Building a Science Classroom Community

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When we think of ecology, we consider communities in nature—ecosystems, habitats, niches, food webs, and symbiosis. Ecological communities are places where flora and fauna thrive, take risks, reach potentialities, and fulfill their mission during their life cycle. They can be truly beautiful and magnificent places.

Can we use ecology as a metaphor for the science classroom? Is there a way for students, teachers, curriculum, and learning experiences to thrive and be a community? Most definitely. Building the community begins before the first day of the school year when we, as science teachers, set up our room and lab space, create innovative lesson plans and units, and determine what we want our students to know and be able to do by the end of the school year. When students arrive on the first day, community building transitions into focusing on them. Who are they as individuals? What are their interests? What challenges are they facing? In what ways can their intrinsic motivation be increased in our science classrooms?

We often begin with team building activities to help the students get to know their classmates or to become reacquainted after a summer apart. Activities such as an autograph scavenger hunt with statements like, “I slept under the stars during the summer,” “I met a famous person,” “I attended three concerts this summer,” “I consider myself creative,” or “I prefer cats to dogs,” help spark conversations between the students as they walk around the room and gather one autograph per student. The conversations are rich with wonder, excitement, and enthusiasm. As a result, the community begins to take shape. For quiet students, this autograph activity is less threatening than one during which they are to speak to the entire class. Other more extroverted students get into lively back and forth conversations as they gather the autographs. Just like nature, symbiotic relationships begin to surface where mutualism is prevalent.

In nature, we find areas that are considered margins between fields of crops, or the areas by train tracks, fencerows, or the ocean tide pools. These are places that appear messy and inconsequential, yet are filled with possibilities for species living there. Can margins be found in the science classroom? Certainly. When a student asks a question such as “If the sun were to supernova, would the earth explode immediately? Would it take a few minutes?” “What would happen?” it pushes the class to the margins because students can consider all sorts of options depending on their background knowledge. As science teachers, we must embrace these moments, as students come together to try and figure out the answer. Much like phenomenon-based teaching, a situation is provided that students must make sense of during ensuing investigations. Students take risks with their responses and thoughts assuming the phenomena-based situation does not lead the students to one right answer. Going to the margins isn’t about seeking the “right answer,” nor should the science classroom community be either.
sense of wonder, curiosity, and possibilities must be the bedrock of the conversations occurring during class, which in turn build community between the students, teacher, and curriculum.

If animals are part of the classroom (following all the appropriate ethical, animal care guidelines), they too can help build a sense of community. Watching students connect with creatures they are not familiar with is spellbinding. For students who have never had an animal in their home, the benefits exceed all expectations. Seeing a student holding a Madagascar beetle (hissing cockroach) can be magical as the student carefully observes and watches it crawl up their arm. Holding the students responsible for the appropriate care and feeding of the classroom critters also builds a sense of community if the students have truly bonded with them.

Having a sense of community in our classrooms necessitates the need to act as a single unit, not teachers versus students. Not students versus the students. Instead, we seek a cohesive group exploring the wonders of science together in a meaningful, memorable manner.

Letting students have a voice is a great way to build community. Do they wonder about phenomena in the discipline of science you teach? Do they have questions about why the district does not have a robust recycling program? Do they want to use the school’s courtyard for a garden or a quiet, mindful place for students to have available during lunch or other supervised times? Provide a system for students to voice their needs, wonderings, and questions by setting up a box where they can insert a “ticket of wonder.” Or do so electronically with Google forms or other methods you use with your learning management system.

Another idea is concluding class with students sharing a “lightbulb” moment about whatever was done in science class that day. What happened during class that was an “Aha!” moment for them? Trust me, these moments will take time to surface. Modeling these moments goes a long way toward fostering students’ desire to voice their special moments that occurred during class. At the beginning of the school year, students may be reluctant to share. With encouragement and making “lightbulb” moments a regular part of the daily routine, the students will become more likely to share if the class is built around curiosity and wonder.

Consider having students write a science autobiography or create a digital story early in the year. What was their earliest memory of asking a scientific question? How did they explore science and nature when they were younger? How much time did they spend in nature? Were they fortunate enough to explore national parks with their family? What teacher in elementary school or middle school provided memorable science experiences, such as transforming the classroom into a rainforest where each student became an expert on some facet of this diverse biome? If writing an autobiography is not a good option, have students share their experiences with each other in teams and then share with the entire class. As a science teacher, these student memories provide you with a plethora of information as to where your students are with their science background and how you can infuse those memories into future lessons.

It is critical for every member of the science classroom to be an integral part of the exploratory nature of the class. Time spent building the community pays off in innumerable ways as you investigate the natural world throughout the school year.

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