# A Garden for Every Child. Every Child in a Garden: Historical and Contemporary Arguments and Implications for Schoolyard Gardening Programs

Christopher D. Murakami
University of Missouri, MU Science Education Center, Columbia Center for Urban Agriculture, MU Office of Science Outreach

## Defining Schoolyard Gardening

Schoolyard gardening involves educational program in which students and teachers design, plant, maintain, observe, investigate, harvest, and prepare agricultural crops.

- The experience should be long-term, at least two weeks, and include the production of foods by students while learning academic content.
- To include schools in diverse climates and both rural and urban settings, indoor activities like growing sprouts in mason jars, composting, growing mushrooms on logs, and growing in soil-less mediums are SG. Ideally, however, SG should occur outside.
- Schoolyard gardening programs can vary based on region, season, and student grade level

## Statement of the Problem

Sedentary youth with limited interaction with and awareness of nature

The average child spends 7 hours and 38 minutes a day on a computer or watching television, while outdoor time is only "minutes a day" (Coyle, 2010, p. 2).

66-79% of US students are below grade level in science

On the Science National Assessment of Education Progress (NAEP) for science in 2009, "34% of fourth-graders, 30% of eighth-graders, and 21%of twelfth-graders performed at or above the *Proficient* level in science" (Science NAEP, 2009, p.1).

Students are not eating the recommended amount of fruits and vegetables

According to the Center for Disease Control and Prevention, 77.7% of students surveyed consumed less than five servings of fruits and vegetables (CDC, 2009).

## Elements of Schoolyard Gardening Programs

Gardening will look differently in every school, but all programs should contain the following elements:

- Connections with regional crops from seed to plate
- Opportunities to develop academic skills across diverse disciplines
- Collaborations between farmers, scientists, communities, and educators
- Agricultural practices that model ethical resource conservation

## The Argument:

*All* legislators, administrators, and educators should consider schoolyard gardening programs to increase science achievement, improve environmental attitudes, and positively influence food-choice behavior.

## Historical Schoolyard Gardening in the US

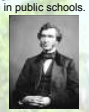

"We should all take note of the tagline for the U.S. government's youth gardening program in World War I: 'A Garden for Every Child. Every Child in a Garden'" (Hayden-Smith, 2011).

*"During WWII ... Americans were encouraged by the federal government to be as self-reliant as possible; victory gardens sprang up in schools, churches, parks and private homes. But once the culture of scarcity was transformed to one of abundance, which was the case following the war, urban gardening declined sharply"* (Winne, 2008, p.55).


## The Divergence of Science Education & Agricultural Education

Industrial agriculture and the emphasis of hard sciences in curricula reduced the prevalence of agriculture education in public schools.

In 1892, The Committee of Ten established a curriculum to prepare students for colleges that does not emphasize agriculture education (Atkin & Black, 2007).



During Reconstruction in the South, the Hampton-Tuskegee models of normal school teacher preparation incorporated the hard work of agriculture was used to train African-American teachers (Anderson, 1988).

During the late 19th century, The Nature Study emerged from Cornell University to engage students in the wonders of nature in an attempt to keep rural students from fleeing the farm (Atkin & Black, 2007).

## The Emerging Youth Gardening Movement

Alice Waters' Edible Schoolyard in Martin Luther King Jr. Middle School in Berkeley, California.

Michelle Obama replanted the Victory Garden at the White house and invited students to plant and harvest produce.

FOOD CORPS

"FoodCorps is the first national AmeriCorps program designed to address childhood obesity through school garden and Farm to School service" (food-corps.org).

The Learning Garden in Ashland, Missouri, is used for interdisciplinary primary instruction.

In March 2011, the Columbia Center for Urban Agriculture installed a garden with tenants at the Boone County Juvenile Justice Center.

## ✓Schoolyard gardening improves science achievement

After using gardening to teach science concepts, students showed significantly higher science scores on the Texas Assessment of Knowledge and Skills exam, in comparison to the control population (Klemmer et al., 2005).

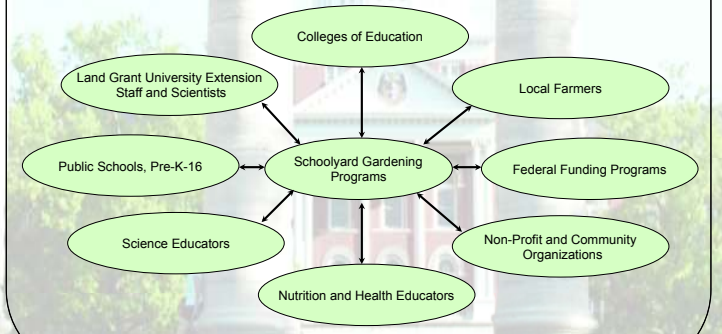
## ✓Schoolyard gardening creates pro-environmental attitudes in an outdoor learning experience

Learning experiences in the garden generated pro-environmental attitudes (Morgan, et al., 2009; Skelly & Bradley, 2007; Waliczek & Zajicek, 1999).

## ✓Schoolyard gardening improves food-choice behavior

Ratcliffe et al.(2009) surveyed over 200 students before and after teaching a hands-on gardening curriculum and found that vegetable consumption increased, along with students' ability to identify, and willingness to taste, vegetables (Ratcliffe, et al., 2009).

## A Model of Collaboration for Schoolyard Gardening Programs




## Funding and Policy Implications

**Legislators should support the passage of the No Child Left Inside Act of 2011 to support environmental education programs.**

**Garden educator programs should be funded in part with yet to be appropriated funds from the Healthy Hunger-Free Children's Act of 2010 to support effective nutrition education**

**The 2012 Farm Bill should include funds for propagating schoolyard gardening through teacher professional development programs and supporting partnerships with farmers and schools**

## Implications for Teacher Education

**More professional development for schoolyard gardening educators**



**In July 2011, a pilot program in science teacher education at the University of Missouri.**

- **Eight pre-service science teachers learned teaching methods and curricula that emphasized Foods, Investigations, Soils, and Healthy Habits (FISHH)**
- **Future programs must support pre-service and in-service teachers' attempts to provide rigorous garden education.**

## Conclusions & Connections to Sustainable Agriculture

**Sustainable schoolyard gardening programs must:**

**Demonstrate Human Equity:**
- **Create reasonable expectations and support for educators**
- **Reconnect all students to healthy food and nature**

**Demonstrate Economic Viability:**
- **Provide fair compensation for teachers and garden leaders**
- **Generate profit from crop production and sales (i.e. Farm-at-School)**

**Demonstrate Environmental Responsibility:**
- **Use responsible garden management practices**
- **Reduce use of non-renewable and off-garden inputs**

**Demonstrate Collaboration Between Diverse Stakeholders**

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