Minorities and the Environment: How SR1 Achieves The Importance of Exposing Mississippi Young Minorities to Conservation Efforts in Mississippi

Annual Conference of MS Political Science Association
February 12 -13, 2016
Itta Bena, MS

Christina M. Spann and Jae-Young Ko
Jackson State University

Background

- Approximately 13,034 million individuals across the United States 16 years of age and older participate in hunting in 2011, and only 2% were African- American
- In a study done by the Forest and Wildlife Research Center at Mississippi State University, 7.02% of hunters are female and only 3.86% of youths who are less than 20 years of age hunt.
- SR1 (Scientific Research), a non-profit 501 (c) 3, located in Ridgeland, Mississippi, services students living in Hinds, Madison, and Scott counties in order to increase youth with no prior experience in hunting, fishing, and conservation activities.
- SR1 achieves these objectives through a project titled Go! WIN. This project provides at-risk minority (female, African-American, and Hispanic) students and their caregivers the opportunity to gain knowledge of Mississippi's environmental ecosystem through hands-on experience with Mississippi's wildlife and nature.

- Unfilled teaching job openings in the STEM area in the MS public schools

CRITICAL TEACHER SHORTAGE AREAS IN MISSISSIPPI:		
Benoit	Hazelhurst City	Noxubee County
Canton	Hinds AHS	Quitman County
Carroll County	Hollandale	Shaw
Claiborne County	Holly Springs	South Delta
Clarksdale Separate	Holmes County	South Pike
Cleveland	Humphreys County	Sunflower County
Coahoma Agricultural HS	Indianola Separate	Tate County
Coahoma County	Jefferson County	Tunica County
Copiah County	Kemper County	West Bolivar
Drew Separate	Leflore County	West Jasper
Durant Separate	Leland Consol.	West Tallahatchie Consol.
East Jasper	Marshall County	Western Line Consol.
East Tallahatchie	Montgomery County	Wilkinson County
Greene County	Mound Bayou	Yazoo City
Greenville Public	North Bolivar	Yazoo County
Greenwood Public	North Panola Consol.	**34% of MS COUNTIES**

Critical Subject Areas: ***Math, Science (Biology, Chemistry, Physics), Special Education, Foreign Languages (French, German, Spanish)***

(Courtesy of Sheryl Bacon)

Problem Statement

- In Mississippi, the lack of minority youths' exposure to the environment and nature is steadily increasing. Mississippi is a state where the number one industry is agriculture, however, the lack of youth participating and showing interest in outdoor activities, and concern for their environment is alarming. SR1, a non-profit located in Ridgeland, MS is working to decrease that problem in three counties in Mississippi: Hinds, Madison, and Scott counties.

Research Objective

- By exposing minority youth to various wildlife and outdoor activities, youth are more likely to increase their chances in interest and knowledge of their environment and the outdoors work hard to protect their natural resources.

Methods

Target Audience:

- Target Audience: SR1 targeted 85 new at-risk minority youth in grades 5th-12th with no prior experience in the areas of hunting, fishing, or conservation from Hinds, Madison, and Scott counties in Mississippi.

- The students selected in the three following counties represent urban (Hinds County), suburban (Madison County), and rural (Scott County) areas of the state.

Survey Instrument

- Student participants were given the **National Environmental Literacy Instrument** as a pre and post test.
- This instrument is used to identify awareness of the environment along with the issues associated with it.
- The instruments are able to test if participants believe they know and what is actually true.
- The survey is 40 questions that have four focus points- Knowledge, beliefs, opinions, and self-perceptions.

❖ Environmental Literacy Instrument

Part I: Information about the environment

(Question 1) Compared to other students in your school/neighborhood, how much do you feel you know about environmental issues and problems in general?

1. A lot , 2. A reasonable amount, 3. A little, 4 Almost nothing

5. Nothing, 6. Don't know

(Question 2) What are your primary sources for environmental information? Check as many as applicable:

1. TV, 2. Radio, 3. Internet, 4. Magazines, 5. Newspaper, 6. Classes/courses , 7. Books, 8. Library, 9. Friends/ relatives, 10. Other, 11. None

(Question 3) Quickly write down as many current GLOBAL environmental issues as you can think of. Use 1-3 words for each.

1. _____ 2 ._____ 3. _____

4._____5._____

(Question 4) Quickly write down as many environmental issues as you are aware of that are distinctly LOCAL or "Southern" in nature. Use 1-3 words for each.

1. _____ 2 ._____ 3. _____

4._____5._____

Part II: Your reactions to expressions about the environment. Please choose one alternative for each question.

(Question 5) The expression "Different varieties of life (animals and plants) living in a variety of different environments" is a simple definition for the term…

1. Evolution, 2. Ecosystem, 3. Biodiversity, 4. Biological community, 5. Don't know

(Question 6) What do you think is the most important source of pollution that affects the quality of water in the earth's streams, rivers, and oceans?

1. Waste disposal from the cities
2. Trash washed into the water from polluted shorelines
3. Waste disposal from factories and industries
4. Runoff water from cities, yards, paved lots, and farm fields
5. Don't know

(Question 7) Human population of the Earth is now approximately…

1. 3.0 billion, 2. 6.5 billion, 3. 10 billion, 4. 25 billion, 5. Don't know

(Question 8) Global climate change is the warming of our planet Earth, a process also known as global warming. Which of the following better represents its cause(s)?

1. Ozone layer depletion, 2. Fossil fuel consumption, 3. Carbon dioxide (CO2) emission, 4. All of the above, 5. Don't know

(Question 9) What is the most common cause for plant and animal species to become extinct?

1. Predation by other species
2. Habitat loss and fragmentation
3. Temperature change
4. Competition between species
5. Don’t Know

(Question 16) Urban sprawl in the South results in:

1. Increases in the cost of developing municipal sewer and water systems
2. Increases in the cost of developing roads and freeways
3. The loss of farmland
4. All of the above
5. Don't know

Part III: Your feelings about the environment in and around you. Please, choose only one answer.

(Question 18) All life on Earth has the right to exist for no required reasons, regardless of their value to humans.

1. Strongly disagree, 2. Disagree,3. Somewhat disagree, 4.Don't have an opinion, 5. Somewhat agree , 6. Agree, 7. Strongly agree

(Question 19) I am willing to protect endangered animals on my land only if the Federal Government provides me with some financial incentive.

1. Strongly disagree, 2. Disagree, 3. Somewhat disagree, 4. Don't have an opinion,

5. Somewhat agree, 6. Agree, 7. Strongly agree

(Question 20) Environmental activists over-exaggerate in justifying their causes and actions.

1. Strongly disagree, 2. Disagree, 3. Somewhat disagree, 4. Don't have an opinion,

5. Somewhat agree, 6. Agree, 7. Strongly agree

(Question 22) I'll do my best to protect our environment as long as I don't have to change my lifestyle.

1. Strongly disagree, 2. Disagree, 3. Somewhat disagree, 4. Don't have an opinion,

5. Somewhat agree, 6. Agree, 7. Strongly agree

(Question 24) Environmental Education should be part of every school grade's curriculum, K- 12.

1. Strongly disagree, 2. Disagree, 3. Somewhat disagree, 4. Don't have an opinion,

5. Somewhat agree, 6. Agree, 7. Strongly agree

(Question 27) If I were to preserve natural resources on my land, the main reason I would do it is to fulfill the needs of future generations of my family

1. Strongly disagree, 2. Disagree, 3. Somewhat disagree, 4. Don't have an opinion,

5. Somewhat agree, 6. Agree, 7. Strongly agree

(Question 31) I would be willing to pay up to $100 more per year to promote the sustainable use of our natural resources.

1. Strongly disagree, 2. Disagree, 3. Somewhat disagree, 4. Don't have an opinion,

5. Somewhat agree, 6. Agree, 7. Strongly agree

(Question 36) In the next 10 years, the quality of the air, soil, and water in the area you live will…

1. Improve a lot, 2. Somewhat improve, 3. Stay the same, 4. Somewhat decline,

5. Decline a lot, 6. Don't know

Part IV: Demographic information for analytical purposes

(Question 37) Your age:

1. 10-13 years, 2. 14-16 years, 3. 17-19 years

(Question 38) Your gender:

1. Male, 2. Female

(Question 39) County you reside in:

Answer: _____

(Question 40) In what kind of environment did you spend the majority of your childhood?

1. Rural farm
2. Rural non-farm
3. Suburban
4. Small town (<=2,500 people)
5. Small city (2,500 to 50,000 people)
6. Large city
7. Other

Survey Instrument

- Student participants were given the National Environmental Literacy Instrument as a pre and post test.
- This instrument is used to identify awareness of the environment along with the issues associated with it.
- The instruments are able to test if participants believe they know and what is actually true.
- The survey is 40 questions that have four focus points- Knowledge, beliefs, opinions, and self-perceptions.

Data Collection

- On November 6th- November 7th, 2015, SR1 provided 85 students the opportunity to participate in USM's Debris Removal Program, Watershed Education, and a Coastal Science Camp.

- On November, 5th, students were given a pre Environmental Literacy Instrument Test. On November, 11th, students were given a post Environmental Literacy Instrument Test.

Data Collection

- On November 6th- 7th, Students were junior conservations with The USM Gulf Coast Research Laboratory, which taught students, and staff evidence based methods to maximize the probability of watershed literacy and long-term environmental stewardship

- Students participated in pre-cruise, cruise, and post-cruise activities.

- Activities included: students learning watershed literacy content; human and natural causes of change in watersheds; map orientation; data collection (GPS location, temperature, clarity, dissolved oxygen, salinity) and data entry skills, research local watersheds to learn about cleanups, monitoring activities, and restoration projects; visit Pascagoula watershed to research natural changes (avulsion and channel switching) and compare Pascagoula and home watersheds.

Data Collection

- The USM Marine Education Center, located in Ocean Springs, MS, provided classroom and hands-on activities in the areas of conservation biology, habitat conversation, and wildlife conservation.
- Students participated in the protection of marine animals' natural habitats in Mississippi waterways (i.e. Mississippi Gulf Coast, Deer Barrier Island, Ross Barnett Reservoir) through USM's Mississippi Marine Debris Removal program.

Data Collection

- The Coastal Science Camp where students continued their role as junior conservationists.
- Activities included an introduction to shark biology; data sheet interpretation; how to hold, tag and measure a shark; shark ecological importance and shark species; measurement of water quality parameters; sieve net sampling nekton, dip net sampling of fringe marsh species; and geographic orientation via Google Earth
- Students utilized boats to catch, tag, and release sharks using hand-line and rod and reels, deep-sea fishing, and identification of organisms by utilizing a trough.
- Students assisted in taking organism measurements and recording all measurement data and water quality.

Data Collection


AEROPOSTALE

Data Collection

- A randomized sampling of 22 out of the 85 students who took the pre and post test.
- Target: middle school students in grades 6^{th}-7^{th} grade. (more diverse group of students based on race, gender, and county)
- Comparing Environmental Literacy Pre-Test Scores, and Environmental Post-Test Scores, based on the students' race, gender, county.

Data Analysis

- Data was analyzed using SPSS software, version 23.
- Compare the impacts of student exposure to environmental activities both in class and hands on experience.
- The pre test was an attempt to check their knowledge of the issues of the environment and the need to protect
- The post test was used to gauge if there was any improvement made on their score to see if their experience had any impact on their thoughts of the environment.

Data Analysis

County

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Hinds	5	22.7	22.7	22.7
	Madison	8	36.4	36.4	59.1
	Scott	9	40.9	40.9	100.0
	Total	22	100.0	100.0	

Data Analysis

Race

		Frequency	Percent	Valid Percent	Cumulative Percent	Bootstrap for Percent[a]			
						Bias	Std. Error	95% Confidence Interval	
								Lower	Upper
Valid	African American	7	31.8	31.8	31.8	.0	.0	31.8	31.8
	Caucasian	8	36.4	36.4	68.2	.0	.0	36.4	36.4
	Hispanic	7	31.8	31.8	100.0	.0	.0	31.8	31.8
	Total	22	100.0	100.0		.0	.0	100.0	100.0

a. Unless otherwise noted, bootstrap results are based on 1000 stratified bootstrap samples

Data Analysis

Gender

		Frequency	Percent	Valid Percent	Cumulative Percent	Bootstrap for Percent[a]			
						Bias	Std. Error	95% Confidence Interval	
								Lower	Upper
Valid	Male	10	45.5	45.5	45.5	.0	.0	45.5	45.5
	Female	12	54.5	54.5	100.0	.0	.0	54.5	54.5
	Total	22	100.0	100.0		.0	.0	100.0	100.0

a. Unless otherwise noted, bootstrap results are based on 1000 stratified bootstrap samples

Data Analysis

T-Test

One-Sample Statistics

			Bootstrap[a]			
					95% Confidence Interval	
		Statistic	Bias	Std. Error	Lower	Upper
Race	N	22				
	Mean	2.0000	.0000	.0000	2.0000	2.0000
	Std. Deviation	.81650	.00000	.00000	.81650	.81650
	Std. Error Mean	.17408				
Environmental Literacy Pre Test Scores	N	22				
	Mean	16.2273	.0000	.0000	16.2273	16.2273
	Std. Deviation	5.73155	.00000	.00000	5.73155	5.73155
	Std. Error Mean	1.22197				
Environmental Literacy Post Test Scores	N	22				
	Mean	30.3636	.0000	.0000	30.3636	30.3636
	Std. Deviation	4.55177	.00000	.00000	4.55177	4.55177
	Std. Error Mean	.97044				

a. Unless otherwise noted, bootstrap results are based on 1000 stratified bootstrap samples

Results

- A T- Test showed the average pre-test score was 16, whereas the post test score was an average of about 30.
- African-American and Hispanic participants displayed a cumulative lack of prior knowledge to the outdoors and understanding of their environment as compared to their Caucasian peers.
- However, outlying factors include: location, hobbies, and family traditions.

- During a listening session conducted with student participants,
- Caucasian students had more experience with the outdoors, which was identified as a pastime through hunting and fishing.
- African-American and Hispanic students had a better understanding of environmental issues surrounding their community and were able to grasp an understanding of how these small environmental issues can lead to larger environmental issues.
- Outlying factors include: students who lived in the urban area of Jackson, MS which was more African-American students, tended to have more experiences with water issues such as “boil water alerts” that affect their homes and family life.

Conclusion

- The participants have made significant gains and improvements based on their awareness of the environments, exposure, and further interest in environmental issues.
- there can be improvements and gains made for minorities from various backgrounds to have exposure and understanding of environmental issues.
- Furthermore, environmental education is successful in offering exposure to nature and a clear understanding of the environment and their human impact. The way environmental education is presented to students is important because it has to keep their interest and peak their interest. The issues have to be made relevant to them.
- Once this is achieved, there is a shown increase of improved academic performance, reduced stress, a myriad of cognitive, emotional, and physical benefits, and a reduced risk of obesity.

The End