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No chalk in this algebra class, just digital ink

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For Sarah Weston, teaching high school algebra does not include a bell schedule.

She rarely works before 10 a.m. But she stays busy from then until about 2 p.m. Students often ask her for help during her 8 to 10 p.m. office hours. After that, her workday is far from over. She's up until 2 a.m. crafting the next day's lessons and assignments.

During the 2009-10 school year, Weston taught algebra to 125 ninth-graders across the state at Open High School of Utah, a year-old virtual charter school that has no physical campus. She recently was named "Educator of the Year" by the Utah Association of Public Charter Schools.

This year, an estimated 35,253 students attended Utah's 72 charter schools, which are state-funded.

"I'm very excited about the ways Sarah has found to use technology to enhance her [teaching]," said Lincoln Fillmore, a board member of the association. "For a long time, technology around the whole world has really served to enhance the effectiveness of people in their work. It's been slower to catch on in education."

After she was hired as Open High School's first math teacher, Weston spent a month finding and learning to use new technologies. She had taught math in brick-and-mortar classrooms at East High in Salt Lake City and Sunhawk Academy in St. George. She wondered how she could deliver the same educational experience via a computer screen.

"I had to wrap my mind around how I was going to turn that into a classroom," Weston said. "I didn't want to just give those kids information. I wanted to instruct and teach and be a teacher."

Unlike a college "distance education" class that outlines a plan for independent study, Weston wanted her class to be interactive — and go beyond multiple-choice questions.

She turned to a digital tablet and pen to create a virtual chalkboard on students' screens. Using a rainbow of colors, she can draw and calculate equations before students' eyes. She also can watch them draw their own computations. It's a process called "digital inking."



Sarah Weston (on 0630) Sarah Weston, the Utah Association of Public Charter Schools' "Educator of the Year," at her home workstation in Santa Clara. Mark Havnes/The Salt Lake Tribune

She also has set up a way for students to collaborate on group projects. She can hold class and ask her pupils to complete the same math problem. She has the ability to allow or not allow them to see each other's answers.

Weston uses Skype to hold video conferences with students who need help. Plus, she answers questions via instant messaging and texts using her BlackBerry.

"We found the social platform of choice for students is Skype," she said. "E-mail is almost like a dinosaur to them."

Weston has been promoted to curriculum director at the virtual school, which next year will grow to 250 students and serve both ninth and tenth grades. But the algebra teacher who replaces her will be able to use much of Weston's materials, including 100 "math casts," or video lessons.

The school uses open educational resources, which are free of copyright and licensing restraints, so that teachers are able to tailor their lessons to students' needs and share those lessons with other educators.

After Weston discovered many of the algebra students were falling behind, she split the curriculum into two tracks to create a remedial class.

"She came up with that on her own and presented it to me, because she cared so much about those students," said DeLaina Tonks, director of Open High School. "I'm a little jealous I can't take her classes."

Stacey Fletcher, a parent in Ephraim, said Weston provided the one-on-one attention her son Brock was missing at his neighborhood public school, Ephraim Middle. He has mild learning disabilities but did not qualify for special education, she said.

"I probably would have done horrible in algebra, but Mrs. Weston helped me so I got like a B instead of an F," said the 15-year-old Brock. "Some parts of it were hard, but I could Skype her and, no matter what, she'd get on and help me. ... She's probably one of my favorite teachers I've ever had."

Weston has an office at home, but she ended up moving her computer, digital tablet, webcam and headset to a desk next to her kitchen. There, it's easier for her to check messages from students when she's fitting her "life into the holes between my job."

She has five daughters. The youngest are 2-year-old twins and the oldest is 13. She works around nap times and sometimes relies on a neighbor for babysitting. Her husband, a general contractor, works from home, too, so that makes it easier, Weston said.

Open High School, Weston said, has been a good fit for moms who want to work but also want to stay home with their kids. Now, Weston can do both.

Even if it means working until 2 a.m.

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