

Conserve Plastic Bags: A Service-Learning Initiative
IUSB Faculty Curriculum Development Grant Report
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Project Description

A service-learning project was incorporated into a psychology statistics course with three primary aims: (1) Apply students' statistical training and knowledge to a real-world issue in our community, (2) raise public awareness on the consumption of plastic bags and, (3) instill moral and civic responsibilities that inspire behavioral, environmental, and economic changes. To meet these goals, several in-class and out-of-class activities were implemented for IUSB students, faculty, and community members. In short, this service-learning project reflected IUSB's mission to support academic excellence, expand community partnerships, and enhance the university's image.

Rationale

Teaching undergraduate statistics entails unique challenges not apparent in other psychology courses. In general, students consider statistics less relevant and less interesting to understanding psychology (Conners, McCown, & Roskos-Ewoldsen, 1999). Often times, students also experience increased math anxiety and decreased self-confidence (Ma, 1999). Consequently, these negative beliefs and attitudes may result in poorer retention and comprehension of statistics.

In recent years, Americans have expressed greater concern for protecting the environment (Leiserowitz, 2007; Yale Environment Study, 2007). To bolster claims regarding several environmental issues, experts from multidisciplinary fields use statistics to educate the public on global warming (Kerr, 2001; Oppenheimer & Boyle, 1990), habitat loss (Ehrlich & Wilson, 1991), and deforestation (Oppenheimer & Boyle, 1990). Experts have also relied on statistics to estimate the consumption of natural resources (e.g., oil) and overreliance on non-biodegradable products (e.g., plastics) (Nickerson, 2003).

Despite efforts to inform the public of these serious environmental issues, people may have difficulty interpreting abstract statistical information (Gigerenzer, Hertwig, van den Broek, Fasolo, & Katsikopoulos, 2005). Yet, psychologists are experts on human behavior and use statistics to understand human thoughts and behaviors. Consequently, psychologists could play a vital role in teaching students how to apply their statistical knowledge to an environmental issue. Integrating psychology with environmentally-oriented content, however, has not been a central theme in most undergraduate programs (Koger & Scott, 2007). Thus, from a pedagogical perspective, there is an emerging need for psychologists to make significant contributions by teaching students and community members to better understand how their personal decisions and actions may help or harm the environment with the goal of instilling sustainable practices.

Moreover, this project addressed a community need. To date, the state of Indiana does not provide plastic-bag recycling. Wal-Mart is the only store in our community that recycles plastic bags, and those bags are shipped to out-of-state for recycling. And Martin's is the only grocery store that offers a financial incentive for reusing plastic bags. That is, patrons receive a .03-cent credit towards their groceries for every plastic bag that is re-used. Although Martin's periodically advertises this program in their newsletters, it is unclear how many people know of this financial incentive. Hence, this project offered local businesses the opportunity to endorse moral and civic actions in our community.

In response to these pedagogical and community limitations, this service-learning project was implemented to teach students how to apply their statistical training to a current environmental issue. This approach to teaching statistics went beyond the traditional course expectations by emphasizing a real-world issue to help students integrate their intellectual and personal development so as to increase their moral and civic responsibilities.

Service and Reflection Activities

Service Activities

At the beginning of the semester, students read primary sources (i.e., articles published in *BioCycle*) that use statistics to measure waste reduction. As part of the course requirements, students also read *Garbage Land: On The Secret Trail of Trash*, to broaden their background knowledge on this issue. To integrate these readings with course objectives, students accessed instructional materials (e.g., charts, images, audio, visual, discussion questions) from the project website. These activities were designed to prepare students for in-class discussions that pertained to the conservation of plastic bags and other related environmental issues.

At the midpoint of the semester, a "mini pile-up" demonstration was conducted in class and filmed as part of the documentary. For this activity, students recorded the number of plastic bags brought to class. Plastic bags were gathered to form a pile. In groups, students brainstormed how to implement this activity for a festival called BagFest. Finally, students posted their personal reflections on the class blog.

On April 14, 2007, IUSB hosted BagFest: The Conserve Plastic Bags Festival. Approximately 500 students, faculty, and community members attended. As part of the festival activities, students and volunteers worked in teams to count and tally the number of plastic bags donated for recycling. Guest speakers led a panel discussion on the consumption of plastic bags. Steve Antonetti, District Manager of Wal-Mart, and Jeff Ashby, Co-owner of Rocky Mountain Recycling, discussed Wal-Mart's efforts to recycle plastic bags. Allison Kozdron, Consumer Relations Manager of www.reusablebags.com, discussed the importance of reusing bags for shopping. Calvin Manns, Supervisor of the South Bend Waste Paper, talked about current recycling practices in our community.

Elizabeth Royte, author of *Garbage Land*, was the featured speaker at this event. All of these public discussions were filmed as part of the service-learning documentary.

In addition, Amanda Serenevy, Ph.D., President of the Riverbend Community Math Center, formed a community partnership with this project. As part of this collaboration, students worked with Dr. Serenevy to teach children how to use math in fun and practical applications. Many students also worked with Dr. Serenevy at the Science Alive Festival, which was held at the St. Joseph Public Library. Dr. Serenevy also conducted a workshop at the Conserve Plastic Bag Festival to teach children how to apply mathematics to this real-world issue.

Reflection Activities

There were two primary reflection activities: First, a service-learning documentary was filmed throughout the semester. In collaboration with Jim Yocom, Director of the Instructional Media Services, we filmed students' observations, interviews, and personal experiences related to this project. Second, a class blog was created for students, faculty, and community members to post their personal reflections.¹ Combined, the documentary and class blog provided students a public forum to reflect, consider multiple perspectives, and engage in reasoned discourse with their peers, faculty, and community members.

Public Dissemination

Scholarship. Aspects of this project were presented at the 19th Annual Meeting of the Association for Psychological Science, in Washington, DC. In addition, a manuscript has been submitted for publication in the *Teaching of Psychology* journal.

Media coverage. This project received much attention from local and national media outlets. In October, a radio essay was aired for public broadcast on the local National Public Radio (NPR) station, which featured commentaries from the American Democracy Project. Throughout the course of this project, reporters from the *South Bend Tribune* interviewed me and my students on six occasions to help raise public awareness on this issue. In addition, our class was featured in six television news programs for continued public dissemination. This project has also been featured in magazines, including *Indiana Living Green* (May, 2007), the *Foundations* magazine (March, 2007), and the *APA Monitor* (January, 2008) as well as on online blogs, including <http://www.mchron.net/>, www.neitherpapernorplastic.com, and the Huffington Post (www.huffingtonpost.com).

Online resources. For public dissemination, course materials have been posted on the project website (<http://iusb.edu/~cpbags>). In addition, the class blog currently serves as an online repository for students' personal reflections.

¹ Please visit the class blog: <http://www.conserveplasticbags.blogspot.com>

List of Project Products

Verges, M. (under submission). Digital media and environmentalism: Using statistics to conserve plastic bags. *Teaching of Psychology*.

Verges, M. (Feb. 2007). *Wal-Mart's Personal Sustainability Project and the New PSP: Conserve Plastic Bags*. Invited paper presented at Regional Wal-Mart Manager's Meeting. Michigan City, IN.

Verges, M. (2007). *Digital media and civic engagement: Innovative methods to teach statistics and conserve plastic bags*. Poster presentation at the meeting of the Association for Psychological Science in Washington, DC.

Additional Grant Funding

Principal Investigator: *BagFest: The Conserve Plastic Bags Festival*, Spring 2007. Total Direct Costs \$5,300. The Wal-Mart Foundation.

Principal Investigator: *Conserve Plastic Bags: A Service-Learning Project*, Spring 2007. Total Direct Costs \$3,000. The Lily Endowment Fund, Indiana Campus Compact.

Faculty Director: *Conserve Plastic Bags: A Service-Learning Documentary*, Spring 2007. Total Direct Costs \$800. Indiana Campus Compact.

References

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Gigerenzer, G., Hertwig, R., van den Broek, E., Fasolo, B., & Katsikopoulos, K. V. (2005). A "30% chance of rain tomorrow": How does the public understand probabilistic weather forecasts? *Risk Analysis*, 25, 623-629.

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Ma, X. (1999). A meta-analysis of the relationship between anxiety toward mathematics and achievement in mathematics. *Journal of Research in Mathematics Education*, 30, 520-540.

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Yale Environment Study. (2007). Yale Center for Environmental Law & Policy. Retrieved on October 15, 2007, from <http://www.yale.edu/envirocenter/eab.htm>.