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ABSTRACT

East Feliciana Parish (Louisiana) has raised achievement scores by involving students in hands-on projects related to community needs and resources. Project Connect, a hands-on science and math program begun by the Delta Rural Systemic Initiative, has expanded into a comprehensive place-based program. In response to new state standards, teams of teachers visited place-based education programs elsewhere in the country, seeking advice and ideas from rural educators coping with comparable challenges: low-income populations, struggling local economies, shortages of certified teachers, large proportion of at-risk students, and few local career opportunities for high school graduates. Although 80 percent of district students are African American, the teachers found much to share with teachers working in White, Northern, rural schools. The Louisiana teachers saw examples of student-designed economic development projects and learned the skills of nature study and journaling. Project Connect has also organized 10-day teacher workshops that present skills and concepts of outdoor fieldwork and methods of designing place-based projects aligned with Louisiana's academic standards. Community and Americorps volunteers built nature trails near three schools, providing access to creeks where students monitor water quality and explore the natural environment. The benefits of outdoor hands-on learning are discussed. (SV)

East Feliciana Parish Schools Embrace Place-Based Education as a Way To Lift Scores on Louisiana's High-Stakes Tests

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In a get-tough climate of state-mandated tests and standards, many educators hesitate to develop localized curricula rooted in a community's specific needs and resources. Facing considerable pressure to "teach to the test," they focus primarily on standardized syllabi, worksheets, and daily drills. But in East Feliciana Parish, 30 miles northeast of Baton Rouge, teachers are rethinking how best to impart concepts and skills. Increasingly, they involve students in hands-on projects outside the classroom. The school district's teachers and its 2,476 students know all about lock-step learning and rote memorization— this is how learning has taken place in their schools for generations, with limited success. Until recently, students and teachers had little to show for their hard work but low test scores and a high retention rate for failing students.

In November 2001 the state of Louisiana released 4th grade scores for its critical reference test, LEAP 21 (Louisiana Educational Assessment Program for the 21st Century). Although 4th grade students in East Feliciana's three elementary schools (Clinton. Jackson, and Slaughter) continued to rank below the overall state average in their scores taken as a whole, the number of students passing the science portion increased 13% in one year and achieved the state average pass rate of 85%. At Slaughter Elementary, the science pass rate was an unusually high 95%.

To Dr. Daisy F. Slan, Superintendent of East Feliciana Schools, such startling results indicate positive changes in the way science is now being taught in the elementary and middle schools. Buoyed by this objective indication that her students can be motivated to master rigorous subject matter, she is planning systemic reforms throughout the curriculum. She credits much of the success in science to Knight Roddy, the facilitator of Project Connect, a hands-on math and science program evolving from the Delta Rural Systemic Initiative (RSI) of the National Science Foundation. Since 1999, Project Connect has been expanding into a comprehensive, place-based learning effort through

4th graders from Jackson Elementary School conduct water quality tests at McKowen Creek.

the additional guidance and support of the Rural School and Community Trust (Rural Trust).

Roddy, a veteran science teacher and doctoral student in science education, has always championed hands-on education. Now, he urges teachers and students to move beyond pre-packaged teaching units and study their outdoor communities with the empirical, interdisciplinary techniques of natural science. He also taps local wisdom by inviting such experts as the area's wastewater treatment manager, a local geologist, a forester, and even Clinton's mayor to participate in student learning activities. Cooperative Extension Agent Beverly Bailey has been visiting 4th grade classes once a month to conduct 4-H-related activities. Such expertise has been welcomed by teachers, almost half of whom are uncertified and often lacking in college-level scientific training.

Before Project Connect, science at the elementary level was taught on a very limited basis. Teachers worked in self-contained classrooms and had little direct guidance in how to impart scientific concepts or topics. When the state imposed its own subject standards on the local schools, many teachers realized that they did not fully comprehend the concepts they were mandated to teach.

Because of this, Knight Roddy and Dr. Slan encouraged professional development, sending teams to visit Rural Trust-affiliated place-based education programs elsewhere in the country. They sought advice and ideas from rural educators coping with comparable challenges: low-income populations with a limited tax-base; struggling resource-based economies; a shortage of certified teachers; a large proportion of students considered "at risk"; and few career opportunities for high school graduates hoping to work in their local areas. Although 80% of East Feliciana's students are African Americans, district teachers found much to share with teachers working with predominantly white, northern, rural schools. Both groups recognize that they have much in common, and the East Feliciana educators have adapted successful models for improving academically while strengthening the link between school and community.

At a marine conference in Lubec Maine, participants from East Feliciana were inspired by student-designed and executed aquaculture projects with potential to revitalize the local economy. At a "Teaming With Nature" (formerly the "Selborne Project"), summer education workshop at the Roger Tory Peterson Institute in Jamestown, New York, the Louisiana teachers learned how to enter descriptive observations and nature drawings in individual nature journals. They taught themselves to identify fauna and flora with field guides. They discovered that utilizing the local community as a laboratory for study and reflection lies within the capacity of any rural school.

Top: Clinton Mayor Toler Hatcher explains to Clinton Middle School students how the Town of Clinton wastewater treatment facility works. It discharges treated water into Petty Creek, downstream from their school site. Bottom: Clinton maintenance supervisor Lloyd LeBlanc shows the students how water is treated in oxidation ponds using duckweed. Students are able to gauge Petty Creek's water at various testing stations along its length and monitor levels of water pollution.

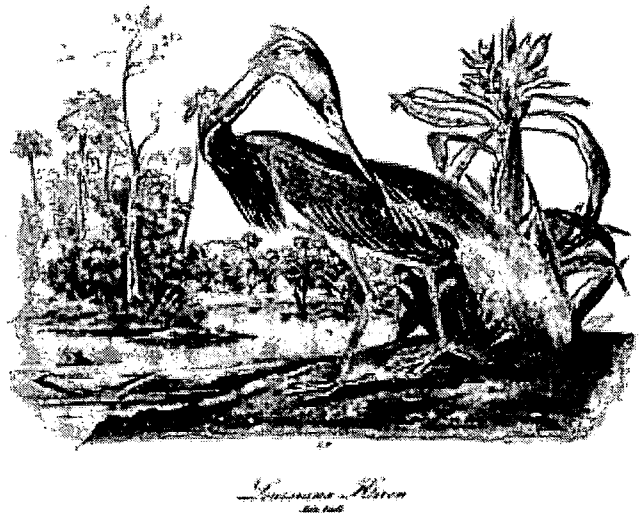
East Feliciana educators now brainstorm about all the things they would like to teach while developing each student's informed sense of place. Sharon R. Jones, vice-principal of Jackson Middle School says she returned from a Rural Trust conference "believing more than ever that knowledge of one's community creates a love and appreciation of its future." For her, place-based learning "extends the learning process beyond the traditional four walls of the classroom and into the community" by building on its assets. (*Perspectives, Minnesota Planning*: August 2001).

Although most East Feliciana Parish children live in poverty (85% of its public school students qualify for free or reduced-price lunches), they are surrounded by a landscape with tall forests, streams and rivers, rolling hills, and diverse wildlife. Long ago, while visiting a local plantation, John James Audubon rhapsodized about the area as:

> a place where nature seems to have paused, as she passed over the earth, and opening her stores, to have strewed with unsparing hand, the diversified seeds from which have sprung all the beauty and splendid forms which I should in vain attempt to describe.

Even today, for teachers and pupils alike, there is much to marvel at just beyond the schoolhouse door.

For the last two summers, Knight Roddy has organized ten-day Project Connect training workshops for local educators, enlisting the help of teachers with developing scientific skills as well as community experts. East Feliciana's teachers, many of whom had never actively explored the outdoors, clamored to enroll—22 signed up for the first year and 25 for the second. Each morning, participants learned skills and concepts through outdoor fieldwork, much as their students would do during the following academic year. During the afternoons, the teachers devised place-based curricular projects incorporating what they themselves had just learned. Throughout



John James Audobon stayed at a nearby plantation during the 1820s and was entranced by the beauty and natural diversity of the Felicianas. Louisiana provided many species for his *Birds of America*, including this print of a Louisiana Heron.

the academic year, Roddy and his Americorps assistant, Dawn Bond, advise and consult with the teachers on a regular basis.

Superintendent Slan is convinced science education is successful in the elementary and middle schools because, from the beginning, Knight Roddy has aligned all place-based activities to Louisiana's learning standards. Unlike some states, which emphasize the mastery of specific facts and content details, Louisiana asks its students to develop an understanding of important skills and concepts in every tested subject category. Once a teacher understands what those skills and concepts are, Slan and Roddy believe they can be taught in a variety of ways, responding to student enthusiasm and available opportunities. "Mr. Roddy took each standard required of the students and tailored it to the resources of the community," Dr. Slan said in an interview for the Rural Trust newsletter, *Rural Roots* (December, 2001).

Although state standards sometimes seem daunting, Dr. Slan believes they also offer a chance for teachers, previously isolated in their classrooms, to

Science facilitator Knight Roddy guides Clinton Elementary students on their school nature trail and leads them in a discussion of the living and non-living components of the pine forest ecosystem.

work together to achieve defined objectives. The school district makes use of a process called "curriculum mapping," in which each teacher reflects on what he or she actually taught during different months of the academic year and how that material was assessed. Teachers then share this information with other teachers—across grade levels in the elementary grades and also across subject areas at the middle school level.

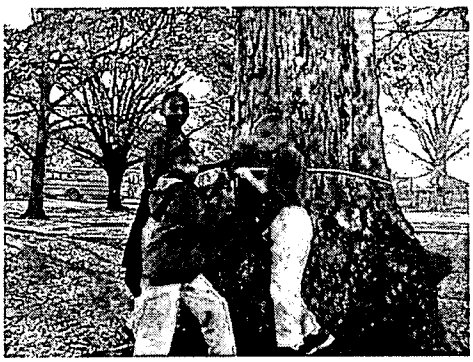
In February 2002, a teachers' committee reported its findings to the principals, pinpointing areas of redundancy, neglect, and irrelevance. The next step will be for teachers and administrators, using the state guidelines, to develop a coordinated approach to deciding what concepts and skills should be taught by whom and at what level. "Our objective," said Dr. Slan, "is to have the whole district teach skills aligned to state standards of learning and consistent across the district while each school and teacher maintains flexibility in imparting those skills." Such a mixture of uniformity and flexibility, Dr. Slan points out, is necessary for a school system where teacher turnover has been as high as 70% during recent years. Schools need to build on what each teacher can do best while ensuring that critical standards are being addressed.

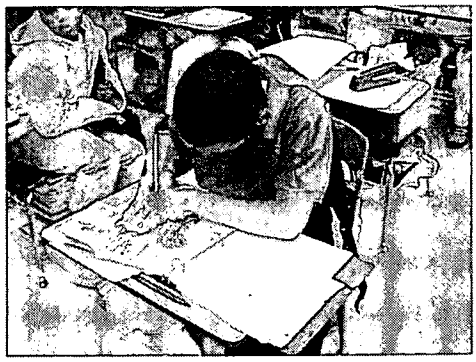
Gaining the support of district teachers during this period of systemic reform requires considerable diplomacy. Rather than imposing reforms from above, Dr. Slan says, "we need to have the teachers sit down and think for us—we let teachers tell us what they are teaching, and we've devised a format." Passionate as she is about curricular reform and place-based education, she is even more committed to raising district staff salaries to a level commensurate with those of nearby West Feliciana Parish (wealthy because of revenues from a nuclear power plant) and East Baton Rouge. "The district needs money to boost teacher pay," Dr. Slan recently told a state panel, pointing out that district teachers who win certification soon leave to take jobs in neighboring communities.

A tax election is tentatively scheduled for May 4, 2002, which could bring salary increases of up to 13%, by rededicating property taxes for that purpose. Passage could be difficult as a relatively small number of local residents actually pay property taxes, and many of these taxpayers send their children to private schools.

Dr. Slan tries to convince all sectors of the community that improved education for all is essential to the area's well-being. She works hard to generate support for her reforms and is particularly grateful to her school board. "They want good schools and allow me to try," she says appreciatively.

Delta Service Corps (Americorps) volunteers have been extremely helpful in building nature trails for East Feliciana schools. Here, they construct a nature trail at Clinton Elementary School.





From left to right: Slaughter Elementary students measure a tree as part of a plot study of the environs surrounding their school. This activity derives from a "Teaming with Nature" summer training workshop several teachers attended at the Roger Tory Peterson Institute; A 4th grade Slaughter Elementary student learns how to sketch plant life accurately in his nature journal; and One student at Slaughter Elementary has brought a flower back to his classroom to identify with a field guide and to describe, sketch and analyze. Observation, attention to details and careful recording of data are emphasized by the Roger Tory Peterson Institute's summer workshops.

> We try to inform parents and keep school board members well-trained to explain to parents what is going on. When the parents don't understand, they ask, 'why aren't they studying reading and math instead of just playing around?' The school board members can explain what we are doing. Parents who come to science nights or language arts nights also understand what we are doing, but not enough come.

Parent participation, however, is on the upswing, as is more widespread community involvement. On Martin Luther King Day in 1999, 60 volunteers—including parents, teachers, central office personnel, Delta Service Corps (Americorps) workers, a custodian, a member of the school board, and Dr. Slan herself—constructed nature trails at three school sites: Clinton Elementary, Clinton Middle, and the Jackson school complex. Science classes at Clinton Middle School can now walk from their building to nearby Pretty Creek, part of a regional watershed that eventually flows into Lake Ponchartrain.

During the last two years, supplementary trails have been built for Clinton students to study the creek from at least three access points. They measure and analyze water samples, net insects, larvae, and minnows, and assess the impact of seasonal and environmental changes on the stream and its surroundings. At Clinton Elementary, local volunteers cleared a long path through bottomland hardwood forest and created a reading space for language arts. Rural Trust steward Julie Bartsch described the nature trails during a recent visit:

> As we hiked through this lovely area I could hear the voices and see the tennis courts of the private academy nearby. They may have many amenities that the Clinton schools don't have, but they don't have a 500-acre outdoor learning laboratory!

Students attending the complex of schools at Jackson use a wooded trail on their campus while conducting water studies at nearby McKowen Creek. The children at Slaughter Elementary not only have a nature trail, but also maintain their own butterfly garden, which they helped to design and build. Most of the nature trail construction was planned with the advice of local foresters Mike Thomas and Jimmy Culpepper.

Much goes on in the school district's outdoor learning laboratories that could never be evaluated by a standardized assessment test. Even for the youngest children, there are lessons in courage

Bobby Taylor, a local parent and employee of the US Geological Survey helps Clinton 3rd graders identify the aquatic organism they found on a trip to the wetland areas of Clinton Middle School.

and teamwork such as stepping into a muddy creek filled with mysterious organisms or keeping up with the group. There are lessons in responsibility: caring for equipment and being sure to register data accurately even when it refuses to confirm hoped-for results. In their butterfly garden and or with an indoor aquarium filled with creatures captured from the world outside, youngsters learn patience and the disciplined routines of caring for other living things.

Some of the 8th graders, presenting their water-related research at the Lake Ponchartrain "Water Watch" Symposium, have discovered what it takes to convince others that their findings are meaningful and valid. Nan Goodreau, who has taught math in the East Feliciana schools for 21 years, welcomes the move to more hands-on, outdoor learning. She says it motivates some of the lowest scoring students and shows them how to learn with all their senses. "They use a lot of math skills in their projects too," she adds, "...measuring, making plots, and mapping." Knight Roddy agrees that students who have a hard time focusing in school often show energy, leadership, and increased interest when working outdoors. Mr. Hunter, a 7th grade science teacher at Jackson Middle School, made the following comments to Rural Trust steward Julie Bartsch during one of her site visits:

> Kids are remembering facts from last year about the critters they netted. When other students and adults come to my class, my students can talk articulately about what they are doing...they remember what they touch!

With the help of the Lake Ponchartrain Basin Foundation (a regional watershed alliance), a team of Clinton Middle School students, guided by 8th grade science teacher Eva Davis, conducted monthly tests on Pretty Creek's water, studied its ecosystem, learned to read topographical maps, and identified human and natural factors affecting water quality of both the creek and the larger Lake Ponchartrain Basin watershed. An administrative staff created an assessment portfolio which analyzed "before and after" student essays and the conceptual maps they created of the hierarchical relationships between data, major themes, and subordinate topics. The students improved significantly over time in their ability to remember details, to classify information, and to link facts to

3rd grade students set out to map the town of Slaughter where their elementary school is located.

larger themes. The portfolio was presented at a "portfolio design team meeting" of the Rural Trust, which is working with the Educational Testing Service on developing new ways to assess the breadth and depth of what students learn in place-based education.

As Project Connect's reforms are integrated with subjects throughout the school curricula, a consensus seems to be emerging among teachers, administrators, students, and community partners that strengthening the link between learning and place is an idea whose time has arrived.

Two children from Slaughter Elementary progress from mere water play to learning the basics of methodical scientific inquiry.

THE RURAL SCHOOL AND COMMUNITY TRUST

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Students from Clinton Elementary record the living and nonliving factors in the oak grove area of their school campus

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