

The Heart of the Matter: Infusing Sustainability Values in Education

Experiences of ESD with the Earth Charter



Celebrating the UN Decade of Education for Sustainable Development



United Nations
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UNESCO Chair on Education
for Sustainable Development
and the Earth Charter



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Preserving Our Community of Life: Integrating the Earth Charter's Philosophy into the Eco-School Programme of Puerto Rico

Minnette Rodríguez Harrison

Introduction

Throughout the 21st century, developing curriculum that complements the students' learning experience has become more and more challenging. Thus, curriculum development that strives to link academic and practical situations has become increasingly complicated. An educational environment that facilitates the development of bio-sensitivity and interdependence between organisms and the environment is crucial for students' success; monarch butterflies have been used as catalysts for the bio-sensitivity process in the Specialized Ballet School of Julián E. Blanco, which has utilized the Earth Charter's principles throughout the process.

The Specialized Ballet School of Julián E. Blanco has integrated the Earth Charter's principles into the school's curriculum since 2012, which demonstrates the eco-school's shared vision with UNESCO in support of the Decade of Education for Sustainable Development (DESD). Julián E. Blanco endorsed the Earth Charter's principles in response to the alliance between Earth Charter International (ECI) and the Foundation for Environmental Education (FEE) (Poland, 2011).



The introduction phase of the Earth Charter's principles in the Specialized Ballet School of Julián E. Blanco took place in the science department's curriculum. Presently, the principles have spread throughout the entire school body and even into the surrounding community; the entire school has now integrated the Earth Charter's philosophy into curriculum development. Education on peace and tolerance of differing forms of life has led to an increase in sustainable actions among the student body.

Context

In 2012 and in collaboration with the Eco-school Programme in Puerto Rico, we created guidelines with five environmental lessons to initiate the implementation of the Earth Charter principles throughout all participating educational facilities. In these guidelines, we identified as one of the objectives the creation of a school butterfly farm to promote the development of environmental values that will later evolve into the everyday performance of sustainable actions. Such actions, as proposed by the Earth Charter, include respect for the community of life, universal responsibility, and the promotion of the common good. This project allowed eco-school teachers to integrate this international document (the Earth Charter) in their curriculum. Within a year, two additional schools adopted the School Butterfly Farm Project. The programme is a positive asset to a school's curriculum because it encourages direct contact with nature, assists the students' development of scientific and analytical skills, and encourages respect and understanding of the environment.

Pérez-Asso, Genaro & Garrido (2009) suggest a framework that supports forming an infrastructure that would guarantee successful reproduction of species (in our case the reproduction of monarch butterflies), and whose goal would be the subsequent liberation of the butterflies in adequate areas for the species' development. Our students became guardians and caregivers for the butterflies, with these actions they began contributing with the protection of Earth's biodiversity. High school students cared for the monarch butterflies while the construction of the butterfly farm and garden were ongoing throughout 2012 and 2013.

The Specialized Ballet School Julián E. Blanco integrates academic studies and ballet to promote the art of dance through systemic learning and teaching approaches that allows to:

- a) develop artistic sensibility;
- b) develop the growth of artistic and technical abilities on ballet and other forms of dance; and
- c) accomplish academic excellence.

Our school provides an academic programme for grades five through twelve. All grades share a common goal of accomplishing integral student development through academic excellence and ballet, which awakens students' human and esthetic sensitivity. The School is located in an urban zone that is severely lacking green space. Therefore, it is vital for our education community to create space that contributes to the conservation of the ecological processes throughout the city. It is necessary for the students to understand how their actions impact urban ecosystems, and how the students can modify their actions to benefit others, "as we are one human family and one Earth community with a common destiny" (Barnett, et al., 2011).



The Problem

When we started the Butterfly Farm School Project in the Ballet Specialized School, a lack of concrete environmental policy was discovered. In a self-evaluation process that we carried out, a plan emerged to construct a concrete environmental policy that could be put into practice by the entire school. The initial phase of the school project encountered various challenges, such as the acceptance and ownership of the project by the school community members; some showed initial resistance to the project's framework. Thus, the Environmental Committee in charge of the Eco-School Programme developed a framework for an environmental policy that focused on finding solutions to pressing environmental issues, such as solid waste management. Promotion of sensitivity and environmental education were included in the plan with the objective of establishing a culture of environmental responsibility among students, faculty, and the community. This was done to promote the education community's participation in the butterfly farm project. During the butterfly farm project's promotion phase, emphasis was placed on adaptability of the programme to all subjects. The Eco-School Programme facilitated this process as part of its vision to encourage the education community's involvement in sustainability actions. Two topics were integrated into the school's curriculum in order to achieve Eco-Schools vision, to establish our environmental policy and to facilitate the development of environmental literacy: solid waste management and biodiversity. Several activities regarding solid waste management were developed throughout the year. The monarch butterflies played a significant role in educating students on the subject of biodiversity, and the Earth Charter was the cross cutting element.

Implementation

During the initial phase of the project, the students conducted research on current and prior environmental agreements, which familiarized them with the chronology of development of the Earth Charter's principles. An action plan was then carried out that consisted of integrative activities in which students developed environmental management actions, utilizing monarch butterflies as the focus and the Earth Charter principles as the framework.

The Butterfly Farm School Project 's framework included four components: the protection and care of the monarch butterflies; the management and utilization of a composting operation as a measure to reduce solid waste while creating a natural fertilizer to nurture both hosts plants and nectar plans; the creation of a website; and the development of a scientific magazine.

Doing composting was helpful for the students to learn sustainable behavior. They complemented this with forming a learning community with other groups to develop a paper on the fundamental values of the Earth Charter.

After the decomposition process finished and compost was prepared, the compost was employed by the students to sow plants in the school's butterfly garden, which taught the students the significance of species protection.

Action oriented research was carried out to observe how the interaction with the monarch butterfly (*Danaus plexippus*) helped the students to understand its life cycle. Not only did they learned this, but while doing research students showed respect for this form of life. The Earth Charter's principles were mentioned in this research when discussing the process of understanding, compassion, and care (Boff, 2005).



In the butterfly farm project, students observed and provided care for the butterflies throughout the four stages of their metamorphosis cycle: egg; larva; pupa; and adulthood. For example, from a plant with sixty-two monarch butterfly eggs, students observed forty-eight newborn larvae, and conducted a larvae-feeding process by utilizing host plants; all forty-eight larvae became pupa, and later forty-seven butterflies entered adulthood (twenty-one males and twenty-six females). Later, each butterfly was released into the wild. A ninth grade student commented, "By taking care of the butterflies I learned to secure them, feed them and to be responsible. I learned how to hold them and really like to recognize their right to live." Through this direct experience students were able to "protect and restore the integrity of Earth's ecological systems with special concern for biological diversity and the natural processes that sustain life" (EC Principle 5: Ecological Integrity).

Technology was also utilized to create a website to facilitate communication, provide resources, and scientific educational materials, and log educational experiences and executed activities. The introduction of digital communication was part of Julián E. Blanco's mission to decrease solid waste throughout the school and in the surrounding community. High school students published a scientific magazine with the objective to capture the attention of readers interested in scientific studies and turn this magazine in an education resource for the entire school community. Later, the document was digitalized and promoted through the school's science website: <http://cienciajeb.blogspot.com/>.

The creation of the magazine became part of the environmental campaign, "Zero Waste," which was established by the Eco-School Programme. The content of the document was later elaborated on by students and included the drafting of an ecological commitment, a connection to the Earth Charter's principles, the "Litter Less" campaign, the Butterfly Farm Project and other information. In order to integrate the Earth Charter's philosophy into the school's curriculum and participate in activities during Earth month, students endorsed the Earth Charter.

These activities helped students at the Ballet Specialized School to value environmental education to help preserve planet Earth. Our education community was able to show with practical actions (a butterfly farm) how to care and protect natural resources for future generations.

Lessons learned

Participating students' feedback are the best evidence of success in the learning process. A twelfth grade student commented, *"Throughout the environmental science courses this semester, our classes were able to raise awareness about how humans affect nature; it is our responsibility to solve the problems we've created. I've realized this in different ways, studying history and the environmental treaties, and with doing practical work like composting. The course allowed us to create a vision that could lead us to be more sustainable."*

She also said, *"The most important thing I learned was to start having a clearer idea of what environmental science is, and through an online quiz, to know what my ecological footprint is. I learned about my daily waste consumption, and I hope to reduce these numbers over time and avoid future damage to our planet."*

Upon completion of numerous environmental activities, students were able to recognize environmental challenges surrounding them on a daily basis and brainstorm solutions and alternative actions to these ongoing issues

by utilizing analytical skills that can be applied to other academic areas (Krinock & Robb, 1999). Undoubtedly, the integration of the Earth Charter's philosophy has facilitated discourse on environmental subjects that were put into practice, which incorporate peace, deep understanding, and holistic approaches at Julián E. Blanco.

Future academic projects will continue to incorporate the Earth Charter's principles, and Julián E. Blanco strives to encourage endorsement of the Earth Charter at additional educational facilities. Our school plans to integrate ballet and the care of butterflies; students are currently researching possible ideas and strategies to create artistic expressions that could possibly include theatre, music, or dance.

The Way Forward presents new beginnings, challenges, and opportunities to coexist and care for our home, our only home, Planet Earth, and the students of Julián E. Blanco strive to search for ways to achieve this.

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