said, right, ok, I’ve got a couple pictures I can show you. And I showed them an image of a bird carcass. And inside the bird you could see...bottle top, bottle top, bottle top, cigarette lighter, bottle top, bottle top. And they went ‘ohhhh.’ They made that connection.



Figure 1. Dead Laysan Albatross. Midway Atoll.
© Chris Jordan www.chrisjordan.com. Used with permission.

Jamie witnessed his students make the connection that was missing, a point of success for him. I asked Jamie, “In what ways do you perceive this single image worked?” To answer he continued his story, describing how he narrated the likely story of the bird in the image to contextualize its meaning:

Well it’s up to the viewer to interpret what they see. What I explained to them is that our coastal town is full of large marine sea birds like Albatross and Petrels. We are known for it. They have wing spans that are so huge, so that they can hover over the ocean to pick up stuff on the surface. And I said, the number one thing floating are these bottle tops you just collected...And all of a sudden they could envision the bigger picture and the future of what their actions will or could do, what they could cause.

Jamie highlighted the impact of the image and its narrative. The image and his story facilitated awareness for students of the causal role of plastic litter. The

image and the story connected “the bigger picture,” “the future,” and “what actions cause” as missing pieces that were previously not seen or experienced by the students. The imaginative capacities of the image and story communicated in ways that expanded their ability to understand the bigger picture of litter and plastic waste, beyond the range of their own experiences.

It is difficult to measure the extent of students’ emotional responses and the influence of their feelings on being able to “vision” and understand meaning. Jamie’s emotive reaction as he recounted the story to me showed his sense of when and how understanding happened. The imaginative media of story and imagery encouraged students to imagine and empathize with the bird’s life and death. These imaginative discourses formed connections between students’ experiences, and the possible impacts on other beings, spaces, and times. Being able to imagine and empathize with another occurs as a powerful element of affective education in this learning story.

Imagining the Other through Story

Narrative Form

Learning through story involves imagination. Australian environmental education researchers Amy Cutter-Mackenzie, Phillip Payne, and Alan Reid (2010) write that stories present other places, perspectives, and times to readers by narrating the experiences of others through imaginative constructions. Narrative forms like stories or images imaginatively enact understandings as readers empathize or vicariously become the other. Jamie’s account suggests that pedagogies involving story, including images, can be ways of understanding or empathizing with the other through imagination. As discussed in the theoretical framework, the ways in which knowledge is constructed and communicated can form a division or connection between self and other, or self and world. Stories seem to resist the objectification of nature through imaginative immersion, rather than objective learning “about it.” Many education for sustainability educators interviewed work in ways that allow for the construction of knowledge in narrative form.

‘It’ Narratives as Hidden Stories

All educators interviewed used online resources to help communicate sustainability perspectives. Three of the seven educators used Annie Leonard’s (2007) online video, *The Story of Stuff*, in their classrooms. This resource re-examines the way consumables are disregarded. The narrator, Leonard, tells the hidden stories of objects as a way of re-educating how we have been taught to imagine them. While this method is creative and entertaining, the invitation to imagine realities that cross distance and time invite and support imaginative ways of understanding the concealed, whole-story perspectives of sustainability.

Sustainability itself occurs as a dimension of every object, being, or matter that involves its whole life. Through telling the “stories of stuff,” the concealed narratives of objects and matter become relevant and accessible as things with lives.

A tertiary educator, Olivia, described her use of an online animation to teach the perspectives of life-cycle analysis. She referred to an online text called *Life Pscycle-ology: The Secret Life of a Mobile Phone* (Acaroglu & Kaliincos, 2010), that tells story of a mobile phone named Eric. The storied discourse gives the phone agency to tell *his* story, and the object becomes a character with a life we can identify with. The story follows Eric, the phone, undergoing psychotherapy where his memories narrate his origin and early life in raw materials, manufacture, and distribution. We are encouraged to care for him as he sadly tries to understand his abandonment; why he has been thrown away?

The request of the story is to feel for Eric. The idea of throwing Eric away seems reckless and unsympathetic to his embodied life. The storied mental and emotional state of Eric contrasts with his inert, functional identity. The story facilitates empathizing as a counterpoint to a detached, human consumer’s objective view. The emancipatory possibility of Eric being heard, and of being *known*, creates an empathic partnership between the protagonist and the viewer. These examples, using popular online resources in environmental education and education for sustainability, recognize how story can encourage imagination and empathy to communicate the sustainability perspectives involved in life-cycle analysis.

Imagining Story

Ben, another educator, described the key concepts that focused his teaching as: “how we are a part of the environment, we’re not separate.” Ben focused his education for sustainability workshops for primary students on waterway ecologies. When I visited Ben’s workplace, I observed one of his workshops with a group of 16 primary school children. His workshop highlighted humans’ impact on water quality. But rather than listing these impacts explicitly, or describing the component parts of the water cycle or using diagrams to cover a range of scientific processes, Ben used story-based lessons. He encouraged his students to become immersed in an imagined environment as the basis for learning.

During the interview Ben did not refer to the need to “break it down” so that the knowledge of sustaining waterways was understandable, or “tell” them “about” “it,” or assert the need to protect them. Ben described his teaching in the workshops as: “taking them down the course of a river”:

We start off in the mountains, painting a picture of that, with their eyes closed getting them to feel that... So, taking them down the course of a river. I take them as if they are in the river, ‘alright let’s all jump in the river,’ and we are flowing down the river.

Through becoming immersed in imagining, students were geared to see

and experience this river inside themselves. I watched students in a circle close their eyes, and open them freely, without losing the experience, as though the imagining was not only internal but shared as well.

Ben described how students showed a sense of having been affected as richly as if they had *really* been to the mountains and travelled down the course of a river, and seen all those things: “It’s like they’ve been there, and know the animals they’ve seen; they want to help.” Ben determined that they “definitely understand the connections” implied between the imagined and the real, and between the ideas in the story and materialities of “real life.”

Ben’s process constructed an overlapping correspondence between knowledge and the world, the real and imagined. These agentic entanglements are indistinct, but worthwhile to consider in gaining a greater understanding of affective education for sustainability teaching and learning pedagogies. Involving imagination, empathy, and experience in learning avoided a more transmissive discourse about problems in a separate, external world. His work positioned materiality and knowledge about it as entangled with the imagined, rather than distinctly separated from it.

Living Knowledge

Imagining ‘Who’ Rather than ‘It’

During participant observation at the primary school, Grade 3-4 students studied a local population of migratory birds that nest on a local uninhabited (by humans) area called “the island” for 10 weeks. To introduce this new topic, the teacher, Eva, showed photographs of the local habitat with subtle background music to evoke a sense of place. Interestingly, she did not describe, explain, or tell a story about the place or topic. After the silence of images and soft music, Eva announced they would go there on excursion. She asked if anyone knew: “Who lives there?”

“Who lives there?” occurred as an empathic statement, conjuring “who?” rather than “what?” This gave identity to the birds, as opposed to a generalized reference to “bird” or the objectification implied by “what,” as in “what species is that?” Instead, “who lives there?” is a statement of value, because it creates a feeling that “we will be visiting *someone’s home*,” rather than *something*. Eva constructed the birds as local members of the community and she affectively positioned students as visitors through her simple question. Empathic understanding can appreciate a living world.

Framing Knowledge as Living

Eva’s focus was not on telling, information, or content, but on guiding an approach to learning. The images, music, and question “who lives there?” introduced

a topic in an engaging, curious way. Her role became more storyteller than holder of knowledge. Eva reflected later on this purposeful pedagogy during an interview: “We haven’t sat down and told them about Short-Tailed Shearwaters, not told them any information at all.”

Encouraging students to feel, wonder, and imagine the birds’ worlds was a priority for Eva, before the excursion and before learning factual knowledge about them. Her strategy produced a relaxed affect that created an empathic beginning to learning about biodiversity. This framed environmental knowledge not as “learning about,” but as getting to know living beings.

Drawing as Understanding

After the excursion, Eva gave her students snippets of the bird’s life: cut-out typed sentences with each describing one aspect of the bird’s life cycle. This intertextual task asked learners to make connections between what they had already seen and experienced on “the Island” and their narrative snippets. Eva and I walked around the room watching students draw. Eva asked a student about his drawing. He explained:

It’s a bird, what I’m thinking of on my paper. Mine’s on an underground nest of one egg, and I’ve got to draw 53, and it’ll crack on the 53rd one. I’m writing about the days it takes to hatch an egg.

I listened as he explained how his drawing *is* his thinking. This description of his drawing as “writing” suggests he really was examining and thinking about the bird’s life as though he were writing about it. There were no words on his work. His description showed how aspects of his drawing were made thoughtfully as expressions of his understanding.

Significantly, the way Eva questioned and listened seemed to enable both learner and teacher to become more aware of the visual and textural process. By giving students different ways of making meaning, Eva’s students learned to manage a range of texts to develop understanding, and to express and consolidate learning through a range of media. This emphasized that evidence that learning and understanding comes not only in written work but in drawing also, and greater awareness of learning processes were gained as students talked about their drawings. Eva warned against relying on teachers’ interpretations alone. Rather, learning is intertextual and requires many discursive strategies.

Imagining Other Perspectives through Fiction

Eight weeks later on another topic, Eva read a fictional story to the class that evoked such an affective response that it turned into a four-week project. The story was about a girl who was inundated by swarms, flocks, and herds of animals rushing through her home every day, collecting her possessions. The protagonist discovered the animals were returning to claim back what they had

given: feather quilts, jumpers, wool, honey, blankets, wax. The evocative language of the story and the perspective of the protagonist vividly evoked new ways of imagining everyday possessions. The story invited listeners to imagine the concealed life within and behind objects, and consider how *everything* comes from living nature.

This began a huge discussion among the 9 and 10 year-olds. Their questions empathized with animals, demonstrating how their thinking extended into their perspectives. The animals' families, homes, livelihoods, and capacity for free will were considered. The students' feelings for the animals, as well as the protagonist, were thoughtful, hypothetical, and affective, and showed understanding, empathy, and care.

The link between the narrative form that allowed and encouraged imaginative understanding and empathic response was prevalent. In the follow-up task children chose their own projects: to draw something "back to nature" from their perspective. Their drawings included metal rafters, a bookshelf, desks, and paper. Through their drawings, the origin and make-up of their immediate environment became storied. Again, Eva and I found their learning most measurable, evident, and affective when the students described their drawings and narrated the story of their artwork. Their interest in this topic surprised Eva, and evolved into a new unit of work called "Made on Earth."

Understanding Sustainability Requires Empathy and Imagination

My qualitative educational research forms part of a story that grapples with the complexities of what it takes to communicate and understand other perspectives in sustainability education. The analysis of participants' learning stories demonstrates a range of ways educators engage in imaginative media and elicit empathic capacities in the context of learning about other things and perspectives.

The findings show that discursive strategies used by education for sustainability educators comprise a significant role in presenting the perspectives of sustainability. Intertextual strategies acknowledge that understanding is made and communicated in non-linguistic ways. Online animation, fiction, visualization, imagery, drawing, and narrative accounts use feeling to communicate. Participants' learning stories offer insights and clues as to what is involved in understanding sustainability concepts and perspectives, as well as what is effective.

Clearly, for teachers and learners, understanding involves more than knowing "about" and more than information. Transmissive structures of teaching and learning were not dominant in education for sustainability settings. Teachers and students were creative and innovative in their practices, showing interest in de-objectifying otherness and empathizing with imagined perspectives. In some cases, student understanding was accelerated as they experienced empathy by imagining the other.

This study shows that understanding sustainability has complex dimensions and involves relationships between self and others, requiring both experience and imagination to be felt and comprehended. Continued discussion and research is needed regarding how affective levels of understanding of other beings, objects, and places can be generated through imagination. This potentially carves new relations between both self and other, and experience and imagination as possibly responsive and reflective of each other, rather than polarized in environmental education.

This investigation shows how empathy is an act of imagination and has important affect in developing understanding of sustainability concepts. In a range of education for sustainability settings, empathy emerged as feeling for characters within a story; imaginatively becoming an object or a river; and a way of seeing things newly by learning their story. Empathy was elicited by teachers in a range of ways: by showing images, telling stories, and framing the world as living. Birds, objects, a mobile phone, and school infrastructure were seen as storied matter. All of these techniques affectively brought children in closer connection to understanding the sustainability dimensions of objects, animals, ecological habitats, and everyday infrastructure. This also involved a shift away from “it” by encouraging students to feel that everything has a story and a life. The ability to imagine and empathize with the other appears to be an essential component in understanding sustainability.

Notes

- ¹ ResourceSmart AuSSI Vic is the Australian Sustainable School Initiative in the state of Victoria, Australia. It is a state government framework that provides practical support to schools in becoming environmentally sustainable, and awards their efforts through a five-star accreditation system.

Notes on Contributor

Sally Jensen is an environmental educator working with regional schools in Victoria, Australia. **Contact:** sally@thefarmersplace.com.au

References

- Acaroglu, L., & Kaliincos, N. (2010). *Life pscycle-ology: The secret life of a mobile phone* [Video file]. Eco Innovators. Retrieved from <https://www.youtube.com/watch?v=TJP18eKelws>
- Australian Curriculum, Assessment and Reporting Authority (ACARA). (2015). *Australian Curriculum (version 8.3) cross-curriculum priority, sustainability*. Retrieved from <http://www.australiancurriculum.edu.au/crosscurriculumpriorities/sustainability/key-ideas>
- Barad, K. (2007). *Meeting the universe halfway: Quantum physics and the entanglement of matter and meaning*. Durham, NC: Duke University Press.

- Blenkinsop, S. (2012). Four slogans for cultural change: An evolving place-based, imaginative and ecological learning experience. *Journal of Moral Education*, 41(3), 353-368.
- Cutter-MacKenzie, A., & Smith, R. (2003). Ecological literacy: The 'missing paradigm' in environmental education (part one). *Environmental Education Research*, 9(4), 497-524.
- Cutter-Mackenzie, A., Payne, P., & Reid, A. (2010). Experiencing environment and place through children's literature. *Environmental Education Research*, 16(3/4), 253-264.
- Dewey, J. (1902/1990). Imagination. In J. A. Boydston (Ed.), *John Dewey, The later works 1925-1953, Volume 17: 1885-1953* (pp. 242-255). Carbondale, IL: Southern Illinois University Press.
- Egan, K. (1986). *Teaching as storytelling*. Chicago, IL: University of Chicago Press.
- Egan, K. (1997). *The educated mind: How cognitive tools shape our understanding*. Chicago, IL: University of Chicago Press.
- Egan, K. (2005). *An imaginative approach to education*. San Francisco, CA: Jossey-Bass Publishers.
- Egan, K., & Nadaner, D. (1988). Introduction. In K. Egan & D. Nadaner (Eds.), *Imagination and education* (pp. ix-xv). New York, NY: Teachers College Press.
- Fawcett, L. (2000). Ethical imagining: Ecofeminist possibilities and environmental learning. *Canadian Journal of Environmental Education*, 5, 134-149.
- Greene, M. (1988). What happened to imagination? In K. Egan & D. Nadaner (Eds.), *Imagination and education* (pp. 45-55). New York, NY: Teachers College Press.
- Haraway, D. (2003). *The companion species manifesto: Dogs, people, and significant other-ness*. Chicago, IL: Prickly Paradigm Press.
- Judson, G. (2010). *A new approach to ecological education: Engaging students' imaginations in their world*. New York, NY: Peter Lang.
- Jensen, S. (2015). *The nature of imagination in education for sustainability* (PhD thesis). Deakin University, Melbourne, AU.
- Kaplan, E. A. (1997). *Looking for the other: Feminism, film and the imperial gaze*. New York, NY: Routledge.
- Kollmuss, A. & Agyeman, J. (2002). Mind the gap: Why do people act environmentally and what are the barriers to pro-environmental behavior? *Environmental Education Research*, 8(3), 239-260.
- Lakoff, G., & Johnson, M. (1980). *Metaphors we live by*. Chicago, IL: University of Chicago Press.
- Latour, B. (1993). *We have never been modern*. Cambridge MA: Harvard University Press.
- Leonard, A. (Dec 2007). The story of stuff. [Video File]. Retrieved from <http://storyofstuff.org/movies/story-of-stuff/>
- MacLure, M. (2013). Researching without representation? Language and materiality in post-qualitative methodology. *International Journal of Qualitative Studies in Education*, 26(6), 658-667.
- Macknight, V. S. (2009). *Teaching imagination* (PhD thesis). The University of Melbourne, Melbourne, AU.
- McKenzie, M. (2005). The 'post-post period' and environmental education research. *Environmental Education Research*, 11(4), 401-412.
- Minh-ha, T. T. (1989). *Woman, native, other: Writing postcoloniality and feminism*. Bloomington, IN: Indiana University Press.

- Murphy, M., Watson, R., & Moore, S. (1994). A longitudinal study of domestic water conservation behaviour. *Population and Environment*, 16(2), 175-189.
- Orr, D. (1991). What is education for? Six myths about the foundations of modern education, and six new principles to replace them. *Context: A Quarterly of Human Sustainable Culture*. Retrieved from <http://www.context.org/iclib/ic27/orr/>
- Plumwood, V. (1993). *Feminism and the mastery of nature*. London, UK: Routledge.
- Rose, D. B. (1996). *Nourishing terrains: Australian Aboriginal views on landscape and wilderness*. Canberra, ACT: Australian Heritage Commission.
- Rousseau, J. J. (1755/1984). *A discourse on inequality*. (M. Cranston Trans.). London, UK: Penguin.
- Rowling, J. K. (2015) *Very good lives: The fringe benefits of failure and the importance of imagination*. Cambridge, MA: Harvard University Press.
- Ruskin, J. (1899) *Selections from the writings of John Ruskin, Second Series 1860-1888*. Orphington, UK: George Allen.
- Russell, C. L. (1999). Problematizing nature experience in environmental education: The interrelationship of experience and story. *Journal of Experiential Education*, 22(3), 123-128, 137.
- Russell, C. L. (2005). "Whoever does not write is written": The role of "nature" in post-post approaches to environmental education research. *Environmental Education Research*, 11(5), 433-443.
- Shelley, P. B. (1840). *Essays, letters from abroad, translations and fragments, vol 1*. London, UK: Edward Moxon.
- Somerville, M., & Green, M. (2012). Mapping sustainability initiatives across a region: An innovative survey approach. *Australian Journal of Environmental Education*, 28(2), 65-77.
- Steiner, R. (1954). *A modern art of education: Stenographic transcripts of lectures, 5th-17th August, 1923*. London, UK: Rudolf Steiner Press.
- Stewart, A. (2009). *Windows onto other worlds: The role of imagination in outdoor education*. Paper presented at the Fourth International Outdoor Education Research Conference (Outdoor education research and theory: Critical reflections, new directions). Victoria, Australia. Retrieved from <http://www.latrobe.edu.au/education/downloads/Stewart.pdf>
- St. Pierre, E. A. (2013). The posts continue: Becoming. *International Journal of Qualitative Studies in Education*, 26(6), 646-657.
- Sutton-Smith, B. (1988). In search of the imagination. In K. Egan & D. Nataner (Eds.), *Imagination and education* (pp. 9-22). New York, NY: Teachers College Press.
- United Nations Educational Scientific and Cultural Organisation [UNESCO]. (2002). *Education for sustainability: From Rio to Johannesburg: Lessons learnt from a decade of commitment*. Paris, France: UNESCO.
- United Nations General Assembly [UNGA]. (2010). *The millennium development goals report 2010*. New York, NY: United Nations. Retrieved from <http://www.unfpa.org/publications/millennium-development-goals-report-2010>
- Warnock, M. (1976). *Imagination*. London, UK: Faber & Faber.
- Weir, J. (2008). Connectivity. *Australian Humanities Review*, 45, 153-164.
- Whitehouse, H. (2011). Talking up country; Language, natureculture and intercultural in Australian environmental education research. *Australian Journal of Environmental Education*, 27(2), 295-302.