Reading, Writing, Arithmetic & MOTHER EARTH

Environmental Education in K-12 Schools

"To waste, to destroy our natural resources, to skin and exhaust the land instead of using it so as to increase its usefulness, will result in undermining in the days of our children the very prosperity which we ought by right to hand down to them amplified and developed. " ~ *Theodore Roosevelt*

BY AIMEE WELCH

Times were different when President Theodore Roosevelt delivered this insightful statement during his Seventh Annual Message to the country on December 3, 1907. Preserving the environment was gaining importance, but existed farther down on the world's priority list. Global warming hadn't crossed our minds, rain wasn't considered a limited resource, and rainforests were still considered exotic – not rare. Mother Earth was thriving and sustainability still came easily, yet Roosevelt's prudent foresight couldn't have been more accurate.

Our children have been handed a monumental challenge—preserving the health of the planet. It is now their responsibility to share, but it is our duty to give them the tools and the education needed, so that a century from now they can hand their children and grandchildren a more prosperous environment than the one we left them.

The delicate balance between NATURE and knowledge

Raising environmentally astute citizens capable of sustaining the planet is the task at hand.

One aspect of this charge is to get kids back outside, where they learn to question, understand, appreciate and respect nature. The number of kids and hours spent in front of computers and TVs is steadily climbing, at the expense of bike riding, fishing and collecting bugs; yet the American Academy of Pediatrics says those bug-catching kids are happier, healthier and more relaxed. Go outside and play…checkmark.

Secondly, we have to teach the concept of sustainability—the cause and effect of our actions (or non-action) on the planet and its resources… that is how we turn our little nature lovers into a generation of environmental stewards with a holistic view of the world, armed with the skills to make it a better place.

The question then becomes what is the best way to combine nature and knowledge—demonstrate the power, impact and consequences of their actions? That depends on who you ask. But the infusion of Environmental Education (EE) in K-12 classrooms is a cause being championed on national, state and local fronts, and a growing number of children are getting the message.

"The goal of environmental education is to develop a world population that is aware of, and concerned about, the environment and its associated problems, and which has the knowledge, skills, attitudes, motivations, and commitment to work individually and collectively toward solutions of current problems and the prevention of new ones." – *The Belgrade Charter*

Getting from there to HERE

While it's been a slow and rocky road, EE is steadily making its way to our children in the classroom—a few steps forward… and sometimes a few steps back at a time.

Environmental Education concepts are currently well represented in most states, but exactly how to introduce them into lessons plans throughout the year, for different age groups, and in alignment with state academic standards remains a challenge. Yet, the increasing number of teachers using programs like Project WILD and Project Learning Tree to incorporate EE indicates they're doing just that. An abundance of online resources (see "teacher resources" section below), grants, non-government organizations and willing volunteers are helping educators provide the hands-on opportunities kids need to better understand their environment, and the importance of sustainability.

Before the 1970s, EE in K-12 classrooms was virtually non-existent. Then, in 1970, with the celebration of the first official Earth Day and the passing of the first National Environmental Education Act (NEEA), the EE movement began to gain awareness. The following year, the NAAEE was created, which is one of the key organizations providing resources for educators to promote EE programs and improve environmental literacy in K-12 schools today.

Support at a national level waned over the years, but Congress passed the National Environmental Education Act (NEEA) of 1990, which renewed the role of the federal government by reestablishing the Office of Environmental Education, this time within the Environmental Protection Agency (EPA). The reauthorization allocated funding for EE programs to provide teacher training, education and grants to the public and private sectors in an effort to increase environmental literacy.

Due to budget constraints, the EPA was only able to fund 1,200 of the 10,000 grant applications received between 1991 and 1996 local schools and educators accepted the onus of bringing EE to the classroom, relying heavily on financial and educational resources provided by nonprofits and other non-governmental organizations.

And while the Obama Administration's Blueprint for Reform promises a stronger focus on EE on a national level, state and local educators are already two steps ahead, working diligently on Environmental Literacy Plans (ELP) to facilitate information sharing and provide access to quality resources and support for the integration of EE across all K-12 curricula, and creatively implementing sustainability lessons in and out of their classrooms.

Environmental EDUCATION thriving in Arizona

When it comes to driving the EE initiative forward, Arizona is on board. The Arizona Association for Environmental Education (AAEE) recently formalized its ELP for K-12 schools and received the largest single state grant ($75,000 from a foundation) to carry out the programs in the plan.

Robert Kelty, Superintendent of Schools for Coconino County Regional Accommodation School District in northern Arizona, and former Arizona Teacher of the Year, is using grant money he's received to lead by example, creating greener schools and spearheading innovative Sustainable Demonstration Projects that enable students to get hands-on experience.

By 2012, Kelty's district—which includes two high schools serving at-risk youth—will be 70 percent green in their electrical consumption, thanks to 1,500 square feet of outdoor solar structures. Additionally, an adjacent greenhouse was converted to 100 percent wind and photovoltaic power. By demonstrating EE-in-action through these types of projects, Kelty believes his passion for a "hands on" approach will inspire teachers and students to learn more about EE.

Aside from federal stimulus money, Kelty hasn't seen a lot of progress on the national front. But he isn't concerned. "There's always more power at the local level," Kelty passionately explained, as he discussed Arizona's unique ecosystems, and the many ways kids are learning sustainability through school gardens utilizing native species, and beautification and restoration projects across the state. Kelty views the localization of environmental education as a benefit. "You can't advocate for the environment unless you're connected to it," he said.

Changing behaviors is another simple and effective (but often overlooked) way to drastically reduce energy costs in schools. But that's just what Washington Elementary School District in Northwest Phoenix and Eastern Glendale did, and now the district leads all other school districts in Arizona in reducing energy consumption - to the tune of approximately 17 million kWh over a two-year period. This savings equated to a 25 percent reduction in electrical energy and approximately $4 million in avoided electrical energy costs!

Sue Pierce's consulting firm, Pierce and Associates, provides energy management services to K-12 school districts and worked closely with Washington Elementary School District to implement their energy behavior plan and positively influence conservation habits of staff and students. Students serve as energy "police," write songs about conservation and recycling, write skits, perform energy audits and use science and math skills to monitor energy data, according to Pierce. But she emphasizes that, to implement a successful program, top-down support is necessary. "Administration must lead this effort and not default to others. Their leadership (or lack of it) will make or break the energy behavior program," Pierce said.

Teachers making a DIFFERENCE

The bottom line is this—today, the level at which a child is exposed to EE in the classroom depends entirely on the state he/she lives in and his teachers' prerogative. EE is not yet weaved into the core curriculum, and funding opportunities are limited, so state and local educators are currently leading the charge.

For many educators, sustainability has always been a cause to be championed and, regardless of "requirements" or lack thereof, they utilize every resource possible and selflessly give their personal time to bring environmental education to the classroom, or to 3,600 square feet of dirt outside the classroom if you're Elaine Watson from Sedona Red Rock High School.

Watson is one of four K-12 teachers in Northern Arizona recently recognized by the Northern Arizona Sustainable Economic Development Initiative (SEDI) for the "outstanding development and implementation of lessons, units or projects that reflect and reinforce the principles of sustainability." Watson and her students constructed a garden and park setting near their school, reclaiming a 3600-square-foot parcel of land, which now produces the ingredients for *Garden Organics* —the students' very own product line—which produces organic salads mixes, homemade lip balms, pumpkin butter, zucchini bread, jams and more.

Watson is a bit of anomaly at her high school, with regard to her passion for EE, but her excitement about the many students and teachers the garden has inspired is evident. She believes full integration of EE across the curriculum is the way to go. She points out an ongoing movement in Verde Valley to diversify its economic base and provide food security by using local agriculture, identifying a perfect example of how EE combines knowledge and nature to develop those environmentally astute citizens we mentioned earlier.

Verde Valley wants to develop local agriculture... Watson's high school students are outside learning to grow a garden, market and sell their products. "This moves EE from simply being 'green' to making sense on a jobs level. Our high schoolers are developing marketable skills that they could use working for a vineyard, an organic farm, a farm-to-table restaurant, or at a market," Watson said.

"I feel it is an important aspect of my teaching to teach awareness of the Earth and respect for resources and the effects of human consumption." – *Craig Bowie, Puente de Hozho*

Craig Bowie and Anna Brown of Puente de Hozho are two other recipients of SEDI's award this year. Brown's pre-K special needs class learn to identify the recycling symbol and gain a broader understanding about waste and recycling through her snack time

program "Let's Recycle."

With the help of their teacher and more than 300 individual cans, Bowie's students—first- through fifth-graders—used recycled materials students brought from home to construct totem poles reminiscent of Native tribes for the Annual Recycled Art Show at the Coconino Center for the Arts. Bowie's "Respect the Earth" project included a history lesson about old Native American cultures, and encouraged students to set up a permanent recycle bin at home.

"Students are interested in the world around them, they deserve the opportunities to explore their local environments and learn how to be active and responsible community members."
– Amy Larson, Flagstaff Junior Academy

Amy Larson's seventh- and eighth-graders collect data and monitor field states throughout Coconino National Forest through her "Forest Health/ Climate Change" curriculum, which teaches about forest health in northern Arizona, including the impacts of forest management, wildfire and climate change effects. Larson says her students are excited about participating, and are able to observe how interconnected humans are to ecological systems.

What does the FUTURE hold?

Despite challenges, EE in the United States is making great strides.

Congress is currently reviewing No Child Left Inside® (NCLI) legislation which would provide funding for EE, incentives for states developing Environmental Literacy Plans (ELP), and integration of EE across core subject areas. In response to NCLI, 49 of 50 states (including Arizona) are working on or have already developed ELPs, according to NAAEE. On June 21, 2011, Maryland became the first state to approve a graduation requirement in environmental literacy, ensuring that every child receive a comprehensive, multi-disciplinary environmental education approved by the State Superintendent of Schools.

In September 2010, the U.S. Department of Education held a summit on Education for Sustainable Development. In a speech by current Secretary of Education, Arne Duncan, he said, "Historically, the Department of Education hasn't been doing enough in the sustainability movement. Today, I promise you that we will be a committed partner in the national effort to build a more environmentally literate and responsible society… In our A Blueprint for Reform, the Obama administration is making an unprecedented commitment to promote a well-rounded education for our children. And for the first time, we are proposing that environmental education be part of that well-rounded education."

Sounds promising–whether EE becomes officially integrated into the K-12 national curriculum is yet to be seen. And maybe it doesn't really matter–many states, local schools and educators are already moving forward with their EE agendas.

"You do not need a penny to teach sustainability," Bowie said. He encourages teachers to get on the Internet and utilize the vast resources available regarding EE-specific programs, as well as applying for grants if a project requires it.

As the positive impacts of EE gain more credibility, the question is no longer whether EE should be incorporated into the K-12 curriculum, as much as how it should be incorporated.

And all signs indicate we're heading in the right direction—for the planet, and the kids who will one day take care of it.

What you can do – advocate for EE in SCHOOLS

To learn more ways to support legislation for K-12 EE programs across the country, please visit NAAEE's website, naaee.net/advocacy. gl

Resources for K-12 educators:

- **Classroom Earth** - an online resource designed to help high school teachers include environmental content in their daily lesson plans. *classroomearth.org*
- **Environmental Education & Training Partnership (EETAP)** - a national leader in delivering environmental education training for education professionals. *eetap.org/pages/dynamic/web.page.php?page_id=118&topology_id=25&eod=1*
- **Excellence in Environmental Education: Guidelines for Learning (K-12)** - provides a set of common, voluntary guidelines for environmental education, which support state and local efforts. *eelinked.naaee.net/n/guidelines*
- **North American Association for Environmental Education** - an organization that provides environmental educators and the organizations that train, employ, and support those educators with professional development, guidelines for excellence, networking and advocacy. *naaee.net*
- **National Environmental Education Foundation** - provides knowledge to trusted professionals who, with their credibility, amplify messages to national audiences to solve everyday environmental problems. *neefusa.org*
- **Project Learning Tree** - an award-winning environmental education program designed for teachers and other educators, parents, and community leaders working with youth from preschool through grade 12. *plt.org*
- **Project Wet** - a non-profit organization dedicated to educating children, parents, educators and communities worldwide about water. Provides workshops, educator guides and other curriculum and models to "train the trainers" effectively. *projectwet.org*
- **Project Wild** - a wildlife focused conservation education program for K-12 educators and their students. *projectwild.org*

Photography courtesy of Craig Bowie

For complete resources, go to greenlivingaz.com

Aimee Welch is a freelance writer, marketing consultant, and former advertising executive. She writes advertising copy, magazine and web articles for her company, 17,000 Feet; and for herself, she runs, snowboards, travels and hangs with her husband, two kids and four dogs. She holds a Bachelor of Arts in Journalism from Ohio State University.