ARTICLE

Relationality and decolonisation in children and youth garden spaces

Janet McVittie[1],*, Ranjan Datta[2], Jean Kayira[3] and Vince Anderson[4]

[1]Department of Educational Foundations, University of Saskatchewan, Saskatoon, Saskatchewan, Canada, [2]Johnson Shoyama Graduate School of Public Policy, University of Regina, Regina, Saskatchewan, Canada, [3]Environmental Studies Department, Antioch University New England, Keene, New Hampshire, USA and [4]Interdisciplinary Studies, University of Saskatchewan, Saskatoon, Saskatchewan, Canada
*Corresponding author. Email: janet.mcvittie@usask.ca

Abstract

This article presents an analysis of three uniquely situated garden-based research studies. As colleagues intrigued by the rich, intricate, learning dynamics playing out within the garden spaces, our collaboration explored the broader meaning and potential for garden-based programming. As we discussed the three garden studies, two themes emerged as valuable for analysis: relationality and decolonisation. We understand the themes in relation to Gregory Cajete's (2005) conceptualisation of coming to resonance within oneself, one's community, and the surrounding ecosystem as being integral aspects of a holistic learning program. In addition, centring learning around relationality with place requires, as Delores Calderon (2014) asserts, a critique of colonisation that has shaped place over time. In our collaboration on the three studies and reading of current developments in the literature, it became clear that garden- and place-based education must grapple with the troubled histories of place and work towards decolonisation. Each garden project provided unique insight, but our collective analysis elicited an examination of assumptions about pedagogy and potential for decolonisation of land, body, and minds.

We can listen to what the system tells us and discover how its properties and our values can work together to bring forth something much better than could ever be produced by our will alone. (Meadows, 2005, p. 195)

This article examines three uniquely situated garden-based research studies: one in the continent of Africa and two in the continent of North America. The studies were carried out independently by three of the authors and brought together through lively dialogue on the meaning and implication of the studies as a whole. Through engaging the three studies collectively, we were able to generate a rich analysis reflective of both the unique learning emerging from each setting and a more holistic picture of the learning potential grounded in garden-based education. Attuned to the *process* of learning among participants in the garden spaces, our focus became the collective, integrated, and relational forms of learning that could emerge. Additionally, from the commencement of the research studies through to the analysis, a concern for the history of the land — in particular, the colonial history — was a core theme, centring decolonisation as a guide to inquiry. Decolonisation is a messy process, taken up in diverse and sometimes contradictory ways (Andreotti, Stem, Ahenakew, & Hunt, 2015). Tuck and Yang (2012) argued that decolonisation is not a metaphor; land has been stolen from Indigenous peoples. Indeed, colonisation includes colonisation of bodies and minds, as well as the theft of land.

During the initial discussions on this article, the first challenge was to arrive at a framework for constructively exploring that which each author saw as remarkable in the garden projects. As discussion unfolded, it became clear that it was the relationships among the various actors — including non-human actors — that brought about the most salient and intriguing learning in each location. In the opening quotation provided by Donella Meadows (2005), she relates her vision of engaging complex social and ecological systems. For Meadows, engaging systems such as the garden-based programs in the studies is not compatible with controlled and measurable learning outcomes. That is, the desired learning is complex and occurs on multiple levels, and is difficult to capture through standardised quantifying practices. Rather than a linear relationship between pedagogy and learning, the objective of the learning process is 'envisioned and lovingly brought into being' (Meadows, 2005, p. 195). While this understanding appears somewhat straightforward, it reframes the underlying assumptions of pedagogical design and educational programming in a way that diverges from dominant educational practice (Greenwood, 2008). As such, it warrants developing a foundation for analysing the powerful and dynamic learning occurring across the three studies.

The theoretical grounding for this article draws on and intersects with themes explored in gardening education (Fisher-Maltese, 2016; Green, 2012), place-based education (Greenwood, 2008; Smith & Sobel, 2010), and land education (Calderon, 2014; McCoy, 2014), as a subset of a broader field of environmental (Stevenson, Brody, Dillon, & Wals, 2013) and sustainability education (Nolet, 2016). The garden-based and place-based educational theory brought in themes of observation, discovery, collaboration, and the sensuous engagement with learners' surroundings (Green, 2012; Smith & Sobel, 2010). In addition, Williams and Brown (2012) and Gaylie (2009) begin to connect garden-based pedagogy with broader issues engaged within environmental justice and sustainability through a deep exploration of the interconnectedness of human and ecological systems. However, it appeared further exploration into theory beyond that of place-based and garden-based theory was productive in capturing the foundation of learning taking place. Through reading more broadly, it became evident that literature on relationality (e.g., Cajete, 2005; Deloria, 2001; Little Bear, 2016; Musopole, 1994) and decolonisation (e.g., Battiste & Henderson, 2000) were essential to discussing the pedagogical thread woven through the individual studies and generating broader insight and meaning. Within the landscape of these research areas, and in the context of the three research studies, this article explores the way relationships among humans, plants, animals and story can foster learning within garden spaces; and in particular, how diverse cultural, political and epistemological orientations may be exchanged, explored and negotiated; and how these core themes can be examined in a critical analysis of land.

North American Indigenous scholars Gregory Cajete (2005) and Leroy Little Bear (2016), along with the sub-Saharan concept of *Ubuntu/uMunthu* (Kayira, 2013a; Musopole, 1994; Sindima, 1990, 1995; Tutu, 1999), describe a foundation of relationships for guiding not only learning, but philosophy and ethics as well. An overarching principle informing this foundation is the idea of relationality. Little Bear (2016) noted that North American Indigenous peoples' metaphysics was about flux, similar to quantum physics and contrary to the reductionist material-based ideas of the Western European enlightenment. Indigenous metaphysics was about energy, and therefore centred on relationships rather than particles. The energy is found in everything, and this means everything is animate — plants, animals, rocks, stars.

There is an ecological and relational network that leads to the saying 'All my relations'. Indigenous approaches to education centre on the respect and care for the land in situ (Bowers, 2001, 2010; Deloria, 2001; Ritchie, 2015; Wildcat, 2001). As Deloria (2001) noted:

The best description of Indian[1] metaphysics was the realization that the world, and all its possible experience, contributed a social reality, a fabric of life in which everything had the possibility of intimate knowing relationships because, ultimately, everything was related. (p. 2)

Cajete (2005), in the following explanation, similarly articulated the notion of relationality as being at the heart of Indigenous teaching and learning: '*Mitakuye Oyasin* (we are all related) is a Lakota phrase that captures an essence of tribal education because it reflects the understanding that our lives are truly and profoundly connected to other people and the physical world' (p. 70). Cajete framed learning as a process of coming into resonance with the relationality of oneself, the community and the natural world in order to support the axiological principle of pursuing life and holding it sacred. The notion of pedagogy or pedagogical design can be found in Cajete's discussion of the process of creating the conditions for resonance (p. 71). Scholars from sub-Saharan Africa (Musopole, 1994; Sindima, 1990; Tutu, 1999) discuss relationality through the traditional and sustaining concept of ubuntu/uMunthu: the ontological assertion that the existence of a particular being is made possible only through the existence of other beings, and that this reality must be anchored at the heart of theory and practice.

When engaging in research with a place- or land-based focus, as Calderon (2014) argues, researchers must understand that relationships with and practices on land are political in nature, and are heavily circumscribed by processes of colonialism. Calderon states:

> *If environmental educators are to pursue the work of consciousness raising through education connected to place, there has to be an acknowledgement of this reality to critically examine what it means to inhabit lands that were once (and continue to be) the homelands of Indigenous nations.* (p. 27)

Calderon employs the term *territoriality* to illuminate the processes and structures through which a colonial understanding and valuation of land permeates educational research and programming. The notion of territoriality critiques the removal of Indigenous peoples from lands to make way for the coloniser's private ownership, use, and enrichment (notably, damage and destruction of lands are externalised from colonial imaginaries of land). Thus, the pedagogical implications of territoriality within a garden-based learning model require an explicit emphasis on the historical, political, legal, and ideological consequences of colonisation (see also McLean, 2013, and Seawright, 2014).

Decolonisation, from the United Nations point of view, was about removing colonised states from the authority of their colonisers, such that self-government could happen. However, in many countries, there are as many or more people who have descended from colonisers than there are Indigenous peoples; in these countries, the colonisers have settled, leading to the term 'settler colonialism', and they are not likely to leave. Even in those countries where colonising powers have been removed, there is more involved in decolonisation than working towards self-government (although this is an important part of decolonisation). Mark Aquash (2011) noted:

> *As Indigenous intellectuals and communities we are faced with several interrelated challenges: first, dealing with the legacies of Canada's colonial history; second, working towards the decolonization of Canadian legislation and relations with First Nations; and, third, decolonizing the colonial mindset and educational system as well as First Nations identities and communities.* (paragraph 1)

Battiste and Henderson (2000) warn that there is not just one Indigenous way of knowing, or perspective. Thus, as people work to decolonise, they must be sensitised to the histories, cultures, knowledge, ways of knowing and governance systems that various Indigenous individuals and cultures practised. Finding out what different groups did can be difficult; because of the time length of colonisation, generations have passed. Nonetheless, Battiste (2002) noted, 'Indigenous knowledge . . . is the expression of vibrant relationships between the people, their ecosystems, and the other living beings and spirits that share their lands' (p. 42). In each context, decolonisation

will take place in different ways and is a lifelong process. A common point for all three of our studies is a focus on relationality as integral to Indigenous world views; in this sense, we present an alternative to coloniality, in which objects/beings are largely considered autonomous (Bowers, 2004).

All three studies drew from aspects of participatory action research (PAR). PAR is a methodology that unites theory and participatory inquiry as researchers collaborate with community members to conduct research that responds to the needs of the community (Datta et al., 2015; McIntyre, 2008; Reason & Bradbury-Huang, 2008; McTaggart, 1991; Whyte 1991). Since PAR appears particularly well suited for environmental relational learning and decolonisation, we used the approach in our case studies to bring theories into practices of educational research and its implications for the continuing development and deepening of these practices. These reasons made the PAR approach well suited for our research studies. This article illustrates how PAR is a useful method to help both researchers and participants understand the connections between relational ways of learning, decolonising, and taking responsibility for protecting our environment.

Building from this opening framework, the following sections discuss the three garden-based studies in turn, followed by an examination of salient themes related to learning in the three research settings. Finally, the article considers what the research illuminates in terms of relationality within garden spaces in general, and what this might mean for practising decolonisation.

Three studies of gardens, beings, and relationships

Study one: Janet's story of a naturalised garden

This section examines day-care children, aged from 2 years 6 months to 5 years old, who had been invited to play and to learn in a nearby naturalised biodiverse setting. The garden had been naturalised from invasive grasses, and Indigenous features had been built in, such as an Earth Turtle.[2] The researcher was aware of, and concerned about, the need for more naturalised spaces, so as to work towards preserving biodiversity. At the same time, she wished to honour and value the original occupants of the land, and thus features that demonstrated the perspectives of Indigenous peoples that reflected the valuing of land, place and relationships had been added to the garden. The researcher is white and was raised within a Eurocentric world view.

When the research began with the day-care children, it focused on their learning about relationships. It was through discussions with co-authors that the role of relationality to enhance decolonisation emerged.

The research comprised a few learning activities, designed by the researcher and approved of by the caregivers, as well as including much time for free play. While engaged in free play, the children interacted with one another, with the environment, and with their caregivers. The researcher sought the multiple and dynamic emergences facilitated through experiences within this garden — among biotic and abiotic factors, and including interactions among children and with their adult caregivers. The purpose was to observe the children's developing relationships. Institutional Research Board permission was granted. PAR was used, and data were drawn from the researcher's planning notes, anecdotal records made in the moment and after the activities ended, and from end-of-day conversations between researcher and an undergraduate summer student research assistant. Memos made in the moment, and at day's end became part of the data, and these memos contributed to researcher ability to follow up on emerging themes. The study was a PAR design in that the researcher worked side by side with the caregivers to plan activities (including creating a balance between free play and structured play). As well, each day's observations could lead to modifying the next day's activities. Data were inductively analysed in conversation with the caregivers after each research day.

We [researcher and summer student] observed the children in free play in the garden, and attempted, at times, to engage them in specific activities for various purposes. For example, we wanted them to focus on senses other than just sight and so asked them to listen for bird calls. At first, the children could hear only the traffic of nearby construction. But, as I [researcher] put up my finger every time I heard (faintly, nearly drowned out by traffic) a bird call, the children began to notice these on their own. The children noticed other organisms quickly, such as, for example, the only furry organism (ground squirrels). Most of the children were fascinated with the ground squirrels, sometimes stopping other activities to try to entice them with food. We asked the children to 'be a ground squirrel' one day. This resulted in the children dropping to all fours, and crawling around in the garden. This is a significant feature of ground squirrel behaviour that is different from human behaviour; other features specific to ground squirrels were not portrayed, such as the way they stand erect by their holes and peep loudly as a warning to their families when people encroach. The children were also interested in lady bugs. When we asked the children to find a lady bug to tell us about, they began to search the leaves of the bushes. 'Lady bugs live on leaves' was a common statement. When asked what the lady bugs did by 'living on leaves', they said the lady bugs ate the leaves. Again, as with the ground squirrels, living on leaves is very different from the children's behaviour; however, lady bugs do not eat leaves. The children had observed ground squirrels and lady bugs, and they cared about these organisms. They noticed interesting behaviours and relationships — that lady bugs live on leaves and that ground squirrels live on the ground. The children did not seem to observe closely what these organisms were doing. The problem could well have been the result of the set-up of the activity itself; however, since the children were to act out or observe a particular species, they were not asked to look for relationships or behaviour.

On the day we asked the children to be 'sunshine', a different understanding emerged. To represent sunshine, the children spread arms and legs wide above a flower, with one girl saying 'I'm shining on these yellow flowers'. It would seem that this abstract concept, sunshine, demanded the children to represent a relationship.

In an attempt to have the children engage in a more meditative time, a solo time in the garden, we asked them to try to feed the chickadees[3] from their hands. Each child was to find a spot and then a caregiver would bring the child a handful of sunflower seeds. Some of the children remained focused on holding out their hands to the birds. Other children fidgeted, and often this was a precursor to leaving the chosen spot. One little boy had selected his bird-feeding spot carefully, very near to the bird feeder that was always in the garden. Patiently, quietly, and very still, he held out his hand. A chickadee flew very close several times; then a cluster of other boys moved in his direction and the chickadee flew off.

In the debrief, I asked the children if they had been able to feed a chickadee. A number of them said yes; however, there was not the look of magic having happened that comes into a child's eyes the first time a chickadee lands on one's own fingers and takes a sunflower seed. Thus, we organised a field trip to a nearby birding location where chickadees had already learned to take sunflower seeds from human hands. The first time a chickadee landed on a child's hand, the child's eyes lit up with wonder. Tiny bird feet, tiny bird beak, and then tiny bird flying off with its treasure. My participation in this activity with the children resulted in my observing something I had not noticed before: some chickadees will take and eat a sunflower seed; others will take one, and fly away to store it for later, returning quickly for more. The world encompasses a rich complexity of relationships, and no one, child or adult, will notice them all. I became more humble in my judgments of the children's investigation of relationships.

The next day in the garden, we tried feeding chickadees again. Again, despite the patience of some children, the chickadees did not come close enough. Some children were worried that the chickadees did not get enough to eat. To support understanding of natural habitats where food is available, I said that it did not matter so much that the chickadees had not eaten the sunflower

seeds. Chickadees also ate insects, and I used the example of ladybugs (but actually, ladybugs are poisonous to birds).

This statement resulted in all the children becoming very quiet. Chickadees eating their friends the lady bugs seemed a problem for them. After about 20 seconds of silence, a small voice from the back said: 'I just eat food.'

Although the common adult reaction to this story is a giggle and a statement that this is cute, the statement, to me, represents the child engaging in attempts at interspecies intersubjectivity. Likely, in her attempt to understand why the chickadee she loved would eat the lady bug she loved, she had put herself into the chickadee's situation: it has to eat, there are no more sunflower seeds, lady bugs are available. What would she, a child, eat, so as not to have to eat her friends? It seemed this child was attempting to feel the emotions of 'other', reducing the barriers between herself as an individual and the world around her.

The children came to the garden as knowers, with attitudes towards other species, such as fear of spiders, dislike of mosquitoes and affection for lady bugs, but also with language and related concepts. Results indicated that children quickly learned from their caregivers that these organisms serve special roles in the garden. There were many aspects of the garden that were part of the unnamed (and often unnoticed) world for the children; and caregivers, through creating sensory activities, helped the children to bring more of the garden into their attention. When observing children's understandings of relationships, it seemed the children picked up on adult words and communications that would either focus them on individual aspects of the garden (e.g., a lady bug) versus focus them on relationships (e.g., sunshine, helping plants to grow). Relationships existed and continued to emerge. To reinforce this opening of an individual's abilities to see and make relationships, adult caregivers must affirm the importance of relationships with the biotic and abiotic world. These early learners were predisposed to view the world relationally and, perhaps alternatively, perhaps simultaneously, as separated into individual (and more or less unrelated) component parts. Language and the behaviour of significant adults seemed to affect the ways children developed their epistemologies and therefore their personal margins.

Study two: Jean's story about uMunthu in a Junior Farmer Field and Life Skills School garden

This section presents findings of part of a larger study that was aimed at exploring how environmental sustainability is taken up in the forms of knowledge and practice embedded in the local culture of Chinduzi village in Malawi. The study was conducted at Chinduzi Junior Farmer Field and Life Skills School (JFFLS) in Machinga District from September 2010 through January 2011 (Kayira, 2013b). In particular, this part focuses on the interactions that were evident in the JFFLS garden. The researcher is Malawian but currently based in North America.

The JFFLS is an initiative that was initially developed in 2003 by the Food and Agricultural Organization of the United Nations (FAO) and the World Food Program (WFP) to help address a growing number of orphan[4] and vulnerable[5] children (FAO, 2008). The goal of a JFFLS is to empower orphan and vulnerable children and youth,[6] by offering them livelihood options and gender-sensitive skills needed for long-term food security, while minimising their vulnerability to destitution and risk-coping behaviours (FAO, 2008; FAO & WFP, 2007). There are 41 JFFLS sites in six districts in Malawi (Kachale, 2009). Chinduzi JFFLS is one of the sites located at Chinduzi primary/elementary school. The program is managed by three facilitators: a teacher at the primary school and two from the community. The garden is about 0.25 acres in size. JFFLS lessons are offered in the afternoon after the youth are done with the general primary school lessons. Forty youth were in the program at the time of the study and their ages ranged from 9 to 17 years. Methods of collecting data included observations of field lessons, focus group discussions with the youth and facilitators, and conversations with Elders. The study followed a participatory research design in two main ways. First, all the youth, including the researcher, actively participated in the tasks taught in the garden. Second, a group of 14 youths worked with

the researcher on a daily basis to, for example, facilitate conversations with Elders, analyse transcripts and present initial findings to the facilitators. Data were inductively analysed.

The study revealed that the JFFLS garden was a fertile ground for relationships to co-exist and be enabled. In particular, relationships that were evident included those developed through informal interactions among the youth and facilitators, as well as those between knowledge systems (taught and learned). A consistent thread observed throughout the study was *uMunthu* (humanness, interconnectedness, interdependence, respect). This was expressed either explicitly by Elders or implicitly through the interactions among youth and facilitators.

Observational data revealed that the youth were more comfortable with each other and seemed to enjoy each other's company, as well as that of the facilitators. There was good rapport between youth and facilitators. In the beginning, the youth were too shy to ask questions; however, they became more comfortable very quickly, feeling free to ask many questions. An example of the youth asking questions of the facilitators can be seen in an excerpt of a lesson on planting mustard vegetables in a bed they had made with Gliricidia green manure. Facilitators did not tell the youth what they were planting until one asked:

Yamikani[7]: Kodi tikudzalachi ndi chani?[8] (What are we planting?)

Facilitator: Masamba a mpiru kapena tanaposi. (Mustard vegetables.)

(Youth are excited; everybody wants to participate in the planting! They are told to plant three seeds per station.)

Ndiuzayani: Chifukwa chani tidzale zitatu pa phando? (Why should we plant three seeds per station?)

Facilitator: Kuchitira kuti tikadzala imodzi mwina siimera … zikamera zonse tidzachosa zinazo maka-maka zooneka zofooka. (To increase the chance of germination … if all germinate we will thin out the weak ones.)

Lonjezo: Kodi manyowa a gilisidia tinapanga tsiku lija sali pansi kwambiri kuti midzu ya mbeu yiwapedze? (Is the Gliricidia manure we made the other day not too deep for the mustard roots to reach?)

Facilitator: Mukufunsa mafunso abwino kwambiri. Tiyeni tikumbe tione. (You are asking very good questions. Let us dig and see the depth of the manure.)

(They find the manure at a depth of about 20 cm. Facilitators explain this is a good depth for the roots to reach. After planting is done, youth are told they are going to cover the bed with grass before watering it. Then another question.)

Dalitso: Tiika maudzu chifukwa chani? (Why are we going to cover the bed with grass?)

Facilitator: Kutchinga ku dzuwa kuti bedi lisaume koma likhale ndi chinyezi. Komanso tiika maduka mmbali kutetedza madzi kuti asasefukire … izi zimatetedzanso ku tizirombo … mchitidwe umeneu umathandiza kusunga nthaka kuti ikhale yachinyezi kotero chilengedwe chathu chimatetedzedwa. (To prevent the sun heating the bed directly thereby helping keep moisture. We will also put half bricks around the edges to prevent runoff water … such measures also protect the vegetables from termite attack … such practices help conserve soil water which in turn [help] preserve our environment.)

The data also suggest that many youth enjoyed the teaching style used in the JFFLS lessons more than the teaching style used in the regular primary school lessons. Thus, they would miss regular school sessions in the morning, but made sure they were present at the JFFLS lesson in the afternoon. For example, this is how a youth participant, Landileni, explains why he could not come to school in the morning on this day:

Landileni: A mai anandipempha kuti ndipite ku chigayo, ndinasinkha-sinkha kuti ndipite kuchigayo mmawa [ndikujomba sukulu] kapena masana [ndikujomba maphunziro a junior farmer field]? Ndinasankha kupita ku chigayo mmawa kuti ndisajombe ku maphunziro a junior farmer field. (My mom asked me to go to a maize mill for her so I had to choose whether to go in the morning [and miss regular school] or go in the afternoon [and miss junior farmer field lessons]. I chose to go to the maize mill in the morning so that I do not miss junior farmer field lessons.)

Author C: Chifukwa chani unasankha kusajomba maphunziro a junior farmer field? (Why did you choose not to miss junior farmer field lessons?)

Landileni: Chifukwa maphunziro amenewa [junior farmer field] ndiwosangalatsa. (Because these lessons [junior farmer field] are fun). (Fourth youth focus group discussion)

Most youth participants agreed with Landileni's point that JFFLS lessons are fun, citing reasons such as friendliness of facilitators, less pressure to provide a *right* answer, provision of a meal, and not having to write exams. Facilitators encouraged the youth to ask questions and not fear providing a 'wrong' answer. They emphasised that it was only a discussion and everybody's contribution was valued, and no one was being assessed or judged. I felt this was a good strategy to remove pressure and anxiety for the youth. Indeed, the lessons in the garden were active and often filled with laughter.

Additionally, one set of skills I observed among the youth was social skills for conflict resolution, communication, respect, and team work. The youth and I developed a modus operandi at the beginning to ensure we had guiding procedures and a collective understanding of responsibilities and expectations. However, as would be expected with any group working together, there were disagreements, tensions, and arguments. In the beginning, there were many arguments among the youth. I often had to intervene to settle disputes and remind all of us that we were all one and needed to respect each other as we worked together. Everyone had a valuable point and we needed to respect that even if we did not agree with them. It was interesting that as time went by, everybody got along. In most cases, disagreements were amicably dealt with by the youth themselves as I watched. Indeed, by the end of the study, many indicated they had become good friends. Elder Mlauzi made this prediction early on in the research. She was commending the participatory nature of the study, particularly the strategy of holding conversations together with the youth and not the researcher alone and how this was a relationship building exercise, 'Monga mmene mukuyenda nawomu ndiye kuti pamenepo mukuwakondetsa ngati anali odana . . . [chifukwa choti akuyendera limodzi nthawi zonse] ndiye kuti akhala wogwirizana' ('As you are making these visits with them [referring to the youth], you are making them like each other if they were not on terms before . . . [because they are together all the time] they will learn to work together amicably').

uMunthu was another key finding of the study. For example, participating Elders felt the school curriculum should include important cultural virtues for character building and the instillation of morals as these factors relate to sustainable and responsible actions. To this end, they recommended the teaching of uMunthu, including a strong sense of community as a core value, as well

as religion (both Indigenous and non-Indigenous). Elder Mussa pointed out that education and uMunthu are not the same thing. According to him, a person may be highly educated, but if they do not have uMunthu they are as good as nothing because uMunthu makes one 'human' through demonstrating empathy and respect for others ('*Kuphunzira ndi uMunthu ndi zosiyana* … *ukhoza kukhala ophunzira kwambiri koma ngati ulibe uMunthu, palibe chimene ungapindile* … *chifukwa uMunthu umapangitsa kuti munthu akhale 'munthu'* … *aonetse chikondi* … *komanso alemekeze ena* … '). Elders also emphasised youth learning 'respect' as a virtue. Here they did not refer solely to respecting people, but to everything that contributes to a person's wellbeing, including non-human entities (i.e., nature). The phrase 'Munthu ndi nthambi yachilengedwe' ('A person is part of nature/environment'), was said by almost all Elders in the study. This means that people's knowledge systems, traditions, and spirituality are inseparable from their environment. Thus, the youth are expected to respect and protect their relationships with nature and with one another. That is the essence of uMunthu; they are expected to nurture these relationships.

It could be argued that the interactions in the garden were inherently grounded in uMunthu. The garden provided a space where participants were able to respect, connect, and relate with each other, including with the more-than-human present. Furthermore, youth learned both Indigenous and non-Indigenous knowledge systems of soil fertility management (SFM) and pest and disease control (e.g., planting strong smelling plants such as onions, garlic, and marigolds in between other vegetables; making a pesticide from grasshoppers to control grasshopper attack; using animal urine (cow or goat) to repel insects). The SFM practices included legume intensification (agroforestry, green manures, rotation, intercropping, and growing crops under leguminous Indigenous trees) and manure usage. Thus, these knowledge systems co-existed in the garden. It was clear that the youth preferred this pedagogical space to their usual classroom space.

Study three: Ranjan's story of a cross-cultural community garden

This section highlights a cross-cultural community garden program as a shared space where children and adults connect, learn, share, and engage their social and environmental communities. The author is an immigrant, Indigenous in his home country of Bangladesh.

I have been involved with this garden with four family members (two children, my spouse, and myself) since 2011. This study examines the emergence of relationality among diverse actors coming together to foster community and the implications of this emergence for decolonisation. Using PAR as a research methodology, this study developed from seven years of relational cross-cultural community garden activities. This cross-cultural community garden is situated on the AAA university grounds in BBB city, which provides a collaborative space to residents living in university-owned apartments on campus during the months of May to October. This project started in 2012 with ten garden plots and gardeners coming from three different countries, with a total of ten families, including 18 adults and five children. By 2017, the garden space had extended to 120 garden plots with over 25 countries and cultures represented among members, with 120 families, including 400 adults (single students, married students without children, parenting students, and students' parents) and 60 children. Another six sharing plots were created: two for the local food bank, two for students and neighbours without access to garden space, and two for children. Many of the children were there daily, particularly during weekends and two months of summer when schools are closed. The garden had operated for six months of each of five consecutive years.

I employed participant observation while engaged in various activities (i.e., garden coordinating, organising cross-cultural and environmental workshops for children, garden maintenance, and cross-cultural garden foods celebrations), recording the information in my personal daily journal in which I had photos and notes. Immediately following each observation event, I completed an observation checklist to document my participation and activities in my daily journal.

I had collected the photos, notes and checklists over five years of garden work and learning. Data were analysed using a self-reflective narrative approach, focusing on my own experiences and stories (Tuck & McKenzie, 2016). My positionality as a participant-researcher and the underlying concepts of relationality and engagement were gathered from my five years of involvement in this cross-cultural community garden. I drew on my experiences and activities as my data sources, as they provide a powerful avenue for understanding who I am, my accountabilities as a researcher, and my responsibilities towards my relationships (Datta et al., 2015; Wilson, 2008). In this way, my participation actively shifts the balance towards non-dominant perspectives that are commonly neglected by mainstream research methods (Wilson, 2008).

As an immigrant researcher, understanding the concepts of relationality and decolonisation from the Indigenous perspectives was one of the important goals in our community garden. For instance, Indigenous community Elders and Knowledge-holders visited our community garden and shared their traditional stories regarding the importance of native plants and their relationships with community garden plants. Indigenous Elders noted that it is necessary to teach the history of colonisation. As well, they addressed decolonisation through valuing traditional ways of living with the land, ways that have been successful for thousands of years. Such relational forms of learning may provide significant insights for immigrant community gardeners and their children to create belongingness in this foreign land. For instance, our children developed two school presentation projects based on Indigenous community garden visits and Indigenous stories.

Interactions with different species play a significant part for the children's learning within the community garden. Throughout my five years of community garden activities, I have learned that a community garden promotes understanding of relationships with other children, other species, other places, diversity, and the environment. I see a community garden as a relational teacher who can teach us how we can live together, share, and care for each other. Each of the following stories illustrates the children developing relationships with 'other'.

Interacting with lady bugs became a regular activity for our garden children. Through their interactions with lady bugs, I have interpreted that children enrich their knowledge of family. For instance, the community garden children, including my two daughters, tried to build relationships with lady bugs. If any lady bug was separated from its family (was alone), the children tried to get it back to its family. The children tried to build relationships with lady bugs so that they could understand the lady bugs' needs. Upon going out to the garden, my children would run to the children's plots. I observed that they worried about lady bug food and lady bug family relationships. As children interacted with lady bugs in the garden, they asked many questions, such as: how do they sleep at night when it rains, how do they survive during winter, what do they eat, how do they know if wind takes their family away, and so on. I also found many times that our children worried if it was raining outside. I used to answer them that lady bugs know how to survive in the rain and that they take care of each other as we take care of our children.

In summer, our community garden is full of different colours of butterflies. The children tried to find out which garden flower the butterflies liked best and why. I used to sit beside my children, who would sit silently, trying to find out if a butterfly would land on their hands. If a butterfly did land on a child's hand, the children were happy seeing themselves as a good friend of butterflies. One of my daughters told me that butterflies taste their food with their feet. She thinks that butterflies have many similarities with humans, but we do not see these.

Interacting with ants seemed to enhance the children's collaborative learning activities. For example, children tried to find out why ants ran in groups and where they went. They followed ant activities closely and tried to find out how so many ants worked together. One of the children told me, 'I like how ants like and help each other'. By following the ants, the children learned not only how ants collected food, but also how ants work together to bring large pieces of food back to the ant hill. In relation to their interactions with ants, whenever I had an opportunity, I used to explain to my two daughters why they should work to help each other. I found it was easy to share my knowledge if I could show why ants were working together.

Relational activities with bees played a significant role in building my children's understanding about environment (Datta, 2016). For example, one day, one of my daughters came home from school and asked right away if we could go to the garden. When I asked her why, she said she wanted to learn more about the plants and insects there — how they live together. When I asked her why we should care about insects, she gave me an unexpected answer: she had learned from her school teacher that bees are important for our plants and humans are not protecting them. My daughter wanted to bring her classmates and teacher to our community garden to show how the plants are providing food for the bees. She added that the university was full of buildings and green grass, and these did not provide food for the bees. She challenged me to find bees in the grass field and then to find bees in the community garden, where there were many different kinds of plants. I had not taught her about the relationship between bees and gardens; however, she learned about them from school, and was able to connect her school knowledge to her practice in the garden. Through the relationship between school learning and the garden, she not only knew what we as a society are doing wrong, but how we can do things better.

I have learned that decolonisation through relational activities in the community garden not only provides multiple ways of learning but also creates opportunities for different ways of knowing for children. Through garden activities, the children showed many examples of how they can be engaged in critical discussions and how they can learn from each other without having a teacher. The children's focus on relationships was significant: they noticed and worried about lady bugs, inquired about butterfly preferences of flower species, attended to the cooperation among ants, connected school learning to the world through examining bees and bee habitat, and gained an understanding of the colonial history of the space in which they were gardening. In this study, I focused on decolonisation as emerging from relational learning towards interspecies empathy among children, the place, diversity, and environmental learning.

Discussion

During our initial discussion of the studies it became clear very quickly that something significant was occurring across the three settings. While we enjoyed sharing stories about the various emergences within the garden spaces, we felt that there was something deeper and more profound at work that merited further exploration. In the introduction, we explored the idea of relationality as a possible frame for discussing the three studies. In doing so, we drew on Indigenous approaches to education (Cajete, 2005; Deloria, 2001; Musopole, 1994; Schertz, 2007; Sindima, 1990, 1995; Tutu, 1999) and found that it had implications concerning decolonisation in the learning process (Andreotti et al., 2015; Battiste & Henderson, 2000; Calderon, 2014; McCoy, 2014). For each of the studies, decolonisation was a goal, but one that was emergent as the researchers explored ways to incorporate relationality into the garden learning.

Relationality

During analysis of the studies, we found that relational learning was central to each garden setting. Williams and Brown (2012) promoted the role of gardens for teaching relationality and interconnectedness. As Cajete (2005) articulated, relationality involves coming into resonance within oneself, one's community, and the surrounding ecosystem (Cajete, 2005). The guiding quality of this resonance, as Cajete emphasises, is the pursuit and enrichment of life. Our understanding of the learning arising within the garden spaces ties into Cajete's guiding quality. Thus, the value of relationality involved supporting learners in generating meaning for themselves as part of the garden community. In a way, the community emerged through the relational qualities that physically, socially, psychologically and spiritually connected participants, and connected each participant to the land (Datta, 2016).

A close review of the three studies suggests that learners' relational activities in the gardens, especially ones characterised by mutual respect and honour, lead to the deepest learning. For example, the study in Malawi revealed the translation of the term *uMunthu* from Elder voices into respectful relationships among community members. We assert that such a relational learning perspective from Elders to youth created a strong sense of community. Elders related uMunthu as important for ecological care, as well as care for one another; youth also identified respectful relationships as significant for protecting their environment. Likewise, in the cross-cultural community garden study, we observed how children's relationships with different community garden species were not only helpful to understand various species, but children also found that their relational activities were significant for protecting their environment. When gardeners were able to tour Indigenous community gardens, they learned about the importance of native species for maintaining healthy ecosystems, which include humans. Similarly, in our naturalised garden study, we observed how children's relational activities supported relational understandings among themselves and the other species.

Children were prompted to use the relationships they observed in the garden setting to connect with their own social experiences and to support desirable behaviours; for example, in the community garden study, lady bugs were interpreted to be family oriented and ants as cooperative. Children and youth (in the community garden) also connected their school-based learning to their understandings of biodiversity and relationships in the garden, expressing a desire to bring their classmates to the garden to learn in that site. One of the children in the natural garden setting demonstrated her ability and desire to understand why a chickadee might eat an insect the children valued. All the children loved both chickadees and ladybugs, so the idea that one would eat the other was difficult to understand. The children demonstrated concern for other-than-human participants as they learned how to interact and cooperate with peers and other visitors to the community and natural garden settings.

Relational learning in gardens can enrich mutual respectful learning. While relational learning activities in gardens are important for celebrating cultural rituals, they also offer a significant bridge across cultures. We have seen in all the three studies that children's and youth's relational activities in their garden activities can offer mutual learning processes such as intergenerational learning (learning between children and youth; children, youth and adults; adults and Elders; and Elders and children) and cross-cultural learning (learning from different cultures and within cultures). We also observed that children and youth not only learned from their garden activities, but they also connected their classroom learning with the learning emerging from experiences within the garden. The gardens were places for the children and youth to observe, inquire into and play in, and also to apply classroom learning.

In the JFFLS garden in Malawi, the facilitators were well aware of Indigenous attitudes and were able to focus much more closely on relationships among all the entities. It was necessary for the adults to take a critical perspective, one informed by decolonisation. Significantly, we noticed the garden sites were valuable sites for provoking decolonisation, and for supporting Indigenous focus on interrelationships. Indeed, exploring place and relationality cannot be done without understanding colonialisation; hence, the need for working toward decolonisation.

Decolonisation

Relational learning can be used as an entry point for decolonisation. Decolonisation is a process that 'engages with imperialism and colonialism at multiple levels' (Smith, 1999, p. 20) and requires the critical examination of the hegemonic structures of mainstream education that perpetuate the values of colonialism (Battiste, 2004). Decolonising processes are lifelong unlearning and relearning acts (Battiste, 2013). Bowers (2004) argued that colonisation is a global enterprise, involving the seizure of local lands, bodies, minds, and the turning of them to serve remote 'others'.

In contrast, valuing local places with local understandings of how to live sustainably supports the ideal of healthy ecosystems, biodiversity and, ultimately, planetary health. In this article, the three studies demonstrated that it is possible to focus on relationality to challenge the process of classroom-based learning, which reinforces colonisation (Battiste, 2004). We learned that when children are immersed in garden spaces on a regular basis, they develop a relationship with and attachment to the land, and with the other species there. It is against this context of research-as-colonisation that decolonising learning can be undertaken for and with learners' communities (Datta, 2017).

In the cross-cultural community garden, immigrant children, by visiting Indigenous gardeners, had opportunities to meet Indigenous Elders and learn first-hand how the environmental destruction associated with colonisation affected the lives of Indigenous peoples. Indigenous stories were helpful not only for learning land-based stories from Indigenous Elders, but also helped to create a sense of attachment and belongingness in a new land. Such relational learning may provide an avenue to discuss contentious histories, to help work through contradictory ideas and to gain new knowledge. The young learners had many questions as they interacted in the diverse garden space, leading them to inquire into the species and relationships they observed. An example was when children independently sought out the relationships between butterflies and flowers and systematically examined these relationships as they sought answers to their own questions about which flowers were most likely to host which butterflies. Supporting them in their inquiry was a committed adult, who encouraged them to pursue their own curiosities.

The youth in the JFFLS garden were learning uMunthu through interacting and relating to each other, facilitators and their surrounding (i.e., the biotic and abiotic), which speaks to caring for local ecosystems. The young learners related well to the biological diversity and decolonising nature of learning in the gardens; they commented that they preferred the hands-on, practical nature of learning, as well as the warmth of the facilitators for their learning. The facilitators in the JFFLS garden supported the youth to explore answers to their questions — for instance, finding how deep the green manure was. The youth in the JFFLS garden learned how to get along with one another while respectfully engaging with facilitators; this was partially an outcome of the set-up of the study, but also because the youth were working together toward a common goal.

The children in the naturalised garden space demonstrated that the way the researcher framed an activity affected whether the children focused on individual entities or relationships. This made it apparent that children are capable of seeing the world as relational, or as individual entities. The researcher was changed as a result of participating with the children and revealing the depth of colonisation, but also because the children were still open to seeing the world differently. The researcher determined that the language forms that are used are key for supporting children in seeing relationships, and therefore beginning the process of decolonisation. Battiste (2002) noted that Indigenous languages must be valued as part of the process for decolonisation. The Indigenous language most common in this area is 'verb based' and a verb-based local language would support both relationality and decolonisation. By focusing on relational learning in the analysis, the researcher in the naturalised garden learned how her language had to change to support this focus.

Each of the studies shows that the learning processes were informal, derived largely from the collaborative interactions among human participants and the biotic and abiotic phenomena present within the garden spaces. We observed that the children and youth (as well as other learners) came to the gardens as 'knowers', bringing knowledge and values to their inquiries. While participants and researchers brought understandings and values of what it is to be present within the garden spaces (and on the land in general), new possibilities for connection and responsibility emerged as participants collectively explored relationships with one another and with the land. Participants practised decolonisation through learning and unlearning relational ways of being with the land.

Conclusion

Through discussion of the three research studies, it has become evident that the learning potential extends to engage relationships, care, and a deeper understanding that learning and being are not individual phenomena. In other words, the process of coming to know the world and ourselves within it is contingent upon recognising our relationality (and reciprocity) with human and non-human life all around us. Returning to Cajete's (2005) vision of education referred to above, the learning involves deliberately embracing a resonance with an interconnection of oneself, the community, and the natural world to promote a reverence for life and to safeguard living systems. Similarly, the learning potential embodied in the notion of uMunthu, as expressed by Kayira (2013a), Musopole (1994) and others, emphasises relationship and care as foundational pedagogical tenets. Indeed, relationality and interdependence defy pedagogical practices that are based on hierarchy, not only between teacher and learner, but also between and among knowledge systems. This is one path that environmental education researchers might take to support decolonisation.

There are myriad perspectives and priorities driving educational theory and design, all of which have particular value. The value-base emerging from our exploration of the three garden-based learning studies centres life as a complex of intricate relationships, ideally embraced through attentiveness and care. This approach, as noted above, is largely informed by Indigenous researchers and educators, simultaneously articulating traditional approaches to education and providing a roadmap for responding to the profound social and ecological challenges we face in the present era (Battiste & Henderson, 2000; Bowers, 2001, 2004, 2010; Cajete, 2005; Deloria, 2001; LittleBear, 2016; Musopole, 1994; Seawright, 2014; Sindima, 1990, 1995; Tutu, 1999; Wildcat, 2001). Given the analogy of the garden as a meeting place of children, youth, adults, plants, animals, landscapes, stories, languages, cultures, knowledges, practices, and discovery, gardens can serve as rich settings for bridging commonplace practices of public education with priorities of decolonisation. While each garden study aligns with these aims in its own way, more work and research must be done to gain a clearer sense of how garden-based learning can reflect the moral and intellectual foundations of relationality, and advance the goals of decolonisation. In our pursuit of decolonisation, we wonder how we humans make meaning with/in the land? How do we examine this, share it, develop it, with learners? As Meadows (2005) states in the opening, although this learning objective cannot be forced upon learners it, 'can be envisioned and brought lovingly into being' (p. 195). To do this, learners will need to spend time in places where life forms interact and interrelate with other life forms.

Endnotes

1. Deloria here refers to the peoples now named 'American Natives'. In Canada, these people have chosen to name themselves 'First Nations' and 'Métis' peoples; in showing relationship to First Peoples globally, the term 'Indigenous' is often used.
2. When children first visited the garden, they noticed and asked about the Earth Turtle, built several years prior with the support of an Indigenous elder. A foundation story told by many North American Indigenous groups is of a woman falling from the sky and ending up on the back of a turtle. Kimmerer (2014) tells a version where, as the Sky Woman falls, geese notice and fly up to catch her, directing her fall onto the back of a turtle swimming in the water. Various animals then come to help the woman to build a continent on the back of the turtle. In Kimmerer's version the story emphasises relationality — the different species of animals worked together with the first human on 'Turtle Island'.
3. Chickadees are very small and popular birds, which remain all year in this location, and are known for interacting with humans.

4. National Statistical Office (NSO) and ICF Macro (2011) define an orphan as a child under age 18 who has lost one or both parents.

5. A vulnerable child is defined as a child under age 18 who has a chronically ill parent or who lives in a household where an adult is chronically ill (NSO & ICF Macro, 2011).

6. Youth are defined as those aged 15–24 years (Chigunta, Schnurr, James-Wilson, & Torres, 2005).

7. To assure confidentiality and identity of participants in the research, all names have been replaced by pseudonyms.

8. The quotes are presented verbatim as spoken by participants in the local language of Chichewa. An English translation is provided in parentheses. I decided to present the quotes in the original language spoken by the participants as a way to decolonise some of the conventional use of words. For example, there is a tendency to give an English explanation of a word that gets 'bracketed' in its Indigenous form while other words in their Latin, German and or French form are considered acceptable (Mignolo, 2003, 2013).

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Vince Anderson (Interdisciplinary Studies, University of Saskatchewan). Vince's doctoral research centres on the question of what it means to design educational systems that respond to and serve the needs of the community. The research process draws both from literature on social and ecological justice education and data gathered with individuals working closely within the community to address the real and lived challenges faced daily.

Ranjan Datta (College of Education, University of Saskatchewan). Ranjan's current research focuses on building a bridge between formal and informal learning in the realisation of cross-cultural practices, with a specific focus on community-based environmental education.

Jean Kayira (Environmental Studies Department, Antioch University New England). Jean's research interests focus on Indigenous knowledge and sustainability education, youth participatory action research, and community-based environmental education. She is a core faculty member and associate director for the environmental studies PhD program.

Janet McVittie (Department of Educational Foundations, University of Saskatchewan). Janet's current teaching and research focus on sustainability education as it applies to social and ecological justice. She is the coordinator of the University of Saskatchewan's Prairie Habitat Garden.