

Conservation Across Biomes

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ABSTRACT

This study used a 5-point Likert scale to assess information retention as well as my effectiveness in conveying information with a group of homeschoolers in grades three through five. This homeschool class was part of Zoo Knoxville's homeschool program that is run by the zoo's education department.

INTRODUCTION

Despite the fact that scientists have been promoting an inquiry based approach to the teaching of science since the 1960's (McBride et al., 2004), most science teachers still rely on textbooks as the primary means of information communication as recently as 2006 (Abell and McDonald, 2006). A study by Upadhyay and DeFranco (2008) demonstrated that by using connected teaching as opposed to direct instruction, 3rd grade students are more likely to retain science language and information. Connected teaching uses students' culture, previous knowledge, and experiences as a foundation to build upon. By connecting science teachings to students' experiences and lives, it can lead to a sense of empowerment in the students rather than a sense of inadequacy. It is this method of inquiry and connected teaching that my project focused on.

Focusing on the sense of empowerment, I wanted to bring students attention to things that they themselves are able to do in order to make a difference in the world around them. Encouraging healthy habits, such as recycling, at a young age helps to increase the chances of those habits sticking with the students through to adulthood (Mrema, 2008). By looking at what the students already do and know, I used that as a foundation to build on and expand upon. Empowerment, connected teaching, and green practices were the main themes of my project.

My master plan is focused on expanding knowledge about wildlife in both the public and professional sectors. This project was centered on the public aspect of my master plan. In order to continue to educate and teach students as well as adults, I need to know how effective I am at communicating information. This project helped with that as well. Education and communication is something that I feel a person can always improve upon and. My project helped with my personal goal of becoming a better educator as well as my professional goals of adding to the knowledge of the general public.

PROJECT DETAILS

I gave a short, ten minute talk to a group of twelve students. These students made up Zoo Knoxville's homeschool class for grades three through five. This talk took place on Tuesday March 23, 2021 in the middle of their afternoon session. After speaking with the zoo's education department, the instructor suggested that my talk take place during the week of their section on biomes. The class had recently finished a section on green practices. My talk focused on biomes and green practices the students can put into action to help protect those biomes and the endangered animals found within them. While I had prepared information for six biomes (Appendix I), the class was currently discussing forests and since that is a biome that is very familiar to people in this region, we ended up focusing on that biome for the duration of the talk rather than touching briefly on multiple biomes.

Before the talk, I explained the purpose of the project and gave each student a piece of paper with three statements on it and a 5-point Likert scale at the top (Appendix II). The students were to write a number, one through five, under the "before" section for each statement, conveying how much they agreed or disagreed with that statement. After the talk, they were asked to repeat the process for each statement in the "after" section. Students were encouraged to share personal experiences and ideas during the talk and all responses were anonymous.

REFLECTION AND CONCLUSION

The results of this project were enlightening for me both on a professional and personal level. As I had hoped, the ratings for each statement either stayed the same or increased after the talk. Appendix III breaks down the number of responses per rating for each of the statements. There were three response forms that were either incomplete or had inappropriate ratings, such as 4.5 and 5+. For the purpose of maintaining consistent responses, these papers were excluded from the final tallies.

I learned that a lot of the students in the homeschool class retained a good bit of the information that they had previously been taught. Most felt they were well aware of endangered animals and actions they could take to help them. The few students that were less confident in these areas were more confident after the talk. Besides learning which animals that lived in the forests around them were endangered, they also learned new roles they can take in order to help

protect those animals and the forests themselves. They also learned how their actions and the various aspects of biomes, especially the forest biome, all combine to impact all plants and animals.

One of the biggest obstacles I encountered was keeping the attention of all the students and getting all of them to participate in the talk. Since the group varied in ages, the older kids seemed to take over more of the discussion and the younger kids tended to try to disappear into the background. Due to the time constraint in the homeschool class, I felt rushed and unable to take the time to interact with each of the students. I prefer a back and forth discussion as far as my leadership style. I believe I can learn as much from others as they can from me and hearing how they think and process things will help me alter my teaching style to meet their needs as well as broaden my awareness. I interact a lot with young children as a zookeeper and try to engage them in this type of discussion so for this project I wanted to see how well this way of leadership actually worked for me. After seeing the positive results of this project, I would like to continue leading and communicating in this way, but I have realized that I should slim down the information I try to convey and focus on one or two smaller things rather than a broad discussion of many different things with the younger students. It seemed harder for them to think on a large scale and they focused more on what they had just recently learned rather than information they had learned in the past. They were also very eager to connect their own personal experiences to the discussion which I think is a great way to make the students feel empowered to make changes.

I would like to continue working with my zoo's education department and giving these brief talks to the homeschool classes. The students were excited to talk to a zookeeper and I think having someone different teaching them helped to keep their attention better. I also plan to continue giving keeper chats about the animals I care for to groups visiting the zoo as well as camps that the zoo holds. This project helped me in learning how to hone down the information I want to get across and helped me realize that when I am talking to groups, sometimes the quieter kids are the ones who understand the least about the topic. I would like to try to encourage them more to participate and ask questions in our discussions.

LITERATURE CITED

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APPENDIX I:

Biomes: Freshwater, Marine, Forest, Desert, Grassland, Tundra

Freshwater:

Includes: lakes, streams, rivers

Threats: pollution, overfishing

Endangered animals: manatees, sturgeons, giant freshwater stingrays

Green practices: turn the water off while brushing your teeth

Marine:

Includes: oceans

Threats: pollution, overfishing, illegal fishing

Endangered animals: sea turtles, blue whale

Green practices: reusable water bottles, recycling aluminum and other products

Forest:

Includes: temperate forest (Smokies), rainforests, tiger, gorilla, macaw

Threats: logging, development, deforestation, illegal hunting

Endangered animals: red wolves, red pandas, giant pandas

Green practices: recycle, reuse, pick up trash, leave wildlife alone

Desert:

Includes: Sahara

Threats: hunting, development, loss of habitat

Endangered animals: gazelle, cheetah, tortoise

Green practices: support environmentally friendly businesses, water conservation, adopt an animal

Tundra:

Includes: Antarctica

Threats: pollution, overfishing

Endangered animals: arctic fox, polar bear, arctic peregrine falcon

Green practices: recycle, reuse, limit pollution

Grassland:

Includes: central North America, Savanna

Threats: habitat loss, hunting

Endangered animals: elephants, wild dogs, black footed ferrets

Green practices: recycle, don't buy ivory

APPENDIX II:

Please do not write your name on this paper. Using the scale listed below, please rate how you feel about each of the three statements before listening to the presentation. After the presentation, please write a number rating for the statements again with how you feel after hearing the presentation.

1 Strongly disagree

2 Disagree

3 Neither agree nor disagree

4 Agree

5 Strongly agree

Statement 1:

I can name an endangered animal.

Before:

After:

Statement 2:

I can help save the planet every day.

Before:

After:

Statement 3:

I can make a difference for animals in the wild.

Before:

After:

APPENDIX III:

<i>Statement 1</i>	1	2	3	4	5	Median:
Before:	1		3	4	1	4
After:				2	7	5

<i>Statement 2</i>	1	2	3	4	5	Median:
Before:				5	4	4
After:				2	7	5

<i>Statement 3</i>	1	2	3	4	5	Median:
Before:	2		2	2	3	4
After:		1		3	5	5

APPENDIX IV:

Before and After Median Ratings

