

Louisiana Chemistry Students Use InspireData™ to Measure Humidity in Century-Old High School

The last couple of years have been a time of upheaval for students and faculty at Slidell High School, located in the New Orleans suburb of St. Tammany Parish. When Hurricane Katrina ripped through the region, many who had lost their homes left the area, and students from the other side of Lake Pontchartrain, whose schools had been destroyed, joined Slidell.

The school's enrollment, now at 1,700, is slightly lower than it was pre-Katrina, in this district of 35,000 students and 52 schools—many still reeling from the damage. Slidell High School, a historic institution erected in 1908, was largely spared by Katrina, and with the work of teachers such as Glenda Schmidt, innovation in teaching continues.

Last fall, Schmidt, a science teacher, was tasked with adding earth sciences to the curriculum to meet district exit exam criteria. After reading on a science Web site about a project called "Mapping the Air in Your School," she decided to put it to the test with all of her Chemistry I Honors classes.

This project fit well with her curriculum, as she was about to launch a unit on gases. She had recently learned about InspireData™, the visual way to explore and understand data, and thought it might just be what she needed to bring the project to life. InspireData builds critical data literacy skills and engages students. Students actively explore and analyze data using dynamic Venn diagrams and bar, stack, pie and axis plots to interpret information and draw conclusions. Already a fan of Inspiration® visual learning software, she said she "knew InspireData would be good."



Collaborating to Collect Data

"My students were very excited and curious, and they really latched on to InspireData," said Schmidt. "I didn't have to instruct them on it all; the only thing I had to explain was lab techniques." Her second-period class filmed the project. "I like new projects, and this one really grew," she said.

Relative humidity was interesting to measure and discuss "because it's kind of a nebulous thing about feeling comfortable," said Schmidt. She divided her students into groups: One group read background information she had collected, one formed questions to create a survey, another input data into InspireData, and yet another learned how to use the lab materials: a data-collection device, digital temperature probes and graphing calculators.

On a cold day in December, her students took measurements in various rooms around the school. "A number of teachers asked to have their room temperatures measured, but we couldn't do them all," she said. Students used two digital temperature probes: one wet, with the end covered with a shoelace and dipped in water before each reading, and one dry. Students connected both to the data-collection device and the graphing calculator, which recorded the temperatures to determine relative humidity. Next, using InspireData, they analyzed the data.

During her second-period class alone, students collected data filling a table 35 columns wide and 136 rows long. "The students were extremely involved in the collection and interpretation, even volunteering extra time outside of class to enter the data into InspireData," she said.

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"We expected the older rooms in the first wing, with window heating units, to be draftier and colder, but these rooms turned out to be the hottest rooms in the school," said Schmidt. Another prediction was that if the temperature increases, so does the relative humidity. However, the hottest rooms in the first wing also had the lowest relative humidity. "Everyone had ideas about humidity, and their attempts to explain the results interested me the most," she said.

"Mapping the Air" With InspireData

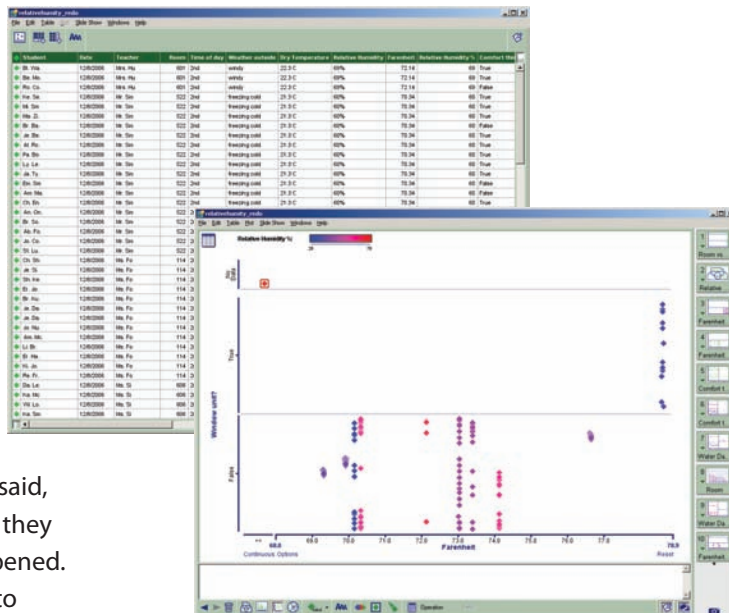
InspireData has many valuable capabilities, she said, noting that it separates the data for students so they can clearly visualize the data and see what happened. Perhaps Schmidt's favorite feature is the ability to make slides with live data, she said. "You can click on any axis and change any variable, and it's still live. The little icons, representing each data point, move across the screen to their new spot, which everyone finds interesting and amusing."

The speed is another bonus, as data plots are instantaneous. "It is fascinating to watch. It keeps up with how students think," she said. "In today's world, with all the electronics kids use every day, you have to have something that moves fast, and this is it. You don't have to be bogged down to plot something and see a relationship. For them to see and watch the graph form before their eyes is extremely powerful."

Schmidt also appreciates the color coding, which she said makes the data very easy to see. In the project, students saw the lowest relative humidity in blue. "The results were not what we expected, and by putting the color coding on it, it really blew their minds."

Being able to plot text was a plus, too, she said. "InspireData gave us the ability to ask questions and answers, so we were not limited to numbers."

InspireData also allows students to predict the outcome of their project, something Schmidt sees as a powerful teaching tool. "When we were making predictions, it really struck me that this can do for graphical analysis what word processing lets you do with words. You can rearrange and clarify."



Students collected data in InspireData's Table View and then chose an axis plot to show the correlation between a room's temperature, relative humidity, and whether or not it had a window heating unit.

Interacting With the Data Using InspireData

Schmidt said as she has used InspireData, she has become more aware of "how flexible, powerful and interactive this program actually is. Because it yields changes in visible results so quickly, it facilitates more questions and much more critical thinking." Another teacher at Slidell had planned to use a spreadsheet program to do his scientific analysis until Schmidt showed him what InspireData could do, she said, and then he added it to his project as well.

Thinking ahead for next school year, Schmidt is planning more innovative science projects using InspireData, including repeating the relative humidity project. She is looking forward to teaching Slidell's 100th class and believes the centennial festivities will bring the school a much-needed lift.

As she and the community around her make strides in recovering from the devastation of Katrina, Schmidt finds joy in following her passion: teaching kids about the science behind the world that surrounds them. "It's exciting to see my students on the edge of their seats, wanting to know about science," she said. "They're working together, asking great questions and really learning. They are amazing."



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