



Learning Gardens and Nature Connections: Diversity and Inclusion



Dilafruz Williams, Ph. D.
Professor
Portland State University
williamsdi@pdx.edu

North American Association for Environmental Education
Webinar, February 27, 2018

Overview

My GOALS are to invite you to consider:

1. What's the *Learning* in Learning Gardens?
What are the *Outcomes*?

2. How do we honor *Diversity and Inclusion* not as an afterthought but as core commitment?

Use of two frameworks as support:

Framework 1: *Community Cultural Wealth Model*

(Yosso);

Framework 2: *Pedagogical Principles G*A*R*D*E*N*S*

(Williams)

My passion and commitments

- Wonders of nature through learning gardens on school grounds;
- Over past 2 decades: Engaged with urban, low-income, ethnic, racial minority, immigrant and refugee populations
- My research, grants, publications related to Learning Gardens, in partnership with colleagues, can be found as follows:
 - **NSF-funded project:** *Science in the Learning Gardens (SciLG): Factors that support Ethnic and Racial Minority Students in Low-Income Middle Schools.* See NGSS curricular and instructional materials: <http://learning-gardens.org/>
 - See RESEARCH on Learning Gardens projects, with links and pdf files: <https://sites.google.com/pdx.edu/dilafruz/home>
 - **BOOK:** *Learning Gardens and Sustainability Education: Bringing Life to Schools and Schools to Life* (with J. Brown, 2012 Routledge), www.amazon.com

Daily realities: Smartphones?





Background:

History, Context, Research

- Proliferation of school gardens across states and countries;
- 7000+ school gardens in USA; Oregon: 668 gardens;
- Not a new phenomenon; resurgence since 1990s
 - Food insecurity
 - Health concerns – Diabetes 2, obesity, stress
 - Technology: over stimulation/nature disconnect
 - Disengagement from schools-dropout; irrelevance of education from real-life

Demographic trends

Of the projected ~50.8 million public school students entering prekindergarten through grade 12 in fall 2017:

- ~ 24.4m **White students, < 50%**)
- ~ 8.0m Black students
- ~ 13.6m Hispanic students
- ~ 2.8m Asian/Pacific Islander students
- ~ 0.5m American Indian/Alaska Native students, and
- ~ 1.5m students of two or more races.

Enrollment of White students: **continue to decline** through at least fall 2026, Hispanic and Asian/Pacific Islander students will continue to increase.

Source: NCES/USDE

Home languages--other than English--of students in public schools

(a few of the most spoken in four large urban school districts are listed below)

- Portland public schools: **94**: Spanish, Vietnamese, Cantonese, Somali, Russian, Mandarin, Japanese, Arabic, Native American [Chinook-Wawa, Haida, Salishan, Siuslaw, Tinglit]
- Seattle public schools: **143**: Amharic, Arabic, Chinese, Oromo, Spanish, Somali, Tagalog, Tigrigna, Vietnamese
- Minnesota public schools: **90**: Spanish, Somali, Hmong, Oromo
- Cincinnati public schools: **63**: Spanish, French, Arabic

In 2017-2018, how many families have you interacted with that speak a language other than English at home? How often?

Next few slides: Sample of school gardens with children and their teachers – notice engagement, diversity of gardens



Sacred space, Hawai'i





***Come stomp with us!
Our feet love the mud!***

**Building Cob oven,
Portland**



Compost delights! Chicago





Adolescents digging
with gusto



Learning Gardens Laboratory
Students designed signs also in their
home languages. Portland, Oregon

Classrooms and gardens: Integrated learning



n

Teacher honors students/Bulletin Board



What are students learning?
*What are the outcomes of garden-based
education?*

Synthesis of research: 1990-2010

Williams, D. R. & Dixon, P. S. (2013). Impact of garden-based learning on academic outcomes in schools: Synthesis of research between 1990 and 2010. *Review of Educational Research* 83(2): 211-235. doi:10.3102/0034654313475824

Garden-Based Education

Outcomes – sample

- Personal, social, moral development
- Vocational/career-oriented skills
- Academic learning: **curriculum/subject** links/relevance. E.g. Science, Math, Language Arts
- ✓ Sense of curiosity and wonder
- ✓ Multi-sensory learning
- ✓ Food literacy
- ✓ Healthy eating habits
- ✓ Physical activity
- ✓ School bonding/ community
- ✓ Attentional functioning
- ❖ **Motivation/engagement**
Science in the Learning Gardens
NSF-funded project. [See article.](#)

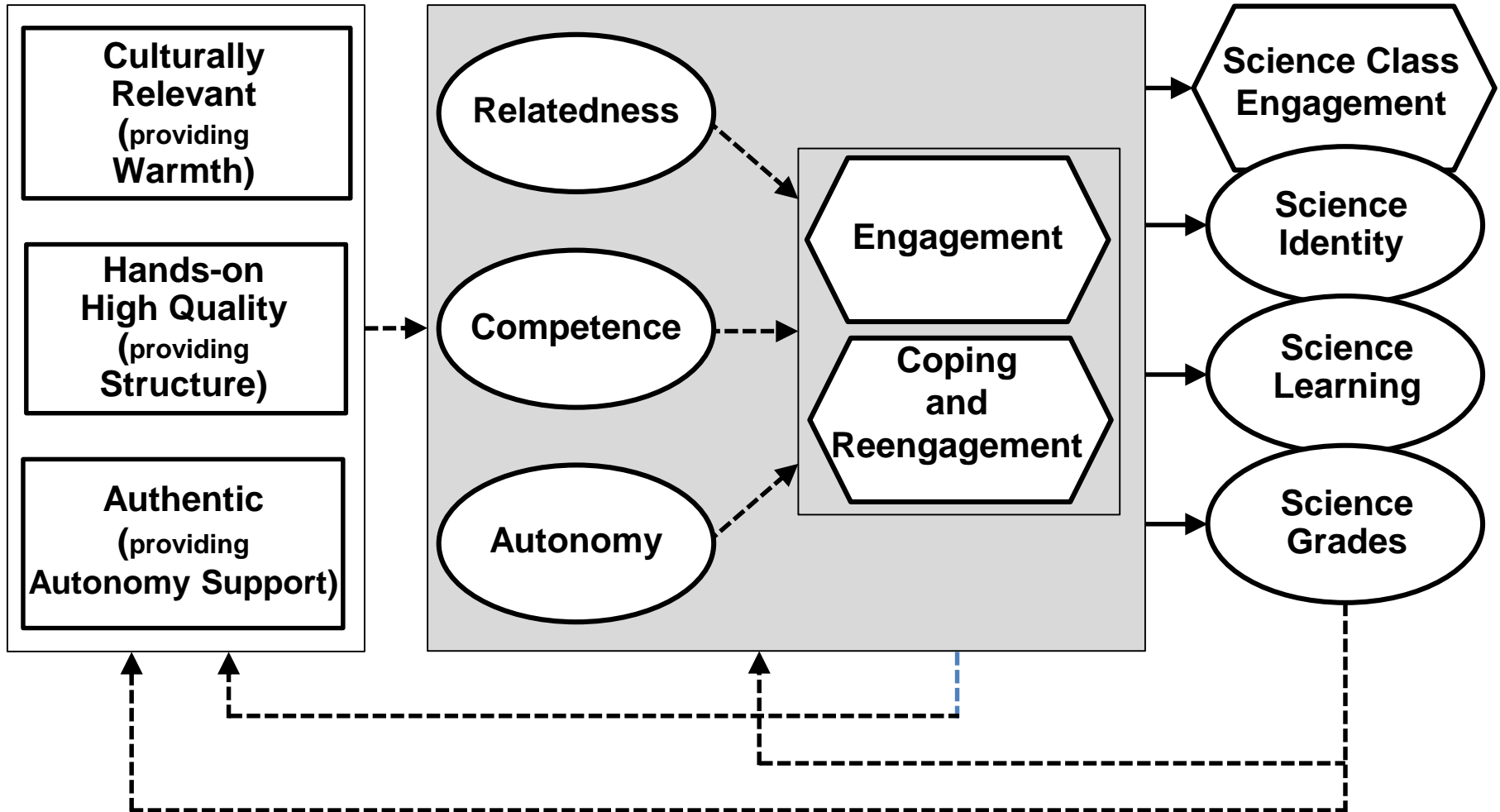
Science in the Learning Gardens

Longitudinal
research
grades 6, 7, 8



Science in the Learning Gardens-NSF funded

Pedagogical SUPPORTS → **GARDEN MOTIVATIONAL EXPERIENCES** → **OUTCOMES**



6th grade student:

“At Learning Gardens, it is time to be in your own little world. Letting your imagination go wild. Planting dreams in the ground and seeing them grow. If I can do this, take care of a plant, then I can see I can take care of myself and help myself and help other things.”

Diversity and Inclusion for All

Framework 1:

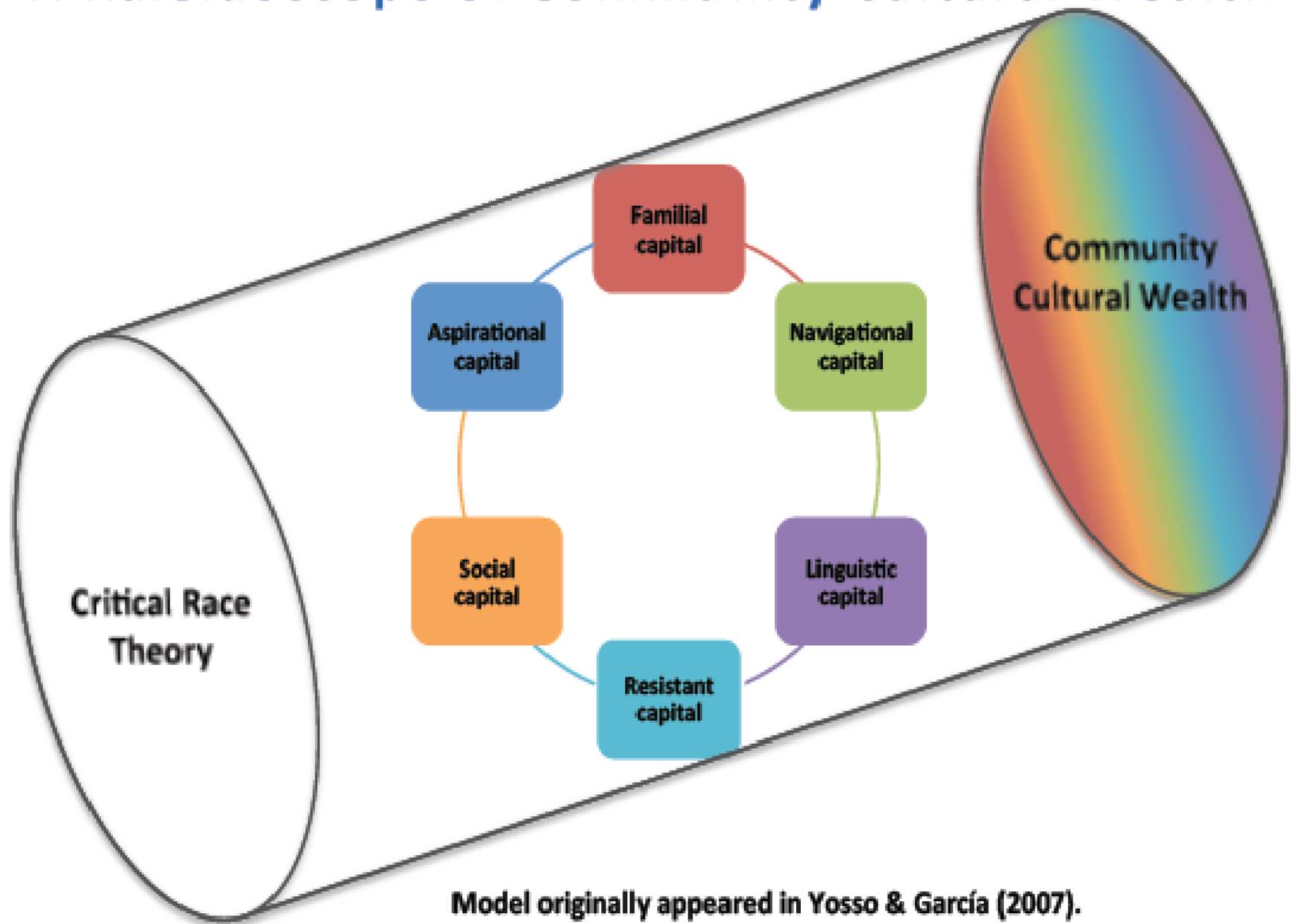
Model of Community Cultural Wealth

Kaleidoscope

“An array of knowledge, skills, abilities and contacts possessed and utilized by Communities of Color to survive and resist macro- and micro-forms of oppression”

Yosso, T. J. (2005). Whose culture has capital? A Critical Race Theory discussion of Community Cultural Wealth. *Race Ethnicity and Education* 8(1), pp. 69–91.

A Kaleidoscope of Community Cultural Wealth



**Model originally appeared in Yosso & García (2007).
Adapted from Villalpando & Solórzano (2005), Yosso (2005, 2006).**

Linguistic Capital: Various language and communication skills students bring with them to school. Also visual art, music, poetry

Familial Capital: Social & personal human resources drawn from and nurtured by extended family/kin/community networks

Social Capital: Peers and community-based social relations

Aspirational Capital: Hopes and dreams students have

Navigational Capital: Skills and abilities to navigate, and maneuver through, social institutions

Resistance Capital: Knowledge and skills fostered through oppositional behavior; resist assimilation

Source: Yosso, T. & Burciaga, R. (2016). *Reclaiming our histories, recovering community cultural wealth*. Research Brief. Pp. 1-4. Center for Critical Race Studies, UCLA.

Cultural differences are assets, capital, not deficits

Usually, knowledge of
diversity is manifested as
statistics

Move beyond statistics, reject
cultural stereotypes and
prejudices

Acknowledge self-limitation

Honor parent and community
involvement (Familial
capital)

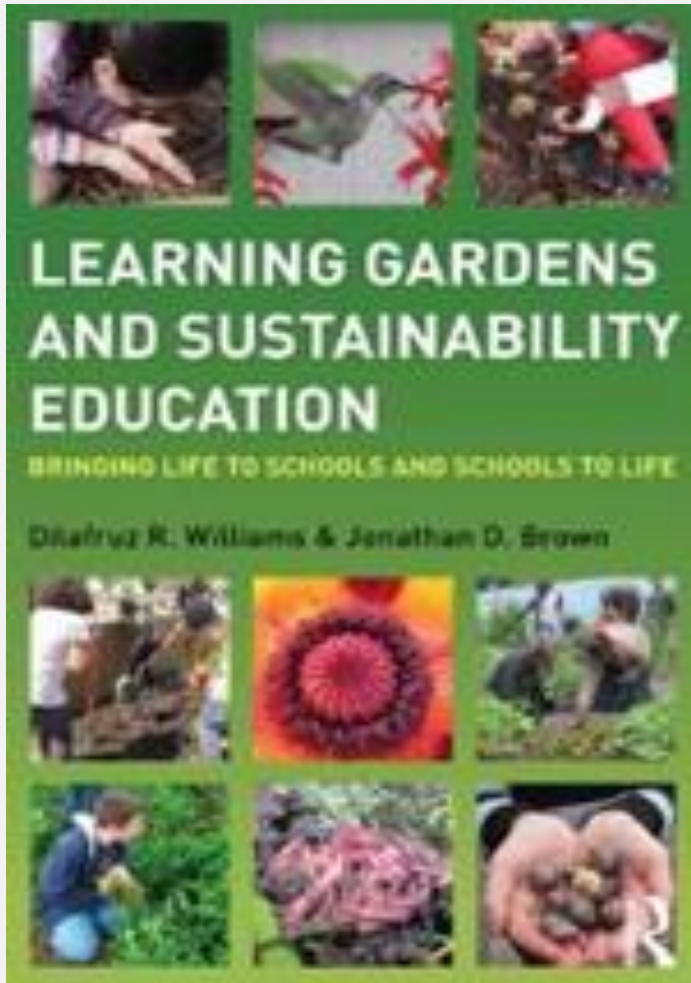
Culturally-Responsive Curriculum

- Eating is a cultural act: *Montanari, Food is Culture, 2006*
- Literature, Writing, and Poetry: Family Food Stories; Stone Soup; Seed Folks (Paul Fleischman), Seed Kids (multicultural books/stories); 'I Am From' Poem/Writings
- Journal entries – guided questions; A-ha moments
- Personal experiences: with food and land

Adults

- Must commit to integrity, authenticity, openness to learn, critically engage
- Remember and reflect on power dynamics/unequal relationships, unquestioned assumptions; attend to informal texts/subtexts
- Be in dialogue with those who are different

Framework 2: Pedagogical Principles



Williams, D. R. & Brown, J. D. (2012). *Learning Gardens and Sustainability Education: Bringing Life to Schools and Schools to Life*. New York, NY: Routledge www.Amazon.com

G*A*R*D*E*N*S

Groundedness (Sense of Place)

Awe (Curiosity, Wonder)

Rhythm (Scale, Patterns)

Diversity (Biocultural)

Experience (practical)

i**N**terconnectedness

Sensory awakening

Principle #1 **G**roundedness/ Cultivating a sense of place



Many students are uprooted, dislocated..

**Gardens provide place connections
through planting**

Student comment – 6th grade

“It's like I'm a member.
I'm home. I'm safe. I'm
comfortable. They help
me do what I need to
do.”

Principle # 2 Fostering Awe/ Sense of Curiosity and Wonder



Principle # 3

Discovering Rhythm, Scale, Patterns



Principle # 4: Valuing Biocultural Diversity



Principle # 5: Embracing practical Experience



Principle # 6: Nurturing iNterconnectedness



Principle # 7: Awakening the Senses



Poetry Underground- 4th grade

Beet

It's earth trapped in a bottle. The
wet plain taste, melting on my tongue.

-- Cedar

Inclusive Instructional METHODS

Sit spots: 10 mins

**Find a special place
away from distractions.**

Learn to pay attention. Be mindful. Be still. Be quiet.

Observe; sensitize the senses.

Lessons of nature seep in; the experience feels personal.



A close-up photograph of a plant stem, likely a young tree or shrub, showing a dense, white, fibrous, web-like structure that appears to be a protective layer or a natural growth pattern. The background is a blurred green, suggesting foliage.

Wonder Wall

- **I wonder about ...**
- **I wonder how...**
- **I wonder why ...**
- **I wonder when...**
- **I wonder if...**

Power of Camera:

Photographs for communication

Photographs taken by students who might otherwise be shy if English is not their native language.

No more than two per day

- **S** - What do you **see**?
- **A** - What is actually happening?
What **a**ctivity is going on?
What is the lesson about?
- **Y** - Connect to **y**ou.
Why is this moment important for you?
How do you feel about it?



Ethnic Minority Adolescent Voices

“I feel safe at the Learning Gardens.”



**“No one is judging me for who I am.
It is a circle of life, of friendship.”**



**“It releases stress from me.
I feel really happy.”**



**“I feel smart. I feel like a better
learner.”**

Related research articles with colleagues at Portland State University

- Williams, D. R., Brule, H., Kelley, S.S., & Skinner, E. A. (2018, in press). Science in the Learning Gardens: A study of motivation, achievement, and science identity in low-income middle schools. *International Journal of STEM Education*.
- Williams, D. R. (2018). Garden-based education. In *Oxford Research Encyclopedia of Education*. George Noblit. (Ed). New York: Oxford University Press. DOI: 10.1093/acrefore/9780190264093.013.188
- Hauk, M., Williams, D. R., Bluehorse-Skelton, J., Kelley, S., Gerofsky, S., & Lagerwey, C. (2018). Learning Gardens for all: Diversity and inclusion. *International Journal of Sustainability in Economic, Cultural, and Social Context*, 13(4): 41-63. <http://doi.org/10.18848/2325-1115/CGP/v13i04/41-63>
- Williams, D. R. & Anderson, J. A. (2015). Tongue-tied no more: Diversity pedagogy and sense of place in the Learning Gardens. *Canadian Journal of Environmental Education*, 20: 26-46.
- Williams, D. R. & Dixon, P. S. (2013). Impact of garden-based learning on academic outcomes in schools: Synthesis of research between 1990 and 2010. *Review of Educational Research* 83(2): 211-235. doi:10.3102/0034654313475824
- Kelley, S. & Williams, D. R. (2013). Teacher professional learning communities for sustainability: Supporting STEM in Learning Gardens in low-income schools. *Journal of Sustainability Education*, 5: 1-19. ISSN: 2151-7452.
- Skinner, E. A., Chi, U., & the Learning-Gardens Educational Assessment Group-includes Williams, D.(2012). Intrinsic motivation and engagement as “active ingredients” in garden-based education: Examining models and measures derived from self-determination theory. *Journal of Environmental Education*, 43(1): 16-36.



LEARNING GARDENS AND SUSTAINABILITY EDUCATION

BRINGING LIFE TO SCHOOLS AND SCHOOLS TO LIFE

Dilafruz R. Williams & Jonathan D. Brown



I welcome your
QUESTIONS.
THOUGHTS.
Moving forward...

Dilafruz Williams
williamsdi@pdx.edu

<http://learning-gardens.org/>

<https://sites.google.com/pdx.edu/dilafruz/home>

Photographs courtesy
Jennifer Anderson, Claire Lagerwey,
Marcia Thomas, Dilafruz Williams