Sedgwick second graders study computer programming

By MICHAEL COLBERT

SEDGwick—Since the beginning of the school year, students in Caroline Werth’s second grade class at Sedgwick Elementary School have been studying computer programming.

Twice a week, students in Werth’s class have been working to understand the connection between the lap top and the robotically controlled cars they have designed and built with their own hands. The cars, roughly the size of a shoe box, are assembled from gears, cams, bushings, axles, wires, engines and other parts found in Lego Mindstorm kits. In addition, the students constructed their cars with something called the “yellow brick,” developed at Massachusetts Institute of Technology. This is the essential component that enables the computer to “talk” to the cars.

The robotically controlled cars utilize light and touch sensors to help them navigate the classroom floor in connection with the travel pattern the students have programmed for the cars. When a car hits a wall, a chair leg or a foot, a sensor might tell it to back up and start again, depending on what the student has programmed. When asked what she thought of the whole process, second grader Rachel White said, “Awesome! You get to make the car go.”

Assisting them is Robin Jettinghoff, who designed several computer interfaces to help youngsters interact with the computer. Jettinghoff works at the Learning Barn in Blue Hill, which is run by Seymour Papert. While at MIT, Papert, a pioneer in artificial intelligence, developed Microworlds software to help kids learn how to program with physically engaging projects that are learner centered.

Within the context of Microworlds, Jettinghoff said she was “working on ways for kids to program who haven’t learned to read yet.” Since children have a mix of intelligences, those who might get bogged down in learning to read may find a way to be successful in school if they have spatial intelligence or hands-on abilities.

Werth indicated that the robotics work also contained an important social component.

“When we started, kids didn’t want to share,” she said, “but they wanted to give up.” Werth said they realized that it’s only a take if they don’t learn from it. Werth pointed to trays containing many sizes of wheels and said that her students had learned the hard way that if the front wheel of the car was too small, the force would be directed into the ground instead of propelling the car forward.

Students keep journals of their discoveries. Jordan Adams, for instance, wrote his first entry, on September 22, that his almost broke down. Two months later, however, the entry recorded a numerical object to turn in a circle.

“In 20 years everybody will need to know something about how a computer program is set up, how a program works, just everyone needs to know something about how a car works,” said Jettinghoff.

—Rachel White

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