

LEARNING SUSTAINABILITY:

To Know and To Act

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Larger systems can be used to harvest rain from apartment or commercial buildings.

A movement is underway. Public gardens are building on their plant and ecological heritage to become leaders in sustainability. For centuries public gardens have served as horticultural reserves and provided restorative experiences to their visitors. Today many gardens are also committed to promoting environmentally responsible behavior.

Being on the vanguard means offering any number of educational, demonstration, and outreach programs. But merely informing visitors and the public is no longer a high enough bar. The vision is to change behavior for the benefit of local and global environments. Here are some principles from psychology that may be used to build more effective programs.

Habits and Action

Achieving sustainability requires change on scales ranging from individual, to local, to regional, and even national. Many of the changes that make a difference are the consequence of hundreds, thousands, even millions, of individual and household choices. Lifestyles are clusters of habits that are generally supported by the structure of our society. Sustainable behavior involves changes in habits. Just telling people about what to do may not be enough. As an Asian proverb tells us, "Tell me, I'll forget. Show me, I'll remember. Involve me, I'll understand."

Many public gardens have adopted a mission of modeling and explaining the behavioral changes that are needed to sustain the environment—from backyard to planet. Yet resources are limited in several ways. Some gardens have limited

budgets and staff to devote to sustainability outreach, on site and beyond. Teachable moments can be limited by infrequent or brief visitor experiences. Courses or workshops expand such opportunities but require intensive effort to prepare.

If you build it, or teach it, will visitors change? How can programs generate the desired behavioral outcomes?

Sustainable Behavior

Environmental psychologists have been studying the causes and effects of sustainable behavior for decades. Other terms for these principles include environmentally responsible behavior and conservation behavior. Test programs and studies have revealed ways to motivate long-term behavior change concerning recycling, energy conservation, transportation alternatives, and water use.

For starters, information campaigns are valuable in helping people to understand a problem, but they rarely influence behavior (Harland and Staats 2001). Good information helps people to build awareness about an issue and the far-reaching consequences of individual and community actions.

Behavior change is more complex and is the result of commitment. Being committed to even simple acts involves a complex interaction of motivation and satisfaction. The most effective motivations are intrinsic, that is, they come from within and are personalized. External motivators rarely generate long-term behavior change. It was once thought that cash alone could motivate change. Early conservation programs offered monetary rewards for taking

certain actions, such as recycling, but soon after the reward ended, so did the behavior. Programs that help connect an action to deeper and personal interests are more successful.

First Steps

So what can be done to enable and encourage desired behaviors?

When designing programs, it is important to think about potential satisfactions for doing the action and emphasizing that aspect of the outcome. Gardeners may adopt organic practices in order to protect waterways and find to their satisfaction that their vegetable yields are greater. Building in social support is also important. Creating working groups or clubs around a set of desired behaviors sets up a reinforcing network of people who aid each other by sharing information, materials, and encouragement.

Doug McKenzie-Mohr is a proponent of community-based social marketing. His book outlines how to do *barrier and benefit analysis* (McKenzie-Mohr and Smith 1999). It is important to assess inherent barriers when developing a new program. For instance, garden visitors may learn about and be compelled to reduce chemical use in their gardens. What are the benefits—that's easy! What are the barriers? Limited opportunities to buy alternative products at garden centers, misinformed sales people, and inconvenient application recommendations may hinder a resolve to change.

The outcome of barrier and benefit analysis is often the realization that traditional, non-green practices are seen as providing the greatest personal benefit. For instance, hiring a lawn service may be perceived to be convenient, cost-effective, and produce a beautiful yard. Relatively few homeowners consider the consequences of fertilizer runoff in local waterways.

At one level, community-wide programs can be launched. For instance, working with merchants to change the products and services they make available can have great consequence. Yet most garden programs target individual behavior change. What are some ways to encourage behavior change once barriers are identified?

A Personal Touch

Informational displays help build awareness and good intentions. Follow-up approaches can move an individual from commitment to action.

Make a desired action more convenient. Remove or change the physical obstacles that limit desired behavior. Show people how to rearrange things in their home or garden so that the behavior can be done with minimal effort. For instance, when recycling programs began providing recycling bins, participation soared.

A bioswale captures surface water and slows its movement, allowing moisture to seep into soils and groundwater.

Water is the essence of life. Sustainable practices can generate improvements in both the quantity and quality of water. A public garden can prepare a water-oriented program, using sustainable behavior principles. The images accompanying this article portray some actions that can be encouraged to become habits.



Natural or non-toxic garden supplies are less likely to impact nearby streams and rivers.

By using small experiments in sustainable behavior principles, public gardens can successfully expand their role as stewardship leaders.



Rain barrels can be used to capture rain from roof gutters. Rain water can be used to water a lawn and garden.

Pervious pavings allow water to seep into soils and to be used by nearby plant roots. They can be installed in places having light traffic and can be used in combination with impervious pavings.



Ask for a tangible sign of commitment to a new behavior. Written commitments are much more powerful than verbal ones. Public commitments, and those done while in a group, are more effective than one-on-one pledges. Pledges can be distributed to workshop participants, asking them to sign-on to try a new practice at home. Use respected or admired individuals to solicit pledges. For instance, individuals may be more likely to follow through on a pledge made at the urging of a respected local garden expert. Finally, give people the opportunity to publicly display their pledge, perhaps with a lapel button or a car window sticker.

Prompts help people to remember to act. Old habits die hard, and new behaviors are more likely to be practiced if small reminders are strategically placed near the place where the behavior should happen. Have people pledged to compost their yard waste? Then a prompt on the garbage can may remind members of a household to sort their green waste. Slogans and clever graphics or diagrams are effective. The prompt should always identify a specific act and emphasize a positive outcome.

An incentive, if carefully planned, can initiate and reward behaviors so that they become habits. Some financial incentives have been used by utility agencies to reduce solid waste disposal or to encourage energy conservation, but few public gardens have the resources to pay patrons for their changed behavior. There are other opportunities. Perhaps a garden association can partner with a local agency to reduce costs for people who adopt a behavior, such as sponsoring free garden chemical drop off days. A garden may distribute coupons for discounts on alternative lawn treatments at a nearby retail garden center. Preferential parking can be provided at the garden for people driving energy-efficient vehicles.

Building Commitment

Once tried, how can new behaviors be imprinted, so that they become a part of a person's or household's lifestyle?

Reducing uncertainty is important.


People will often resist trying new things because they don't know enough to take the leap. For instance, I now bicycle commute. I considered riding for months, but only started after being "double dared" by my daughter. The first few weeks were uncomfortable, but after talking with biking veterans, I learned about better routes, clothing, and equipment that made my new behavior safer and easier. The rides are now some of the most satisfying times of my workday. Some programs (such as those promoting carpooling) pair up "mentors" or "coaches" with newcomers to ease transitions and provide social support.

A feeling of competence is a powerful satisfaction for people. Most people enjoy challenge and the opportunity to develop new knowledge or skills. A system of indicators of achievement may provide the intrinsic reward that motivates people to constantly improve their performance. Voluntary, commercial certification programs, such as LEED scores for green buildings, are being widely adopted. Similar scores or benchmarks for individual performance can confirm increased competence. This feedback may compel people to strive for achievement, particularly within a social group that respects such actions.

My research in voluntary adoption of non-polluting land management practices suggests that *placing new behaviors within the context of daily lives is also important.* A sustainable lifestyle includes a collection of green behaviors, done without much thought. Demonstrations can help people see that while actions may be initially challenging, ultimately they can be

satisfying and easy to do. Placement of storage containers (such as how to unobtrusively store recycle bins) and their ease of use, the timing of actions in daily routines (such as taking out compost materials each day after breakfast), and the involvement of everyone in the household are important components of mainstreaming sustainable behaviors.

Social support of new actions is important. The song line, "I get by with a little help from my friends," says a lot. Having mentors, coaches, or a support network for new behaviors can aid long-term adoption. People may have questions about the technicalities of sustainable behaviors (such as where to buy greener products). Uncertainty usually leads to abandoned behavior. Social exchange of information is more motivating than access to written sources. Building on that, public gardens could recruit and train volunteer teams to do green garden audits. Utility companies do home energy audits, sometimes supplying products such as replacement fluorescent bulbs. Garden audit teams could help homeowners engage in better gardening practices by offering pointers that are convenient and of direct interest, and provide discounted products in collaboration with local merchants.

Habits make up lifestyles, and on a grander scale, if many people adopt certain lifestyles, then social norms emerge. What is initially viewed as innovative or even quirky eventually comes to be viewed as normal by society. Public attention has focused on the plight of the environment. How can awareness be converted to action? Public gardens are providing excellent opportunities for people to learn about and engage in behavior change. By using small experiments in sustainable behavior principles, public gardens can successfully expand their role as stewardship leaders. 

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Groups of homeowners have worked with the City of Seattle to create SEA Streets in neighborhoods. This natural drainage system is an effective alternative to pipe-and-pump engineered systems.

