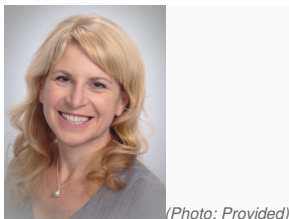# Why teachers embrace Kentucky science standards

Tricia Shelton *5:39 p.m. EST November 18, 2015*

(Photo: Provided)

As a science educator for more than 20 years, I have seen countless new initiatives come and go. Some of these efforts, while well-intentioned, weren't very effective in supporting student learning and igniting students' innate curiosity. But the Kentucky Academic Standards for Science (Science KAS) – which are based on the Next Generation Science Standards (NGSS) – have the potential to do both, and science teachers across our state have embraced them.

Kentucky and 25 other states were actively involved in developing the NGSS and Kentucky is now implementing the Science KAS statewide. But to successfully support students to achieve these standards, the way science is taught will have to change.

A classroom using Science KAS does not revolve around memorization of facts, worksheets, teacher lectures, and labs where everyone knows the expected, pre-planned outcome. Instead, students lead the way through investigations and figuring out answers to their own questions with teacher guidance, gaining a whole picture of learning that connects to their own lives instead of learning a series of disconnected facts. Students focus on using evidence and communicating explanations through multiple means including media, modeling, speaking and writing.

The Science KAS classroom is driven by students *figuring out* instead of just *knowing about* the world, and most importantly, these classrooms provide supports so all students can engage in the same science and engineering practices that scientists and engineers use every day. The result is engaged and empowered students that have a strong foundation for their next step, whether it be college or career.

But teachers can't do this alone. In order to successfully shift their instructional practice teachers need the support of their school's instructional leader – the principal. Principals are expected to lead change in our schools but are too often left out of the conversation and receive little professional development around exciting work that will support change.

Thanks to the forward thinking and leadership of Superintendent Brock Walter and the Boyd County District team, all of the principals in Boyd County Schools had the opportunity for a day-long deep dive into the Science KAS. Each principal also invited a teacher leader from their school.

By the end of the day, everyone gained a clearer understanding of what a Science KAS classroom should look like. Each participant had experienced professional development using the latest research, were provided with support and feedback to train their school staff, and developed both school and district-wide plans to lead and transform teaching and learning in Boyd County. By digging into the standards they experienced the kind of teaching and learning that is possible through implementation of the Science KAS.

This distributed leadership model serves to remind us of the power of working together for student achievement, combining the classroom expertise of a teacher with the skills and leadership of administrators. Together, the Boyd County group set out to rethink professional learning, curriculum, instruction, assessment, and communication with families and community stakeholders. Everyone who participated in the one-day workshop left with an understanding of what teaching and learning looks like in a Science KAS classroom, enabling him or her to provide support at multiple levels and lead a purposeful, coordinated implementation.

Boyd County serves as a model – and hopefully a catalyst – for other district and school leaders. Their work provides an excellent example of the positive impact on students when all of the educators who support student achievement work together.

Tricia Shelton, a science teacher and teacher leader with 20 years' experience, has a BS in biology and MA in teaching. She is a 2014 NSTA Distinguished Teaching Award winner for her contributions to and demonstrated excellence in science teaching.