2015

Sustainability Lesson Evaluation

Alison Stemczynski
Grand Valley State University

Sustainability Lesson Evaluation

Alison Stemczynski

HNR 499

June 5, 2015

Our society has become very wasteful, without much regard for how our actions impact the environment. It has become even more urgent lately that society needs to start taking responsibility for their actions and adopting behavior that is more environmentally conscious. For this reason, my goal was to promote the education and awareness of sustainable behavior for students. One of the biggest challenges in convincing children to implement more earth-friendly actions is educating parents as well to help in the decision process. Children learn most of their habits from their parents, who tend to make choices that are convenient rather than environmentally friendly. I believe this lesson is necessary in order for students to learn how to combat the wasteful habits we perform on a daily basis.

I presented my lesson on sustainability in a 5th grade classroom at Oakwood Intermediate in Allendale Public Schools. This lesson was inspired by one previously created by the No Impact Project, a non-profit initiative located in New York City. It incorporated resources from other zero waste curriculums ("3-5 Lesson Plan." 1995) and was intended to help students explore what effect their everyday behavior has on the environment, their health, and their well-being. It challenged students to think about how our society influences our lifestyle choices in ways that often are not good for environment. I also tried encouraging students to take action both individually and in groups to bring about positive change. This curriculum was unique because it connects students' personal experiences with the environment and gives them practical ways at home and in school to make simple changes in their lifestyles.

The most difficult aspect of creating this lesson involved making it appropriate for a 5th grade age group. I tried to leave out any material that might go over their heads and add more activities and discussion questions that would further their engagement and interest in the lessons. The questions would give them an opportunity to share from their personal experiences

at home and how their parents and families are handling waste. I wanted to make this lesson as engaging and exciting as possible to encourage the kids to actually adopt more sustainable choices. By challenging the kids to make certain changes at home, I believed the lesson would be more effective as they would have practical goals.

The outline of the lesson I created highlights the objectives as well as the activities and questions I asked to fulfill those objectives. In order to evaluate the success and effectiveness of this lesson I attempted to gain feedback from the students throughout the discussion by asking them questions. Ultimately, I tried to get an idea of whether or not the kids understood the objectives and whether the material was received successfully. Asking open-ended questions allowed me to generally evaluate the impact the project had on the students.

I started off asking if the students knew what sustainability meant, and most of them responded that it involved not using up all our resources. I added that it also includes making decisions that allow future generations to have the same quality of environment if not better. I then explained the No Impact Man to them and how he made several lifestyle changes to eliminate his impact on the planet for a whole year. Instead of eating out, he and his family only bought locally-grown food or food that did not have any packaging that needed to be thrown out. They used less water and electricity by turning off their lights and always using the stairs instead of the elevator. They also walked and biked everywhere instead of driving, and they did not buy anything new.

I asked the students if they would be willing to make all those changes, which ones might be easier, and which ones would be the most difficult. Most students said that they would not want to make all these changes. Some said they often get to ride their bikes to close locations instead of having their parents drive them, which saves gas. The most common things they said

they would not be willing to do were to shorten their showers and not buy new things. They would also not be able to give up electricity. They also do not like shopping at goodwill for used clothes. However, they were excited about purchasing locally grown food and most had been to Motman's greenhouses. These statements reflect how much we take for granted and how spoiled our generation has become. For this reason, it is even more crucial that we convince people that giving up certain things is worth the inconvenience as it creates a healthier, more sustainable planet.

We talked about the problem with trash and how when we throw things away, it doesn't disappear. It goes into a landfill or incinerator, causing environmental problems like air and ground water pollution, which harms humans, animals, and plants. As wastes "decompose" in a landfill, methane gas is put into the air, which leads to global warming as well. In response, we should consider how to create less trash. I suggested a few questions to the students to ask themselves before purchasing something. They should be conscious of what resources are being used to make the product, how much energy was needed to produce and transport the product, and what type of waste is left from the product. We all have a choice to make, so we should choose zero waste!

I had an activity for the students to put a list of items in order of how fast they decompose in a landfill and have them guess how long it takes those items to decompose. The items ranged from a banana, which last about 3 weeks, to Styrofoam and glass bottles, which could potentially last forever. The thought of some of these items sitting around for millions of years is very troubling, especially thinking about how many other items would accumulate in that time. After discovering how long certain items lasted in a landfill, they were all extremely surprised and vowed to never buy Styrofoam again. This activity was helpful in the students becoming more

aware of the consequences of their actions and the importance of recycling. Landfills are only getting larger and someday we may run out of space for them. We need to prevent our planet from becoming covered in waste and make more intentional decisions.

I also asked the students to think about what they had previously thrown out that day. Most of the items included food waste and snack wrappers. To properly dispose of food waste, composting is necessary. Many students had heard of composting before and a few of their families composted. I encouraged them to learn more about this process from their parents, and some kids felt challenged to talk to their parents about starting a compost bin in their homes. As far as the snack wrappers goes, this is a difficult issue to avoid. A majority of products are packaged this way, so I also challenged the students to discover new snacks that came in compostable bags or materials that could be recycled.

Next, we went over some ideas to think about how to solve the trash problem. The three main principles I used were reduce, reuse, and recycle. By reducing, we can cut down on the amount of trash we throw out by not creating it in the first place. The best way to reduce consumption is by avoiding disposable and over-packaged products. We can also cut down on the amount of trash we throw out by reusing items instead of throwing them away. Common ways we can reuse items are by donating clothes or things in your house that you don't need any more to charities, repairing broken things, and reusing items like shopping bags, boxes, and containers. Recycling items such as paper, glass, metals, and plastic allows for less raw materials and energy to be used in creating new products. Recycling as much as we can will conserve landfill space, save raw resources, reduce energy consumption, and often save manufacturers money.

Even the materials produced by people will not go away. Eventually they will fall apart in places they cannot be useful, unless they were designed and made to move through the natural materials cycle like food and paper materials that can be composted. That will be harmful to the health of humans, animals, water, air and the soil in which we grow our food and in which trees and plants grow. Therefore, it makes more sense to keep the materials we have produced and used from making this mess by composting what can go back to nature and by creating our own materials cycling system for the rest. By doing this we are contributing to the beauty and wellbeing of the ecosystems that depend on us, upon which we all depend, and for which we are all responsible. This mentality is what I wanted to instill in each of the students through this lesson.

One thing that stood out to me about this group was their creativity. They each presented very unique and original ideas for helping to solve the problem of trash. I think this is a valuable quality for these students to have because we are faced with new issues every day, and it seems like these students are very capable of thinking of innovative solutions that no one else has ever thought of. They were mostly concerned with coming up with alternative locations to hold all our waste. This gives me confidence that our future will be left will individuals who can adapt to the constant changes in the environment we are faced with.

At the end of the lesson, I asked them a few questions to reiterate the important messages I wanted them to understand. The first question I asked was “Who is responsible for taking care of the things we produce and use?” One student made a comment that we should not worry about how much we waste because it will not be a problem until long after we are no longer living. That statement represents a majority of society’s perspective, which is why teaching them about sustainability is so important. I told them that the whole idea of sustainability is maintaining the

resources and quality of our environment into the next several generations. They all agreed that it was everyone's responsibility to take care of our planet and that we should not leave our children to deal with it. I also asked them if they knew what their school was doing about recycling materials. They informed me that their school is a part of a PaperGator program in which the school earns money when students and faculty bring in paper, newspapers, or magazines. This program makes it easier to increase the amount of waste diverted from local landfills. They also have a recycling club in which some of the students were a part of. There are recycling bins in every classroom as well.

When I asked them if they enjoyed the lesson and if they would interested in learning more about sustainability, they all shouted "Yes!" Some students made a comment that they would much rather learn about that than the other subjects they are taught every day. Sustainability is something that should be taught in schools, and the earlier students are exposed to this concept, the more effective they can be. Sustainability is a lifestyle and requires an intentional effort as it goes against convenience. I was very impressed with the students' input, creativity, and willingness to participate in the discussion. This gives me encouragement that they will take matters into their own hands at home and at school to make a difference.

Sustainability Lesson Outline

- What is Sustainability?
  - Definitions
- Objectives
  - Understand how human actions can change the environment
  - Know the ways in which the environment is harmed by human activities (changes in climate, air pollution, water pollution, expanding human settlement)
  - Become accountable for our actions (and inaction) as well as the long and short term consequences of those actions
- No Impact Man
  - Describe lifestyle changes made by this man from NYC
  - Ask students what their reactions are
- What is the problem with trash?
  - Discuss where trash goes and how that harms the environment
- How can we create less trash?
  - Ask students to think about their customer habits
  - Suggest questions to ask before purchasing something new
- Our choice
  - We all have to be conscious of our decisions – lean toward a cleaner environment
  - Activity: have students put a list of items in order of how fast they decompose in a landfill and have them guess how long it takes those items to decompose
- How can we help to solve the trash problem?
  - Discuss the 3 R's
    - Reduce: We can cut down on the amount of trash we throw out by not creating it in the first place
      - Discuss ways to reduce waste
    - Reuse: We can cut down on the amount of trash we throw out by reusing items instead of throwing them away
      - Suggest ways to reuse common items
    - Recycle: We can conserve landfill space, save raw resources, and reduce energy consumption
- Different types of waste
  - Have students list things they have thrown out that day and categorize them into waste or recyclable items
  - Learn how the school is handling waste and recyclables
  - Discuss differences between resources found in nature and man-made resources
    - Resources in nature can be recycled (composting)
    - Man-made resources never "go away"
- Wrap-Up Questions

- Who is responsible for taking care of the things that we produce and use?
- What can we do about this?
- Is your school doing anything to recycle or reuse things?
- What do you know now that you didn't know before? What are some things you learned?
- What would happen if everyone participated responsibly in the materials cycle?
- What can we do to contribute to that possibility? What plan can we propose for conserving, reusing, and recycling the materials that our school produces?
- Is this topic something you would be interested in learning more about?
- Did you enjoy the lesson?

References

"3-5 Lesson Plan." *K-12 Exemplary Lessons Developed for TerraCycle*. The Cloud Institute for Sustainability Education, 1995. Web. 11 May 2015.