

Spring 4-25-2022

Exploring the Relationship Between Art and Environmental Education

Mackenzie Haynes
mahayne@bgsu.edu

Follow this and additional works at: <https://scholarworks.bgsu.edu/honorsprojects>



Part of the [Art Education Commons](#), [Biology Commons](#), and the [Environmental Studies Commons](#)

How does access to this work benefit you? Let us know!

Repository Citation

Haynes, Mackenzie, "Exploring the Relationship Between Art and Environmental Education" (2022).

Honors Projects. 799.

<https://scholarworks.bgsu.edu/honorsprojects/799>

This work is brought to you for free and open access by the Honors College at ScholarWorks@BGSU. It has been accepted for inclusion in Honors Projects by an authorized administrator of ScholarWorks@BGSU.

EXPLORING THE RELATIONSHIP BETWEEN ART AND ENVIRONMENTAL
EDUCATION

MACKENZIE HAYNES

HONORS PROJECT

Submitted to the Honors College at Bowling Green State University

April 27, 2022

Dr. Barbara J. Bergstrom, MFA, PhD, Art Education, Advisor
Dr. Angélica Vázquez-Ortega, Assistant Professor, School of Earth/Environment/Society,
Advisor

Background:

My Honors Project revolved around the relationship between art and environmental education. I wanted to see if art could be used as a tool for educating young people about the environment. I used my love of art, kids, and the environment to help get me to where I am now! My love for kids and the environment goes way back. I grew up as a big sister and that changed my life. My sister is now in 4th grade which is funny because my project took place in a 4th grade art class. Then when I was old enough, I became a camp counselor. I was a counselor at a local day camp for three summers and I had so much fun. The connections I made with the kids in such a short amount of time made the end of the summer something I dreaded. I miss them all the time! Essentially, being around kids was something I felt comfortable with and something that I wanted to do again for this project. I chose an art class because art has helped me through some stressful times. It has allowed me to express myself and to feel hopeful. Plus, it's fun! My last love is for the environment. It has always been there, but I never knew the importance of it until one of my High School environmental science classes opened my eyes to the problems occurring. I knew right then that I was going to make it my mission to do anything and everything I could to help the environment. Being in nature fuels me and I want to share that love and passion with as many people as possible! My project changed so many times and I'm glad it did because I finally found something that represents me in every way and something that I will forever be happy and excited about.

Research Questions:

The research questions that I focused on for this project are as follows...

1. How are lesson plans created? How are they used in a classroom setting?
2. How can art be used as an avenue for educating young people about the environment?
3. Should we focus on educating young people about environmental issues? Why or why not?
4. How much do children know about the environment?

I couldn't choose just one because I felt that they were all equally important and I wanted to explore the answers to all of them. The avenue that I wanted to take seemed like it would allow me to do so.

Methodology:

My project was carried out in a lot of steps. First, I started collecting, with the help of friends and family, plastic bottle caps and lids. That changed to other recyclable materials later in the semester such as cardboard, yogurt cups and toilet paper rolls.

The next steps for me were meeting with my advisors and sharing my ideas/hopes for the project which I did at the beginning of February. It was in these meetings that I was able to solidify what exactly I wanted everything to look like in the end. I continued meetings with my primary advisor to create a lesson plan and further workshop my art project.

I initially created a draft of a lesson plan after I was given directions and information for how to go about making one. I used a template that the education department uses, and my draft was edited many times until I was happy with it. This process was done at the end of March.

As I was working on the lesson plan, I worked on classroom samples for my art project as well as other materials that I wanted to share/use while I was teaching. This was an ongoing effort throughout the months of February, March, and April.

Dr. Bergstrom and I met with the art teacher at Crim Elementary in late March and early April to discuss all our ideas and get feedback on how to make it suitable for the classroom.

We continued workshopping until everything was at a stopping point and then I put the lesson plan, my project, and materials to use the week of April 18th. I taught Monday, Wednesday and Friday and had the kids create the project I had envisioned. It involved them choosing an endangered animal (out of 5 given to them) and creating a habitat (in a shoebox) out of only recycled materials. They decorated the outside and inside of the box throughout the week and then presented them to the class that Friday! The finished creations are currently on display at Crim Elementary in the front hallway.

Reasoning:

There are so many reasons as to why I chose the route I did. First, and probably the biggest driver for it is that, educating young kids about world issues is so important. Kids are like sponges; they absorb anything and everything that is told to them because their brains are still developing! A study done by Siegmund Otto and Pamela Pensini in 2017, explored the impacts of what they called “Nature based environmental education (NBEE)” on 4-6th graders. They found that,

...increased participation in nature-based environmental education was related to greater ecological behavior, mediated by increases in environmental knowledge and connectedness to nature.

Even in this one study, the researchers discovered positive things about educating young people about the environment. Those that were in these NBEE programs not only gained more knowledge but were more likely to act in ways that benefit the environment. Their connection with nature also strengthened which is a bonus. Studies like these are so critical because they show the power of education and get people excited to use it. Education is a tool that is widely

used for conservation and protection of the environment (Otto and Pesini, 2017) and it should be aimed at all age levels. I was also able to see firsthand how much the kids picked up on the knowledge that I shared and the knowledge they already had to use in their art projects!

Similarly, a study done in Portugal by Elisa Saraiva and Maria Manuel Azevedo showed the positive outcomes of environmental education for young people. The cool thing was that this study directly worked with art. Many different projects and activities were done related to gardening, fire education and recycling etc. and all of them were shown to have improved the knowledge base of students (Saraiva and Azevedo, 2020). The one activity was very similar to the one that I did! It required students to reuse materials to create a 3D work of art. What the authors found was that,

...the reuse of materials and the reduction of waste played a major role and translated into meaningful learning on how to reduce the environmental impact of some products by giving them new life... (Saraiva and Azevedo, 2020).

It's crazy because that is exactly what I wanted the students to get out of my project. I know how serious the waste problem is around the world and how much pollution ends in waterways/on land. I really wanted to emphasize how reusing materials and repurposing them is so much more impactful than recycling. I think the kids were able to take that away from completing their habitats!

The waste problem that I just touched on briefly is the second reason I chose the route I did. A lot of people aren't aware of proper recycling techniques which means that lots of recycling ends up in landfills. It's tough with plastic because different cities and towns recycle different numbers. Plastic caps are made from a different material than the bottle so many times they can't be recycled (How to Recycle, 2021). That is initially why I chose to reuse plastic caps and lids so that they wouldn't end up in the environment or landfills.

Furthermore, I liked the idea of how many different uses items can have, especially for art. The kids came up with so many cool ideas, I was really impressed! I became aware of another way recyclable materials are being reused from a family member recently. A company called Greentreeplastics creates everything from planters to park benches out of plastic bottle caps and lids. Their products are completely eco-friendly as well (ABC Promise Partnership, 2021)!

The possibilities are endless when it comes to reducing waste! All it takes is educated people and a concern for the issue and the planet. The problems we are currently dealing with are adult problems, however, bringing kids into the mix can make for a brighter future. Kids are so creative and open to learning that they might be exactly what we need to make the world a better place! Inspiring them with art is a great place to start.

Lesson Plan:

[https://falconbgsu-](https://falconbgsu-my.sharepoint.com/:w:/g/personal/mahayne_bgsu_edu/EUZEMOJVWBBHo2slGDcWJncBP-EM7d7rczK3LqE8fHIQFWA?e=8eA8YA)

[my.sharepoint.com/:w:/g/personal/mahayne_bgsu_edu/EUZEMOJVWBBHo2slGDcWJncBP-EM7d7rczK3LqE8fHIQFWA?e=8eA8YA](https://falconbgsu-my.sharepoint.com/:w:/g/personal/mahayne_bgsu_edu/EUZEMOJVWBBHo2slGDcWJncBP-EM7d7rczK3LqE8fHIQFWA?e=8eA8YA)

Enduring Understanding:

- 1-2 sentences that use a language function and indicate way students will come think in new, meaningful ways as result of engaging in the learning segment
- Artists, recycling, environmental science

After this lesson, the students (4th graders) should be able to describe, question and identify the world around them, specifically when it comes to environmental problems (trash buildup, local endangered species) and potential solutions including recycling and the reuse of materials.

Lesson Rationale and Summary:

- 1-2 sentences that explain how the learning segment addresses specific aspects of learning
- Stages of development– artistic, social
- Summary– what will students analyze/interpret during the lesson (art making approaches), what will students create and how will they do so, where will students relate art to a context (personal, social, cultural and or historical)

State standard 4.2CR—select materials and processes to solve artistic problems

- Using recycled materials to create a representation of an endangered species habitat
- Problem—how to bring awareness to environmental problems using art as a medium/tool
- Solution—using recycled materials to educate about environmental problems

State Standard 4.2PR—select and vary materials, tools, and processes to achieve innovative outcomes

- Creative solutions and outcomes, using materials that they know for different purposes

State Standard 4.1RE—identify qualities that contribute to the design and meanings of works of art

- Observing other artists who use recycled materials and identifying the techniques they use
- Applying those techniques to their own works of art

State Standard 4.3CO—demonstrate empathetic reactions in response to works of art

- Connecting with their own works of art, empathize with struggles of creatures (our choices are causing these organisms to go be in danger)

This learning segment addresses artistic and social aspects of learning. Students are required to showcase their creativity as well as their collaborative skills as they create a representation of an endangered organism with their groups.

- The students will analyze different artists who use recyclable materials in their work and their peers work at the end of the project
- Students will collaborate within groups (5 total) to create a 3D representation of an endangered species habitat in Ohio using a shoebox as well as plastic products and other art materials
- The students will be able to relate their creations to the environment they experience in Ohio as well as to any recycling/reuse methods that are used at home

Learning Objectives:

- **Creating**– conceive and develop ideas
- **Producing**– materialize and present work
- **Responding**– understand and evaluate meaning
- **Connecting**– relate to personal and external contexts

The student will...	Learning Objectives	ODE Code	Evaluation of Evidence
1	Intro of Project	Creating	Exit slip
2	Construction of project	Producing	Materials used in project (recycled materials)
3	Sharing/presenting Group Project	Responding	Presentation quality (5 min description of project, each member participates)

4	Relate to life	Conn ectin g	Exit slip/discussion (what was learned throughout 3 days)
----------	---------------------------	-----------------------------	--

Vocabulary: definitions, 4th graders (9-10 years old)

- **Eco art— form of art the addresses environmental issues**
- **Environment-- living and non-living things in a space**
- **environmental problems—issues with the planet’s systems (air, water, soil)**
- **recycling—turning waste into new objects**
- **repurposing—to use an object in a different way than it would normally be used**
- **reusing—to use again**
- **Endangered species— an animal or plant that is in danger, an organism with low numbers in the wild**
- **Pollution— a chemical or material that causes harm to the environment**
- **Land—the part of the earth where there is no water**
- **Habitat—the place where an animal or plant lives**
- **Marsh—type of wetland that has standing/slow moving water and grasses**
- **Wetland—environment that combines wet and dry areas, water covers the soil**
- **Swamp—wetland with trees, partially covered with water**
- **Estuary—the place where a river meets the ocean (space between)**
- **Salt marsh— wetlands that form between ocean and land**
- **Woodland— made of trees, bushes, grasses etc**
- **Prairie—open area of grassland**
- **Grassland—area of country covered with grass**
- **Wet meadow—type of wetland, standing water for part of year**

Summative Assessment:

- **How will you measure how successfully students have achieved your learning objectives and are thinking in new, meaningful ways as a result of completing the entire unit/learning segment?**

Measuring the student’s success will come from the presentation of their group projects. At the end of the design stage (Day 3), each group will present their project to the rest of the class. Each group should explain the process of creating their project, materials used (bottle caps, paint, construction paper, hot glue etc), their habitat (where they thought their organism would like to live, pointing to it on a map of Ohio), and one thing they learned

about recycling, environmental problems, solutions to environmental problems, how eco-art can be used to educate/artists that use eco-art etc.

Lesson Resources:

- **Equipment**
 - Phone camera to take photos (only of students if allowed), projector/screen to display PowerPoint, laptop, drying rack or extra tables for projects, table for materials
- **Health and safety**
 - First aid kit, COVID protocols (masks, sanitizing materials after use)
- **Supplies**
 - 20 students
 - Bottle caps of different colors as well as other plastic materials, shoe box for each group, paint (enamel bottles), mixing tray for each table, 4 paintbrushes, colored construction paper, plaster?, gorilla glue dots (precut for each table), masking tape, scissors (4 for each table), random recycled materials from scrap4art/art department
- **Instructional support materials**
 - PowerPoint, sample project examples, YouTube videos/pictures of artwork, list of ideas for each theme/environment (mission cards)

	Teacher actions	Student Actions
Pre-Assessment	<ul style="list-style-type: none"> - Ask if the students know what habitat means or of any habitats in Ohio - Do they know of any environmental problems? If so, which ones? - Do they know what recycling is? 	<p>Answering posed questions, identifying materials that can be recycled (out of materials that they have collected)</p>

<p>Lesson Opening</p>	<ul style="list-style-type: none"> - Introduce the “game” Habitat Heroes and an overview of the goals of the game (situation= last people on earth as well as few organisms that are in danger, habitats ruined by people, no more recycling, goal= to create a habitat for these organisms) - Show pictures of artists who use recycled materials to get students excited - Use artists images to have them identify materials and see if they have the same ones <p>2nd Part of Class:</p> <ul style="list-style-type: none"> - Have students (with their groups— people they are sitting with), choose a mission card from the stack on their table and create a team name - Go into depth (with PowerPoint) about what the students will be doing for the game - Show students the already created project (interior of habitat only) to get 	<p>Students sharing their current experiences with the environmental problem (4)</p> <p>Students brainstorming ideas with their group (2)</p> <p>Asking questions about artists/artwork (1)</p> <p>Students getting excited about eco art (1)</p> <p>4th grade</p>
------------------------------	--	--

**their brains going
about what they want
to make**

- Have each group
start to design and
produce the interior of
their habitats
(shoebox interior)**

Allotted Time	1 class period	
Formative Assessment of Lesson Opening	Exit slip at the end of day 1 - With basic questions about 1 thing they learned or found interesting Or end PowerPoint with a question	Students will fill out an exit slip at the end of Day 1 to share with me something they learned and something they are excited about in the coming days
Body of Lesson	<ol style="list-style-type: none"> 1. Refresh idea for the “game/challenge”, the materials to be used, the purpose of the project 2. Walk around to each group to remind them of which organism and habitat (plant or animal) they have (mission cards will already be on tables along with shoeboxes) 3. Give the groups most of the class to work on creating the exterior of their habitats (gluing down paper, bottle caps, straws, cardboard etc) 4. Walk around and answer questions/observe how the group is working together 5. Stop with 5-10 minutes left to recap the day (how creating 	Asking questions about the project (1) Creating their season display with their group (2) collaboration/discussion (2) - Making sure all the group members can be heard/participating and have a job - Helping to resolve any conflicts or struggles groups might be having

	the project is going) and cleanup	
Allotted Time	1 class period	
Formative Assessment during Body of Lesson	N/A	N/A
Lesson Closure	<ol style="list-style-type: none"> 1. Give the groups 5 minutes to share what they have made and what materials they have used (all members should say something) 2. As the groups come up there will be a map of Ohio displayed on the smartboard and I will share where each organism lives so that groups can try to point to where in Ohio they think that is 3. Display all the habitats with organisms next to them in the front of the class and the hallway for others to view (later on) 4. Reveal who has won the game/who had the most points (points collected from creativity, use of most different materials, most different color 	<p>Students, along with their groups will present their display by mentioning materials used, what is on their display etc (3,4)</p> <p>Commenting on each other's work (3,4)</p> <p>Students sharing what they learned out loud or via exit slip (4)</p>

	<p>materials, participation points etc)</p> <p>5. End with a positive (repurposing materials can help the planet, recycling properly can help the planet, the planet is important, helping endangered species through education)</p>	
Allotted Time	1 class period	
Formative Assessment of Lesson Closure	N/A	N/A
Summative Assessment	<ul style="list-style-type: none"> - Exit slip <ul style="list-style-type: none"> - Favorite part about lesson/project - Which display they enjoyed the most - How they can relate this lesson to their lives (map of Ohio, have students point to areas where they may find their organisms) 	responding to the posed question in class or the ones on the exit slip (4)

Classroom Materials:

Classroom PowerPoint

https://falconbgsu-my.sharepoint.com/:p:/g/personal/mahayne_bgsu_edu/EbgBIYeNYMFPqScFM2eUI7cBACPt2KFWsH-MtmGDTjIIjQ?e=ZotXnL

Mission cards/take home sheet

https://falconbgsu-my.sharepoint.com/:w:/g/personal/mahayne_bgsu_edu/ER5NKP0NYMFPoAxEVFe3jV4BWA1VsWrb8-wG8BdTudeXHg?e=8wBHzk

Rubric and Folder Cover:

https://falconbgsu-my.sharepoint.com/:w:/g/personal/mahayne_bgsu_edu/ERc41miTv6pPr_shhtaHpKABiAD4AYNeu1e3qS3fs245Dw?e=29zjql

Pictures:

https://falconbgsu-my.sharepoint.com/:f:/g/personal/mahayne_bgsu_edu/EttOBOiyjh5Op7LYiSMMIB8Bla5Owgco0TyPDqzowMPw4A?e=169HCo

Sources Used:

“ABC Promise Partnership.” *Greentreeplastics*, 12 Oct. 2021,
<https://www.greentreeplastics.com/abc-program/>.

“How to Recycle Plastic Caps & Lids.” *Earth911*, 6 July 2021,
<https://earth911.com/recycling-guide/how-to-recycle-plastic-caps-lids/>.

Otto, Siegmar, and Pamela Pensini. “Nature-Based Environmental Education of Children: Environmental Knowledge and Connectedness to Nature, Together, Are Related to Ecological Behaviour.” *Global Environmental Change*, vol. 47, Nov. 2017, pp. 88–94. *Science Direct*, [https://www.sciencedirect-com.ezproxy.bgsu.edu/science/article/pii/S0959378016305787?via%3Dihub#!](https://www.sciencedirect.com.ezproxy.bgsu.edu/science/article/pii/S0959378016305787?via%3Dihub#!)
Accessed 13 Dec. 2021.

Saraiva, Elisa, and Maria Manuel Azevedo. "Primary School Project Fostering Environmental Education through Art." *Modern Applied Science*, vol. 14, no. 7, 2020. *Summons*, <https://www.ccsenet.org/journal/index.php/mas/article/view/0/43108>. Accessed 13 Dec. 2021.