



# Climate change resiliency response from and within cross-cultural children activities

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## ARTICLE INFO

### Keywords:

Cross-cultural children  
Community garden  
Climate change  
Elder  
Land-based knowledge  
Children activities

## ABSTRACT

While there are many studies about the environmental impacts of climate change, the role of cross-cultural children and their activities for climate change solutions has been a lesser focus of inquiry on climate change resiliency research. This paper discusses learning from reflective learning, Indigenous Elders land-based teaching, and music and arts learnings and positive interactions with cross-cultural children in a cross-cultural community garden. It is essential to know who we are as a colour settler family on Indigenous land (i.e., treaties six and seven territories known as Alberta and Saskatchewan in Canada). Our family has been involved with various cross-cultural children's activities in the community garden for over eight years. Learning together with cross-cultural children in a community garden assisted us in creating our belonging with land and people, building a cross-cultural community, and taking responsibility for climate change solutions. Following Indigenist research methodology, we used non-traditional stories such as growing foods, learning through Indigenous and intergenerational stories, father and daughter conversations, music, dance, and artwork. We hope learning about climate change solutions through cross-cultural children's activities in a community garden may inspire others to understand the importance of building a cross-cultural children's community for climate change solutions from and within everyday learning and practice.

## 1. Introduction

Children's involvement in community gardens offers many benefits, including learning and health (Castro et al., 2013; Datta, 2018). Children's activities in a community garden can also build a bridge between formal and informal learning, particularly with children from different cultures and nationalities (Datta, 2018). Several studies on community gardens and children's involvement suggest that children's activities in a community garden can build children's learning capability regarding who they are and what they need to do (Ghose et al., 2014; Kim, 2017). Children's activities in a community garden allow them to create belongingness with land and people (Datta, 2016). Community garden activities are essential for children's learning because these activities grow awareness of how to protect land, plants, animals and responsibilities (Castro et al., 2013; Kim, 2017). Children's activities in a community garden also help children understand the importance of protecting our Earth and reducing the impact of climate change (Kim, 2017).

Although many studies discuss community gardens, more research

must be conducted on cross-cultural children's activities in a community garden and climate change solutions (Datta et al., 2022; Trott, 2020; Walker, 2021). More research is needed on how cross-cultural children can take responsibility for climate change resilience through community garden activities. Moreover, there needs to be more information on how community garden activities can help cross-cultural children take responsibility for climate change resiliency. This study aims to fill these gaps by exploring how the cross-cultural children's community garden contributes to cross-cultural learning opportunities such as land-based learning, intergenerational learning, and decolonial learning in response to climate change.

We organized this paper into five parts. In the first part the literature background that discusses children's activities, children's responsibilities, and children's self-determination in climate change solutions; second, we situate ourselves regarding who we are and why we are writing this paper; third, we present our theoretical framework and methods; fourth, situating a case study, we explain how children's cross-cultural community garden activities could enrich children's climate change understanding and practice; finally, we discuss how our

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<https://doi.org/10.1016/j.envsci.2023.103634>

Received 24 July 2022; Received in revised form 20 September 2023; Accepted 30 October 2023

Available online 14 November 2023

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children's community garden activities could help children to educate themselves and take responsibility for climate change solutions.

## 2. Importance of cross-cultural children's activities on climate change response

While there are many studies about the environmental impacts of climate change, the role of cross-cultural children and their involvement in climate governance has been a lesser focus of inquiry (Seif, 2011). Children's activities play a significant role in understanding climate change adaptations and their impacts (Taylor et al., 2018). Although many vital issues are interconnected with climate change and children's activities, in the following, we explore relationships between climate change and children's activities, looking at youth activities, children's responsibilities, and children's self-determination in relation to climate change solutions.

The effects of climate change are becoming more severe; as a result, more children are joining the campaign for meaningful change. In their research about youth political involvement, particularly in voting, Boulianne et al. (2020) explain that it is not that youth are disinterested; instead, they are increasingly interested in other types of involvement. These are open-ended, issue-oriented, non-electoral, and personal means of communication. Cloughton (2021) suggest that climate change has piqued children's attention, engagement, and advocacy worldwide, which is expected to continue. This study also argues that children and adolescents exhibit lower rates of climate change doubt and are more inclined to accept human behaviour as the primary driver for climate change. More children have become involved in addressing climate change by joining existing environmental organizations and creating their own. Reis (2020) explains that initiatives involving children's activism can enhance relationships between schools and local communities. Students learn about the importance and value of these programs because of these initiatives. These studies show us that children must get an early start by getting involved in issues that affect the world because they will be in charge in the future. These activities place children in situations that compel them to learn about societal concerns. Children can provide a fresh viewpoint on situations that adults have not considered. Some issues need to be brought to children's attention, which will only happen once the children are given a voice.

Everyone must take responsibility for reducing climate change, particularly children's responsibility, which significantly impacts climate change solutions (Lee et al., 2020). A study on climate change and personal responsibility (Boto-García & Bucciol, 2020) shows the relationship between efforts to minimize energy use and perceptions about individual accountability for climate change mitigation at the personal level. Another study on climate change and children's responsibility (Gallagher and Cattellino, 2020) discusses youth's sense of personal responsibility to inform themselves and the individualized understandings of climate science that emerge, their disillusionment with politics and the resulting perception of individual responsibility for climate mitigation. This study also suggests that children's sense of climate change responsibility is a pathway to their negotiation of personal plans in light of climate change visions of the future. Ulrich (2019) found that children have emphasized the failures of previous generations. Children are now holding adults accountable and proposing inventive and practical answers. Elsen and Ord (2021) argue that children's activism has recently taken the lead. Learning about children's responsibilities creates a responsible future generation, which continues to pave the road for social change.

Children can actively protect and enhance the environment, which is essential in preventing climate change. Gallagher and Cattellino's (2020) study shows how youth's responsibility helps create children's self-determination by saying that children's responsibility for climate change solutions helps develop individual agency and self-reliance. Bandura, Albert, and Cherry's (2020) study suggests that children's climate change initiatives create self-determination, allowing them to

have a large-scale environmental influence. Their innovative methods have laid the groundwork for a vibrant children's environmental movement. Another study (Schusler, Krings, and Hernández, 2019) on children's climate change activities and self-determination argues that children's involvement with climate change actions empowers youth to reclaim their identity decision-making ability and build solidarity. This study also reminds us about the importance of youth knowledge and that intention and self-restoration are critical for building young people's agency and power to effect social change.

Three themes (i.e., children's activities, responsibilities, and self-determination) are deeply interconnected with children understanding the climate change crisis, its impacts, and how to take responsibility for reducing its effects. The above discussion shows that children can significantly mitigate climate change in everyday practices. Everyone may be affected by climate change. Therefore, everyone may need to play a role in reducing climate change effects; all climate change governments, decision-makers, industries, and citizens must take responsibility for combating the climate change crisis.

## 3. Situating ourselves

Situating us as learners is an integral part of our research. It is also a significant aspect of who we are and whom we need to become (Datta et al., 2015; Wilson, 2008) on Treaty 6 and 7 as a colour settler family with second-generation children. The Treaty 6 and 7<sup>1</sup> refer to Indigenous land and the Indigenous agreements with settlers. Our positionality gives us an intersectional identity.

### 3.1. Author-1: community-based researcher

As a settler of color researcher on Indigenous land in Canada, I am a community-based learner and researcher. I have had many opportunities to learn and practice land-based knowledge, anti-racist and anti-oppressive perspectives, and community-led research in my 17 years of teaching, research, and service activities. Community-based, community-engaged, and community-led views are central to my research. The community helped me reshape, rethink, and reclaim who I am as a researcher and my responsibilities to my research communities.

Following the relational theoretical framework in my research for the last 17 years, I consider myself an Indigenist researcher (Datta, 2023). The meanings of Indigenist research to me include taking responsibility in research, honouring and respecting traditional knowledge and practice, considering Elders and Knowledge-keepers as a significant source of knowledge, being an anti-racist trainer, and knowing transformation as a process of decolonization.

As a minority researcher born and raised in minority communities in Bangladesh, I research social and environmental justice from community-engaged and community-led perspectives. For instance, I did many decolonial community-based participatory action research (CBPAR) focusing on Indigenous environmental justice, minority land-water rights, and Indigenous well-being for nearly 17 in Canada, Bangladesh, India, Nepal, and Ghana. Working with various Indigenous and land-based minority communities in different parts of the world, I learned how to transform my research into actions, including decolonizing myself, protecting land and water, learning from traditional knowledge, and being part of social justice movements.

### 3.2. Author-2: children researcher

I am a 15-year-old child studying in grade nine. As a second-

<sup>1</sup> Treaty 6 (1876) includes central Alberta and Saskatchewan and includes the Nehiwayak (Cree), Nakoda, and Anishnabe. Treaty 7 (1877) includes the Blackfoot Confederacy, the Sarcee, and the Nakoda. It is located south of the Red Deer River and extends to the southern Alberta border, Canada.

generation immigrant child, I identify as intersectional, including a community gardener, dancer, musical artist, and artist. My intersectional identities have multiple implications in building cross-cultural children's communities through my community garden activities.

The informal learning that constantly took place in the community garden has significantly assisted my artistic development. Making art has always been an essential part of my life. The garden piqued my interest in creating art about the world around me, and I still enjoy sketching the land and the animals that live on it.

Therefore, our intersectional identities significantly influenced the education and community activities we have been doing for the last eight years. It has connected substantially our learning with practice, bridging formal and informal learning and transforming our research into action.

#### 4. Theoretical perspectives and methods

Following the Indigenist worldview, we used a relational theoretical framework to understand children's activities in a community garden and their positive impact on other children as they learned the meanings of climate change and actions (Datta, R, 2015; Wilson et al., 2021; Wilson, 2008). Our relational theoretical framework helped us to understand how everything in our environment is interconnected and interdependent with everything surrounding us, including humans and non-humans (i.e., animals, plants, insects, water, soil, and so on). Our relational theoretical framework not only makes researchers responsible for their research communities but also builds trust with communities and respects community knowledge and practice as a significant source of scientific knowledge. We developed a long ongoing trustful relationship with most gardeners from our eight years of community garden activities. Our community garden was situated in Treaty Six territory (the city of Saskatoon in Saskatchewan Province, Canada). It has been one of the largest community gardens; the University of Saskatchewan provided the community garden land and other logistic support.

We started our community garden in 2011 with ten garden plots with ten families from 3 different countries, and in 2019 (before the COVID-19 pandemic), it became 120 families from 20 different countries. When we started our community garden, we had five children (3–10 years old), and it also became 60 children from 3 to 15 years old. We spent almost every day every 5–6 months together to learn from each other. Our continuous community garden activities helped us learn about cultivation culture, food culture, and other stories. Our collective stories helped us to know we are all connected and are obligated to our land; we have responsibilities to protect the land as land is our relative. Therefore, we see that our relationship is the center of who we are; it is in-depth, ongoing, and responsible. We used six methods to achieve our goals from last year's relationship and relational activities: listening to traditional storytelling, intergenerational conversation, land-walk, children's artworks, growing foods, playing, dancing, and music.

Listening to traditional storytelling in a community garden is crucial (Datta, 2018). Storytelling is an effective communication tool for youth. It can positively impact youth learning, improving critical thinking and developing cultural awareness. Storytelling is a creative method that allows students to move beyond standard classroom tactics and into beneficial teaching techniques (Davidhizar et al., 2003). For example, our various activities taught us many stories from Indigenous Elders and Knowledge-keepers, Indigenous and non-Indigenous artists, and immigrant adults and children.

Growing food and adopting arts-based methods with children in a community garden are essential learning methods for children's education (McVittie et al., 2019; Anderson et al., 2016). This method helps children to connect their learning to practice. All these methods (i.e., growing food, children's artwork, music, and dancing) in our everyday garden activities have helped us learn and understand our responsibilities to help the Earth by reducing the impact of climate change. These methods have helped us better understand the land, animals,

insects, and other life. We also used these methods to showcase how growing food in a community garden was an education about the environment and the implications of climate change. We used our reflective journal to take notes from these activities.

We used intergenerational conversation as an essential method for sharing land-based stories, self-determination, and resiliency. Many times, I (Author-1), as the father, shared my ancestors' land-based sustainable culture and practice with my daughters (Author-2) through discussions about the importance of traditional plants, growing food, learning from the land, respecting the non-human, responsibilities in education, decolonizing our ways of knowing and doing, meaningful bridging between western and traditional learning, becoming an anti-racist scholar, creating collective solidarity. Our intergenerational conversation mostly happened during weekends when gardeners have more free time in the garden. We used thematic coding to analyze our learning stories as it helped us understand which themes we needed to look for and why (Saldana, 2021).

Other non-traditional research methods (i.e., learning through music, dance, and artwork) were also significant in our research. For instance, I (Author-2) had many opportunities to dance in the community garden and learn a variety of cross-cultural dancing from other children. Ballet, lyrical, Bangla folk, Indian classical Kathak, Indian classical Bharatanatyam, Indigenous pow wow, Russian, and German folk dancing are among the styles of dance that I have learned. Music has no language in the community garden because I enjoy the music regardless of where they are from or what language they speak. Singing in the community garden helped me get more exposed to many types of music from around the world and appreciate the diversity of people in our garden. Playing instruments in the community garden has taught me about various cultures. An Indian classical harmonium was the first instrument I learned to play. My mother, sister and I would always sing and play the harmonium in the garden. Being in the community garden has allowed me to connect with various cultural instruments.

Our relational theoretical method from the Indigenist worldview empowers us as researchers and who we need to be. It also helps transform our research into action so we can take collective responsibility for finding climate change solutions. We see our research as transformation, celebration, and action.

##### 4.1. Ethics Statement

This study is based on our eight years of decolonial autoethnography (i.e., critical learning reflections); it may not need to go through institutional ethical approval. Decolonial autoethnography challenges the Western form of ethical approval that often makes researchers responsible for themselves (Denzin, 2014). Our research decolonized who we are and who we need to be (Denzin, 2014; Wilson, 2008). The auto-ethnographic research is very well-known in qualitative research as it helps both researchers to reshape their positionality in their research and their research (Denshire, 2014; Datta, 2018).

#### 5. Result

There are many community gardens around Saskatoon, Saskatchewan, and Canada, but the one we associate with is deeply transnational and intergenerational. Our case study was in Saskatoon city in Saskatchewan province, Canada. It represents 28 countries, more than 200 parents and grandparents, and 60 children (Fig. 1). Although gardeners were from different nationalities, we worked collectively from a cross-cultural perspective. My (Author-2) parents inspired me to work in the Community Garden. I loved playing in the dirt and planting while my parents worked in the garden. When we started working at the community garden, we had around 10–15 children who wanted to help in the children's plot. We planned numerous activities to learn directly from the land, Indigenous Elders, and immigrants' grandparents. In the following, we discuss how our cross-cultural community garden





Fig. 1. This Artwork was drawn by Author-2 to show children's community garden and surrounding area.

activities have helped our children's community to understand and build relationships with the land, animals, plants, and Indigenous people in response to climate change action. Since this paper is based on our decolonial reflective learning, we only used our reflective learning to showcase our learning and participatory action from our last eight years' activities. We intentionally did not use other gardeners' quotes and reflections, as we did not have the opportunity to meet them (i.e., other gardeners) to take their consent because of Covid 19 pandemic.

### 5.1. Climate actions through cultural connections

The community garden activities have helped us create long-lasting connections with children and immigrant families from many cultures and nations. The community garden activities assisted immigrant families and their children in making new friendships by allowing us to help one another while working in the garden. For instance, in the last eight years of community garden activities, we developed long-time trustful relationships with different immigrant families and children and Indigenous Elders and Knowledge-keepers, who shared their traditional stories. We learned the importance of sharing by building relationships with cross-cultural gardeners. Sharing is crucial because it creates a positive and supportive environment. It is important because some people need a garden and cannot eat fresh food in the summer. Many people do not have access to healthy food at all. We also learned to share seeds in the spring and the fruits of the harvest in the fall.

### 5.2. Climate actions through responsibilities

In our community garden, we learned why we must take responsibility for climate change. For instance, our children's community garden responds to climate change since we have a garbage-picking activity for children and adults. Picking up trash in the community garden is when a group of children and an adult, typically parents, pick up garbage discarded in the garden and put it in garbage cans. We also taught the children to sort the garbage, recycle what could be recycled and throw the rest in the garbage. Children learned from community garden workshops that waste disposal is vital because garbage harms wildlife since an animal that eats a piece of plastic will die. The garbage people leave on the ground will pollute ponds, lakes, rivers, oceans, and land. For instance, I (Author-2) learned climate change, global warming, and other issues might cause the world to vanish one day. That is why picking up garbage is so essential for me. Even if the garbage is not ours, I learned that we should pick them up and throw them away if we find trash on the ground. Do not leave it there if we see trash since it affects the environment. It harms all of us and the animals and plants

surrounding us. I also learned that if we clean up garbage or recycle in the recycle bin, we will retain trees, our primary source of oxygen. If we do not have oxygen, neither people nor animals will survive. In our learning activities, children also learned from community garden workshops that growing plants is vital to fight against climate change because plants absorb carbon and release new oxygen. Carbon dioxide is a greenhouse gas that absorbs and gives out heat. We are responsible for using more reusable products, consuming fewer fossil fuels, emitting less carbon dioxide, eating less meat, and using less power. Children learned how to stop using plastic bags in the garden and reuse plastic milk jars as garden water jars.

In the artwork (Fig. 2), I (Author-2) explained how people are prepared to jeopardize the planet for financial gain in today's world. I also showed how oil and minerals are more important than the Earth's well-being. More and more emissions are rising due to fossil fuels, increased livestock farming, and deforestation. Changes in environmental conditions influence ecological habitats and ecosystems due to climate change. I also showed that even minor changes could significantly impact the species that live in an environment. The Earth's temperature has increased substantially in the last few decades, resulting in new viruses like COVID-19. If we do not act now, our planet will be overwhelmed.

### 5.3. Climate change actions through learning the importance of native plants

Through the various stories Indigenous Elders and Knowledge-keepers shared in our community garden, we learned the importance of Native plants in climate change solutions. Many Indigenous Elders suggested that gardeners may help reverse the trend of habitat destruction by building garden habitats, and Native plants are the solution. Knowledge-keepers explained in many garden workshops that Native plants have a long tradition in North America, although conventional gardening often ignores it. It is past time that we celebrate native plants and their diversification. Elders explained that non-native plants do not contribute to the natural food chains and ecosystems. According to Elders, Native plants encourage proper insect populations within our garden, providing vital nutrition for birds and other wildlife. Therefore, if we want to create a habitat for wildlife in our garden, we need insect-friendly food sources. Keeping Native plants brings in insects, which allows the many more notable species that rely on insects for food to flourish in our garden. To sustain biodiversity, we may not need a large garden. Begin by planting just one native plant. There are many natural plants to select from. It is preferable to begin small than



Fig. 2. Author-2 drew this artwork in one community garden workshop to explain protecting the Earth.

not to begin at all.

We also learned that carbon is sequestered or removed from the atmosphere by Native plants. Wildlife can find food and shelter in native vegetation, and native plants encourage diversification and environmental management. According to Elders, Native plants require significantly less water because they are tailored to particular ecological conditions, improving efficiency, cost, and possibly our most valuable natural resource, water. Elders explained that Native plants are also important for several other kinds of animals and provide critical habitat for birds.

#### 5.4. Climate actions through art activities

The art workshops in the community garden were a significant way to learn the meanings of climate change. Children had many opportunities to do many forms of art workshops with Indigenous and immigrant artists; children had many opportunities to connect art with gardening, plants, insects, and animals. Children did art in the garden and wrote many relational stories from their artworks. Art workshops at the community garden were beneficial, such as painting, sketching, drawing, colouring, and shading with coloured pencils.

Artwork activities in the community garden positively impacted children's learning. For instance, through art workshops, I (Author-1) have learned many new things about accessible learning opportunities from parents, grandparents, Indigenous Elders, and youths. When I was in school, I usually did my art lessons in the classroom, but when we did them in the garden, we were constantly surrounded by blue skies and green plants. For example, I (Author-2) share how, as a child, artwork in a community garden helped me learn the meaning of climate change.

"The community garden has helped me develop my art skills because of the informal learning that always took place there. Making art has always been an essential part of my life. Art is a way I can express my feelings through creativity and imagination. I started making art at a young age. When I was younger, I usually drew nature, for example, flowers, butterflies, ladybugs, simple landscapes, and trees inspired by the community garden. The garden sparked my interest in creating art about the things around me; I love sketching the land. In the summer-time, I go outside to our community garden and sketch. I also had an art class at school, which helped me broaden my thinking and led me to draw new things. I also enjoyed painting; usually, I used acrylic or water colour. The best part of art is that we can never make a mistake; we can change it into whatever we want. Art has always been an essential part of my artistic life". (Author-2, 16 years old children).

Similarly, children's artwork helped them know why many insects are essential for our survival, such as worms, butterflies, bees, and many. Children's artwork at the community garden is also helpful to know why Native plants are essential and how they have survived for many years. Indigenous Elders and Knowledge-keepers explained the importance of Native plants through their artworks.

#### 5.5. Climate actions through music

Our community garden has always been a lively and open place for cross-cultural music (i.e., different cultural music with a direct connection with land, people, and culture). We met new immigrants, Indigenous, and settler people through music in our community garden and learned many new things. Music and art classes were the two activities that brought the most joy to the community garden. Music in our community garden benefited us in a variety of ways. I (Author-2) explain how music allowed me to communicate my emotions and sentiments in response to climate change.

"Music in a community garden helped us relax and de-stress from life's opposing and hostile forces; it also enabled us to rest from life's stresses. Music helped us to feel peaceful and comfortable. It is something that we could share with other people. We used our music to know our cultural roots, cultivation culture, and traditional practices. Many

immigrant children sang with their parents and other adults. We learned that cross-cultural music in a community garden has the potential to bring people together. It is a method of communicating with other people or groups. Cross-cultural music in our community garden has been associated with joy, education, and relaxation. Music assisted us in a variety of ways. (Author-2, 16 years old children).

We also learned our responsibilities through our music. For instance, we also made much music about different meanings of climate change impacts and how to overcome them in traditional ways. We learned climate change's implications from various music forms from different cultures. Music in the community garden has had a significant influence on our family and the lives of many others. Cross-cultural music helped us understand our ancestors' relationships with plants and soil and why we need to grow our foods.

"Indigenous music also played significant roles in teaching Indigenous sustainable land-based stories before colonization, particularly how Indigenous people lived thousands of years in sustainable ways. We have learned how Indigenous land-based practice is critical in reclaiming climate justice from Indigenous Elders' traditional stories." (Adult community gardener).

We have learned that all forms of music and art activities have helped us know who we are in this Indigenous land, build relationships with people and land, and take responsibility for the land we are currently living in.

#### 5.6. Climate actions through dancing

Dancing in a community garden created a significant opportunity to learn about climate change. For instance, I (Author-2) often danced in the community garden. Here, I explain how dance in a community garden helped me learn about climate change in the following.

Through dance, I learned about the connections with the land, which helped me understand why I need to take responsibility for the land, insects, animals, and plants. I did a lot of dancing and learned different cultural dances from the other cross-cultural children and teachers. Since we have a lot of cross-cultural people in the community garden, I have learned many different types of dances with many different cultural meanings of land and climate actions. In the community garden, many cross-cultural dancers came, including Indigenous dancers who taught the children the importance of relationships with the land. They taught us how everything is connected, and one thing in the cycle is harmed, and so is everything else. Dancing in the community garden helped us learn about the land and our responsibilities concerning climate change and helped build cross-cultural relationships. (Author-2, 16 years old children).

In sum, all the above community garden activities have helped us discover many new things about myself and the land around me through cross-cultural children, teachings about climate change, Native plants, art, music, dance, and playing instruments. We have learned so much, but still, there is much more to learn.

### 6. Discussion and conclusion

Climate change is one of today's most severe environmental challenges (United Nations Trust Fund for Human Security, 2021). Climate change has a wide range of effects on humans, animals, and the environment, including poverty, unbearable food and water shortages, and physical and mental health concerns. While both authors discussed how they had many learning benefits of community gardens and cross-cultural children activities in response to climate change response, the discussion and conclusion on three main learnings, including building cross-cultural children activities, creating space for intergenerational and transnational learning, and creating relational land-based learning.

### 6.1. Building cross-cultural children's communities

This study showed how community garden activities could bring multiple learning opportunities for taking action in response to climate change. This study showcases how learning from children's activities in community gardens is crucial for understanding climate change directly from the land. Children learning now from land can lead to specific forms of action, such as building intergenerational climate change knowledge and practice building community for collective climate change solutions (Datta, 2019). Children's activities foster a sense of community among cross-cultural groups, resulting in sustainability (Datta, 2019). Climate change affects many people, but it significantly affects our children, and children are the ones who will have to deal with the effects of climate change in the future. Re-engaging with the epistemology of community gardens is to frame communities as places of responsibility (Neo and Chua, 2017). Similarly, according to Neo and Chua (2017), community gardens play an important role in climate mitigation by insulating buildings against temperature extremes. Therefore, this study shows how community garden activities can help learn the meanings of climate change and how to be responsible in everyday practice.

### 6.2. Intergenerational and transnational learning

This study shows how a community garden provides an intergenerational and transnational learning space. Okvat & Zautra (2011) study on community gardens discussed a similar perspective that community could enrich intergenerational and transnational learning space. This study also showcases similarly that in a community garden, children had many opportunities to learn from their parents and grandparents from different cultures and nationalities, Indigenous Elders and Knowledge-keepers, and other children. This study explained how creating intergenerational and transnational learning spaces helpful in building relationships with people, land, plants, and animals in response to climate change actions. Intergenerational and transnational became our success across generations in various learning processes and required creating and sharing knowledge and fostering productive relations. Two recent studies involving community gardens and children (Elsen, and Ord, 2021; Gallagher, and Cattelino, 2020) suggest that children's intergenerational learning through community garden activities can enrich citizens' physical and mental health.

### 6.3. Relational Land-based Learning

Learning land-based learning from a relational perspective is a center for dealing with climate change (Datta et al., 2023). This study explained how a community garden taught cross-cultural children to form relationships with the land, animals, and insects. This study also showcases how community garden activities helped them to develop relationships with the land, animals, insects, and people with different cultural backgrounds. As Oldfield et al. (2019) explained, an expression of ownership and individuality and locations for social connections and interaction with nature. The children's author explained how they learned from all the insects and plants around the community garden. They also discussed how their learning helped to develop a relationship with the land. The land allowed them to socialize with more friends from different cultures.

This study suggested that the response to climate change is a lifelong process; it cannot be done within a short time program or with specific forms of activities. This study provided an example of how cross-cultural children's community garden activities helped transform learning into action by decolonizing ways of knowing, enriching land-based learning responsibilities, building trustful relationships, and participating in activities. Therefore, this study urges everyone to understand their cross-cultural responsibilities to take action in response to climate change in a way meaningful for them and protect our Earth.

### Funding

We declare no Competing Financial or Non-Financial Interests.

### CRediT authorship contribution statement

Conceptualization and methodology, Ranjan Datta; Data collection and writing—original draft preparation, Ranjan Datta and Prarthona Datta; writing—review and editing, Ranjan Datta and Prarthona Datta; visualization, Prarthona Datta.; supervision, Ranjan Datta; project administration, Ranjan Datta; funding acquisition, Ranjan Datta. All authors have read and agreed to the published version of the manuscript."

### Declaration of Competing Interest

We do not have any conflict of interest with our manuscript.

### Data Availability

Data will be made available on request.

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