



COLORADO
Department of Education
Department of Higher Education

Educator Preparation Report



2021

**The Colorado Department of Higher Education and
Colorado Department of Education**

Statutes: §22-2-112(1)(q) and §23-1-121(6).



**This report was prepared by the
Colorado Department of Higher Education (CDHE) and the
Colorado Department of Education (CDE) pursuant to
Colorado Revised Statutes §22-2-112(1)(q) and §23-1-121(6).**

March 2021

1600 Broadway, Suite 2200, Denver, CO 80202

For more information contact:

Brittany Lane, PhD

Director of Educator Preparation
Colorado Department of Higher Education
brittany.lane@dhe.state.co.us

Mary Bivens

Director of Educator Development
Colorado Department of Education
Bivens_M@cde.state.co.us

Carolyn Haug, PhD

Director, Research & Impact
Colorado Department of Education
Haug_C@cde.state.co.us

Table of Contents

Is Colorado Still Experiencing an Educator Shortage?	6
Educator Preparation	9
New Teacher Employment in Colorado Public Schools	14
Conclusion	17
Endnotes	18



Dr. Angie Paccione
Executive Director, Colorado Department of Higher Education

Dr. Katy Anthes
Colorado Commissioner of Education, Colorado Department of Education

To ensure that Colorado's increasingly diverse P-12 students are ready for postsecondary education or workforce upon graduation, Colorado must ensure schools are staffed with excellent educators. Educators are a critical component to Colorado's economic recovery as they help shape the minds of the next generation of health care workers, researchers, entrepreneurs and social advocates.

Educator quality begins with strong preparation and requires partnerships among school districts, Boards of Cooperative Services (BOCES), institutions of higher education, nonprofit organizations and the Departments of Education (CDE) and Higher Education (CDHE). Whether it's early childhood teachers, or high school science teachers –school counselors or principals – Colorado has 46 approved educator preparation programs across the state that shape our educators. CDE and CDHE work in partnership to support 23 of those programs as higher education programs, and CDE oversees all other programs as alternative educator pathways.

The information within this report demonstrates CDHE's commitment to the master plan for higher education, *Colorado Rises: Advancing Education and Talent Development*. Specifically, to increase the number of students completing educator preparation programs. The state master plan also expresses the need to eliminate equity gaps, improve student success and invest in affordability and innovation.

A highly effective teacher is the most important school-based factor in a student's success in the classroom, according to a multitude of research. As such, providing excellent educator preparation programs is key to producing high-quality teachers in every classroom and strong leaders in every building, which is a crucial part of the Colorado Department of Education's strategic plan.

Much like other high-need fields, teachers and other educators commit to a profession that requires a deep knowledge base and professional practice. Colorado's educator preparation providers strive to provide robust training in content and pedagogical knowledge that take theory into practice in the classroom environment. Such rigorous training and support from mentors help us achieve our ultimate shared goal – the success of Colorado's P-12 students.

Handwritten signature of Dr. Angie Paccione in black ink.

Dr. Angie Paccione
Executive Director,
Colorado Department of Higher Education

Handwritten signature of Dr. Katy Anthes in black ink.

Dr. Katy Anthes
Colorado Commissioner of Education
Colorado Department of Education





To prepare K-12 students for college and careers after graduation, Colorado must focus on cultivating a diverse, well-trained educator workforce.

Educator preparation providers have been striving to ensure that Colorado schools are filled with excellent educators. However, as Colorado was making gains in addressing teacher shortages, the COVID-19 pandemic struck and shook the field of education to its core.

Beginning in the spring of 2020, schools statewide struggled with keeping students, teachers, and their families safe while concurrently pivoting to remote teaching and learning on very short notice. When asked about their concerns with remote teaching, teachers indicated that students' struggles with technology and engagement were the top challenges¹. Now, in-service teachers are

exhausted, and we find ourselves once again facing a crisis of looming educator shortages. Though we have yet to see the full impact of the pandemic on the educator workforce, districts have expressed concerns regarding teacher and leader turnover due to stress and burnout.

Colorado Educator Preparation Program (EPP) providers will be called on by districts to help fill hiring needs. This EPP report examines current trends in educator preparation enrollment and completion, and how recent completers fare in their first years in the field. Additionally, the report summarizes recent legislative measures implemented to address teacher shortages. Finally, potential policy solutions are offered.



Is Colorado Still Experiencing an Educator Shortage?

Several factors influence educator labor market supply and attrition. One key indicators of the extent of teacher shortages is the number of unfilled positions and the mechanisms that districts use to address unmet hiring needs in any given year.

Shortage mechanisms—like hiring long-term substitutes, retired teachers, those with emergency certification, or those currently enrolled in an alternative preparation program — ensure that positions do not go entirely unfilled.

Based on the Statewide Educator Shortage Survey³ the Colorado Department of Education (CDE) conducts each year, local education agencies (LEAs) such as school districts and Boards of Cooperative Educational Services

(BOCES) reported for the 2019-20 school year there were 7,242 open teacher positions. Most were presumed to have been filled through traditional hiring practices, however, 147 (2.03%) remained unfilled for the entire school year and 985 (13.60%) were filled using a shortage mechanism. Knowing that teachers are the most important in-school factor determining a student’s success, Colorado must ensure that an excellent teacher leads every class.

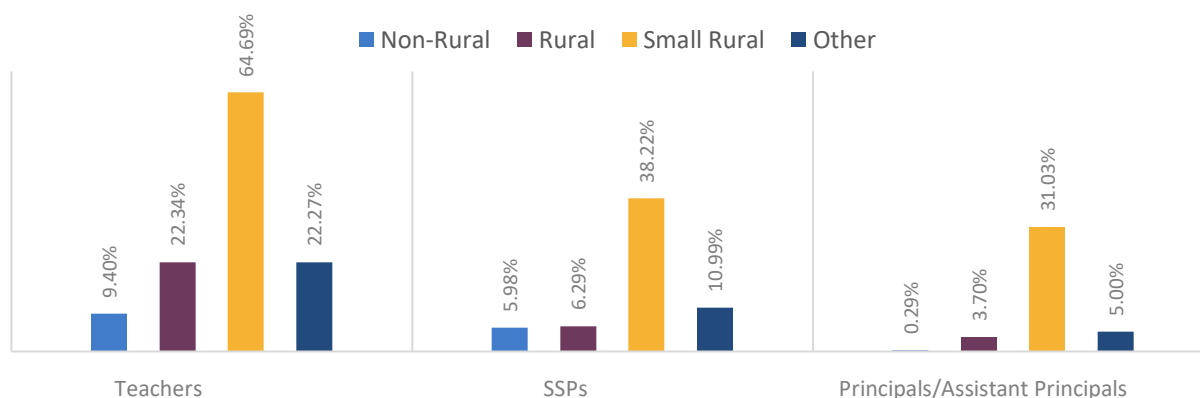
There were 421 principal and assistant principal positions also needed to be filled for the 2019-20 academic year. Of those, 20 (4.75%) remained unfilled and eight (1.90%) were filled through a shortage mechanism. A 2017 report prepared by the Colorado Department of Higher Education and CDE found that poor working conditions (including poor leadership) were among the top reasons educators left the field. Effective principals shape the vision of academic success for all students by cultivating the optimal climate for teaching and learning. A strong principal is essential for both instructional and building leadership.

Shortages were also identified for special service providers (SSPs)—those who help educate some of our students with the greatest needs. There are nine different endorsement areas for SSPs who provide school services: audiologists, counselors, nurses, occupational therapists, orientation and mobility specialists, physical therapists, psychologists, social workers, and speech-language pathologists. The [Colorado Educator Shortage Survey's](#) 2019-20 results

found that of the 1,123 SSP positions that needed to be hired, 76 (6.80%) remained unfilled and 69 (6.11%) were filled using a shortage mechanism.

Perhaps most concerning is the statewide inequality in hiring challenges. Understandably, non-rural locations had the highest number of positions to fill due to the large student populations they serve. However, rural districts (those with fewer than 6,500 students) and small rural districts (fewer than 1,000 students) are experiencing the shortages most urgently. Across all teacher, principal, and SSP positions, rural and small rural districts were forced to fill positions through a shortage mechanism far more often than were non-rural districts. Teaching positions in rural and small rural districts were eight times more likely to be filled through a shortage mechanism than were positions in non-rural districts. Similarly, SSPs and principal/assistant principal positions were six times more likely to be filled through a shortage mechanism in rural districts than were positions in urban centers.

Percentage of Positions to Hire Filled Through a Shortage Mechanism by Rural Designation



Addressing Educator Shortages

Shortages have typically been addressed in two ways—by recruiting new educators or by better retaining experienced ones. A significant factor influencing recruitment is the return on investment (ROI) for those considering working in the field. Education is a high-social-value, low-wage field for which obtaining a college degree may not seem financially feasible. Though educators are often drawn to the field for more altruistic reasons, the rising costs of college and increased loan debt coupled with below-median wage outcomes are a valid cause for concern. Educators in Colorado earn about 30 % less than their peers with the same level of college degrees in other fields; the gap is exacerbated over time and among educators with advanced degrees⁴. The low ROI likely accounts for some of the declines in enrollment among educator preparation programs experienced nationally since the Great Recession.

Retaining high-quality, in-service educators is essential for both the students and districts. Nationally and locally, almost 30% of early-career teachers leave their classrooms within 5 years⁵. Nearly two-thirds of educators leave the profession before retirement⁶. These turnover rates are even higher in schools that serve high-poverty, high-minority, and vulnerable student populations, intensifying inequities in schools that are already under-resourced⁷. Teacher attrition is concerning as it not only affects the climate of a school, but studies have shown that turnover can hurt students' academic achievement. Researchers found that in grade levels with a high degree of teacher turnover, students scored lower in math and English language arts⁸. What's more, recent estimates suggest that it can cost districts and

Shortages have typically been addressed in two ways—by recruiting new educators or by better retaining experienced ones.

taxpayers upwards of \$20,000 to hire a new teacher—funds that could be better-spent elsewhere⁹.

There are a variety of factors that contribute to teacher turnover, including preparation and initial support on the job. Studies show that teachers who were more satisfied with their preparation program perceived themselves to be more effective as educators and were significantly less likely to intend to leave their positions¹⁰. The quality of a novice teacher's preparation appears to have an important effect on retention as well.

In a study conducted by the Consortium for Policy Research in Education (2014), the amount and type of pedagogical preparation that early-career teachers received had a substantial impact on how likely they were to remain in teaching¹¹. The researchers found that factors like practice teaching and receiving feedback, and specific instruction in learning theory and selecting teaching materials significantly contributed to whether novice teachers left the field. This was particularly true for math and science teachers. Educator preparation programs must fully train educators to meet the needs of their students on day one.



Educator Preparation

EPPs are authorized and overseen by both the Colorado State Board of Education (SBE) and the Colorado Commission on Higher Education (CCHE), and oversight is operationalized by staff at CDE and the CDHE.

There are two pathways to becoming an educator in Colorado. The traditional route involves candidates enrolling in an approved public or private institution of higher education (IHE), completing an approved program, and applying for licensure. The traditional route is jointly authorized and monitored by SBE and CDE, and CCHE and CDHE. The second pathway is through designated agencies approved by the SBE as alternative licensure educator preparation programs, referenced throughout this report as alternative educator preparation programs. The alternative licensure route is authorized and monitored by SBE and CDE. This option exists for individuals who already hold at least a bachelor’s degree but need additional coursework and training in pedagogy. Alternative teacher and principal candidates receive instruction concurrently while they work as the teacher of record or principal in a school.

Pathways to Teaching in Colorado



Methodology and the CO Educator Preparation Program Report

In 2020, the more comprehensive [EPP Report](#) was made available to report outcome metrics of Colorado educator preparation providers. Outcomes such as enrollment, completion, and new teacher performance and retention are documented, as are contextual factors that describe new teacher employment. The EPP Report information was used to prepare this written executive summary and are provided to meet requirements of Colorado Revised Statutes §22-2-112(1)(q) and §23-1-121(6).

The EPP Report is populated with data that originates from the EPPs and Colorado school districts. Most data used are gathered in multiple mandatory data collection processes operated by CDHE and CDE, including the data collected for the U.S. Department of Education Higher Education Act Title II Program.

CDHE staff collected data for this report using the Student Unit Record Data System (SURDS) from all 22 public and private institutions authorized to offer traditional preparation programs for initial licensure, add-on endorsements, and advanced studies for licensed teachers, principals, and administrators for academic years 2013-14 through 2019-20. Enrollment and completion data

for traditional EPPs is shared with CDE by CDHE through permissions granted in a formal Data Sharing Agreement for purposes of creating the EPP Report.

CDE staff collected data on designated agencies authorized by the SBE to offer alternative certification for teacher or principal initial licensure. These data were collected in the Designated Agency Data Collection (DADC), which CDE has established as an annually required process to fulfill statutory mandates for educator preparation reporting. The DADC has collected individual-level preparation records for academic years 2015-16 through 2019-20.

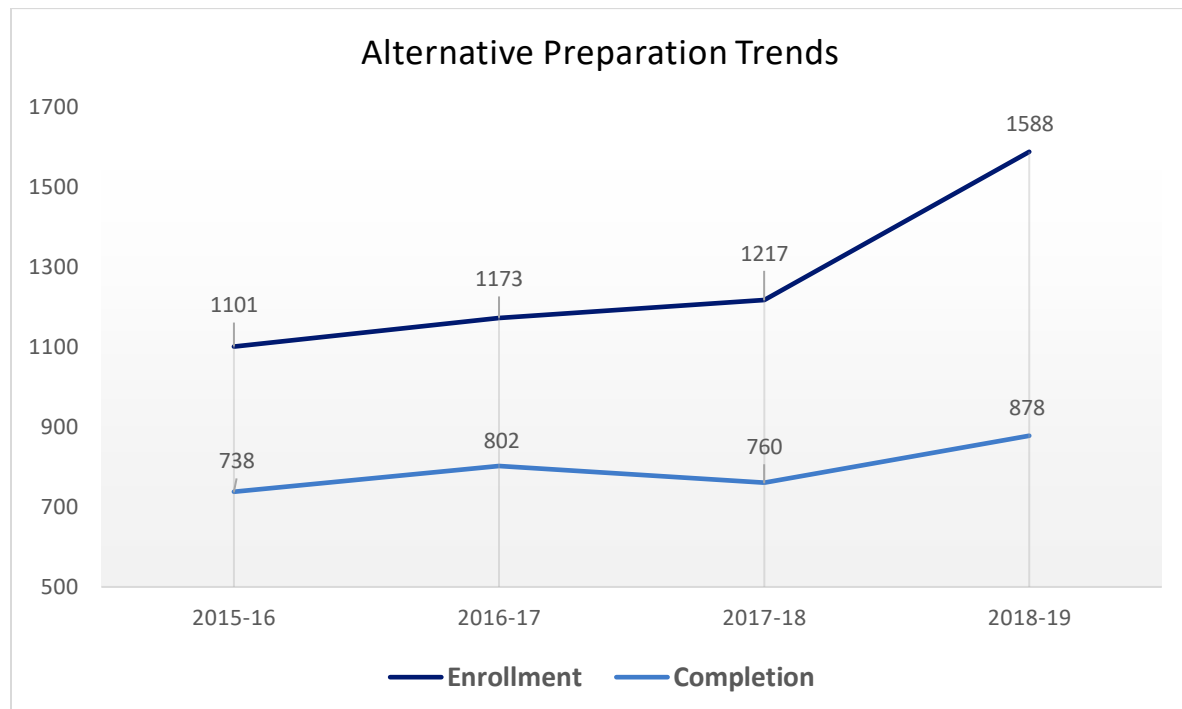
Employment data is collected annually by CDE from all Colorado school districts and BOCES that employ educators through the Human Resources Snapshot. This collection provides employment, performance, and retention information for the cohort of new teachers tracked into the workforce in Colorado public schools. Contextual information about the schools and districts in which new teachers are employed comes from the CDE October Count collection and district annual accreditation ratings generated by CDE.

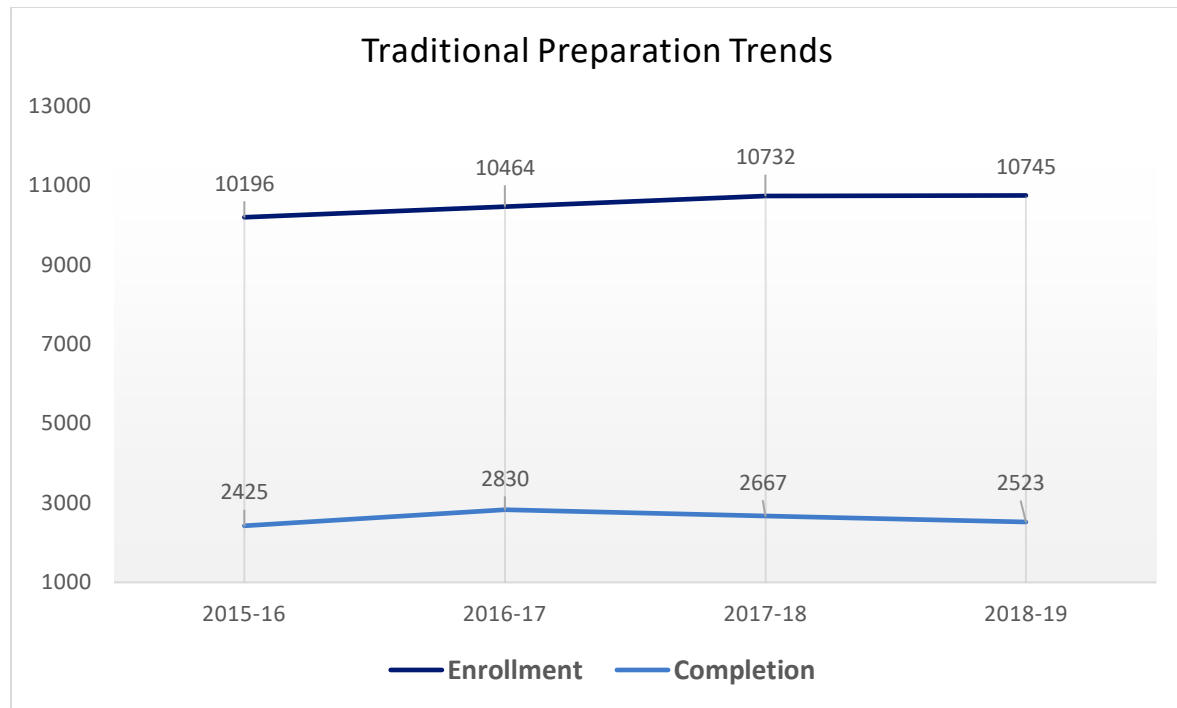
CO Educator Preparation Enrollment and Completion

Following several years of decline, overall enrollment in Colorado educator preparation programs increased by 9.1% during a recent four-year period —from 11,297 in 2015-16 to 12,333 in 2018-19. With the number of approved designated agencies doubling in the last decade, enrollment in alternative preparation programs jumped 44.2% since the 2015-16 academic year. Notably, gains were seen in both alternative and traditional preparation programs in high-need content areas. For example, the number of enrollees pursuing an early childhood education endorsement grew 16% from 813 in 2015-16 to 944 in 2018-19.

During the past four years, the number of overall completers of educator programs has increased

7.5%. In 2015-16 3,163 people completed their program while in 2018-19, 3,401 had completed. During the past four years, in the statewide teacher shortage areas of secondary mathematics, secondary science, and K-12 special education generalist, the number of completers increased substantially in special education but remained about the same in mathematics and science. In 2015-16, there were 597 completers in these endorsement areas; in 2018-19, there were 707 completers in these high-need areas, representing an overall increase of 18.4%. In the K-12 special education generalist subject area, completers increased from 223 to 337 (51.1%) during this period.



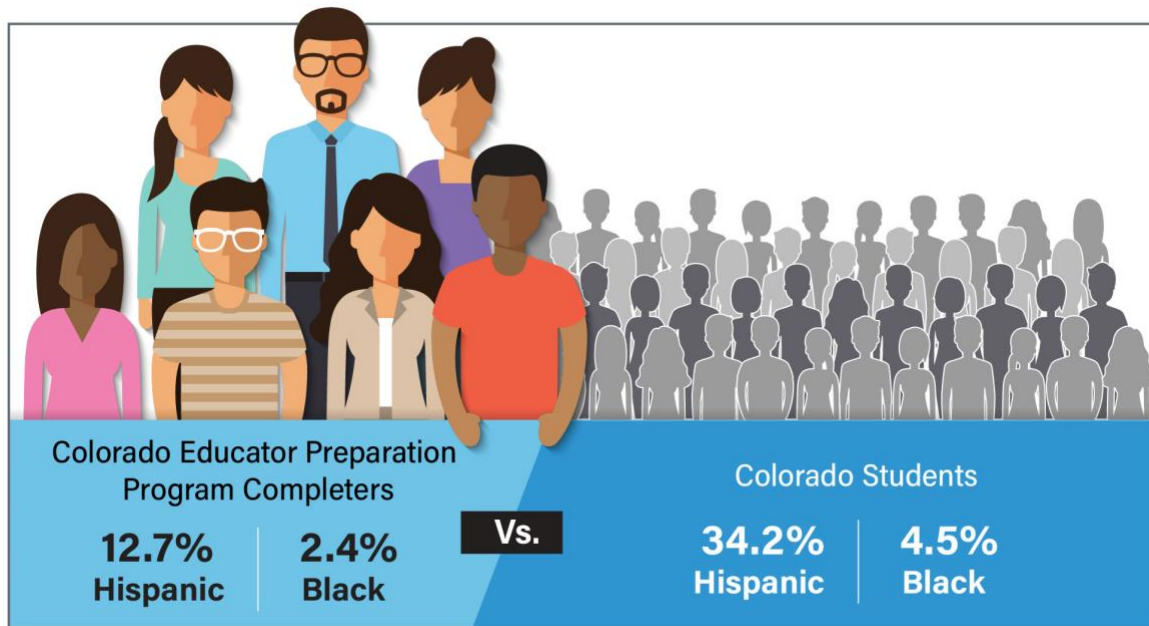


These gains do not make up for the overall enrollment and program completion declines seen in previous years, however. Also, potential traditional pathway candidates are not going into alternative programs instead of those at an IHE. The majority of candidates (80%) enrolled in an IHE are 24 years old or younger and in bachelor’s seeking degree programs whereas alternatively licensed teachers already hold a bachelor’s degree.

EPPs are making efforts to ensure that candidates reflect the communities they will serve by recruiting candidates with racial, ethnic, and linguistic diversity. Approximately half of K-12

students in Colorado are Black or African American, Hispanic or Latino, Asian, or another non-white race/ethnicity, yet our teachers are overwhelmingly white and female. Colorado’s pool of educators-in-training continues to be predominately (75%) non-Hispanic white and female. Yet studies show that students feel more cared for, are motivated by, and learn more from educators who share their same race¹¹. Further research suggests that all students benefit from having at least one teacher of color, and students of color that have had at least one same-race teacher in grades 3-5 were 39% less likely to drop out of high school than those who had not had a teacher of color¹².

Despite recent attempts, efforts at diversifying the teaching profession have fallen short. Among recent EPP completers, 12.7% are Hispanic and 2.4% are Black, yet 34.2% of Colorado students are Hispanic, and 4.5% are Black. Promisingly, alternative preparation programs are attracting a relatively high proportion of male candidates. For the 2018-19 academic year, approximately one out of three (34.3%) of alternative licensure candidates were male, compared to 22.8% of traditional route candidates.



Ensuring a diverse pipeline of educators is an important goal of the state but filling the pipeline with diverse candidates is only one part of the solution. Educator preparation providers are also offering high-quality programs to ensure that candidates have all the training and tools that they need to be effective.



New Teacher Employment in Colorado Public Schools

Data received from EPPs and linked to CDE's Human Resource files allow for recent completers to be tracked into the Colorado public school workforce.

The in-state placement rate of new teachers was 65.8% for the 2018-19 cohort, which is an increase of 3 percentage points from 2017-18, and up 7 percentage points total for the prior three years. Predictably, during the past four years, the largest employers of EPP candidates have been five of the six largest districts in the state: Denver Public Schools, Jefferson County Public Schools, Douglas County School District, Aurora Public Schools, and Adams 12 Five Star Schools. In the 2018-19 cohort—the cohort for which the most recent data is available—these five districts hired at least two of every 10 new teachers (22.6%) from Colorado EPPs.

Context of New Teacher Employment

Nationwide trends show first-year teachers are disproportionately hired into schools with the highest needs, and assigned students who tend to be behind academically¹⁴. Educator preparation programs must produce teachers who are ready to make an impact on their first day. In the most recent cohort (2018-19), about one-third of new teachers were employed in schools with high levels of poverty (31.5%), high proportions of minority students (35.0%), and/or high proportions of English-language learners (33.1%).

In the most recent cohort (2018-19), about one-third of new teachers were employed in schools with high levels of poverty (31.5%), high proportions of minority students (35.0%), and/or high proportions of English-language learners (33.1%).

The most recent Colorado data shows that new teachers were hired in districts that received the “Accredited” rating by CDE; however, several were placed in lower-performing schools in districts charged with adopting and implementing an “Improvement Plan.” Twenty-seven (less than 1%) of new teachers work in a district that is required to have a “Priority Improvement Plan.”

New Teacher Performance Evaluation Ratings

In an effort to promote continuous improvement in practice, teacher performance is evaluated every year. Teacher performance ratings are comprised of a professional practice score and measures of their students’ learning scores. The 2017-18 cohort was evaluated on the revised Teacher Quality Standards in their first year of teaching. The vast majority of the 2017-18 cohort received an overall performance rating of either “Effective” (54 %) or “Highly Effective” (9.4 %)—the top two ratings. Notably, however, first-year teachers are less effective on average than their more experienced colleagues¹⁵.

In an analysis of data from previous studies, researchers found that teaching experience is positively related to gains in student achievement. The gains are more significant for novices, yet, in general, they persist well into a teacher’s career¹⁶. These findings support work in the field to pair pre-service and early career teachers with excellent experienced teachers trained to be mentors for clinical experiences, team teaching, and induction.

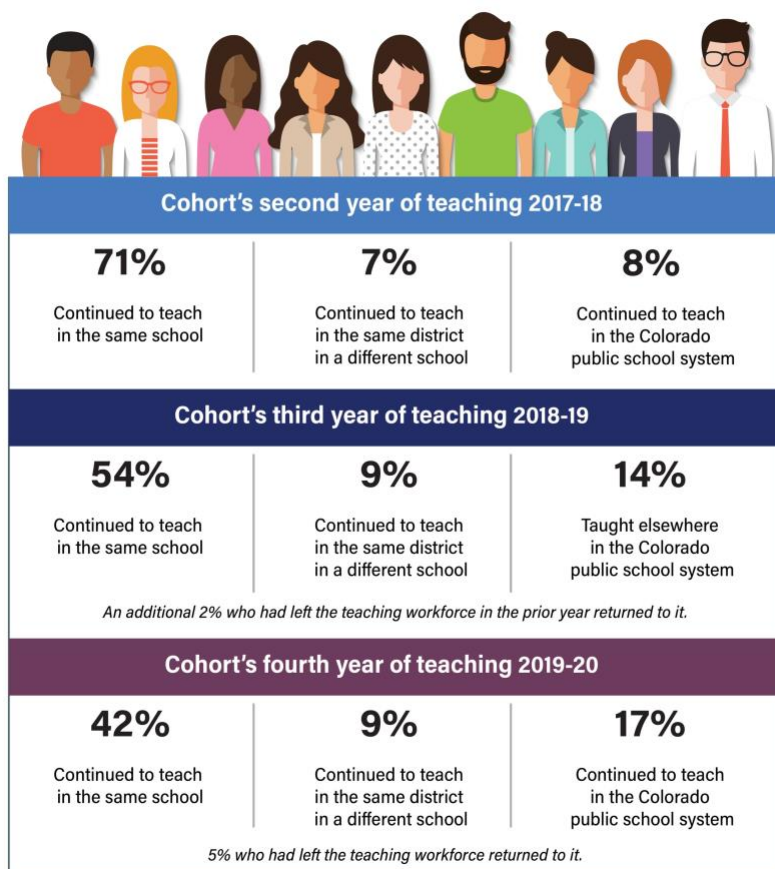
New Teacher Retention Rates

Some attrition is expected among new teachers. Some candidates self-select or are counseled out of their programs. Some may leave for personal reasons or transfer out of state. Yet one of the factors exacerbating teacher shortages is attrition among novice teachers.

For the 2015-16 cohort, three years of retention data are available for reporting. In this cohort's second year of teaching, 2017-18, seven out of 10 teachers (71%) continued to teach in the same school, 7% continued to teach in the same district but in a different school, and 8% continued to teach in the Colorado public school system. In this cohort's third year of teaching, 2018-19, 54% of the cohort continued to teach in the same school, 9% continued to teach in the same district, and another 14% taught elsewhere in Colorado's

public schools. An additional 2% who had left the teaching workforce in the prior year returned to it. In this cohort's fourth year of teaching (2019-20), 42% were still teaching in the same school and an additional 9% were still teaching in the same district. Another 17% were teaching elsewhere in Colorado's public schools, and 5% who had left the teaching workforce returned to it.

Recruiting and retaining an excellent and diverse teacher workforce is the goal of all educator preparation programs and imperative to meet the needs of today's youth and the demands of a changing world.





Conclusion

Colorado is still experiencing educator shortages in multiple content areas and geographic locations and we have yet to see the effects of COVID-19 on the educator workforce.

What we do know is that Colorado EPPs have an important role in both the recruitment and retention of educators. Recruiting a field of educators that reflects the increasingly diverse population of students is important. EPPs also continue to implement best practices in educator preparation to ensure novice educators are equipped to persist in their roles and effect student achievement. Promising policies to consider are those that bolster educator preparation and defray the costs.

Endnotes

1. Leech, N. L., Gullett, S., Cummings, M. H. & Haug, C. A. (2020). Challenges of Remote Teaching for K-12 Teachers During COVID-19. *Journal of Educational Leadership in Action*.
<https://www.lindenwood.edu/academics/beyond-the-classroom/publications/journal-of-educational-leadership-in-action/all-issues/volume-7-issue-1/challenges-of-remote-teaching-for-k-12-teachers-during-covid-19/>
2. Colorado Department of Education & Colorado Education Initiative (2020). Colorado School District Needs Assessment. <https://beta.documentcloud.org/documents/20419380-fall-2020-needs-assessment-report>
3. Colorado Department of Education. (2020). Colorado's educator shortage: Survey results for the 2019–2020 school year. <https://www.cde.state.co.us/educatortalent/2020educatorshortagesurveysummary>
4. Colorado Department of Higher Education. (2020). The Road to Affordability: Reducing Cost and Maximizing Value for Students and our State.
https://highered.colorado.gov/Publications/Reports/Legislative/ROI/202008_ROI.pdf
5. Sutchter, L., Darling-Hammond, L., & Carver-Thomas, D. (2016). A coming crisis in teaching? Teacher supply, demand, and shortages in the U.S. Palo Alto, CA: Learning Policy Institute.
<https://learningpolicyinstitute.org/product/coming-crisis-teaching>
6. Sutchter, L., Darling-Hammond, L., & Carver-Thomas, D. (2016). A coming crisis in teaching? Teacher supply, demand, and shortages in the U.S. Palo Alto, CA: Learning Policy Institute.
<https://learningpolicyinstitute.org/product/coming-crisis-teaching>
7. Ronfeldt, M., Loeb, S., & Wyckoff, J. (2013). How teacher turnover harms student achievement. *American Educational Research Journal*, 50(1), 4–36.
8. Carver-Thomas, D., Kini, T., & Burns, D. (2020). *Sharpening the divide: How California's teacher shortages expand inequality*. Palo Alto, CA: Learning Policy Institute.
9. Ronfeldt, M., Loeb, S., & Wyckoff, J. (2013). How teacher turnover harms student achievement. *American Educational Research Journal*, 50(1), 4–36.
10. DeAngelis, K. J., Wall, A. F., & Che, J. (2013) The Impact of Preservice Preparation and Early Career Support on Novice Teachers' Career Intentions and Decisions. *Journal of Teacher Education*. 64(338-355).
11. Ingersoll, R., Merrill, L., & May, H. (2014). What are the effects of teacher education and preparation on beginning teacher attrition?. Research Report (#RR-82). Philadelphia: Consortium for Policy Research in Education, University of Pennsylvania.
12. Egalite, A., Kisida, B., & Winters, M.A., (2015, April). Representation in the classroom: The effect of own-race teachers on student achievement. *Economics of Education Review*, 45, 44-52.
13. Egalite, A., & Kisida, B. (2017, June). The Effects of Teacher Match on Students' Academic Perceptions and Attitudes. *Educational Evaluation and Policy Analysis*, 40(1), 59-81.
14. Woodworth, K., Bland, J., Guha, R., Shields, P., Wechsler, M., Morales, J.T., & Tse, V. (2009) The Status of the Teaching Profession. The Center for the Future of Teaching and Learning.
15. Kini, T., & Podolsky, A. Does Teaching Experience Increase Teacher Effectiveness? A Review of the Research (Palo Alto: Learning Policy Institute, 2016).
https://learningpolicyinstitute.org/sites/default/files/product-files/Teaching_Experience_Report_June_2016.pdf