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Formal and Informal Environmental Education in the Northern Gulf of Mexico

Brown S

Sherry S. Herron

University of Southern Mississippi, sherry.herron@usm.edu

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Formal and Informal Environmental Education in the Northern Gulf of Mexico

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Shelia A. Brown and Sherry S. Herron | Center for Science and Mathematics Education



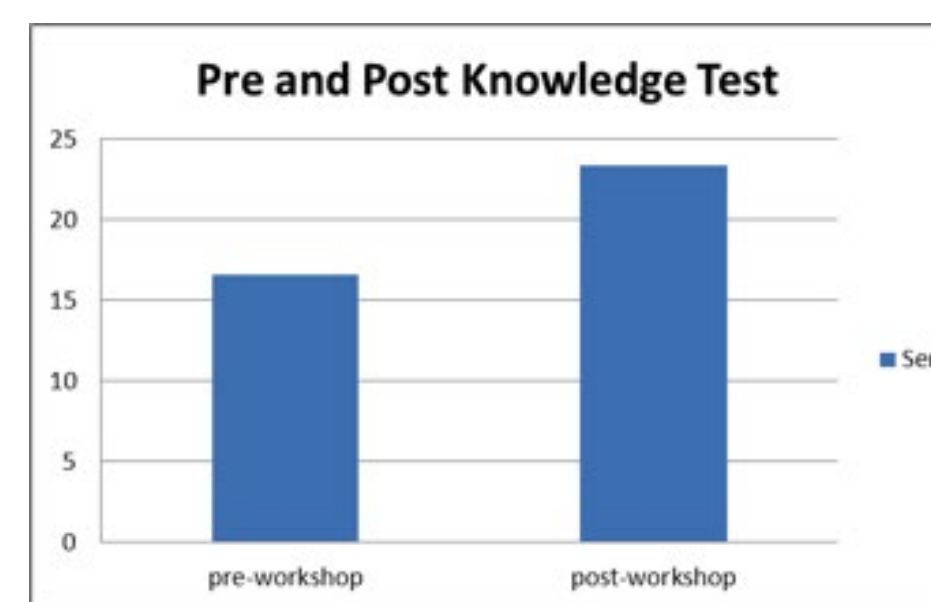
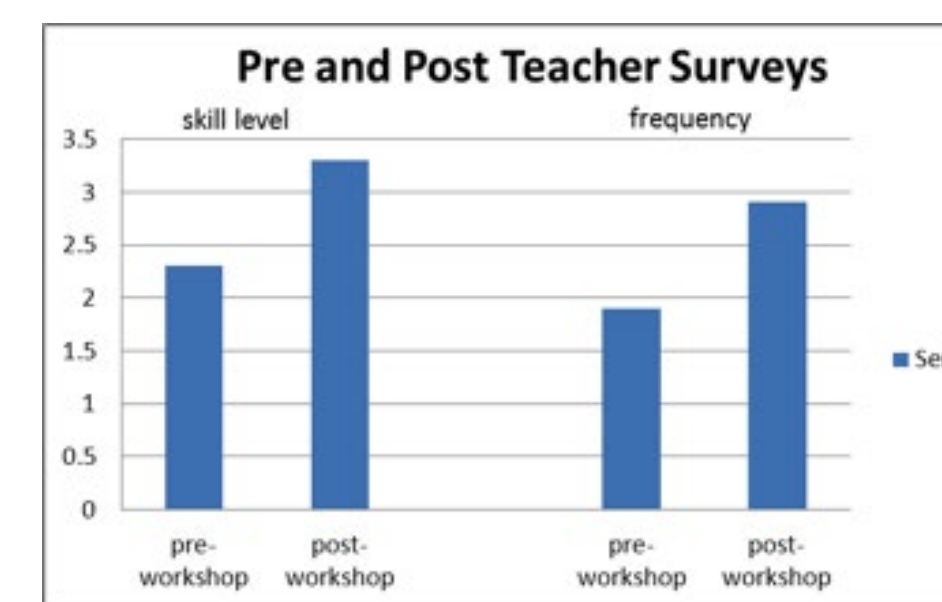
With funding from the Gulf of Mexico Program-Environmental Protection Agency and in partnership with the Grand Bay National Estuarine Research Reserve, the Center for Science and Mathematics Education at The University of Southern Mississippi provides environmental education for under-represented and underserved K-12 students in Alabama, Louisiana and Mississippi, and the general public of the Gulf Region through teacher workshops, school visits, Coastal Ecology Camps and community evening programs. All 10 participating schools have a minority enrollment greater than 50 percent and include Alexandria Middle Magnet School, Alexandria, La.; Sherwood Middle Magnet School, Baton Rouge, La.; Gulfport Central Middle School, Gulfport, Miss.; N.R. Burger Middle School, Hattiesburg, Miss.; West Marion Elementary School, Foxworth, Miss.; Katherine H. Hankins Middle School, Theodore, Ala.; Donnie Bickman Middle School, Shreveport, La.; Ferriday Junior High School, Ferriday, La.; T. H. Harris Middle School, Metairie, La.; and Tupelo Middle School, Tupelo, Miss. Two teachers from each school receive professional development through lectures, hands-on activities and field trips in environmental literacy and stewardship ethics at Southern Miss' Marine Education Center/Gulf Coast Research Laboratory and the Grand Bay NERR. During subsequent school-year visits to schools, project staff lead students in conducting water quality and land cover GLOBE protocols or bring Touch Tanks for students (2,394 students to date) to see, handle and learn about marine life. Teachers then bring students (175 students to date) to the coast for field experiences at the Grand Bay NERR, Ship Island or the Pascagoula River. Post-test scores of both teachers and students show significant gains in content knowledge, and surveys used to collect qualitative data show enhanced appreciation for the environment. Funding has also provided 11 community evening "My Coast" events (on topics such as salt marshes, estuaries, bats, owls, flounders, etc.) with a total of 853 people in attendance.

SCHOOL PARTNERS (ALL PARTICIPATING SCHOOLS HAVE A MINORITY ENROLLMENT GREATER THAN 50 PERCENT.)

T. H. Harris Middle School, Metairie, La.
 Donnie Bickman Middle School, Shreveport, La.
 Tupelo Middle School, Tupelo, Miss.
 Alexandria Middle School, Alexandria, La.
 Sherwood Middle Academy Magnet, Baton Rouge, La.
 Gulfport Central Middle School, Gulfport, Miss.
 West Marion Junior High School, Foxworth, Miss.
 N.R. Burger Middle School, Hattiesburg, Miss.
 Katherine Hankins Middle School, Theodore, Ala.

EVALUATION AND ASSESSMENT

Teaching Staff: Superior 91%; Good 9%
 Overall Experience: Superior 82%; Good 18%
 Test of Concepts (30 items): Pretest Mean: 16.6 (53%); Post-test Mean: 23.4 (78%)
 Perceived Skill Level of Teaching Concepts - on scale of 1 – 4
 Pre-survey Mean: 2.3; Post-survey Mean: 3.3
 Perceived Frequency of Teaching Concepts - on scale of 1 – 4
 Pre-survey Mean: 1.9; Post-survey Mean: 2.9



Teacher Workshop:
 June 8-12, 2009
 Gulf Coast Research
 Laboratory, Ocean
 Springs, Miss.



Representative Teacher Comments:

"I had great time. I learned lots of new information. I can even scratch a few things off my 'bucket list!'"

"I have learned a lot more from this week than in an entire course. I found the lecturer with the field experiences to be very helpful and also easier to retain the information. All three faculty were very approachable to answer all questions. I thought this experience was outstanding. Thank you!"

"Great experience! I loved this opportunity and appreciate everything you all have done! Thank you!"

Representative Written Comments from Students

I learned that you can learn a lot of information from a small area such as the types of organisms, trees, and the amount of pollution. I thought it was fun because we got to measure new things, and it was very interesting. I felt important as we marked off our study area with flags. I liked using the spectrophotometer (refractometer) and other measurement tools. I liked looking for the wildlife in the stream in order to measure its overall health...like the little minnows.

Representative Written Comments from Teachers

"Thank you so much for your patience with our kids. I was so relieved that you tailored your discussion to the level of each class! I am excited to report that just this past class period in my little weaker class, we were talking about what all they did yesterday during their tests they conducted, and one of the girls blew me away with her comments about the water being healthy because of the reading they got! My goofy honors class didn't even make that connection. I am constantly amazed that all kids can learn if they are given the chance, and they take the opportunity! Thank you again for a wonderful experience for us all!"

Table 1. Pretest/Post-test Result for the Coastal Science Mini-Camps

School	Date	Pretest Mean	Post-test Mean	Significance
West Marion Elementary	11/19/10	2.86	4.53	p < 0.01
Gulfport Central Middle School	05/14/12	2.78	11.46	p < 0.01
Donnie Bickman Middle School	04/19-21/12	4.94	11.07	p < 0.01

My Coast Public Outreach Events

- January 25, 2011 Make Your Home More GREEN
- March 29, 2011 Floundering with Buck
- April 2, 2011 Celebrate the Gulf
- May 31, 2011 Bat Program
- July 26, 2011 Wilderness Survival—Surviving in the Salt Marsh
- September 20, 2011 The Importance of Estuaries
- November 29, 2011 Owls of South Mississippi and Their Calls

N.R Burger Middle School | GLOBE Land Cover



Coastal Sciences Mini-Camp October 23, 2010



West Marion Elementary School Coastal Sciences Mini-Camp November 19, 2010



West Marion Elementary School Ship Island Field Trip April 16, 2011



T.H. Harris School Visit October 6, 2010



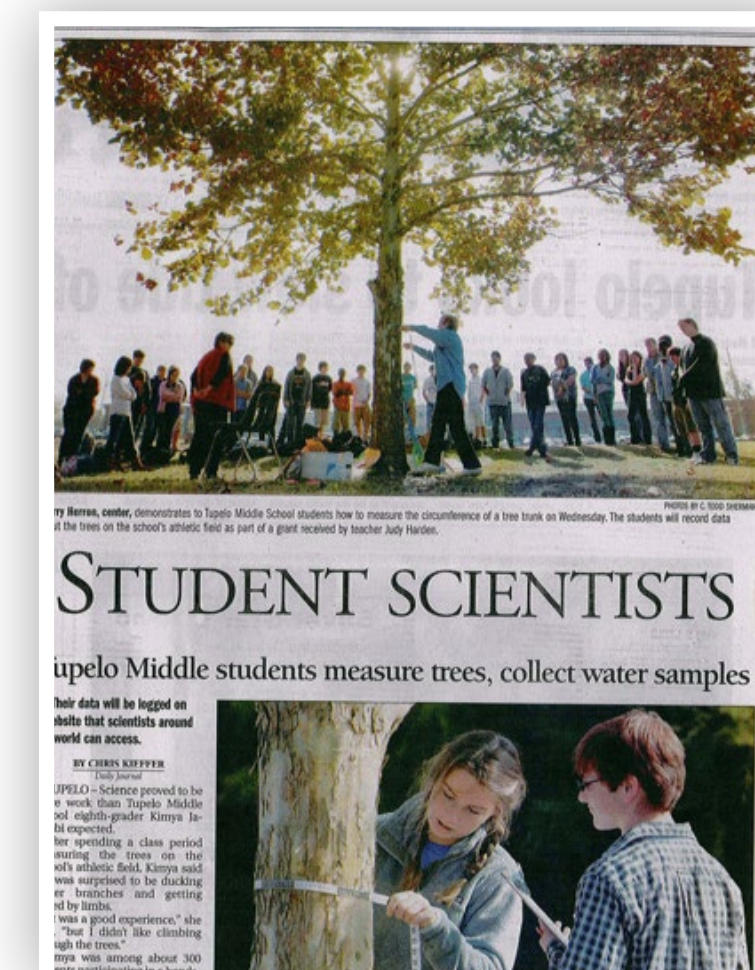
Sherwood Middle Academic Magnet School September 10, 2009



Alexandria Middle School, Alexandria, La., November 18-19, 2009



News Article of Tupelo Middle School Site Visit



Tupelo Middle School

