

By Julie M. Fritsch

Justin Lamb has been teaching agriculture for 28 years. Like any teacher, he got in that groove by doing things the way that worked for him. However, his groove got shaken up a bit when his school went to a one-to-one technology program—a computer for every student. Lamb, who describes himself as technology cursed (a full notch below technology challenged), decided that he was going to tackle his school's new initiative by diving head-first into implementing the new tech in his classroom. He went to every professional development workshop he could, and he tried his best to implement the things he learned. This isn't a story about Lamb's professional development experiences in technology. We're taking a detour here—one that leads to self-discovery, a new outlook, and yes, professional development.

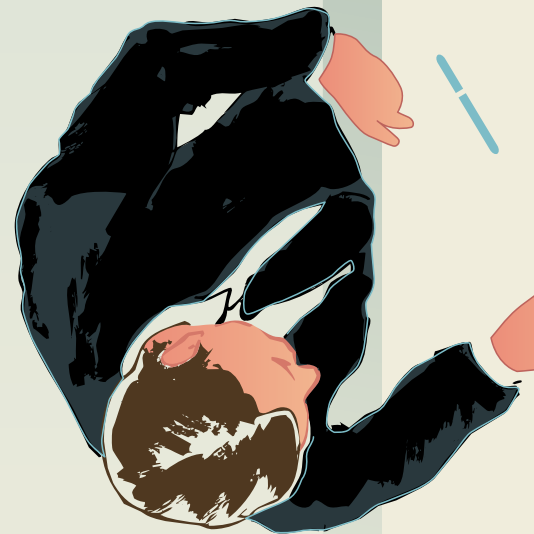
Lamb's enthusiasm about the technology program led him down an unexpected path. "As I'm diving into this technology thing, I'm kind of realizing that maybe I do need to update things in my program," he said. "From a personal standpoint,

Iowa had been number one in education for decades. It started slowly going down, and I realized that happened on my watch. So when the CASE opportunity came up, I looked at it a little bit and talked to some people."

The Curriculum for Agricultural Science Education, or CASE, started as an effort to create a sequence of agriculture courses that emphasize rigorous science, technology, engineering and math (STEM) principles. The curriculum consists of 10 courses arranged into pathways related to plant science, animal science, agricultural technology and natural resources. "The rigor is really what attracted me to it initially," said Lamb. What he didn't expect was how the training itself would affect him professionally.

CASE delivers its teacher training at intensive sessions called CASE Institutes. The only way for a teacher to have access to the curriculum for any of CASE's 10 courses is to attend a 70- to 80-hour CASE Institute for each course.

CASE Institutes are typically held on a university or high school campus over a



BEYOND THE



WORKSHOP

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nine-to-ten-day period in the summer. Attendees actually participate in every lesson included in the curriculum, as if they were the students. The Institutes are led by teacher peers who have already undergone the CASE Institute for that course, taught the lessons in their own classrooms and received additional training to become what CASE calls Lead Teachers.

Eighty Hours? Are You Kidding Me?

Despite many teachers’ initial reaction at learning they have to spend 70–80 hours of their summer as students, CASE’s growth attests to the strength of its professional development model. In 2009, CASE certified 35 teachers. In the four years since, CASE has awarded 921 more certifications to teach one of its courses. The demand continues to grow. This summer, CASE has planned 30 Institutes that could potentially train 600 teachers.

“When I went to my first Institute,” said Lamb, “I was swearing I would never do this again. On my way home, [I was] trying to figure out how to do it again next year.” And figure it out he did. Since that first Institute, Lamb has been certified in another CASE course and has undergone the training to become a Lead Teacher. He led his first Institute this past summer.

“You go to a professional development [event] at school and they’ll talk about modalities and spiraling, and you’ll go back to your classroom and say, ‘I want

to do that.’ But then you get busy, and it just doesn’t happen,” he said. “At a CASE Institute, you’ll be working through a lesson, and they’ll say, ‘Remember that lesson we did yesterday? Well, here’s an example of spiraling from that.’ Most of the activities I think I could have figured out on my own, but it wouldn’t have been as effective. You apply not just the activity, but [also] the strategies, and the whole pedagogy is explained and experienced.”

Lamb said each of his experiences with CASE (attending an Institute, teaching the curriculum, becoming a Lead Teacher) has affected him differently, but his favorite has been serving as a Lead Teacher. “I think everybody should have to do it,” he said. “It’s an unbelievable experience. Try and teach a year of curriculum to your peers in 10 days. It really makes you reflect on everything and be better at what you do.”

Not a Coincidence

What Lamb experienced through CASE did not happen by accident. CASE’s professional development model aligns closely with research published in 2001 in the study, “What Makes Professional Development Effective?”¹ Garet et al. identify three core features of professional development (content focus, active learning opportunities and coherence)² that produce significantly positive results, more so than traditional workshop-type professional development.

Focus on Content

According to the study, the central component of high-quality professional development is a focus on the content of the activities that will be taught. There is also evidence from other scholarly work³ cited in the study that indicates this focus, coupled with consideration of how the student will learn that content, makes for the best professional development.

By spending 70–80 hours working through the actual content of what the teacher will implement in his or her

classroom, a CASE Institute does provide some of the best professional development. According to Lamb, discussions about student learning styles and other pedagogical concerns evolve organically and by design as participants work through an Institute.

Opportunities for Active Learning

The Garet study cites “observing and being observed teaching; planning for classroom implementation; reviewing student work; and presenting, leading and writing”⁴ as indicators of active learning. Institute participants put themselves in the role of student and actually complete the labs, writing assignments and other pieces they will require of their pupils. This also helps them think about and discuss how it will work best in their own classroom. Having the Institutes led by teacher peers who have already undergone the CASE training, as well as implemented the curriculum, brings active learning full circle. And remember Lamb’s comment about lead teaching? It seems his learning continued, even when he became the instructor.

Coherence With Other Learning Activities

The third key to effective professional development addresses a commonly maligned, but often-used form of teacher professional development—the workshop. Teachers in the study reported that workshops they attend are useful, but often there is no connection between them, meaning there’s no clear path for them to develop as a professional.⁵

CASE participants have the opportunity to make these connections on several levels—by attending all the Institutes for a particular pathway of study; by asking other teachers in their schools, such as science and math teachers, to receive the same training so that classes can be aligned with one another; or on a personal professional level, by becoming a Lead and perhaps Master Teacher within the CASE program. (Becoming a CASE

Master Teacher requires several steps beyond the requirements of becoming a Lead Teacher.)

Another way the study identifies coherence is through alignment with assessments, as well as state and district standards. Since CASE is a national curriculum, it addresses national standards, aligning with the standards for agriculture, science, math and English language arts.

What Effective Professional Development Looks Like

The study also describes three structural features of professional development—form, duration and collective participation⁶—that have a positive impact on teacher outcome, which CASE also addresses. Our discussion will focus on the latter two.

The longer and more integrated the professional development experience, the better. The most positive results seem to come from an experience that is sustained over years, not just an hour, week or month. Although the CASE Institute only lasts nine or 10 days, CASE creates an online cohort area for each of its Institutes where teachers can continue to connect and share questions or challenges. Lead Teachers are also available for questions as teachers work through curriculum back in their own classrooms.

Another interesting feature of good professional development is collective participation. This means teachers who participate have a commonality—whether it's the same school, grade level or subject. Lamb also mentioned this as one of his favorite aspects of CASE; the fact that teachers in neighboring school districts who have also gone through the training are usually at about the same place in the curriculum during the school year as he is. "I can call them up and talk to them about what I'm doing. [For example], 'I really struggled with this activity. What did I do wrong?'" He's even been able to help teachers when they've run short on supplies for an upcoming activity. For

agriculture teachers, who are often the one and only in their schools, this new opportunity for connection is great.

Getting It Right, Right out of the Gate

Continuing to develop as a professional is important, but what about teachers who haven't yet entered the classroom? Other research cited in the study found that beginning teachers often have little understanding of how a student learns a particular piece of content.⁷ Most education courses necessarily speak to generalities, trying to prepare new teachers for whatever situation they find themselves in after being hired.

In the past year, CASE has started partnering with agriculture teacher-preparation programs to deliver an Institute to agricultural education majors. The focus is on upper-level students, usually ones who have just completed student teaching, and the idea is to give them a leg-up in being prepared for the next step—their own classroom.

Dan Doeing, who graduated in December with a degree in agricultural education from Iowa State University, participated in one of these trainings last May. "It was essentially like another methods course," he said. "Every time a lesson was presented, it was like we were the students, so we could see what they see and hear what they hear, and understand why we plan the way we do. After each lesson we were able to talk as a group about what concerns came up."

Doeing, who was hired to teach agriculture in January at Oelwein Community Schools in Oelwein, Iowa, said that being certified in CASE was definitely a positive in the job market. "Agricultural education is kind of a niche market, so it was nice to have this to talk about with administrators," he said.

A Sustainable Model

The CASE curriculum may not be right for every school, but its model of

professional development is something which is causing the education world to take notice. Iowa's STEM Scale-Up program, which is part of an effort to increase student interest and achievement in STEM, funds CASE training and implementation for teachers who apply for grants. In Omaha, Nebraska, a unique urban agriculture and natural resources public school program sends not only its agriculture teacher, but also its core subject teachers to CASE Institutes to create cohesion across the program.

When Juston Lamb decided he would tackle his technology curse, he never thought he would end up with an entirely new curriculum and serving as a leader and mentor to his peers, but that's how professional development works. Growth leads to growth, and CASE is helping teachers all over the United States grow in ways they never expected. **I**

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ENDNOTES

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