

Why we must and how we can address Target 14 of the GSPC: The Fairchild Challenge as a Model.

Caroline Lewis,

Fairchild Tropical Botanic Garden, Miami, Florida, U.S.A.

Introduction

A call to action in the field of education: Public gardens must cast wider nets to engage large diverse populations of learners in appreciating the importance of biodiversity.

This paper explores why we must and how we can design and implement far reaching education programs that give schools and communities meaningful opportunities to connect or reconnect with nature.

The Fairchild Challenge is a working model of an education program that, in five short years, has grown to involve more than 25,000 urban teenagers, hundreds of teachers, and by extension, families, neighbourhoods and communities.

The Fairchild Challenge originated at Fairchild Tropical Botanic Garden in Miami, Florida and is already being replicated in 5 cities in the USA. Educators from 21 additional sites (from the USA and Canada to Costa Rica and South Africa) have been trained to implement the program in their cities and towns.

Why We Must

In the words of Edward O. Wilson, one of this generation's greatest biologists, "We have a long way to go to make peace with this planet." (Wilson 2006) In his most recent book, *The Creation*, Wilson suggests that "*part of the dilemma is that while people around the world care about the natural environment, they don't know why they care, or why they should feel responsible for it. By and large, they have been unable to articulate what the stewardship of Nature means to them personally*" (Wilson 2006).

The potential role of public gardens in education challenges us to become more ambitious in our outreach initiatives. The wording of our institutional missions may vary, but our common agendas include developing lifelong learners who appreciate the beauty and value of nature.

The Fairchild Challenge and similar ambitious programs help public gardens cultivate large, diverse, untapped audiences and promote botanical and environmental awareness, scholarship and stewardship.

Additionally, building education programs around the environment provides meaningful and effective learning opportunities. Research findings on the effectiveness of the Environment as an Integrating Concept (EIC) in education point overwhelmingly to the success of the EIC philosophy. A compilation of evidence gathered from 40 different schools that utilized the EIC philosophies includes this partial excerpt from the report: Students involved in EIC learning environments had higher scores on standardized measures of academic achievement in reading, writing, math, science, and social studies; reduced discipline and classroom management problems; increased engagement and enthusiasm for learning; and greater pride and ownership in their accomplishments. On the average, the EIC students outperformed their peers from traditional programs at all five of the schools that conducted these analyses (Lieberman 1998).

Thus, educators in botanic gardens, arboreta, nature centres and the like have the opportunity to create and initiate meaningful programs to engage learners of all ages in appreciating the beauty and value of nature and in seeking and finding ways to embrace the role of stewards of the environment. As Jane Goodall, world renowned

scientist, has stated: “the greatest danger to our future is apathy.” The vast majority of citizens of the world are in desperate need of opportunities to connect or reconnect with nature. When students who have participated in the Fairchild Challenge write to us that after participating in the program, they feel important and needed in their communities, we know we are, at least, on the right track.

How We Can

There has never been a more important time for us to design and implement meaningful and expansive education programs. We can start by creating programs and learning opportunities that:

- Appeal to diverse learning styles, abilities, and interests
- Complement the school curriculum in our towns, cities and countries
- Create opportunities to engage students in open-ended learning opportunities
- Promote civic-minded thinking on local and global issues
- Involve local schools, colleges, organizations, institutions, community leaders
- Celebrate ideas and actions that build civic engagement
- Provide interdisciplinary learning opportunities
- Allow sites to work around school visit capacity challenges
- Raise botanical and environmental awareness, scholarship and stewardship
- Produce measurable outcomes to frame qualitative and quantitative evaluation



While it may not be possible to build programs that afford all of the opportunities listed above, the list should be viewed as a menu of sorts, and institutions are encouraged to include as many as possible when they design and initiate far reaching education programs.

That said, it is critical to take an interdisciplinary approach to effective environmental education. “Indeed, only fluency across the boundaries (natural sciences, social sciences and humanities) will provide a clear view of the world as it really is. To the extent that the gaps between the great branches of learning can be narrowed, diversity and depth of knowledge will increase....it gives ultimate purpose to intellect” (Wilson 1998). It is through this type of multidisciplinary immersion that students experience “productive conceptual collisions across disciplinary lines (which) yield robust and complex portraits of the adaptive and efficient nature of learning...(where) learning is meaningful and sustained” (Brandsford 2005).

The Fairchild Challenge as a working model

If we are to embrace our charge of casting wider nets in education, and we appreciate why we must and how we can, the Fairchild Challenge as an existing program may help you visualize at least one way to approach designing and initiating expansive education programs.



Art Student with Palm Biologist Dr. Scott Zona

The Fairchild Challenge is an outreach program that targets teenagers and engages them through a series of multidisciplinary challenges or competitions. The program encourages students, and by extension their families and communities, to appreciate the beauty and value of nature, develop critical thinking skills, understand the need for conservation and biodiversity, tap community resources, become actively-engaged citizens, and recognize that individuals do make a difference.

The program is launched annually at the beginning of each school year. Schools are presented with the year's "menu" of challenge options, goals, specific requirements, point allocations, and deadlines. Teachers and students at each participating school then select which Challenge options they will attempt (many schools

attempt all options) and participate in order to earn points for their school.

The Fairchild Challenge is designed for success and the annual point goal for schools is very

attainable. Schools welcome the open-ended learning opportunities program promotes and appreciate the fact that the Challenge options correspond with state and national education standards. In addition, at Awards ceremony at the end of the school year, participating students teachers receive t-shirts and family passes to visit the garden, and schools receive prizes and awards.

Fundraising for the program has been rather successful to date since and funders often volunteer in the program and see, first-hand, how the students, teachers and schools become. Funding successes allow us support for under-resourced schools. This includes transportation, supplies, loan of equipment, etc.

Fairchild Challenge Options

Annually, the Fairchild Challenge may include options such as:

- Create/expand/interpret school gardens or natural habitats.
- Engage communities through environmental outreach.
- Investigate freshwater flow and quality.
- Write/perform original verse on environmental topics.
- Explore cultural uses of plants through intergenerational interviews.
- Build LEED-certified green building models, solar cookers and solar-powered model cars.
- Create artwork inspired by tropical plants.



Art students in rainforest

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- Design and produce environmental skits or Public Service Announcements.
- Create Challenge t-shirt designs.
- Conduct field work during Environmental Immersion Day.
- Link people and plants through photojournalism.
- Perform an outdoor theatre scene.
- Write to decision-makers on environmental issues.
- Describe plant/animal interactions.
- Draw environmental cartoons.
- Exchange botanic information with students in other countries.
- Compare enviro-friendly/unfriendly products.
- Reduce/reuse/recycle at school or in your community.
- Write testimonials documenting a lifestyle change to better the environment.
- Produce research/opinion papers and projects.
- Debate environmental issues and policies.

Program Goals:

- Increase environmental awareness, scholarship, stewardship.
- Appeal to a broad range of students with varying interests and abilities.
- Determine how significantly informal education can influence formal education
- Promote civic-mindedness, increase sense of role in community, encourage participation in democratic society.
- Utilize teenagers as gateways to communities.
- Recognize the environment as having meaning and relevance in all aspects of our lives.

Program Strategies:



- Promote interdisciplinary learning opportunities, combining science, civics, arts, community outreach, leadership, etc.
- Offer creative pedagogical strategies to improve education by promoting open ended learning opportunities which have relevance in student's lives.

- Provide forums for students' opinions to be heard and valued. Host events, and present options in which students share their opinions, research findings, skills, and creativity.
- Value emotions, interests, and talents, and recognize these as integral to optimal learning.
- Include in the program's budget, funding to help under-resourced schools participate equitably.
- Collaborate with Miami-Dade County Public School Administrators to identify state and national educational standards met by the various annual Challenge options so the program has relevance in public school curricula.
- Provide meaningful resources for program participants through the Fairchild Challenge staff and FTBG website.
- Use PR/marketing opportunities to celebrate students, teachers, and program stakeholders.
- Involve and value local organizations, institutions, funders, and sponsors.
- Implement meaningful program evaluation, both formative and summative.

In five short years, the Fairchild Challenge in Miami, Florida, has grown significantly and now engages more than 25,000 students and 1,200 teachers from over 103 different schools. Additionally, educators from over 26 sites in the USA, Canada, Latin America, South Africa, and SE Asia have been trained to replicate the program, and interested educators from new sites are trained annually. Already, five sites have launched the Fairchild Challenge in their cities and towns and five more sites are poised to launch.

Student feedback about The Fairchild Challenge:

I learned that any change in the environment how miniscule can cause possible imbalance ecosystem and could even lead to the endangerment of certain species.

Nature is full of mysteries and one can never it. When I am outdoors I can forget about that is going on in my life and concentrate on and purpose without ever getting tired of it.

It has become apparent to me that many need to be made in order to mutually coexist We must lessen our consumption of natural making sustainable buildings and recycling.



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The world is dying. With degradation level of the earth increasing rapidly, there is a sharp demand for people who have a passion and knowledge of the environment to step up and save it. Although the phrase "save the world" seems cliché, it is indeed possible for normal human beings to make a profound difference in the world, which they live.

The older I have grown the wiser I have become to environmental issues and the true sanctity of life upon earth, because of this I wish to make a difference in the world, or at the least obtain the information necessary in order to educate others.

Conclusion



The scope and design of a program like the Fairchild Challenge has been effective in engaging very broad, diverse audiences of students and teachers and, by extension, their families, neighbours, and communities.

This type of program is helping public gardens cultivate large, diverse, untapped audiences and promote botanical and environmental awareness, scholarship and stewardship.

Ultimately, we must get the younger generation to ask questions, empower them to find solutions, respect their opinions, and, welcome them as partners in preserving biodiversity, locally and globally. “How wisely policy is chosen will depend on the ease with which the educated public, not just intellectuals and political leaders, can think around these [environmental policy-ethics-social science-biology] and similar circuits, starting at any point and moving in any direction” (Wilson 1998).

The time is right for all of us to design and implement education programs that engage large diverse populations of learners in appreciating the importance biodiversity.

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