

# Students Are a Lot Like... Tomatoes



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I enjoy raising heirloom tomatoes each year. There are many different varieties, and each is unique: some are sweet, some have a snappy acidity, and others play well with vegetables in a salad. I start my tomatoes from seed in little peat cups on the windowsill. Over years of reading and discussion with folks who have greener thumbs than me, I've learned that using the right growing mix and being careful not to over- or under-water my young sprouts are among the keys to them becoming productive mature plants.

Often the sprouts that were fast-growing stars on the windowsill become blue ribbon winners in the tomato patch as well, producing delicious treats for the summer dinner table. As much as I want to pat myself on the back for my well-informed and careful attention to these plants, I have to soberly remember that these star pupils probably would have thrived regardless of my loving care, or perhaps even in spite of a lack of care if I didn't know what I was doing—there was probably not much need for me to have ever worried about them.

There are shorter sprouts, though, that toil in the shadows of the stars. Sometimes they sprout late, well after their fast-growing colleagues, and it takes them a little longer to grow tall and strong. It is wonderful to see them prosper alongside (or even above) the quick starters, and I like to think that all of my effort researching the best growing methods and applying lessons I've learned from experts are the things that gave these shorter sprouts what they needed to become successful. These late bloomers have charm to me in a way that my blue ribbons don't.

One year I let my tomato sprouts grow on the windowsill for longer than usual, waiting for a few true leaves to appear before setting them on the porch to soak up the

spring sun. Within a few days I was upset to see that my plants weren't looking great—many had fallen flat, their young stems crinkled. I shared this experience with my green-thumb father and he said, "Hmm... you probably kept the plants sheltered too long. If you don't expose them to the breeze when they're young, they won't be able to deal with it later when the wind picks up." My father smiled warmly: "I guess tomatoes are a lot like people." Or maybe, like students.

Through participation in ASEE and AIChE it's clear to me how important it is for us as educators to use the most effective teaching practices for our students—active learning, project-based instruction, the works. Sometimes instructors who don't use these effective techniques point to the successes of their former students who went on to complete graduate degrees at respected institutions or became entrepreneurs of exciting companies. They argue these students didn't need any new-fangled "effective" teaching practices to succeed.

I have neighbors who see me dote over my tomatoes and say, "I can't believe an engineering professor at NC State spends his free time researching the best ways to grow tomatoes—you put way too much effort into them! Just throw those tomato seeds in the patch and see what you get—some will surely make it, and it'll be so much easier."

They have a point, but I don't agree. I think it's important to do my best to cultivate every tomato in the patch—and every student in the classroom. Taking time and care to research and utilize best teaching practices helps ensure success for all my sprouts—not just the blue ribbons. □