

Teacher shows science not just for the boys

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Ann Butcher doesn't let the girls get away with squealing over disgusting things like worms in her science classroom.

Instead, she goes over, picks up the worm and talks about the beauty of the creature, the wonderful texture of its skin.

While some are bound to be grossed out, Butcher hopes a few might change their perspective and have a little more appreciation for their science experiment.

In a nation where less than one-third of all graduates in science and math are women, Butcher says it's important to help students any way she can.

"Hopefully, as a fifth-grade teacher, I am providing a role model to the females and males that being a female in science is acceptable," she said. "It is not a gender-related subject."

In addition to teaching at Fearn Elementary School in North Aurora, Butcher recently completed her doctoral research, focusing on the influences and characteristics that lead gifted girls to become successful students in science and math.

For her research, Butcher interviewed seniors at the Illinois Mathematics and Science Academy.

She said she chose gifted students because "this group was under-served and their voices needed to be heard and recognized nationally that females are underrepresented in the field of math and science occupations."

Her goal was not only to learn what helped teens achieve, but to learn how she could help her own students at Fearn. So, she asked her subjects to reflect on



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Fearn Elementary School science teacher Ann Butcher recently finished her doctoral work on why there aren't more girls active in science and math. The X-rays on the windows in her classroom are part of her current curriculum on nutrition and the body.

their elementary school years and what helped lead them on the road to success. Among her findings are that teachers are key to helping the gifted students reach their potential.

"A really fun teacher can make a boring class fun, and a bad teacher can make a fun subject uninteresting," was how one student put it.

She also found teachers, especially women, who demonstrated confidence in teaching science and math were good models. Parents also played an important role.

All the students interviewed mentioned positive parental influence, such as open communication and common interests.

"Understanding, positive modeling, respect, joy and love were all words they used," Butcher said.

"Parent expectations were to 'Do your best,' and that empowered the young ladies," she said. "The father seemed to be a recurring role. They all mentioned positive father acceptance."

Another key finding was that the students, who were all identified as gifted in primary grades, were pulled out of some regular classes and placed in higher level classes where they excelled.

In the classroom, they valued hands-on instruction, she said.

While they excelled at school, all the students had active lives outside of school, she said.

As might be expected, many of the students were labeled geeks or nerds. There was a social stigma, Butcher said, but the students said the labels did not hurt their self-esteem.

Still, when the students were with others of their same academic level, she said, it was a better environment.

"When they were grouped with their academic peers at the academic academy they were all nerds and it was the stimulating environment that they quested for," she said.

Sandra Prolman, an assistant professor at Aurora University, where Butcher completed her doctorate, said as an educator and a parent of a gifted 19-year-

old, she agrees with Butcher's findings.

It's especially important to place gifted students with others of their same ability, she said.

When Prolman's daughter was in sixth grade, Prolman told her about a high school that focused primarily on math and science. At that moment, she said, her daughter decided she had to attend.

Students at the Illinois Math and Science Academy spend ninth grade at a typical high school and then begin at the math and science school in 10th grade. Prolman's daughter said ninth grade was fine, but being at a school for gifted students helped her excel even more.

Prolman said she hopes educators will take that to heart when looking at Butcher's research.

"They need to know that kids who are truly over the edge in ability need more than they can

get in a regular classroom," she said. "We need to get them together."

Butcher agreed, which is why she strives to bring gifted students together in another of her roles — as director of the Packer Foundation's Young Scholars Program.

The Aurora University program, funded by Packer Engineering in Naperville, focuses on hands-on math and science instruction for students ages pre-kindergarten through high school. It offers everything from preschool classes for gifted children to parent forums where parents talk about the needs for their gifted children.

"I do think that what I hope to be leading at the Packer Foundation Scholars Program is an enrichment program that offers the time for gifted and talented students to learn together with the academic peers," Butcher said.