Growing Gardeners
A Report for Denver Urban Gardens
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**Methods, Results & Key Findings**

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**Report Notes:**

- Question-level sample sizes (n-values) are listed for reference alongside data where possible.
- When a survey question is select all that apply or interview responses are coded, percentages may sum to greater than 100%.
- All data values in this report are rounded to the nearest percentage point.
- Questions about this report may be directed to Centrality Research, andrea@centralityresearch.com
Methods, Results & Key Findings
Growing Gardeners

A Life Cycle

In Fall 2021, Denver Urban Gardens (DUG), hired Centrality Research (CR) to assist with a large scale program evaluation – covering several grant funded initiatives. CR submitted a proposal to evaluate the work of the programs team at DUG as facilitating a life cycle that stretches from early learners all the way through to adulthood.

As Early Learners, children will participate in DUG workshops and curriculum developed by DUG that instills confidence and comfort in a garden environment.

As children age through the school system, they are supported by teachers that are trained through DUG and are connected to DUG gardens and curriculum as they age through school.

As adults, the gardeners are competent in garden practice and can produce healthy food for themselves as well as benefit the Early Learners just beginning the cycle.

This report focuses on DUG’s work with early learners, school aged children, and their educators.
Growing Gardeners
A Logic Model

Assumptions
- DUG values the input and feedback of the community on their programs
- DUG has taken all necessary steps to remove barriers to program participation
- Communities are interested in participating in what DUG is offering
- DUG will use culturally responsive & audience appropriate methods

Inputs
- Human capital of DUG staff & volunteers
- Resources for evaluation
- Funding from three grants
- Community Gardens in community and in schools
- Facility space for workshops & courses
- Online options for program participation
- Community partnerships & relationships

Activities
- Gardening programming facilitated by teacher and by DUG staff
- Food & nutrition courses
- Curriculum development for teachers
- Teacher workshops

Outputs
- Program attendance
- Hours of experience in the gardens
- Pounds of produce delivered
- Number of teachers participating in workshops

Outcomes
- Children who participate in programming will better understand food systems
- Teachers will learn culturally appropriate strategies to teach effectively in gardens
- DUG staff will gain deeper understanding of the needs and experiences of students they are serving
- DUG staff will create a curriculum addressing garden education with culturally responsive approaches
- Children who participate in programming will be aware of healthy food options
Evaluation Strategy

To address the outcomes listed in the logic model, CR worked with DUG to employ the following strategies:

- **Facilitated a panel of community leaders and Early Childhood Education (ECE) specialists** that currently serve children impacted by trauma to advise on the creation of a new, culturally responsive ECE curriculum.
- Participated in teacher professional development sessions to assist with the creation of and monitor ECE Teacher Cohort progress related to the goals of **Participatory Action Research Plans**. These plans were designed by teachers to engage their students around one essential question: **In what ways might we engage learners in garden-based science in a way that invites them to inquire and grows their identities as scientists?**
- **Hosted a focus group and with ECE Cohort teachers at the end of the projects** to gather information about teacher needs as they facilitate learning in the gardens and engage their students in culturally responsive curriculum.
- Conducted a survey with ECE Cohort teachers to **measure the efficacy of their Participatory Action Research plans**.
- Analyzed data collected in **brief surveys designed by Slow Food Denver** and given to students aged 8-12 after participating in healthy food cooking classes at Johnson Elementary School.
- Hosted a training for **DUG staff to feel prepared to engage community members in focus groups and spot interviews within their gardens** as they work to deeply understand the needs of their community.
Results

CR participated in 4 ECE Teacher Cohort meetings throughout the year - listening to the progress and formation of activities that would be implemented by teachers to address the goals of their Participatory Action Research plans.

In April 2022, researchers hosted a focus group attended by 12 teachers from all 5 schools that participated in research plans throughout the course of the school year. Eleven teachers from the 5 schools also completed surveys about their experience.

Through both opportunities to provide feedback, the group shared activities they did in an outdoor learning environment that encouraged inquiry-based learning and grew their students’ identities as scientists, how the activities they created met the goals of their research plans and engaged their students, how they included culturally responsive ideas into their practice, how the cohort created new opportunities for connection, and how DUG can best support them in the future.
Results

To investigate outcomes related to students’ learning about attitudes and knowledge toward healthy cooking and eating, researchers analyzed student data collected after DUG arranged and Slow Food Denver conducted in-school Healthy Cooking Classes. Fifty-five students, aged 8-12, who participated across 3 workshops during the 2021-2022 school year at Johnson Elementary, completed the surveys.

In December 2021, DUG and Centrality Research hosted a roundtable for several representatives of ECE serving organizations in the Denver Metro Area. The group was brought together to understand best practices in engaging children in trauma-informed learning. Tools such as timed discussion and independent reflection via Jamboards were used in the 90 minute conversation. DUG staff will use these top-level findings to outline trauma-informed and culturally responsive programming options.

To help DUG staff feel prepared to deeply understand the needs of the students and community members they work with going forward, researchers hosted a workshop in January 2022 for all DUG staff covering the benefits of qualitative feedback, how host moderated discussion groups or spot interviews, how to scope problems, ask beneficial questions, and capture and review data. This training deck as well as sample questions were provided to DUG staff to use in any future research.
Key Findings

- Many students who participated in Healthy Cooking Classes arranged by DUG and taught by Slow Food Denver felt happy and excited when thinking about cooking and many understood more about where their food comes from.
- Almost all students who took the class tried new foods and after the class, many defined “healthy eating” as choosing healthy food options like fruits and vegetables.
- Teachers who participated in the ECE Cohort reported that their students that participated in garden activities grew their inquiry skills and their identities as scientists.
- All teachers who participated in the ECE Cohort felt more confident teaching their students in a garden-setting and were able to share numerous outdoor or garden-based learning activities that were successful in their classes.
- Almost all ECE Cohort teachers were able to name specific examples of culturally responsive approaches to working with their students in a garden setting and agreed that they learned new approaches to culturally responsive activities during their participation in the cohort.
- Teachers in the ECE Cohort benefitted from their time spent with DUG staff and all of the resources provided to them, but also used their participation to build stronger relationships with each other.
- DUG staff were able to grow their practice both by working with the teachers from the ECE Cohort as well as by working with representatives of ECE serving organizations in the Denver Metro Area that focus on engaging children in trauma-informed learning. Several ideas for how to support teachers moving forward and develop new, culturally responsive curriculum were sourced from these workshops.
Growing Students
Healthy Cooking Classes

In the Healthy Cooking Classes taught by Slow Food Denver and arranged by DUG, 91% of students agreed that they tried new foods in the class and 82% of students agreed that they like fruits and vegetables the same amount or more than before they took the class.

Did you try new foods in class? (N=55)
Do you like fruits and vegetables more, less, or the same after taking this class? (N=55)
Healthy Cooking Classes

Students had positive word associations with the cooking class. Nearly 2 in 3 students selected that they felt happy and over half selected that they felt excited when thinking about cooking. Other words students wrote in included joyful, cool, and calm.

When I think about cooking, I feel (check all that apply) (N=55)
Healthy Cooking Classes

When asked what they learned in the classes, student responses were grouped into three themes:

**How to Prepare Food (69% of responses)**
- “u could make whatever u want just try”
- “How to cook things i have never tasted before”
- “how to make different foods”

**More About Healthy Food Options (23% of responses)**
- “what there called and the plant name”
- “that food is good and yumy”

**Ideas for or How to Follow Recipes (17% of responses)**
- “to make pumpkin pancakes and pineapple pancakes”
- “Measuring foods”

What did you learn in these classes? (n=48)
Healthy Cooking Classes

When asked where their food comes from, students had several ideas. Just over a quarter of students mentioned a source such as a garden, a farm, or the earth and a quarter of students mentioned stores.

Where does your food come from? (N=55)

- Gardens/Farms/Nature: 27%
- Grocery Store: 27%
- Unsure: 15%
- Specific Person: 13%
- Another State/Country: 9%
- Home or School: 5%
Healthy Cooking Classes

When asked what the phrase “healthy eating” meant to them, student responses were grouped into four themes:

Choosing Healthy Options (48% of responses)
- “not eating junk”
- “healthy mean like Salad”
- “eat healthy ”

Good for You (34% of responses)
- “Make you stronger”
- “It means its good for me and great for me”

Unsure (12% of responses)
- “I don’t know”

Specific Diets (4% of responses)
- “vegan”
ECE Teacher Cohort: Reflections on Student Growth

When asked if their students felt more comfortable learning in a garden setting after they implemented activities related to their Participatory Action Research Plan, 10 out of 11 teachers Agreed or Strongly Agreed.

Please reflect on the following statements and rate them on a scale of strongly disagree to strongly agree. As a result of my participation with DUG this year... My students feel more comfortable learning in a garden setting (N=11)
ECE Teacher Cohort: Reflections on Student Growth

Every teacher that completed a survey (N=11) also shared changes they saw in students related to the goals of their research plans. Responses were categorized into two main themes:

Some teachers shared examples of students primarily feeling more confident in a garden setting or learning from their gardens (6 responses)

“Students became aware of how the food chain works and how they can impact the outcome of their garden.”

“They can name four things we need to grow something. They talk proudly about the garlic we’re growing. Half of the class is very interested in the compost and taking care of red wiggles.”

Some teachers primarily shared growth in student skills and science identity (5 responses)

“I observe more curiosity and motivation to learn. The students are asking questions all the time. Also, they want to feel involved in the process and they ask to be helpers all the time.”

“Children became more independent and developed interest and curiosity about these activities. Besides, they depended less in the adults.”
Growing Teachers
ECE Teacher Cohort: Overall Experience

Every teacher that participated in the ECE Teacher Cohort with DUG found the experience to be worth their time, grow their confidence as educators, provide new activities and ideas for their students, and create or deepen connections – both between the teachers in the cohort and with DUG staff. When asked if they feel more confident teaching garden-based science, all 11 teachers Agreed or Strongly Agreed.

Please reflect on the following statements and rate them on a scale of strongly disagree to strongly agree. As a result of my participation with DUG this year.... I feel more confident teaching garden-based science (N=11)
ECE Teacher Cohort: Activities for Success

In the design of their Participatory Action Research plans, many teachers aimed to use scientific inquiry or the scientific method to help students learn, encourage student observations, investigative development, curiosity, and question asking, and measure how garden learning impacted other content areas such as literacy and math.

Teachers also mentioned a desire for content learning as part of the goals in outdoor activities, life cycles, nature, awareness of gardening, and understanding healthy food options. While implementing their Participatory Action Research plans, teachers learned new activities – both from DUG resources and from each other – that encouraged inquiry based learning and grew their students’ identities as scientists.

When asked to share some of those opportunities through the cohort survey and the focus groups, several teachers described activities that engaged students senses, created connections to other content the students were learning, encouraged experimentation and exploration, examined the life cycle of plants, and created connections between the school and students’ homes & communities.

In an activity that used the 5 senses, one teacher recalled, “taking the students outside and...ask them what are some of the things we can hear outdoors when we are in the garden. What are some things we can touch, what are some things we can see that might be different... so I use that process of teaching them the scientific method – scientists do observe thing to come up with a questions or a hypothesis. Just asking [them] questions of ‘what do you think might happen if we do this or we do that?’ Allows us to use inquiry based learning and the tools that the students were born with – their 5 senses.”
ECE Teacher Cohort: Activities for Success

One teacher recalled connecting outdoor and garden learning moments to her literacy lessons. When teaching the sound “ch”, she gave her students “chicle” or gum. She shared that the students were unfamiliar and needed some encouragement, “So I showed them and I was like, ‘vamos a masticar (let’s chew), estamos usando nos dientes (let’s use our teeth), and I read this book – The Bad Seed – and we talked about semillas (seeds), and what happens to this poor seed, and taking the opportunity to talk about social emotional [wellness], because the seed thinks she is bad – and the seed ends up in a bed of gum. So once again, I talk about the chicle. And then I talk about historically, the chicle comes from a tree. It’s from the sap of a tree from a tree from Mesoamerica and they started chewing gum in the 600s. It was just fascinating to bring it from there to now it’s something we use in ordinary [life].... The students were fascinated and talked about their senses in a literacy lesson.”

One teacher described the power of inquiry based learning observed through a seed sprouting activity. Her students placed seeds in a bag with a wet paper towel, left them in a window over the weekend, and then checked on them on Monday. “On Monday we came back and one student was asking to check her bag. She went to the window, grabbed the bag and opened it and was like, ‘[gasp] look Ms. Amelia!’ and then other student asked to check theirs and she said, ‘nothing happened to mine!’ and then another was like ‘one has a shoot’ and it had sprouted so I asked them ‘why do you think that happened? What do you notice?’ [the students responded] ‘well this paper towel is dry and mine is wet, so’ they were just thinking about and making observations and mentioning what they notice and what they might need...so they sprayed their seeds and they put them back in the window.” The teacher goes on to describe the enthusiasm once more of the seeds sprouted in their experiment and students making observation about which beans sprouted faster than others.
Using inquiry based learning in a garden environment has also developed students’ abilities to ask questions and develop deeper exploration skills in different areas. One teacher recalled, “I notice something that I think is very connected. With so much exploration of ‘how this thing happens, how can we do this, why is this thing happening?’ kids are starting to ask questions like ‘how can I draw a dinosaur?’ or something simple like that and so we were exploring ideas about how we could draw it – using shapes, you could copy it, now we’re going to explore how to draw it using shadows. So I think all of this exploring is helping my kids get to deeper thinking connected to other activities.” Another teacher also observed that students rely less on adult help when using an inquiry process. “They are starting to investigate and have a sense of experimenting among themselves and not as much in need of adults around...more independence, more hands activities among themselves, not so much with the teachers.”

Students have also been able to draw connections between what they are learning in a garden environment and their home life. One student shared that her grandfather gardens and the teacher was able to create a connection between her family and the course. “We haven’t started in our garden yet. Today we talked about the seeds and we are going to be planting them. So I invited this grandfather to come and help us plant because he has already started [his garden with his granddaughter] and it was an initiative that this little girl took to be like, “come on let’s go and do a garden!” and they’re doing it at home too. It’s fascinating to hear her.” Students connections also tied to their communities. One teacher who was doing a unit on “community helpers” noted that their work in the garden helped students identify the benefits of gardening and the role of gardeners within their own communities. “They usually think of firemen, and policemen and doctors...It was just interesting. They didn’t think so much about gardeners being community helpers until we started doing the garden things and then they were like, ‘oh yeah they feed us and do all of these things for us.’”
Teachers also see opportunities to make the leap with their students from understanding what scientists do and encouraging inquiry based approaches with building children’s own identities as scientists. One teacher reflected that, “In some of these activities, I’ve mentioned, ‘yeah scientists don’t know everything, they just ask a lot of questions and they figure it out, they just make observations and ask questions and keep looking and maybe they find out the answer, maybe they don’t. But that’s ok, that’s what scientists do.’ And so [when we do activities] they chime in and say things like ‘right, Ms. Amelia? Like a scientists?’ when we are doing something. But I haven’t noticed or I don’t remember someone saying, ‘oh I am a scientist’ and I feel like I could do more to get that going and get that idea in their minds. It’s just another layer of things that we can add for future lessons.”

When asked in the survey about the efficacy of these activities in meeting their established PAR plan goals, 9 out of 11 teachers indicated that their activities were Very Effective and 2 rated them as Somewhat Effective.
When asked if they were able to create lessons that allowed their students to inquire and that grew their students’ confidence as scientists, 10 out of 11 teachers Agreed or Strongly Agreed.
Culturally responsive approaches can be seen in almost all examples of activities provided by teachers. However, when reflecting on the culturally responsive tactics that they have employed to make their students feel comfortable and confident learning in an outdoor or garden environment, a few teachers offered specific suggestions for things that worked well or should be considered:

“One important thing is allowing [the students] to call it what they call it. Not changing that and that’s the beauty of being culturally responsive. Not putting a limit on saying “no you say it this way or this way”. If I don’t understand, then I’m asking them “what are you trying to say” or “what does that mean?” Like in the chicle example, a lot of people don’t call it chicle, they call it something else. So bringing in the vocabulary. Doing a map of the word. Like with “elote” or corn, they call it maiz, they call it esquite or choclo in Peru... so it’s called different names.”

“The things that we often do in the classroom is playing with food and you have to be mindful of other cultures that think that’s really disrespectful. So for us it’s rice. When I came to the United States, and I saw teachers and students playing with rice, that was really different because at home, we were never allowed to touch our rice and play with it because we see how hard people work producing that rice. My family has a rice patty and they worked – it was all by hand. So I think it’s just being mindful of that and also for kids that have food insecurity.”
ECE Teacher Cohort: Incorporating Culturally Responsive Strategies

When asked if they learned culturally responsive approaches to teaching in a garden environment, 10 out of 11 teachers Agreed or Strongly Agreed.

Please reflect on the following statements and rate them on a scale of strongly disagree to strongly agree. As a result of my participation with DUG this year.... I learned culturally responsive approaches to teaching in a garden environment (N=11)
ECE Teacher Cohort: Creating Opportunities for Connection

When asked how their participating in this cohort created new opportunities for connection, all teachers who offered a comment shared positive feedback about the ability to connect – even with teachers in their own schools – in new ways, share ideas, and find mutual support.

“The space with the webinars has been amazing to really get ideas, connect, really open up spaces and have the materials there and the resources there. Every time it’s a conversation like this and more ideas come because someone has tried something different or the questions that start coming are just bringing more knowledge because there are things that maybe I haven’t thought about or I want to learn more about. So the webinars have really been a successful experience.”

In the future, teachers are hopeful that they will get to share deeper connections – particularly with teachers from other schools - by engaging in person with each other.

“I think what the time in person could have offered is the chance to sift through [all of the gathered materials] and – as a one woman show – have the chance to really collaborate like – let’s take this from this and this from this – and put it together in a sequence that we want from all the learning that we have been doing.”
ECE Teacher Cohort: Creating Opportunities for Connection

Connections with DUG staff also deepened as a result of the project. Many teachers mentioned resources provided by DUG including the webinars, answering questions, support in the gardens, and resources for getting projects going.

“Laura has done an awesome job with supporting us with the garlic with the compost, last week I wrote an email about what seeds we could start planning so the kids could see the process before going on vacation and she quickly wrote me back... She has been super on top of us and seeing what ways she can support us.”

“By teaching us we can take that in and then teach the kids. So that’s what I appreciate the most – the training that you guys are providing and the webinars.”
Growing DUG Staff
ECE Teacher Cohort: Ideas for DUG Support
Moving Forward

Teachers are excited about a few opportunities that they feel DUG could support in the future:

- A teacher newsletter
- Indoor greenhouses – small ones to see things that grow throughout the school year, since the garden season does not align with the school year.
- DUG staff coming into classrooms more often for healthy cooking workshops or things that you can grow in the garden and then cook with. Examples of salsa garden or pizza kits.
- Support getting family and caregivers involved in garden-learning. This could be information to share in newsletter, calls to action, “homework”, etc.
ECE Roundtable Discussion: Summary

On December 16th, DUG and Centrality Research hosted a roundtable for 16 representatives of ECE serving organizations in the Denver Metro Area and several members of the DUG team. The group was brought together to understand best practices in engaging children in trauma-informed learning. Tools such as timed discussion and independent reflection via Jamboards were used in the 90 minute conversation. This group to outlined trauma-informed and culturally responsive ideas for DUG to consider as they reimagine their programming for early childhood and school aged children.

This group was open to meeting again in the future to provide curriculum review once preliminary materials have been established. As content is developed, CR recommends that this group – with the addition of teachers from the ECE Teacher Cohort or other ECE teachers - is reconvened to give specific feedback on the design of activities and content.
ECE Roundtable Discussion: Outdoor Activity Ideas

A discussion about outdoor activities and their ability to support trauma-informed learning as a warm up to get participants thinking about what trauma-informed learning practices might look like in the garden before designing their perfect garden. All of the examples listed under each theme are synthesized from a transcript or pulled from Jamboards and in their own words.

Connects the Senses

- Putting hands in the soil and the parallel convos that you have as you are gardening and tending, nurturing the soil. The feel of the sun on kids’ faces and being outdoors.
- The 5 senses for children - important to include as learning components. In the classroom they don’t have all these opportunities and in a garden you can dig into all 5 senses.

The Ability to Physically Engage

- The connection to Earth and it is cleansing and therapeutic.
- Planting the seeds of possibility.
- The cycle of the garden is a process of planting, nurturing, flowering, and returning more to the Earth.
- Allowing a child to be nurturing of nature. We have one student who has experienced trauma and has sensory needs. She LOVES growing things and taking care of the plants
- If people need to use a garden to reset their minds and go outdoors where they can spread seeds and till the dirt. The power of connecting to nature.
- Gardens reinforce the interconnectedness of life.
ECE Roundtable Discussion: Outdoor Activity Ideas

Gardens Build Connections
- Helps in dealing with trauma - being in the garden can connect people
- The personal connections - especially when kids are experiencing trauma and loss during COVID
- Working together - a communal project connects people and builds pride. A garden offers the opportunity to say look at what we did and let's enjoy it together.
- Gardens reinforce the interconnectedness of life

Finding Peace
- Calming - the ability to choose what you want to grow, plant, and eat.
- Feels so good to be one with nature - especially during the pandemic - embracing nature and being thankful
- Finding the inner-peace and teaching to kids and how to use that.

A Place with Agency and to Be You With No Judgment
- Calming - the ability to choose what you want to grow, plant, and eat.
- Cultural responsiveness in the garden (e.g., crops grown, recipes shared, education delivered, languages used, etc.) as a form of trauma informed practices
- The garden doesn't ask anything of you - you don't need to be good at math or reading, or be a good teacher - a garden only asks that you sit and notice and if something doesn't feel right you do something.
- A garden is non-judgmental - you are not judged.
ECE Roundtable Discussion: My Perfect Garden

In this individual exercise, participants were asked to reflect on what makes a perfect garden that is meaningful for students, families, and educators. Below is an overview of how the participants described their gardens in their own words using prompts provided on Jamboards:

Overview of the Gardens

- **Barriers might include sustainability and maintenance - who can care for the garden over the long term (especially considering volunteers)**
- **Different spaces that allow for different types of play/exploration. For example, a 3 year old might want to dig many different holes, or pick a lot of leaves, or plant and replant many seeds. If there are specific places where they can do this.**
- **Hardscape that supports exploration. Hardy plants that are reliable.**
- **A place where it would be possible to conduct a few activities at once.**
- **Year long interest/tasks/plants that can expand the experience outside of the typical growing season.**
ECE Roundtable Discussion: My Perfect Garden

Overview of the Gardens (continued)

• Earthy elements (e.g., wood), sensory components (e.g., smells), bright and vibrant colors
• variety of different fruits and vegetables (combination of familiar produce and new things they've never tried), connecting to family traditions, cultures, and celebrations
• Accessible, welcoming, colorful with multiple paths
• We are located on a small corner lot in Denver with lots of good sun and wall space. I would love to have raised garden beds lining the brick wall on the south side that are at children's height. There would also be benches for gathering and possibly have this all enclosed by a gate to make it safe even for our youngest children. The garden would have vegetables that are easy to eat fresh (cucumbers, tomatoes, watermelon, peas, strawberries, etc) and an herb garden where children can fulfill their sensory needs and pick herbs to make tea or bake with in the classroom.
• Space to grow, space to play and explore and space for wild and space to just relax and be. Full of all kinds of life, insects and birds, little critters and more. Plants for beauty, habitat and food for living things beyond people. Tables for working and places to sit in the shade.
• Some gardens are adjacent to loud roads or industry. Keeping trees alive through our summer and winter droughts. Space and shade for larger groups to meet and eat takes away space from garden beds.
• My garden would be a place where all are welcome and are encouraged and supported to engage. It would have diverse opportunities to support with growing, learning, and high quality food access through all the seasons. Raised garden beds, Hydroponic, Aquaponic, and Learning Lab Shipping Container Gardens.
Overview of the Gardens (continued)

- What makes my garden special is that it created children with lots of space for them to move and walk through, with trees they can sit under and think and process as they watch our crops grow. It is place conveniently next to our school so it is accessible for the children and has several hoses for watering. It would also have a storage area for our tools, buckets, fertilizers, etc to be locked away for safety and maybe even a compost area for making our own fertilizers for our gardens.

- Our garden includes edible plants, flowers, annuals and perennials. There are also insects and pollinators to support the growth.

- Wide pathways, secret places, lots of color, texture, unplanned areas, sensory elements, stones for sitting, sound of water, special plants for texture, sunshade, treetrunks for seating, walking paths, platform for pretend play, gathering stones, leaves, grasses, dried crabapples for play

- Fun, open, in the sun, hands on

- Accessible for all to enjoy. In ground, above ground, clear and clean pathways.

- BEAUTY! A garden that includes flowers, trees, and surrounded by nature to increase Wonder, curiosity and more.

- Engaged Community Garden, those who will use the garden provide input into the design of the garden. What do they want/need/seek/desire.
ECE Roundtable Discussion: Why is a Garden Meaningful for Educators?

Participants were then asked to describe what about their perfect garden was meaningful for three populations: educators, students, and caregivers.

Resources and Support
- Time to train, resources that support, support from administration, connection to curriculum or district expectations, a collaborative experience where they don't have to bear all of the burden of care.
- Returning to a garden in fall that is still thriving and not overgrown with weeds.
- Staffing/Turnover and Funding in ECE
- Accessible, resource rich, plentiful

Co-creation of Programming
- Ensure that the curriculum/programming is created with a trauma informed and DEI lens in partnership with people from the communities that the programming is intended to serve.

Connections to Science Curriculum and Soft Skills
- Tied to curriculum and lessons (e.g., air, soil, sunlight, plant needs, math, patterns, weather), related to students’ problem solving (e.g., plant issue troubleshooting) and observational skills, can use the garden to draw similarities with other subjects
ECE Roundtable Discussion: Why is a Garden Meaningful for Educators?

Connections to Science Curriculum and Soft Skills (continued)

- Gardens allow an educator to reinforce science lessons, describe ecosystems, how gardening changes based on local environmental conditions, importance of water, social studies- gardening/agriculture thru the ages (cultural differences)- relationship to cultural food.
- Connecting with content, seeing the impact on students learning and attendance, an outdoor classroom for teaching and workbenches for students to write and do projects.
- To create programs and supports that are parallel to requirements already needed for ECE. Making the gardens and extension of the classroom and not something additional.
- Being able to use it as a learning tool, for self regulating, calming through the senses, reading or running, a form of behavioral modification, refocusing in the garden
- The children’s garden will be a wonderful and peaceful place for children to learn more about our world and appreciate our earth.

Creating Connections for Educators

- Teachers are more enthusiastic about a lesson when they have an interest in it.
- Educational assistance in terms of signs, info on what is grown, etc. Not all have this knowledge but being able to easily share will enhance the experience for everyone.
- What do educators want to plant? Include them. Appreciate their experiences and desires for the garden before it is planted.
ECE Roundtable Discussion: Why is a Garden Meaningful for Students?

Agency in Decision Making
- Students get to help make decisions and guide the vision (for example, choosing which plants to grow; students can see it from the beginning (e.g., starting seeds in the classroom and caring for it as it grows)
- Allowing them the freedom to play and let their inquiry and imagination guide practices.
- It is their special place made special for them, by them (with support of the adults as well).

Experiential and Immersive Learning
- Experiential learning (increases knowledge retention and understanding) Interacting with nature using all senses. Nature exposure is healing for students especially children who have low exposure to nature be Students have opportunity to learn from gardener. Students can observe their contribution to the garden. Importance of nurturing plants and one another.
- A combination of structured and unstructured experiences. Training on how to nurture and care. The opportunity to be in the garden as often as possible. Some boundaries that support 'ownership' (for example, if you plant a tomato bush and another class picks them all, that would be disappointing.) Dealing with disappointment of things dying/not growing or producing.
- Mud puddle for playing, an area for playing with stumps and sticks, seeds, rocks and more.
ECE Roundtable Discussion: Why is a Garden Meaningful for Students?

Multi-Sensory Experiences

- A multisensory garden would extend the children’s safe outdoor space and allow them to see the full process of growing things. It fulfills the senses, allows the child to nurture nature and to immerse themselves sensorially.
- A place to explore and see an impact they have on the world around them. Sensory plants and activities, fun food to explore like pineapple tomatillos, stevia, toothache plant. Trying produce that they helped grow. Having an area or plant that they are responsible for nurturing.
- Being in nature and touching or activating senses in a positive way.

By Students, For Students

- Ability to play and engage without strict rules. Nature is forgiving and so should our experiences with the garden.
- Children can fail, succeed, and enjoy the garden. Learn life skills and social roles in sharing, group work, responsibility.
- Children can experience the process of growing food. Engage with their food system and feel connected to their food.
- Children can learn to manipulate tools. Digging, watering, and planting. Feel the dirt in their hands, and feel connected to the earth.
ECE Roundtable Discussion: Why is a Garden Meaningful for Caregivers and Families?

Feeding & Supporting Families
- Sending home baskets of home grown vegetables
- Can serve as a place where teachers and community members can provide further non-invasive support to families of trauma.
- A place of sanctuary and peace, produce that will go into meals and snacks. Beauty and diversity of life. A place to meet and eat with friends and family. A place to relax and just be.
- Families can experience an environment that they may not have at home.

Learning/Teaching as a Family
- Feeling welcome, feeling their expertise is valued, having tasks that allow them to feel needed and involved to the level of their need, having space/time to share their cultural experience and values.
- Family members are asked about their own home/community gardening activities and connecting it to household responsibilities, role of students in caring for garden at home; connections to family food traditions and memories
- Send home seed packets, and spread the knowledge of the garden to families on parent support nights. This would be especially beneficial for families of trauma. It provides a place to gather, be together in community, and nurture something that provides the benefits of sensorial response, nature, and healing through growing.
ECE Roundtable Discussion: Why is a Garden Meaningful for Caregivers and Families?

Learning/Teaching as a Family

• Creating home links that support the whole child and whole family that are feasible, enjoyable, and sustainable outside the school day.

• Families will learn to love this place as well because it is a special place built for their children, by their children, to learn, love and grow together.

• Initiation into the school without entering the building. COVID safe and allows for connection to educators and students.

• If engaged early they can provide input on cultural foods that are important to their history/family and share that with their children and community.

Opportunity to Support the Schools

• Ability to contribute to the school in a way that is not monetary. Donating their time, receipts, seeds, heritage.
After designing and discussing their perfect gardens to support trauma-informed learning, CR and DUG posed a question of how multi-media experiences might lend themselves to their garden experiences. This proposal was met with mixed reviews and most practitioners agreed that whatever is considered should be additive to a contemplative, calming, sensory experience. Many focused on sound.

Some practitioners disagreed that technology has a place in the garden. A handful of participants were concerned that taking out a phone or incorporating screens could take away from a soothing or peaceful experience and that tech can be unreliable. This perspective must balanced generationally with the group of students that will be using the garden.
Additions that Practitioners Suggest Would Enhance a Calming Environment

- Music - soft music, different genres (chimes), Taking pictures of the stages of growth - what does the garden look like before and after and then creating a children's book about the garden.
- Rubber surface so that people can do yoga and have space for meditative practice - it's the perfect space (quiet and peaceful).
- Picture books, stories and poems throughout the garden.
- Building instruments into the garden or Make instruments from what is grown in the garden. (Gourds as rattles, beans in rain sticks, corn stalks)
- So many gardens are in a very urban environment (sirens, cars, etc.) and classrooms with videos and computers. A garden offers them the opportunity to tune into different sounds (nature) and tune out some of the distraction sounds. - How can kids use their senses in a different way? Find strength in paying attention to the sounds of nature to tune out distraction.
- Guide for what is growing - an audio guide for how to interact in the garden.
- A scavenger hunt to find things and understand a garden.
- Garden journals, homemade insect sprays with items from the garden/garlic/onion, etc, garden art with fruit and vegetable stamps. Journaling instead of screen time and technology.
About Centrality Research
Who we are

Centrality Research came into being in order to fill a need in the field of research and evaluation to have diverse researchers leading projects. We feel that BIPOC and queer professionals have the necessary perspective to develop culturally responsive studies for projects regarding diversity, equity, inclusion, and those aimed at serving marginalized communities. We are a team of professionals with diverse backgrounds, training, and perspectives who come together to think of innovative ways to create a deeper more meaningful understanding of your communities.

If you would like to learn more about Centrality, reach out to our founder, Andréa Giron Mathern at andrea@centralityresearch.com
Centrality Research (CR) views our role as researchers and evaluators as stewards of information. We believe that research and evaluation should be a participatory process through which all stakeholders can find a place. We are skilled facilitators of the process but firmly believe that it is you that makes the process meaningful and engaging.

- We utilize appreciative inquiry, storytelling, and participatory action research to center stakeholders voices and perspectives.
- We couple qualitative insights with quantitative measures to create a full picture of your present and track your progress into the future.
- We create processes to ensure that internal stakeholders understand the full process and the intentions of the research or evaluation and that external stakeholders are not just informed or involved in the process, but that they have a seat at the decision-making table.
- We work with teams to create a shared understanding of how historical injustices have impacted your work by incorporating critical race theory, indigenous ways of knowing, and social justice theories.
- We have innovative models that ensure diverse perspectives are at the table for the examination of issues and for the creative process of generating solutions.