



Reaching the Teachers: Integrating Environmental Education into Teacher Education Programs at Colleges and Universities

by Michele Archie

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- Brenda Weiser

Photo courtesy of Dr. Molina Walters



One teacher may influence hundreds or thousands of students over the course of a career.

Since it was first popularized in the early 1900s, the slogan, “each one, teach one,” has spoken to the power of expanding education and knowledge one person at a time. This approach has led to tremendous strides in literacy education over the decades. But environmental education is a different sort of undertaking, and if you want real leverage, says Brenda Weiser, professor of science education at the University of Houston at Clear Lake (UHCL), try influencing what college students on their way to becoming teachers learn.

“You don’t know the power of a motivated, excited teacher until you see one in action,” notes Weiser. “We’ve seen teachers go on to incorporate

environmental education activities into all sorts of lesson plans, start environmental clubs and recycling programs at their schools, change the way they do things in their personal lives, and pass their enthusiasm along to family and friends. One teacher, who is now studying to be a principal, gathered his fiancée and friends to help plant marsh grasses in a local restoration project.” Weiser calls this kind of personal commitment “the ultimate success story,” and points out that one teacher may educate and influence thousands of students in the course of a career.

Students in UHCL’s education program initially encounter environmental education in a Survey of Technology course, one of their first classes in

the program. The course relies on environmental education activities from Project WILD and Project Learning Tree (PLT) as vehicles for exploring how technology can be used to enhance learning. Later, in their educational methods class, students are trained as



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WILD and PLT instructors, and use activities from these highly respected environmental education programs to develop an instructional unit. A reading and language professor also incorporates WILD and PLT materials into her courses.

For Weiser, integrating environmental education into different aspects of the preservice curriculum is key to success. “Texas has a pretty tight restriction on the number of hours that a student can take to earn a degree, so electives are not too popular. Our students

learn about environmental education three times in three different settings, and they quickly see how to use WILD and PLT in other areas such as social studies and math. We are also seeing our students using PLT and WILD in their Internship programs. We’re now working more closely with the social studies methods instructors to make another solid link there.”

Reaching the Teachers’ Teachers

A short distance west of Houston, in San Antonio, Christine Moseley points out that the leverage inherent in reaching aspiring teachers can only be achieved with a committed and knowledgeable cadre of education faculty. In Moseley’s Interdisciplinary Studies program at the University of Texas at San Antonio, tomorrow’s teachers are taught by a group of professors and adjunct instructors who are all certified in PLT, WILD and another environmental education program called GLOBE (Global Learning Observations to Benefit the Environment).

Each semester, these instructors take about 200 students through a science methods course that includes a Project WILD training workshop. The GLOBE curriculum serves as the organizing framework for the science laboratory class. Recently, Moseley introduced a new Science and Humanities course that focuses on local issues: “We use PLT activities that fit with these issues, and by the end of the semester, students are certified PLT instructors.”

“It’s taken us four years to get here,” Moseley observes. “But now we have a great group of adjunct faculty who can carry out our program, and mentor new instructors as they come along. We received funding from EETAP (Environmental Education and Training Partnership¹) to put the last component in place—the PLT training. Ours is a big

program, so we have a lot of faculty to train. The funding allowed us to give the adjuncts a scholarship to help cover costs.”

Since 2005, EETAP partners WILD, PLT, and Project WET have trained nearly 600 preservice teacher education faculty to facilitate their programs. Al Stenstrup, director of education programs for the American Forest Foundation (Project Learning Tree’s sponsor), calls this a great investment. “I see reaching preservice educators through universities as an area of growth for PLT and for environmental education in general. We focus our professional development on professors and administrators at the universities. Once you get professors in the schools of education and natural resources involved in using good environmental education materials, the environmental education programs at that university becomes more sustainable.”

Tailoring Materials to Meet Instructors’ Needs

Rachel Bayer, PLT’s manager of education and network partnerships, says preservice educators are a great audience. “Around 40 percent of pre-K through 8th grade educators who use PLT get their training during their preservice coursework. PLT is incorporated into one aspect or another of the preservice education program of some 360 universities—from science education to early childhood to methods classes.”

According to Kris Irwin, at University of Georgia’s Warnell School of Forestry and Natural Resources, part of the appeal of environmental education programs like WET, WILD, and PLT is that they easily meet the needs of professors and the future educators under their tutelage. “The latest PLT activity guide is like a mini-textbook about instruction, with sections on everything from differentiated instruction to reading connections, assessment, technology connections, and cooperative learning—and that’s in addition to a whole array of great activities.”

Back at PLT’s office in Washington, D.C., Al Stenstrup agrees. “We’ve worked hard over the years to ensure that our materials are

Photo courtesy of Christine Moseley



Aspiring teachers at the University of Texas at San Antonio take part in an outdoor environmental education activity as part of their science methods class.

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¹ EETAP is a national leader in delivering environmental education training for education professionals. EETAP is funded by the U.S. Environmental Protection Agency’s Environmental Education Division through a cooperative agreement with the University of Wisconsin-Stevens Point. For more information about EETAP visit www.eetap.org.

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not separate from what professors and teachers are doing—but that they offer a ‘real’ way to do what these educators need to do.”

As an example, Stenstrup offers the PLT activity, “The Forest of S.T. Shrew,” which takes students on a “shrew’s eye view” of a forest. “This is a great application of differentiated instruction,” Stenstrup says. It’s a ready-made demonstration of how to adapt a single instructional activity to simultaneously meet the needs of learners with a range of language, learning, and other abilities.

“What we offer,” says Stenstrup, “is practical, not theoretical. But it’s rooted in solid educational theory. PLT participants at universities often use the materials even before they graduate, in other teaching classes and during their field experience. PLT becomes a tool they use as they practice teaching. Whether or not they become career classroom teachers, we’re reaching students at a key time in their professional development.”

Using Technology to Reach Out

“**Y**ears ago, we realized that not all universities would be able to offer environmental education courses,” reflects Rick Wilke, EETAP project director and distinguished professor of environmental education at the University of Wisconsin-Stevens Point (UWSP). “That’s why we developed the Fundamentals of EE, an online course that provides a foundational knowledge of environmental education and the skills to incorporate sound EE into instruction.”

As a starting point, the course developers at UWSP looked to the *Guidelines for the Preparation and Professional Development of Environmental Educators* developed by the National Project for Excellence in Environmental Education (NPEEE).² It took several rounds of teaching, evaluating, and revising before Wilke says he and his colleagues “knew the course was excellent. That process provided grist for several master’s thesis projects, and enabled us to create a tremendous resource that someone at another institution can use or adapt regardless of their level of experience with environmental education or online teaching.”

Wilke notes that EETAP funding has allowed UWSP to turn its original “franchise model” of course distribution on its head: “Originally, universities paid a \$500 fee, like a franchise fee, to offer the course. But since our real purpose was to increase the number of educators teaching environmental education, we inverted the model

²NPEEE was initiated in 1993 by the North American Association for Environmental Education to develop a series of guidelines that set standards for high-quality environmental education. See the Resources section of this article for links to the *Guidelines for Excellence* series.

and started offering professors \$500 to adapt the course to their needs and offer it to at least a dozen students. We provide assistance along the way, which is key for many first-time instructors.”

Faculty members bring different capacities to teaching the course. Some have tremendous environmental education background but know very little about teaching online. Others have limited experience with environmental education. “Everyone learns something when they’re teaching this course,” Wilke explains.

Christine Moseley agrees. She recently taught the course for the first time and observes that, despite long experience with teaching and environmental education, “I was learning right along with the students, especially how to use the technology to our best advantage. Online learning is a great tool for reaching larger, more diverse audiences and based on what I saw, the online instruction seemed to push students into more constructivist learning and made them more self-responsible than they would have been in a classroom setting. Students became very interested in seeing their peers’ reactions to their postings on our class discussion board, and there was a real sense of learning from each other.”



The University of Wisconsin-Stevens Point developed the Fundamentals of EE online course as a resource to help more educators offer environmental education courses at the college level.

Connecting Faculty with Each Other

Students aren’t the only ones who can gain by learning from each other, says Moseley, who co-chairs the Preservice Advisory Council of the North American Association for Environmental Education (NAAEE). “When NAAEE was considering the best ways to reach preservice faculty and encourage the development of more EE offerings, the council suggested offering fellowships to faculty members. Our idea was to set up mentoring relationships, so faculty members interested in teaching environmental education could learn from and share ideas with individuals who’d walked that road already.”

Since 2007, NAAEE has awarded five fellowships. One went to Dr. Molina Walters (or Dr. Mo, as most people know her), who teaches elementary education at Arizona State University’s (ASU) Polytechnic Campus in Mesa. Dr. Mo used her fellowship to team up with Terry Wilson, who directs the Center for Environmental Education and Sustainability at Western Kentucky University. Dr. Mo got plenty of ideas and guidance from Wilson and his colleagues that helped her formulate a clear plan for the master’s program in environmental education she has now proposed to the administration at ASU.

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According to Dr. Mo, “My advice for anyone starting a new program is, ‘Do your homework first.’ Without the fellowship, and without the information and guidance from Terry and all the folks I met in Kentucky, I’d still be a cheerleader for this idea rather than seeing it all start to come together.”

Sue Bumpous, director of communications at NAAEE, says that the search for faculty contacts to help develop new environmental education programs led the association to Michaela Zint at the University of Michigan. Zint had assembled a directory of more than 100 faculty and programs involving environmental education methods courses. NAAEE used that list as the seed for an online directory, broadening the focus to include all kinds of environmental education programming at colleges and universities across the country.

Bumpous describes the directory as “a vehicle to encourage instructors to network with each other and, down the road as it becomes more complete, an information source for students looking for programs.” The directory now includes basic entries for several hundred faculty and programs ranging from preservice education for classroom teachers to instruction for nonformal educators, often through forestry, natural resources, and environmental studies programs.

Weaving EE into the Fabric of Preservice Education



According to Christine Moseley, one of the challenges in getting preservice teachers to take environmental education courses is that they’re so focused on certification that they see little incentive to take a class on which they will not be tested during their certification exams.

Some states, such as Wisconsin and Kentucky, require all teachers to be versed in environmental education as a condition of certification. Other states, such as Washington, offer separate endorsements for environmental education. Where they exist, these preservice requirements and endorsement offerings help foster demand for, and growth of, environmental education programs.

In most states, however, the state of affairs is as Moseley describes it—and the most workable approach to expanding environmental education for tomorrow’s teachers is to integrate it into existing preservice education courses.

Since 2002, NAAEE has been a member of the National Council for Accreditation of Teacher Education (NCATE) to weave environmental education more firmly into the fabric of preservice teacher education. Founded in 1954, NCATE currently accredits 632 colleges of education, with nearly 100 more seeking recognition. Two-thirds of the

nation's new teacher graduates come from NCATE-accredited schools.

In 2007, a three-year effort spearheaded by NAAEE resulted in the adoption of environmental education standards by NCATE. Thus, environmental education became one of 20 "special program areas" in which schools, colleges, and education departments may choose to be accredited. Other program areas include science education, early childhood education, and special education.

Dr. Billy Bennett, who directs the Center for Environmental Education at Eastern Kentucky University, explains that optional accreditation in these special program areas brings national recognition that boosts the attractiveness of schools and programs. Bennett, whose program will be among the first to seek accreditation under the NAAEE program standards, says, "National recognition will be a good recruiting tool for the environmental education endorsement that we offer." (For more information on NAAEE's involvement with NCATE, see "Setting High Standards: Teacher Education Accreditation Incorporates Environmental Education.")

Integrating environmental education into existing teacher preparation programs can help schools receive higher marks during NCATE accreditation reviews. At the University of Houston-Clear Lake, Brenda Weiser reports that the education department scored higher on NCATE rubrics because connections with environmental education bolstered the interdisciplinary aspects of its science and technology courses.

Weiser says she sees this as a promising step for environmental education: "NAAEE's involvement with NCATE has put EE on the radar screen in ways that are perhaps more subtle, but also more pervasive, than the obvious benefit of being able to accredit environmental education programs. The really big bang for the buck will be when environmental education, like technology, is infused into every preservice program and every special program area."



Members of the writing team that spearheaded NAAEE's efforts to develop environmental education standards for teacher accreditation programs.

Facing camera, from left: Brenda Weiser, Bora Simmons, Martha Kuntz, and Dan Sivek and other members of the NAAEE NCATE standards writing team.

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Tools and Support for More Effective Educators

In the San Antonio area, Christine Moseley sees an extremely competitive market for would-be teachers, especially in elementary education. She thinks environmental education can help make UTSA's graduates more competitive. "When our students graduate, they have a lot of additional qualifications to put on their resumes, with certification in Project WILD, Project Learning Tree, and GLOBE. Texas also offers a

Photo courtesy of Project Learning Tree



Through first-hand experience acting out different parts of a tree's trunk, preservice teachers are learning that environmental education instructional activities can meet the needs of learners with a range of language, learning, and other abilities.

professional development certificate of recognition in EE, and soon our students will be eligible to apply for this certificate when they graduate. We're producing new teachers who have a great set of skills and fantastic tools and materials to draw on right out of the gate. We're hoping that makes them more marketable."

According to Moseley, most graduates from her program will stay in southern Texas, so the resources they

learned about during school will be available to them as they start their teaching careers. And organizations typically associated with nonformal education, such as the National Audubon Society, are getting into the act of training future teachers. In Wyoming, for example, Audubon community naturalists lead workshops on PLT, WET, WILD, and Flying WILD for preservice teachers at the University of Wyoming. Some of WILD's state partners focus on reaching preservice educators as part of their efforts to strengthen and expand their networks.

PLT's Al Stenstrup sees a growing number of nature centers offering workshops for teachers and preservice teachers as a way of exposing more educators to their resources and services. At UTSA, preservice teachers in Moseley's interdisciplinary studies program spend two days at one of San Antonio's wilderness parks to complete their Project WILD training. Moseley says that less than a quarter of their students have been to one of the five wilderness parks in the city before entering the program: "Holding our workshops in the park helps students learn about these unique natural areas."

“It’s all about connecting our students with resources and support that will help them hit the ground running as they start their teaching careers,” says Moseley. “Now that we’ve trained our adjunct faculty, we have expanded to include educators from Audubon and other agencies and organizations. We train them in the environmental education programs we work with and the EE guidelines, and they, in turn, expand our educational reach with our students. These outside instructors co-facilitate workshops for our students and give in-class presentations. Some represent agencies that have their own locally based environmental education curricula, so our students learn about even more resources. It’s really a win for everyone.”

Resources

Learn more about online EE courses, including the Fundamentals of EE course described in this article, at http://eetap.org/html/online_ee_courses.php.

To see or participate in the EE online higher education directory, visit www.NAAEE.org. Follow the “Programs, Initiatives, and Awards” link to “Higher Education Directory.”

Read additional background about NAAEE’s involvement with the National Council for Accreditation of Teacher Education in “Setting High Standards: Teacher Accreditation Incorporates Environmental Education” at http://eetap.org/pages/article.setting_high_standard.2006.03.php.

For more information on the National Council for Accreditation of Teacher Education, visit www.ncate.org. To download NAAEE’s special program area standards, see www.ncate.org/ProgramStandards/NAAEE/NAAEEStandards.pdf.

For access to the environmental education guidelines and other publications of the National Project for Excellence in Environmental Education, visit www.NAAEE.org. Follow the “Programs, Initiatives, and Awards” link to “Guidelines for Excellence.”

To learn about other EE programs mentioned in this article visit the following sites:

<http://www.plt.org/>

<http://www.councilforee.org/>

<http://www.projectwet.org/>

<http://www.globe.gov/>

Michele Archie is a principal of The Harbinger Consulting Group (www.harbingerconsult.com). She authored several publications produced by the National Project for Excellence in Environmental Education (a project of the North American Association for Environmental Education) including *Environmental Education Materials: Guidelines for Excellence*, *Excellence in Environmental Education: Guidelines for Learning (K-12)*, and *Guidelines for the Preparation and Professional Development of Environmental Educators*. Michele has collaborated on the production of community discussion guides on environmental issues, curriculum materials, and educator training programs.