

PERSONALIZED LEARNING

Inside One District's Experiment With Competency-Based Education



By [Alyson Klein](#) — September 16, 2024 ⌚ 14 min read



From left, Amora Grillo, Mia Naughton, and Ally Neil work on a project in the Moonshot Program at California Area Elementary School in Coal Center, Pa., on May 16, 2024.

— Jaclyn Borowski/Education Week

Coal Center, Pa. -

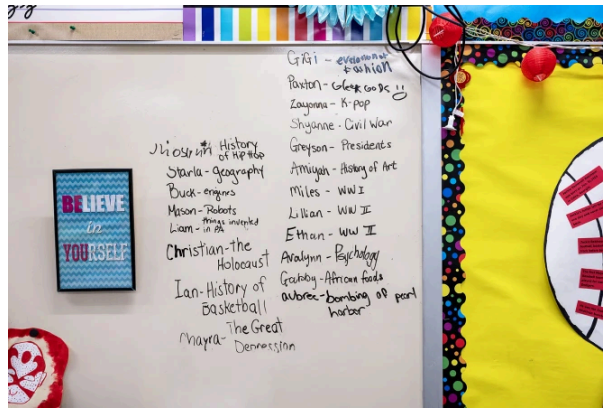
Heather Nicholson considers her classroom a “modern-day, one-room schoolhouse.”

On a May morning last school year, it was easy to see why.

Elementary schoolers sat in one corner, learning Mandarin with a teacher from China. Across the room, 13- and 14-year-olds huddled around Chromebooks. One studied the Titanic. Another researched Ray Charles.

A diorama of King Henry VIII's wives—inspired in part by one student's love of the musical "Six"—sat on the windowsill at the back of the class next to a poster highlighting major events in the life of tennis great Arthur Ashe.

A whiteboard kept track of what each student worked on: "Gabby - African foods. Liam - Things invented in Pennsylvania. Zayonna - K-pop."



What students are working on is listed on the board in the Moonshot Program classroom at California Area Elementary School in Coal Center, Pa., on May 16, 2024.

— Jaclyn Borowski/Education Week

It's tough to discern exactly what grades and subjects are being taught here at any one time. And that's part of the point behind the California Area school district's 3-year-old experiment with competency-based education.

The program—dubbed "Moonshot"—is at the heart of Superintendent Laura Jacob's bid to bust through what she sees as outdated, artificial barriers in K-12—between different academic subjects, between age-based grade levels, and between an A student and the kid with a solid string of C's.

Those structures—which schools have been built around for more than a century—can stymie the kind of individualized, deep learning students need to become critical, creative thinkers in the digital age, said Jacob, who took the helm of this 900-student district in Pennsylvania's Allegheny Mountains four years ago.

"It is suffocating for some kids when we put them in these buckets," Jacob said. "We all know that we are learning at different levels, at different paces, in different subjects. And that's OK."



Heather Nicholson, a Moonshot teacher, talks with Shyanne Schaefer, a student in the program during an art lesson at California Area Elementary School in Coal Center, Pa., on May 16, 2024.

— Jaclyn Borowski/Education Week

Those sentiments are at the heart of competency-based education, which prizes mastery of skills instead of time in the classroom and traditional letter grades; individualized lessons and assignments based on student goals and interests rather than teacher-directed lessons aimed at an entire class; and self-paced, multi-age classrooms over rigid, age-based grade levels. While districts around the country have tried aspects of this approach, few have embraced them all at scale.

Jacob's strategy has been to keep participation in Moonshot strictly voluntary.

Many parents and students—not to mention teachers—would have rebelled, she said, if she'd suddenly decreed that “all kids are not going to have [letter] grades, and all kids are not going to have grade levels, and we're just going to completely eliminate them all next year,” she said.

By allowing students and families to opt in, “I'm not getting the pitchforks coming after me,” Jacob said. Instead, Moonshot is “creating yet another pathway for kids to demonstrate their learning.”

The program is gaining in popularity. Three years ago, just 25 students enrolled. Last school year, that number had roughly tripled, to about 75, most of them elementary schoolers. For now, participation tends to drop off in later grades, with only about two dozen high school students in the program.

The switch to competency-based education asks people ‘to give up sacred rituals’

The initiative was named for its \$70,000 one-year, startup Moonshot grant, provided by the Grable Foundation. [In 2021](#), the Pittsburgh-based philanthropy challenged area schools to imagine what K-12 might look like in a post-pandemic world.

Students can choose the Moonshot approach—in which lessons and assignments are tailored to their individual interests as much as possible—instead of a typical class for a range of subjects, including social

studies, science, computer science, and art. For now, the option doesn't typically extend to language arts and math, though there have been limited exceptions.

Students can opt for Moonshot in every possible subject or pick just one or two. Typically, Moonshot students spend part of their day or week in Nicholson and co-teacher Susan Bitonti's classroom working on assignments or lessons for the class or classes they've chosen to complete through the program. Students can stay in Moonshot for an entire school year or try it out for a quarter, then move back to conventional classes.



Susan Bitonti, left, works with Braylen Findley, center, and Ava Horner, both 6th graders, as they incorporate Legos into their computer class section during the Moonshot program at California Area Elementary School in Coal Center, Pa., on May 16, 2024.

— Jaclyn Borowski/Education Week

Importantly, all Moonshot students receive written feedback instead of grades on their assignments, even in classes they are taking outside of Moonshot.

That's been one of the toughest components of the program for staff to adjust to.

"I don't expect 100 percent buy-in," Jacob said. But, "if we're constantly waiting and using the excuse of buy-in, we'll never make change in education."

She said she hopes staff members are at least open to the idea that a competency-based approach "is good for a group of kids" who opt into it.

Having staff members question aspects of—or everything about—competency-based education is par for the course, said Lauren McCauley, the vice president of teaching and learning at KnowledgeWorks, a nonprofit focused on personalizing learning.

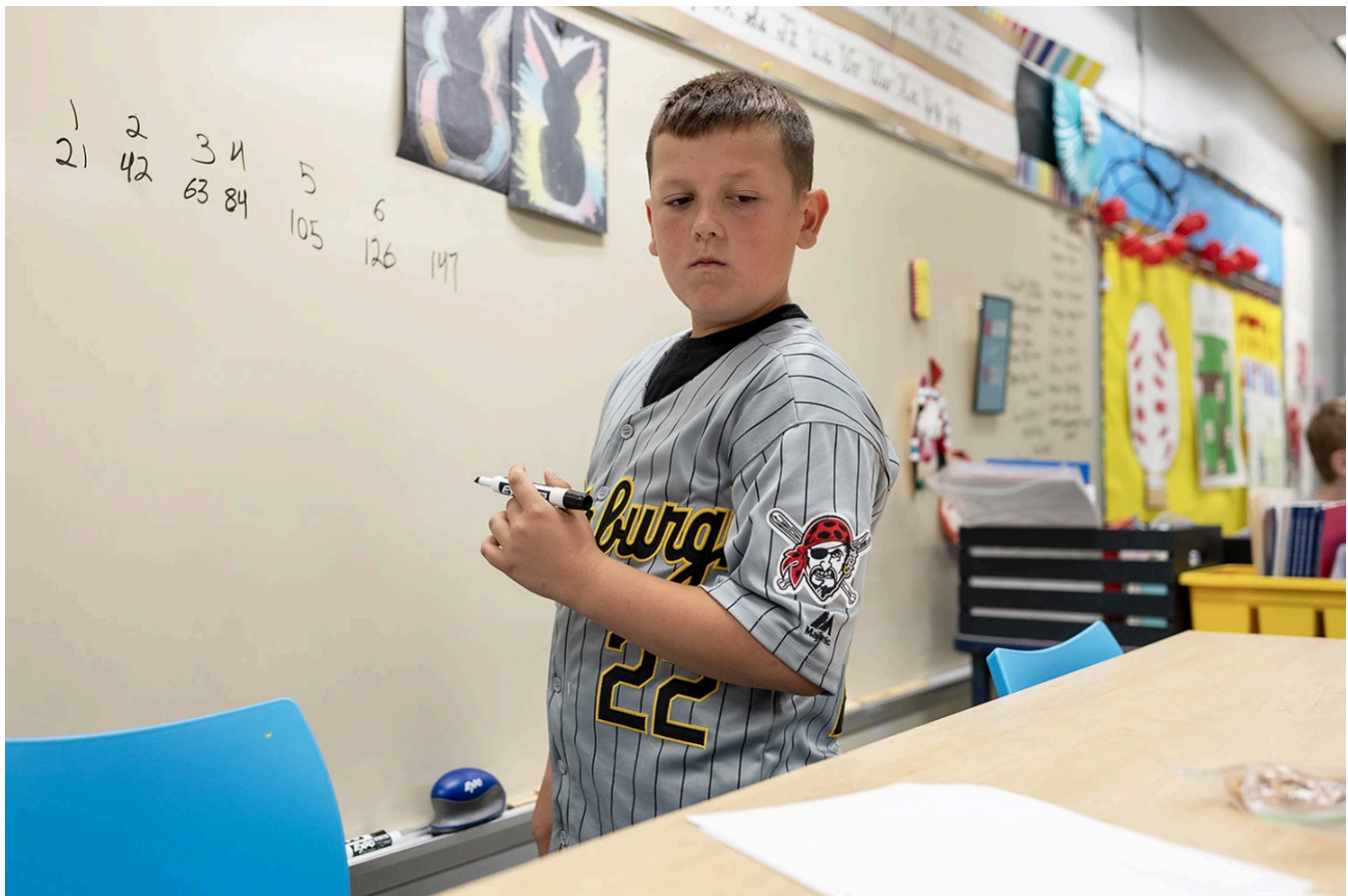
“We are asking people to give up sacred rituals,” McCauley said. But those systems—traditional grades, grade levels, the length of the school year—were created for organizational purposes, she said. “None of those is based in the science of education and best practices.”

Still, leaders that want to embrace these changes “have to be prepared to support those who are questioning that shift because if you think that you’re not going to face any of that, you’re sorely mistaken,” she said.

Competency-based learning is designed around students’ interests

Jacob would like to explore moving away from traditional grade levels—often one of the toughest parts of the model to implement because it requires such a fundamental restructuring of K-12. The concept is aspirational at this point in California schools, though the district has begun to blur grade-level divisions by, for instance, allowing certain students to take courses usually reserved for older kids.

Helping students explore personal passions is another big emphasis.



Bryce Coles, a student in the Moonshot program, works on a math problem during class at California Area Elementary School in Coal Center, Pa., on May 16, 2024.

— Jaclyn Borowski/Education Week

Moonshot students and their parents meet with Nicholson or Bitonti over the summer. At that meeting, they begin to create an “individual learning plan,” modeled in part on the Individualized Education Program, or IEP, used for students in special education.

At each plan’s core: combining a student’s interests with their academic goals.

Nicholson tells students and families: “The world’s your oyster. What would your absolutely perfect day at school look like?” she explained. “They give us ideas. They tell us things that they’re interested in, things that they want to learn.”

Nicholson and Bitonti then design individualized lessons around grade-appropriate state standards, using topics students are drawn to. They focus on mastery of skills—researching, writing, communicating orally, thinking scientifically and critically—as opposed to imparting content.

Students often want to explore topics they might have been exposed to in a more typical class, just in greater depth: The Civil War. Greek gods. Engineering.

But there are quirkier asks. One Moonshot student in a district program for those with significant learning differences wanted to do a deep dive into bees.

The district applied for a grant to bring in four apiaries, or bee habitats, Nicholson said. Now, the student “can tell you anything and everything about a bee, about beehives, about beekeeping,” she said. “And he’s up in there with his smoker and he’s smoking” the hives.

The student, who had been reluctant to engage socially when Nicholson previously had him in her traditional 3rd grade class, “is coming out of his shell. He’ll talk, he’ll say hello,” she said. “His vocabulary is improving.”

Many students love the individualized approach.

“I find it really great to learn about what I want to learn about, and get one-on-one help,” said Ben Zirolecki, 15.

Planning and keeping track of what every student is up to is a lot on Nicholson and Bitonti, a pair of high-flying veterans who have worked for decades in the district and are willing to put in the kinds of hours newbies typically log.

“My husband’s said, ‘It’s like you’re a first-year teacher again,’” said Bitonti, who joined Moonshot last school year, but has taught for about 20 years.



Superintendent Laura Jacob of the California Area School District is pictured during an interview in Coal Center, Pa., on May 16, 2024.
— Jaclyn Borowski/Education Week

Jacob would love additional staff, she said. But right now, two instructors are all the district budget will allow. If the program expands to include more students, she will add more teachers, she said.

The Moonshot approach has helped both students who are behind and ahead of grade level.

For instance, halfway through last school year, a 4th grade teacher realized one student was ready to tackle 5th grade math.

But it wasn't an option to join the class midyear—the student had missed too much foundational content. Instead, Nicholson and Bitonti worked with him one-on-one getting him through about a year-and-a-half of math—a subject typically not taught in Moonshot—in just a few months. That cleared the way for this student to join the 6th graders for math when he entered 5th grade this school year.

Another Moonshot student was behind her peers in language arts, so Nicholson and Bitonti gave her individualized instruction centered in part around the *Little House* book series, which the student wanted to try after watching reruns of the eponymous 1970s television show.

Grading in a competency-based system has been a source of friction

Some students say getting away from traditional letter grades has been a relief.

Before joining Moonshot, “I put too much pressure on myself to get better grades,” said Tori Typovski, 13. “I pushed myself too much, to the point where I couldn’t understand things as well.”

Dylan Haschet, also 13, described himself as “a competitive person.” But he likes that he’s no longer comparing himself with his classmates. In the past, “when I would see my friend got an A and I got a C, I would get mad and stop trying as hard as I could be,” he said.

But the switch to the Moonshot system of written feedback in place of letter grades wasn’t without speed bumps.

“The first year I joined, the feedback was not great because the teachers had never heard of stuff like this. I know I’ve never seen a school do something like this,” said Dylan, who was among the first students to opt into Moonshot. “Some of the teachers didn’t know what to do, so they would just write, ‘good job.’ Over the past couple of years, it’s gotten a lot better.”



The view of the surrounding area from California Area High School in Coal Center, Pa., on May 16, 2024.

— Jaclyn Borowski/Education Week

Adults in the district have their own debate about getting rid of grades. California Area High School Principal Josh Pollock, a former math teacher, has been frank with Jacob that he thinks most teenagers are

motivated by conventional A's and B's.

“I love the idea of personalized learning. I love the idea of having that educational coach to assist students,” Pollock said. “I think the biggest fight we have with this program is the grading aspect. We respectfully disagree.”

Providing extensive, high-quality feedback for Moonshot students is time-consuming, said Pollock, who graduated from the high school he now leads.

“Some of my teachers have 150 students that they're servicing throughout the day,” he said. “It's a very difficult task to ask of them to provide that individualized feedback.”

Some high school teachers simply offer positive comments to students who are compliant—those who complete assignments and don't disrupt class—regardless of the academic quality of their work, Pollock said. (That's a complaint also leveled against conventional grades.)

Plus, there are practical problems when it comes to determining class rank, choosing a valedictorian, and awarding scholarships, he said.

“I can't pick a student for a scholarship based upon qualitative feedback,” Pollock said. “That opens up a very ugly can of worms” because those who are passed over for a high class rank or other honors might assume favoritism is at play if there aren't hard-and-fast grade point averages to back up leaders' choices, he said.



Students in the Moonshot program head back to their classroom after visiting the school's yurt and petting the goats at California Area Elementary School in Coal Center, Pa., on May 16, 2024.

— Jaclyn Borowski/Education Week

The shift to feedback for Moonshot students even in their traditional classes—and competency-based principles in general—has gone over more smoothly at the elementary level, California’s leaders agree.

But some teachers still puzzle over how to provide meaningful feedback on certain assignments, such as a 1st grade worksheet on adding single-digit numbers, said Rachel Nagy, the principal of California Area Elementary School.

Nicholson has coached her colleagues on the ins and outs of giving substantial feedback, Jacob said. While some teachers have mastered it, it will take time for others to develop the skill, she added.

“Kids deserve and need to have” specific feedback on their work, Jacob said. “But honestly, that’s an ongoing learning process. I don’t expect people to be able to do it immediately.”

Still, she remains firm that traditional grades can impede academic progress.

“We know that kids don’t learn with grades,” Jacob said. “The moment they get a grade, the learning stops. They either say, ‘Hey, I’m a genius, I got an A.’ Or, ‘Man, that teacher doesn’t know what they’re talking about, I got an F.’ The learning completely stops.”

Pollock and others also worry about what will happen when Moonshot students apply to jobs or colleges without recognizable grades.



Greyson Hickman, a student in the Moonshot Program, creates a clay version of Abraham Lincoln as part of an art lesson on presidents during class at California Area Elementary School in Coal Center, Pa., on May 16, 2024.

— Jaclyn Borowski/Education Week

So far, there's only been one test case: A student who went through the Moonshot program last year applied to a local branch of the Pennsylvania state higher education system with a mastery transcript, created by a national consortium of public and private schools to demonstrate what graduates of competency-based programs know and can do.

But college officials were unfamiliar with it. They called California, confused. The district assured them that this student could handle college-level work.

“That’s one of the biggest struggles that we’re gonna have,” Pollock said. “We’re changing the rules that our kids are playing by. We’re changing what education looks like here. But if [others aren’t] keeping up with us, what does that look like for our kids?”

Jacob, though, argues that plenty of students without traditional grades—those who were home-schooled, for instance—routinely navigate college admissions.

Students in Moonshot won't learn all the same content as their peers

The California district's educators readily acknowledge that not every student signs up for Moonshot because they truly want a more personalized education or relief from letter grades.

Some expect an easy ride—and are quickly disillusioned when Nicholson and Bitonti push them.

Others seem to use the program to “get away from certain teachers,” Nicholson acknowledged.

Sometimes, even Nicholson thinks students who choose the program for certain subjects are making the wrong call. One student opted for Moonshot in science over Briann Klima's 4th grade class—even though Nicholson told the student she'd enjoy Klima's project-based approach.

“That kind of rubbed me a little bit,” Klima said. The student “didn't even give it a chance. I wish she had at least attempted my room” before opting for Moonshot.

This student had an “aha” moment, though, when the Moonshot classroom was closed for the day, and she was sent to Klima's class instead. She was unsettled when she realized she didn't know the material presented on a quiz her classmates were taking.

That's a trade-off of personalization, teachers said.

“If you're doing a project about Michael Jackson, you're probably not going to know how to build a circuit. You're not going to understand all the different forms of energy,” Klima said. Still, she thinks the emphasis on independence in Moonshot “definitely benefits” some students, including the girl who opted for Moonshot over her classroom.

Nicholson, for one, isn't worried that Moonshot students aren't necessarily getting the same content as their peers.



Miles Matheny, left, and Lillian Archilla research and create presentations on Elon Musk and Walt Disney respectively during class in the Moonshot program at California Area Elementary School in Coal Center, Pa., on May 16, 2024.

— Jaclyn Borowski/Education Week

“They’re not ending up missing anything because we’re looking at the standards they have to meet,” she said. “And we’re making the standards fit the kids instead of the kids trying to fit into those standards.”

At this point, there’s not much national research to support—or debunk—Nicholson’s contention that students in competency-based programs like Moonshot are mastering the same skills as their peers, even if they are learning different content. That’s partly because competency-based education is considered relatively novel, and is rarely done at a broad scale.

Challenges aside, Moonshot and its competency-based principles are slowly shifting the district’s culture, even for students and educators who aren’t immersed in it, Nagy, the elementary school principal, said.

“There’s strong ties to traditional practices in education, and we’re a traditional kind of area,” Nagy said. Having a program that breaks the mold “living inside of our traditional structure is the sweet spot right now. But we’re still pushing those boundaries, slowly but surely breaking molds in every classroom.”



Students in the Moonshot Program visit the school's goats, Acorn and Buddy, during class at California Area Elementary School in Coal Center, Pa., on May 16, 2024.

— Jaclyn Borowski/Education Week



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