



Components of a Model for a SL-based Environmental Outreach Program

1. Identify courses and content which can incorporate discipline-based SL

Environmental science course content is highly relevant to environmental issues in the local community. Engage students in reflective discussions and writing assignments on how what they are learning in the classroom is related to local environmental problems. Courses with an enrollment of 12-15 students are most appropriate for the application of SL projects.

2. Select a target audience to deliver the information: Our University is located in the heart of Southwestern Pennsylvania coal mining country, where the importance of the preservation of natural habitats has largely been displaced by the economic benefits of coal mining for over two centuries. Environmental Literacy is a key component in the development of progress toward a sustainable earth, and the education of our youth is essential in solving our future environmental challenges. Targeting local area schools helps children to develop a long-term perspective for restoring and preserving our natural environment.

3. Create a framework to communicate the information to the target audience: Students are divided into teams to create age appropriate lesson plans to communicate different environmental issues to the audience. A student project leader oversees the process, to insure that all timelines are met and that all materials that are required for the lesson plans are obtained. Programs have been presented on the Waynesburg University Campus, in public and private schools, and on field trip excursions.

4. Present the program to the target audience. Programs have been presented to both large and small groups of students, with the small group format being the most successful. In the small group format, the programs are presented in a "round robin" fashion, with students moving from station to station in small groups.

5. Reflect upon the value and success of the project from the perspective of the students and the audience. Both the presenters and the audience are asked to reflect upon the value of the learning experience. This information has been used to further enhance subsequent discipline-based service learning ventures, which has lead to our successful environmental outreach program.



Courses in which the model has been successfully applied

Environmental Science

- Students wrote their own grant to create and present a program to local elementary schools entitled "How To Be More Environmentally Friendly."

- Students developed a program to explain to middle school students the definitions of global warming and climate change, and how these problems may associated with human activities.

Botany

- Students developed a program for local middle school students entitled "How Plants are Like People" to explore and understand the anatomy and physiology of plants. This project helped middle school students prepare for the PA Envirothon competition.

- Students developed a program to relay the importance of preserving local pollinators and native plants to middle school students, and created a pollinator garden at the Margaret Bell Miller Middle School.

Ecology

- Students developed a program to take local middle school students on a field trip to Cheat Lake, WV to discuss lake ecology and local environmental issues related to clean water.

Student Reflections

"After I expressed my love of botany to different students in the middle school, I realized that they appreciated everything that I had to say. The following year, I was able to help students learn about the current issue associated with global climate change and how it is destroying the biodiversity of different species. When I noticed the students volunteered, had fun during my presentation, and smiled when they learned information, I knew that teaching was a rewarding job that I wanted to do for the rest of my life."

---Tonya Lewis, Class of 2009

"Service Learning in Botany was one of the most meaningful experiences I had in the Department of Biology. It not only help me to learn the course materials but it defines what Waynesburg is all about – which is service to the community."

---Stephanie Gumina, Class of 2008

"After participating in such a service to the community, I have truly learned to a whole new perspective. I have learned to apply the knowledge I have learned thus far in my environmental science courses and teach it to a younger generation. My skills in environmental education have only improved since participating in this project."

---Dorothy Rurak, Class of 2011

Abstract:

The Waynesburg University Department of Environmental Science (Waynesburg, PA, USA) has developed a sustainable educational outreach program which focuses on the environmental literacy of local primary and secondary school students. The keystone of our program is the application of discipline-based service learning to our environmental science curriculum. This model provides a highly effective way for students to apply the knowledge gained in the classroom to educate the youth of the community about issues of sustainability and problems associated with both local and global environments. Methodology used to develop the educational outreach program is discussed, as well as its application to various projects which have been completed at Waynesburg University. Our program has experienced measured success for over 5 years, and has allowed our students to establish a deeper understanding of the importance of their coursework in the development of their roles as "Environmental Ambassadors." Their positive impact on Environmental Literacy has reached far beyond the University community.

Outcomes

- Discipline-based service learning has greatly enhanced the learning objectives of the Environmental Science program at Waynesburg University. College-level science curriculum is often complex and difficult to comprehend without interactive approaches to learning. Developing lesson plans to teach environmental science concepts to younger students reinforces and understanding of undergraduate coursework, while providing an engaging and relevant learning experience for the audience.

- Students will have an understanding of how what they are learning in the classroom can be of benefit to the community.

- Community outreach to local schools confirms to college students that teaching is an intricate component of communicating with people. In many facets of life, we are expected to teach something to someone else.

- School children appreciate their learning interactions with college students and are attentive to their presentations. They often come up with great ideas on how they can apply what they are learning to future school projects.



Acknowledgements

The Waynesburg University Department of Environmental Science would like to thank the Spring Service Learning Network and the Waynesburg University Department of Service Learning for their financial and motivational support.