



Teacher Recruitment and Retention in Rural Colorado

In Colorado, where higher education institutions are not graduating enough candidates to fill open teaching jobs, particularly in specializations such as math, several initiatives are working to

improve rural teacher recruitment and retention.¹ Through scholarships, state university partnerships, a multidistrict professional learning community, and strategies for cultivating mentorship,

Rural districts band together, with help from partners and grants, to attract and keep teaching staff.

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some rural Colorado districts are increasing teachers' enthusiasm for the profession, which keeps them from leaving.

The need for support in retaining teachers is a pressing one in rural Colorado. While public school districts in Colorado overall had a teacher turnover rate of 15.78 percent from 2018–19 to 2019–20, rural school districts reported 17.85 percent turnover.² For the 107 Colorado districts designated as “small rural” (with enrollments of less than 1,000), that figure was 18.1 percent.³

Shortages in hard-to-fill subjects like math and science have become chronic nationally. In 2018, nearly 90 percent of states reported math teacher shortages, and over 80 percent of states reported science teacher shortages.⁴ Nationally, new teachers have high rates of attrition, with 17 percent of beginning teachers leaving the field within their first five years.⁵ Shortages vary greatly depending on school and district contexts, with Title I schools reporting rates of math and science teacher turnover nearly 70 percent greater than non-Title I schools.⁶ Additionally, schools with high proportions of low-income students and students of color report higher rates of novice teachers and teachers with less preparation.

Teacher turnover impairs student performance, as does having less-experienced teachers without subject-matter expertise.⁷ High school-wide turnover rates can also harm students, even if they are in classrooms without teacher attrition, because of the effect on the sense of community and the accumulation of institutional knowledge.⁸

Furthermore, turnover is expensive. One study found that, depending on the district, turnover costs per teacher ranged from \$4,366 to \$17,872.⁹ Thus state boards of education will want to consider how they can increase the number of long-term teachers with subject-matter expertise who are well prepared to deliver high-quality instruction.

The issues of retaining teachers and recruiting high-quality teacher candidates are deeply intertwined. While teacher recruitment can be a challenge in any context, filling open positions can be even more difficult in rural districts due to limitations in the ability to offer a supportive network of colleagues in job-alike roles, limited access to professional development, and

less competitive salaries. Due to their reduced visibility, rural districts located farther from colleges with educator preparation programs may have difficulty competing with urban and suburban districts for newly graduated teacher candidates. Individuals in rural areas who are interested in teaching may choose not to enter prep programs due to their physical distance.

Given the drop in prep program enrollment and the fact that half of their teachers are licensed out of state, Colorado districts in recent years have brought retired teachers back to teach part time, made use of J1 visa provisions, and employed “grow your own” strategies.¹⁰ And a handful of districts have banded together, with support from the Colorado Rural Education Collaborative and other partners, to experiment with innovative ways to recruit and retain teachers. These programs have seen promising results.

Concurrent Enrollment

For many students in rural schools far from a college or community college, concurrent enrollment represents the best opportunity to attain college credit while in high school.¹¹ In 2015, the Colorado Department of Education began requiring that high school teachers of concurrent enrollment courses complete either a master's degree in the specialty in which they were teaching or 18 graduate-level credit hours within that specialty along with a master's degree from any discipline. As a result, six rural districts in southeastern Colorado were in danger of losing up to half of their concurrent enrollment offerings—and likely teachers as well. Of the districts' combined student populations, 72 percent qualified for free or reduced-price lunch, and 56 percent were minority students. The schools had been collectively offering 82 courses per year with a 98 percent pass rate, and thus they were contributing to closing the state's equity gap around degree attainment for students of color.¹²

In response, the Generation Schools Network, through the Colorado Rural Education Collaborative, secured a \$210,000 Title II grant to recruit and retain teachers in these districts' high schools. Colorado State University–Global Campus provided scholarships to help teachers obtain master's degrees or certificates signifying they had earned the required 18 graduate credit

hours, allowing them to become adjunct faculty members at a local college and teach concurrent enrollment classes.

By 2017, the effort had increased the number of students participating in concurrent enrollment from 243 to 485, as expected. It also enabled six teachers to earn master's degrees and five to receive certificates. All but one, who transferred to another nearby rural district, remained in their districts for the next three years.¹³

Rural Immersion

In a parallel effort that also benefited from a Title II grant, 13 adjacent rural south-central districts in Colorado leveraged scholarships and a teacher immersion program to combat a 20 percent teacher turnover rate. With Colorado State University–Pueblo as their higher education partner, the districts rolled out a model, previously tested in Alaska,¹⁴ in which bonds that are developed between teacher candidates and the rural communities that want to hire and retain them serve as a critical factor in a teacher's decision to live and work there.

Under the program, 12 to 15 teacher candidates visited classrooms in a rural community over three or four days, connecting with school leadership, teachers, students, and families. A community service project allowed them to deepen connections with the local community. They received individual coaching from university staff on how to finish or add to their teaching credentials and scholarships. The grant enabled the districts to create a professional hiring guide, complete with marketing pieces and a shared brand identity, and a shared job board that reached more than 100 colleges and universities. The program saw promising results. By the end of the year and a half grant period, the rural districts had hired a third of the candidates who had participated in the program.

Hard-to-Fill Subjects

A subsequent effort in the same south-central districts sought to reduce math teacher shortages and improve math instructional quality. In addition to scholarships, teacher candidates and novice teachers were invited to join a multidistrict professional learning community supported by a stipend, immersion experiences, and a Math Summer Institute.

A 2016 survey of the districts had reported existing or upcoming vacancies in half of all math and science teaching positions. Interim and state assessment results also suggested that half of the staff needed to improve instructional quality. The two data points are related. Turnover and low teaching quality are often interconnected: Teachers who feel less prepared to lead a classroom are three times more likely to leave the profession than colleagues who feel better prepared, while novice teachers who participate in teacher induction programs are two times less likely to leave teaching.¹⁵

Addressing quality would be critical for retaining teachers in the south-central districts, yet most of them lacked resources to provide strong teacher induction. A meta-analysis by Richard Ingersoll and Michael Strong found that induction activities are correlated with higher student academic achievement scores.¹⁶ Thus an important component of the grant-supported effort cultivated math teachers to serve as mentors for the 25 participating novice and preservice teachers.

The program appears to have increased teachers' subject knowledge. Pre- and post-testing on the Learning Mathematics for Teaching assessment indicated a statistically significant increase in the mathematical knowledge of secondary teachers on the geometry assessment. Survey data also yielded positive results. Attendees at the summer math institute indicated that their content knowledge was higher at the end of the institute than at the beginning, and 90 percent indicated that their confidence and capacity to take on leadership roles increased after participating in the grant activities. Overall, 84 percent of professional learning community participants found these activities "useful" or "very useful" for reducing teacher isolation. And 91 percent planned to continue teaching in the upcoming school year. The only participants leaving the profession were planning to retire.

"My confidence in teaching math to my own students has increased," reported one early-career elementary teacher. "I had difficulty with that my first year. I could not explain things very well, I didn't ask enough questions to guide my students thinking, and I wasn't sure how to provide that extra level of thinking to my students. Now I have lots of ideas and have put them to use, even during the distance learning

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we are doing currently. And my students are successful...I really believe it is because I have acquired these new skills.”¹⁷

An additional round of collaboration, partnership, and funding has expanded this work to serve 65 math and special education teachers in rural districts across Colorado. While the grant program is ongoing and thus has not produced final results for analysis, the program’s framework may help state boards looking for innovative strategies to solve teacher recruitment and retention issues in their state.

Lessons Learned

Programs used to recruit and retain teachers in Colorado’s rural districts may provide a promising roadmap for other states as well. The programs taken together yield several key takeaways:

- Rural districts must establish and continue to nurture relationships with educator preparation programs.
- Offering scholarships to teachers to complete coursework toward licensure or endorsement can increase teacher qualifications and longevity. Providing scholarships in a cohort model improves completion rates on certificates or degree programs.
- Activities that increased candidates’ exposure to rural teaching opportunities correlated with successful recruitment.
- Backbone intermediaries and regional service centers, coupled with a university partner, provide the critical support needed to acquire grants and implement them.
- Without support and funding by the state legislature, boards of education, and institutions of higher education, these efforts would not have taken place.

While the challenges of teacher recruitment, well-being, instructional quality, and retention are likely to be ongoing, outcomes from the work in Colorado suggest grounds for optimism: Removing barriers to additional education and empowering teachers with content knowledge and pedagogy training in a peer community can encourage them to remain in teaching. ■

¹Cynthia Cole, “Teacher Shortages across the Nation and Colorado: Similar Issues, Varying Magnitudes” (Denver:

Colorado Department of Higher Education, December 2017), 13.

²Colorado Department of Education, “School/District Staff Statistics,” <https://www.cde.state.co.us/cdereval/staffcurrent>.

³Kelly Latterman and Sarah Steffes, “Tackling Teacher and Principal Shortages in Rural Areas,” *NCLS LegisBrief* 25, no. 40 (2017); Colorado Department of Education, “Rural and Small Rural Designation,” table, <https://www.cde.state.co.us/ruraledcouncil/ruraldesignationlist>.

⁴Kaitlin Pennington McVey and Justin Trinidad, “Nuance in the Noise: The Complex Reality of Teacher Shortages” (Washington, DC: Bellwether Education Partners, 2019), 24.

⁵Lucinda Gray and Soheyla Taie, “Public School Teacher Attrition and Mobility in the First Five Years: Results from the First through Fifth Waves of the 2007–08 Beginning Teacher Longitudinal Study” (Washington, DC: U.S. Department of Education, National Center for Education Statistics, 2015), 3.

⁶Desiree Carver-Thomas and Linda Darling-Hammond, “Teacher Turnover: Why It Matters and What We Can Do about It” (Palo Alto, CA: Learning Policy Institute, 2017), 13–14.

⁷Colorado Department of Education, “Teacher Shortage Fact Sheet,” web page, 2017, <https://www.cde.state.co.us/educatortalent/teachershortage2017>.

⁸Matthew Ronfeldt, Susanna Loeb, and James Wyckoff, “How Teacher Turnover Harms Student Achievement” (Washington, DC: American Institutes for Research, 2012).

⁹Gary Barnes, Edward Crowe, and Benjamin Schaefer, “The Cost of Teacher Turnover in Five Districts: A Pilot Study” (National Commission on Teaching and America’s Future, 2007), 4–5, <https://files.eric.ed.gov/fulltext/ED497176.pdf>.

¹⁰Cole, “Teacher Shortages across the Nation and Colorado.”

¹¹Concurrent enrollment is an opportunity for high school students to receive college credit for taking a college-level course taught by a qualified high school teacher at their high school, using curriculum from a partnering institute of higher education.

¹²Colorado Department of Higher Education, “Colorado Rises: Maximizing Value for Students and Our State,” CRS 23-1-135 (July 30, 2019).

¹³The full report with lessons learned can be found here: <https://drive.google.com/file/d/1HkRg4Com7N-TFcM2DM-LaxdVDSJdGjXqz/view>.

¹⁴Colin Boylan and Ted Munsch, “The Impact of an Immersion Experience in Alaskan Native Community Cultural Life on Preservice Teachers,” *Education in Rural Australia* 17, no. 1 (2018), <https://apo.org.au/node/167531>.

¹⁵Cole, “Teacher Shortages across the Nation and Colorado.”

¹⁶Richard Ingersoll and Michael Strong, “The Impact of Induction and Mentoring Programs for Beginning Teachers: A Critical Review of the Research,” *Review of Educational Research* 81, no. 2 (June 2011): 201–33, <https://doi.org/10.3102/0034654311403323>.

¹⁷Generation Schools Network, “Math Teacher Recruitment and Retention Efforts: Signs of Success in Rural Colorado” (Colorado Rural Education Collaborative, 2020).