



Behavior Change for Sustainability

Ecochallenge.org's Approach

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I. Introduction

At Ecochallenge.org, we believe the solution to the planet's biggest challenges lies in the power of connecting our values with the actions we take.

When Ecochallenge.org (then Northwest Earth Institute (NWEI)) was founded in 1993, not many people had heard of sustainability, or knew much about climate change. Books and the news on network television largely disseminated information. In "inspiring people to take responsibility for Earth," one of Ecochallenge.org's main goals was to educate people on the urgency of the environmental issues that we faced. Now, more than two decades later, information about climate change, pollution, deforestation, overconsumption, and a host of other environmental issues abounds. A quick Google search offers a deluge of data, opinions, and prompts to action to address these crises. So much information exists, in fact, that it can quickly become overwhelming to figure out how to respond. More information and improved awareness are clearly not enough to change people's behaviors (Verplanken and Wood, 2006).

While many people claim that they care about specific or general environmental issues, their behaviors do not often align with their expressed environmental values. People often have strong desires to live more sustainably, but find changing their behaviors to be much more difficult than their desire would suggest. Several studies have shown that one's belief that they should act and their intention to act are often not enough to help a person change an ingrained behavior, or to develop a less convenient or more difficult alternative to the habits they currently perform (Duhigg, 2012; Muraven and Baumeister, 2000; Verplanken and Wood, 2006).

Ecochallenge.org's mission now requires helping people who already care about the environment to figure out ways to take meaningful action in their lives, businesses, communities, and in the world at large. We connect transformative learning -- those "aha" moments people experience in our programs -- with behavior change, leading people from awareness to new knowledge to transformation to action (Cagle, 2014). This is a continuation of what we have been doing for over 27+ years: making change more possible, more social, and more rewarding/fun by helping people connect their values with the actions they take, together.

In this paper, we explain (II) why behavior change research is important and what it offers, and (III) how Ecochallenge.org uses behavior change theory in our programs. We conclude with (IV) both survey data and stories from participants' experiences of behavior changes in global Ecochallenges and Discussion Courses.

II. Behavior & Behavior Change: A Constellation of Habits

The concept of behavioral change can be more easily understood by thinking about the habits that make up our overall behavior. Habits are more than just frequent actions, though. They can become automatic behaviors when cued or triggered by something else. Consider this example:

At four o'clock every day, you find yourself hungry and craving a snack. Feeling your stomach growl or no longer being able to focus on your work are your cues or triggers that you need to eat. An unsustainable routine might be to dig around in your desk drawer for a candy bar or head out for a smoothie at a coffee bar downstairs. After having your smoothie, you feel the reward of being satiated by what you drank. But is your routine sustainable? Maybe you are trying to save money or lose weight or create less trash. For any of these reasons, you might decide that you would like to change this habit. For example, say you believe that you should make more environmentally sustainable choices, and that is why you want to change this habit. You decide to forgo the smoothie tomorrow. But when 4 o'clock rolls around, you find that no matter how hard you try, you feel so hungry that you can't concentrate on your work. At 4:45, you finally give in and get the smoothie. The next day, you decide to pack yourself a small container of nuts so you can eat from these when you feel a little hungry. But you forget to bring that healthy snack with you, or when your 4 o'clock craving hits, those nuts are not that enticing.



Figure 1. Cycle of a Habit.

This simplified scenario illustrates the need for behavior change research. Changing our habits is difficult, even when we believe we should and want to make a change. Habits become ingrained. Our brains are wired to work as efficiently as possible, and habits help them do that. Habits require minimal awareness and are often difficult for our conscious mind to control.

The best way to change an existing habit is to change the routine of the three part cycle. A person can use this information to disrupt and change the routine. For example:

By reflecting on your unwanted habit, you realize that your 4 o'clock smoothie craving is actually triggered by boredom. You realize that is why the nuts you brought from home were not satisfying to you -- your habit was not triggered by hunger. You decide that getting up and moving around -- changing your routine -- might help you overcome your craving. You decide that you will take a walk to the park across the street instead of getting a smoothie tomorrow.

While it is much more effective to change existing habits to your desired behavior, you can also consciously form new habits by associating them with your environment. Sometimes the trigger for a habit can be your environment. For example, sitting at your desk may cue Google searches. Sitting on the couch may cue Netflix and snacking. Laying in your bed may cue checking Facebook and Instagram on your smartphone. But you can also intentionally create a new habit by associating it with your environment. For example:

You could start going to the gym on your way home from work as a new routine. When you get your 4 o'clock smoothie craving, you choose to walk across the office and talk to your co-worker. Together, you create a new habit by establishing a 10-minute walking meeting at 4:00 pm every day. By altering your environment or context, you have to rely less on willpower to change your habits.

It is important to understand that changing habits is not always easy. If the day at work has been challenging with a heavy load of emails and important meetings, you might be too tired to go for a walk, or you might revert back to your well-established smoothie habit. But keeping snacks in your desk and recognizing the trigger for your habit (boredom) and the rewards you need (moving around, doing something different for a few minutes), can help you be prepared for those challenging days, and you can begin to build up your willpower. But to compound matters, **self-control** and **willpower** can only get you so far, because they are exhaustible resources. When your willpower is used up, your emotional mind, which is motivated by the smoothie, does not listen to your rational mind, which knows that drinking a smoothie everyday does not help you reach your long term goals (Heath & Heath, 2010). For all of these reasons, habits can be annoyingly hard to change.

There is hope though, since when one significant habit is changed, it could be a **keystone** habit (Duhigg, 2012, p. 100) that leads to other habits changing. This one change -- choosing to cure your boredom with exercise and social interaction instead of sugar -- may be a habit that has a cascading effect on other habits and routines in your life.

As highlighted above, a variety of research has shown that changing behaviors is no easy task, and sustainable behaviors are no exception. There is a variety of interwoven factors at play that typically relate to: 1.) the context of the individual who is trying to change a particular behavior (e.g., age, family, access to sustainable options), and 2.) the ability for that person to practice the sustainable behavior within a setting that mimics the “real world” that they experience every day (which the learning community offered through NWEI programs aims to recreate).

Research has shown that “many environmental educators often make the mistake of focusing specifically on the behavioral outcomes rather than the steps required to reach those outcomes” (Heimlich and Ardoin, 2008, p. 218). If educators are able to focus on “local, tangible, and actionable aspects,” behavioral interventions, especially at the individual level, are most successful (Anderson, 2012, p. 191). By developing simulations that relate to the real-world, providing time to practice, understanding that there is no single solution, and anticipating what factors can constrain learning a behavior, educators and leaders can help ensure behavior change success for their participants (Brymer & Davids, 2013, pp. 59-60).



III. Behavior Change in Ecochallenge.org’s Programs: The Ecochallenge Platform and Discussion Courses

At Ecochallenge.org, we want to make it as easy and as fun as possible for people to change their behaviors in order to lead lives that are better for themselves and for the planet. Our Discussion Courses are self-facilitated in small groups within organizations -- students, employees, church congregants, or community members. Discussion Courses feature content focused on a particular sustainability issue, suggested discussion questions and activities, and action plans to help people move forward in addressing what is important to them. Discussion Course participants meet once a week for each session, talk about their current practices, and share in discovering new ways to live, work, create and consume.

The Ecochallenge Platform is an environmental and social change online platform to align intentions with actions. Ecochallenges take place around the year offering participants the tools, research, and inspiration to practice changing their habits and to reduce their impact on Earth. Ecochallenge participants can choose actions

from different sustainability-related Challenge Categories. A participant joins or leads a team, earns points for taking action, shares their story on the Platform's Participant Feed, and encourages other participants in their newly affirmed behaviors.

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Our programs have evolved over time based upon what we have seen work well with our participants, as well as established best practices in transformative learning (Cagle, 2014) and behavior change research. As a result, Ecochallenge.org's Ecochallenge Platform and Discussion Courses are built on several key characteristics that have been shown by research to lead to successful behavior change. The programs are: 1) rewarding; 2) social; 3) personally transformative; and 4) sequential by focusing on changing one habit at a time. These four characteristics of our programs overlap, so while they are described separately, it is best to think of these as overlapping and feeding into each other.



Figure 2. Key Characteristics of Ecochallenge.org Programs



III.1. Rewarding, Inspiring, Fun

Ecochallenge.org’s messaging focuses on every person having the power to make positive change. This inspiring messaging welcomes all people into multiple larger solutions -- ways of acting that are better not just for themselves, but also for the larger world. Self-control and willpower are both exhaustible resources (Duhigg, 2012; Heath and Heath, 2010). However, research has shown that by reminding themselves both of their life-values and the specific reasons why they are pursuing their goals, people are better able to sustain the self-control needed to achieve the goals they have set for themselves (Muraven, 2008; Schmeichel and Vohs, 2009). Likewise, if people practice building up their willpower (e.g. through journaling), it can be possible to change habits that might otherwise be quite difficult to change (Duhigg, 2012). By helping people identify and continually connect to what is important to them – in short, by inspiring them – our programs help participants act in line with their identified values and better sustain behavior change.

Additionally, in order to get a changed behavior to ‘stick,’ the behavior must in some way be intrinsically rewarding (Duhigg, 2012; Muraven, 2008; Unilever, 2011), appealing both to a person’s rational mind and emotional mind (Heath & Heath, 2010). People feel pleasure in reminding themselves of their values and then acting upon those values (Muraven, 2008). Sometimes, this self-affirmation alone is enough reward to motivate behavior change, but often people need additional rewards and reinforcements to be able to sustain a new behavior long enough that it becomes a habit (Verplanken and Woods, 2006). As detailed above, Ecochallenge-

.org's programs help reinforce participants' commitments to action by grounding them in their personal values. Each of Ecochallenge.org's programs offers other intrinsic rewards, including fun through socializing and gamification, and inspiration through the recognition of individual and collective impact.

Ecochallenges are Rewarding, Inspiring, and Fun

By allowing participants to choose their own Challenge Actions (e.g., bring a packed lunch to work each workday; bike to school three days a week), an Ecochallenge helps participants act on what they most value in ways that make sense for their own lives. Being able to post their commitments and accomplishments on the Ecochallenge Platform's Participant Feed allows for positive feedback from other Ecochallenge participants. Seeing other people's stories and accomplishments reinforces a participant's belief in their ability to change their own behaviors. And seeing the collective impact of everyone's individual Ecochallenges shows participants that small individual changes really can lead to amazing overall impact.

An Ecochallenge is set up as a game, where participants and teams can earn points and compete against other teams while increasing their impact and engaging their communities. Tracking their progress, sharing their stories, connecting with other Ecochallengers, competing against other teams, and discovering new ways to take action all reinforce behavior change while offering Ecochallenge participants a fun game in which to participate. By tracking their own impact as well as the collective impact of all Ecochallenge participants in measurable categories, participants are inspired and empowered to keep acting to make real change

Discussion Courses are Rewarding, Inspiring, and Fun

Ecochallenge.org's Discussion Courses focus on personal values and self-reflection to help participants ground their commitment to action in what is most important to them (e.g. food, climate change, business). Participants share their motivations and commitments to action with their discussion groups, and are rewarded by group support and encouragement. Discussion Courses also feature inspiring content, including stories of change. These stories of how others are acting in line with their values to create a more sustainable world offer examples and ideas for those wanting to make change in their own lives, and help them to believe that real change is possible.

Discussion Courses are also inherently social, and research has shown that learning and action are much more fun and effective when done in a group (Duhigg, 2012). Many discussion course participants find the community they build with other participants so rewarding that they continue meeting with their groups for years, whether continuing Ecochallenge.org programs or not. By learning together, sup-

porting each other's commitments to action, and celebrating their achievements, groups reinforce behavior change and inspire and empower each other to continue making positive changes in their lives and communities.

III.2. Social

Participating in a social group or community that encourages different behaviors can be one of the most effective catalysts for radical behavior change (Duhigg, 2012). While a person trying something new alone might feel skeptical or discouraged about their ability to change their actions, a community of supporters helps them to believe in themselves (Duhigg, 2012). Both Ecochallenges and Discussion Courses rely on social learning and community building to move people toward individual and collective action.

Ecochallenges are Social

Ecochallenge participants also discover new ways to act with each other -- through Ecochallenge teams and competitions between those teams, and through self-reflective posts about their experiences. These posts can be shared with their team members and supporters, as well as the broader Ecochallenge community through the public feed. When program participants have built-in support from their own community of change, taking action feels easier and more rewarding. As mentioned in section III.1. above, even after their participation in a discussion course or Ecochallenge is over, groups and teams often find themselves discussing sustainability and sustainability behavior, encouraging each person's individual goals for change, and collaborating on larger projects to move their organizations and communities toward sustainability.

Discussion Courses are Social

Discussion Courses take place with groups of six or more people. The circle question and suggested discussion questions for each session are designed to build community and trust within the group and encourage personal responses. Discussion Course participants bring their own unique experiences and perspectives to the learning process and share their insights and knowledge with each other. Together, they construct an idea of what sustainability means for them in their time and location. This collaborative learning process is rich and social. Together, discussion course participants discover new ways to live, work, create and consume that make sense for who they are and where they live. By practicing new behaviors and sharing them with each other, they reinforce behavior change through encouragement and support.

III.3. Personally Transformative

An additional key component of Ecochallenge.org's programs is personal and critical reflection. By reflecting on their own values and experiences, participants understand themselves, their peers, and their world better. Reflection can be a vital component of behavior change -- by reflecting on their values, their personal assumptions about the world, and the factors that motivate their current behaviors (known in behavior change research as triggers), participants discover "aha" moments that transform their perspectives and help them move toward effectively changing their current habits into more sustainable ones (Duhigg, 2012).

"Aha moments" can also come from experiencing a transformative life experience -- a big revelation moment that resets one's behaviors, and sometimes their entire life course in the same way that changing keystone habits can change people's lives (Duhigg, 2012). Ecochallenges and Discussion Courses are designed to ignite "aha" moments of learning and experience for program participants through collaborative learning, trust building, personal bonding, and reflecting on current and new behaviors. These "aha" moments are always paired with opportunities for reflection and immediate, but doable, action. It is worth noting that in our research, we found our approach to pairing transformative learning with behavior change methods to be a unique pedagogical approach (Cagle, 2014).

Ecochallenges are Personally Transformative

Ecochallenges offer participants an opportunity to change their behavior in a way they have often already identified but have not found the motivation to pursue. During an Ecochallenge, participants start with committing to action, then reflect on their experience in acting over a two week period. This reflection is focused on their progress - including successes and difficulties, their motivations for acting, their impact on the planet, and what could help them to be more successful. Participants are also encouraged to reflect on what this action means in their own lives, as well as in a global context. Two weeks of committed action helps to build longer-lasting behavior change, and allows participants to "try on" lifestyle changes in a supportive space and group, and in a real world setting (Brymer and Davids, 2013). Ecochallenges appeal to participants rationally by offering data on their individual and collective impacts throughout and at the end of the Ecochallenge. It appeals to participants emotionally by offering inspiration through the visual representation of one's own and others' progress, encouragement through the comments of others in the Ecochallenge community, and fun rewards through points accrual and competitions with others.

When used alone, an Ecochallenge is very effective at promoting environmentally

sustainable habit development. When combined with Discussion Courses, an Eco challenge can be an even more effective multi-layered approach to sustainability-focused behavior change, both in an individual's life and in the broader culture of participating organizations.

Discussion Courses are Personally Transformative

Ecochallenge.org's Discussion Courses offer both content and discussion questions that lead participants to personal and critical reflection of the ways things currently work in the world. These questions help participants connect to their values and consider how to align their behavior to act in accordance with their values. The questions are also designed to help participants explore their values without placing judgment on themselves and fellow discussion members. Discussion Courses have been successful in many contexts in leading to transformative learning (Cagle, 2014). In addition to being reflective, in order for transformative learning to be effective, it must happen in a group where community and trust has been built (Cagle, 2014; Kelly, 2010). As discussed above, Discussion Courses are designed to build trust so that the opportunity for critical reflection can be encouraged, and so that that reflection can lead to immediate action. Each weekly session of a discussion course ends with a call for each participant to commit to one action for the week, often accompanied by an overall action plan. Notetakers take note of each person's commitment and check back in on it the next week. At the end of each course, participants engage in a celebration session, in which they are encouraged to engage their communities and organizations, and to commit to a group action moving forward. By offering participants time and motivation to practice throughout the course, Ecochallenge.org ensures they are taking the steps needed to reach the desired outcome: environmentally sustainable behavior change (Brymer and Davids, 2013).

III.4. Sequential: One Step at a Time

Often when people want to change their behaviors, they make the mistake of trying to change too much at once. Habits are ingrained and often unconscious and automatic. Trying to change too many habits or too big of a habit to start can leave people exhausted and set them up for failure (Duhigg, 2012; Heath & Heath, 2010). Ecochallenge.org's programs help people focus on one action at time, building change inspired by transformative learning. Taking one step at a time also builds in practice so that over time people gain the capacity to make more changes with continual practice.

Taking action encourages feelings of inspiration and empowerment, an important antidote to the feeling of being overwhelmed that commonly occurs when presented with new and challenging information about the current crises we face. In both Discussion Courses and Ecochallenges, participants are encouraged to start where they are, with small actions that make sense in their own lives. From changing an incandescent light bulb to an LED bulb, to divesting from fossil fuels in their portfolios, to planting a garden, participants take small and achievable steps toward sustainable living. Collectively, those steps lead to real impact. The reward of feelings of accomplishment and satisfaction help participants feel encouraged to make more positive actions and engage in positive lifestyle change.

Ecochallenges are Sequential

Ecochallenge participants also choose one action to change, but stick with it for two weeks instead of just one. This longer time commitment helps them build their chosen action into an actual habit they can continue once the challenge is over. By choosing from multiple Ecochallenge Categories (waste, water, energy, food, transportation, simplicity, community, nature, health) and actions, Ecochallenge participants are reminded that there is no single solution to our environmental issues, and no one right path to choose. Again, this understanding – along with time to practice their new behavior(s) throughout the Discussion Course, individual and group reflection on the constraints and challenges of changing their behaviors, and practicing their new behavior in a real-world setting – leads to more effective behavior change outcomes.

Discussion Courses are Sequential

By choosing one action to commit to per week, Discussion Course participants explore how to act on their values and gain confidence through success in small steps. In some courses, participants can create an action plan over the timeline of the course, helping them to identify their commitment, as well as the obstacles they might face and the resources they might need to be successful. By sharing their new behaviors with each other, participants are reminded that there is no single solution to our environmental issues, and no one right path to choose. As Brymer and Davids have noted (2013), this understanding – along with time to practice their new behavior(s) throughout the Discussion Course, individual and group reflection on the constraints and challenges of changing their behaviors, and practicing their new behavior in a real-world setting – leads to more effective behavior change outcomes.

IV. Outcomes

As we have shown above, Ecochallenge.org programs offer case studies for effective behavior change toward sustainability. Discussion Courses are designed to be self-facilitated in small groups and are used in faith communities, businesses, and educational institutions – places where people are generally already organized in some way. Using Ecochallenge.org’s pedagogical model of shared discovery, personal reflection, and positive action, the Discussion Courses lead participants through a transformative learning experience that leads to long-term behavior change. Discussion Course participants overwhelmingly comment on the importance of discussion with others and commitment to action as the most important aspects of the courses to their learning and growth. And Discussion Courses have seen real results. Survey results since 2014 indicate that:

- 55 percent of Discussion Course participants purchased energy or water efficient household products more after participating in their Discussion Course.
- 66 percent purchased local and organic food products more often.
- 66 percent reduced household waste.
- 70 percent reduced household energy and/or water use.
- 96 percent found the support of their discussion group to be helpful or very helpful in inspiring them to make personal changes.

While the starting point for most Ecochallenge participants is with changing an old or creating a new habit instead of knowledge acquisition, Ecochallenges also take people through Ecochallenge.org’s pedagogical model, leading them to personal reflection and shared learning. Ecochallenge participants show lasting behavior change and transformed assumptions. In the 2016 Ecochallenge:

- 71 percent of Ecochallenge survey respondents definitely anticipated continuing the new behaviors they developed during the Ecochallenge. 27 percent anticipated continuing their chosen Challenge in some way.
- 59 percent of survey respondents said that achieving their goals was their favorite part of the Ecochallenge, while 27 percent said engaging with their team was their favorite part.
- Of the 61,793 actions selected, 73 percent were daily actions, which led to changing old or building new habits, versus one-time actions like installing solar panels or low-flow faucets.
- Over 86 percent of responding participants judged themselves to be “moderately successful” to “100% successful” in achieving their goals.

V. Conclusion

In 1993, Ecochallenge.org (then Northwest Earth Institute) founders Dick and Jeanne Roy saw the great global need of inspiring people to take responsibility for Earth. Because of this recognized need, Ecochallenge.org's programs were originally founded on transformative learning principles. Through Ecochallenge.org's process of personal reflection, shared discovery and positive action, the Ecochallenges and Discussion Courses transform participants' assumptions about the world and their roles in creating change.

As the urgency of our global crises continues to rise, it has become clear that, in addition to transformed assumptions, immediate behavior change is greatly needed if we are to effectively address these challenges. Both individual transformation and broad culture change are necessary to form systems that are sustainable and resilient. The behavior change encouraged by Ecochallenge.org's programs scales up individual actions into culture change. Ecochallenge.org's programs support participating individuals in finding ways to take meaningful sustainability actions in their own lives, as well as in their educational institutions, businesses, communities, and in the world at large.

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