Taking the Icks and the Yuks Out of Science

Mildred Ballou

Several summers ago, two girls, Cathy from Chicago and Karla from Kokomo, tapped on the door of our lakeside condominium. I prize visits from condo children for many reasons, not the least of which is the splendid opportunity to catch a “teachable moment” as they present the treasures they’ve collected from the lake and the surrounding countryside. They often share their perceptions of the world and demonstrate a pleasantly mellow approach to the complexities of nature.

I opened the door, and they quickly knelt on the carpet in front of the hinged door again, with their muddy gift from the lake firmly in hand. They looked on excitedly as I scrubbed the exterior and popped the mussel into a pan of boiling water. “Now watch,” I said. “The shell is opening.”

“Ooooh Yuk!” cried Cathy as the gray flesh of the animal appeared, followed by a Sara Bernhardt “Ick!” from Karla. The moans and icks and yucks continued until I whisked the pan off the stove and into the cold oven, announcing, “I don’t work with Ick people.”

By this time, my husband, the professor; my nephew, the architect; his wife, the secretary; my brother-in-law, the engineer; and my sister, the housewife, had joined the observation gallery. They and the children listened in stunned silence as I continued, my eyes squarely on the girls.

“Want to know why? Yuk people and Ick people miss out on half the fun of this world. If you keep on, you might grow up to be Icks, and there are lots of things they are absolutely no good at. Icks aren’t good mothers,” I charged recklessly, “because when their kids throw up and make messes in their pants and see their mothers making gruesome faces and being first class Icks, the kids might not feel loved. And Ick people have an awful time in biology classes because they won’t look at a dissected frog’s beating heart. And they can’t be nurses or doctors or vets. And they can’t put worms on hooks and take fish off and clean them. And that’s just for starters.”

I’ve seen less serious faces at a wake. “I work with Ah people,” I continued, with what I hoped was a warm smile. “Ah people and Oh people and Wow people.”

“I’m feeling more like an Oh person,” ventured Cathy. “Me, too,” echoed Karla.

“Super,” I responded, removing the banished pan from the oven. “I’m glad because I’m dying to see this thing.”

In a few minutes the shell was open and the mussel in full view. Both girls felt it, albeit cautiously, and oohed and aahed in a manner calculated to please their hostess.

Then, with a sense of drama befitting the importance of the occasion, I invited each girl to peek inside the hinged shell to “see this thing that no human eyes have seen before.”

A careful cut of the hinge and the opalescent shell was revealed, collecting its first sunshine and displaying its colors for the first time to the world. It was at that moment that I began putting together—and reacting to at an emotional level—some things I had known and dealt with as separate bits of information for some time:

• Young children of both genders exhibit considerably more interest in science than the vast majority of their teachers.
• Socialization of girls and boys differs

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Do you have any more?"

Then

"Will you get one for us?"

Delighted with this enthusiasm for nature, I replied, "No, but I'll do something better. I'll show you the kinds of places to look. When you find one, III show you what to do next. Then, anywhere..."

Several weeks later, they were at the door again, with their muddy gift from the lake firmly in hand. They looked on excitedly as I scrubbed the exterior and popped the mussel into a pan of boiling water. "Now watch," I said. "The shell is opening."  

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• Young children of both genders exhibit considerably more interest in science than the vast majority of their teachers.
• Socialization of girls and boys differs
enormously in our society.
• Eighty-five percent of elementary teachers are women. They are licensed to (but not always expected to) teach elementary science.
• Science is disappearing from the elementary curriculum at such an alarming rate that some states, such as Indiana, have recently mandated that science be taught a minimum of 30 minutes per day.
• Expectations for achievement in math and science, at all levels, are lower for female than for male students.
• Few female students enroll in high school chemistry and physics classes.
• Only about six percent of the women scientists in the world come from the U.S.

At the same time
• Women have at least half the brain power in the world.
• Cultural roles for both men and women have changed phenomenally in the last several decades.
• We have moved from a menial to a mental society.
• Scientific solutions to many problems, including disease, hunger, and the depletion of our sources of energy continue to elude us.

That moment at the lake led me to view these apparently disparate facts as pieces of the same mosaic. The Karla-Cathy Experience also led me to suspect that Icks and Yuks and a preoccupation with sweet smells and squeaky cleanliness, along with other socially sanctioned—if not socially demanded—"feminine" traits, may program a girl's attitudes and behavior in a manner detrimental to the development of a woman's whole self. And detrimental to society at large.

My need to test this hypothesis led to the development of a research study now in progress that will help women in elementary school science to identify and understand their Icks and Yuks and then learn how to turn them into Oohs and Ahs, for their male and female students alike.

Being a science teacher, like being a scientist, demands the freedom to ask unconventional questions and adopt no-holds-barred approach to finding answers. And neither can afford to be afraid of things with squishy edges, whether they're mussels or hypotheses.

Oh, yes! I nearly forgot. I am encouraged by an N of one. A little later that day at the lake, Cathy's mother stopped by to see me, eyes twinkling.

"What did you say to Cathy this morning? At lunch she announced, 'I'm not going to be an Ick person anymore. Know why? Because Icks aren't good mothers and they faint at the sight of blood and there's a whole bunch of stuff they can't be. But Oh people can be just about anything.'"

If 15 minutes with a mussel can do all that, who knows?