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Teacher Shortages Across the Nation and Colorado

Similar Issues, Varying Magnitudes

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Higher Education

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EXECUTIVE SUMMARY

A teacher shortage in the United States has been projected for over 20 years, largely based on the projection of population growth due to the rate of immigration, expanding and maturing families coupled with the forecasted mass retirement of the baby boomers (National Commission on Teaching and America's Future, 1996). School districts across the nation in urban, suburban, and rural areas are faced with the challenge of providing students with qualified teachers. In sum, there are teacher shortages across the nation; however, the shortages vary across and within states, school districts, and schools within the same district (Dee & Goldhaber, 2016).

Myriad reasons are cited for the shortages in teacher supply across the nation: low teacher salaries, rising costs of college education coupled with increased student loan debt, competition with more prestigious and higher paying professions, high costs of teacher licensure, increased teacher accountability resulting in lower job satisfaction, educator preparation program (EPP) requirements, restrictions on full-time employment during student teaching practicum and the resulting increase in financial strain on teacher candidates, lack of differentiation in the teacher career pathway, etc.

The state of Colorado is one of many states currently grappling with teacher shortages. Throughout the last seven years, Colorado has seen a decrease in enrollment and completion of EPPs. As these numbers decline, the demand for qualified educators continues to rise due to career attrition and increasing numbers of retirees. As a result, the state annually licenses approximately 50% of its teachers from out-of-state (Colorado Department of Education, 2017). The state legislature passed Colorado House Bill 17-1003, *Concerning a Strategic Action Plan to Address Teacher Shortages in Colorado*, and its subsequent inclusion in the Colorado Revised Statutes under 23-1-120.9 to address this pressing and growing need.

In response to the legislation, a collaborative effort between The Colorado Department of Higher Education (CDHE) and The Colorado Department of (CDE) was formed to analyze the teacher shortage and provide a strategic action plan, *Colorado's Teacher Shortages: Attracting and Retaining Excellent Educators*, based on the findings. As specified in law, significant efforts have been made to include feedback and guidance from stakeholders from all regions of the state as teacher shortages in Colorado are statewide challenges that uniquely affect all areas of the state and; therefore, all residents to some degree.

Included in this study and the strategic plan are research-based findings, best practices, and policy recommendations, as well as the perspectives and suggestions received from parents, students, community members, business leaders, teachers, school administrators, school staff members, state elected officials, educational organizations, boards of cooperative educational services (BOCES), educator preparation leaders across Colorado, and the general public.

This study provides a nuanced approach to examining national teacher shortages as context for this analysis of teacher shortages in the State of Colorado. In Colorado, as well as throughout the nation, experiences with teacher shortages vary by geographic location and content area. This study examines teacher shortage experiences in urban, suburban, rural, and remote rural areas to understand Colorado school districts' challenges with teacher supply and the complexity of issue for all districts. The study also compares national teacher shortage areas (TSA) to the teacher shortage areas in the State of Colorado. Finally, the report examines the teacher shortage phenomenon through the pre-service to retirement or exit continuum and provides policy recommendations for EPPs, school districts, as well as state and federal lawmakers.

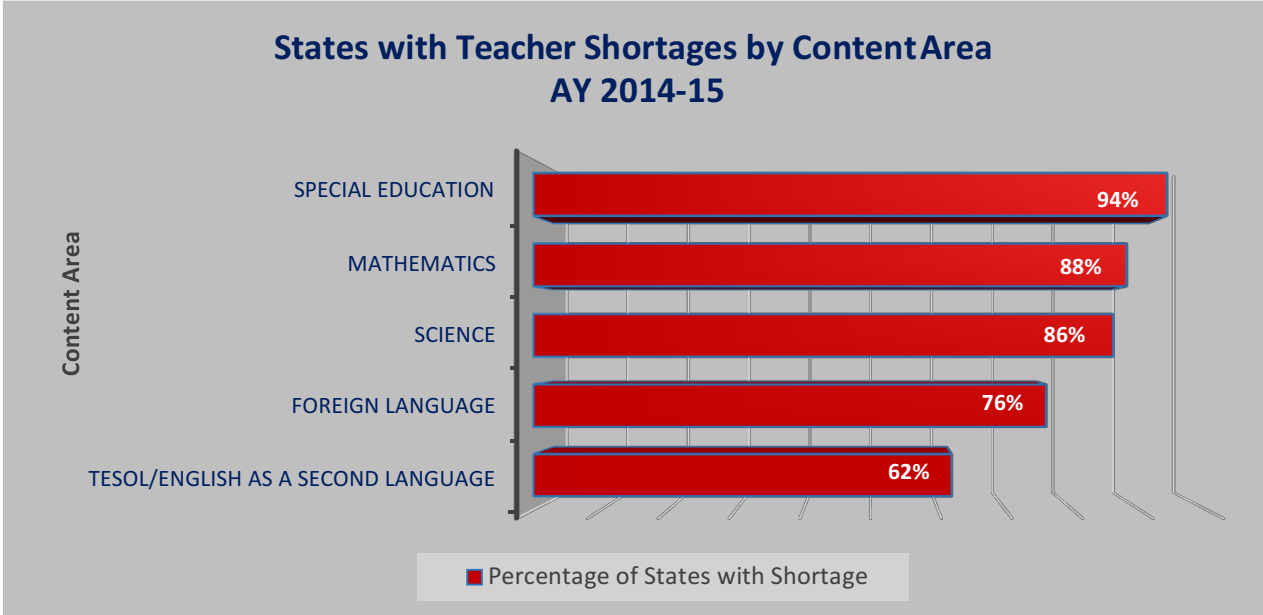
We acknowledge there are shortages of other education professionals across the nation and in Colorado such as school counselors and speech pathologists; however, this study focuses on early childcare providers and P-12 teachers.

TEACHER SHORTAGES ACROSS THE NATION

A teacher shortage in the United States has been projected for over 20 years, largely based on the expected population growth due to the rate of immigration, expanding and maturing families, coupled with the forecasted mass retirement of the baby boomers (NCTAF, 1996). These projections were based on traditional immigration patterns, statistics, and data; thus, they did not include the impact of the Great Recession. However, the country experienced a greater percentage of immigration and, hence, a population swell in some urban centers, as well as some rural areas due to the increase in immigrant labor.

For a while, some speculated that the projected educator shortage was more myth than fact as the recession extended time to retirement for baby boomers. When newly licensed teachers in search of employment faced a job market riddled with teacher layoffs and the continued employment of retirement eligible teachers, the projection appeared to be an error. However, the downsizing of the teaching force and delayed retirements were reflective of economic conditions, not the population growth (Sutcher, Darling-Hammond, & Carver-Thomas, 2016). A possible explanation for the disagreement on the accuracy of the prediction or onset of the teacher shortage is that it was anticipated to be a collective, uniformed shortage across the nation. In fact, the teacher shortage is much more nuanced. There are teacher shortages across the nation; however, the shortages vary across and within states, school districts, and schools within the same district by content area (Dee & Goldhaber, 2016) (see Figure1).

Figure 1



Source: U.S. Department of Education (2016, August). *Teacher Shortage Areas Nationwide Listing 1990–1991 through 2016–2017*.

Myriad reasons are cited for the shortages in teacher supply: low teacher salaries, rising costs of college education coupled with increased student loan debt, competition with more prestigious and higher paying professions, high costs of teacher licensure, increased teacher accountability resulting in lower job satisfaction, gatekeeping associated with matriculation through EPPs, restrictions on full-time employment during student teaching practicum and the resulting increase in financial strain on teacher candidates, lack of differentiation in the teacher career pathway, etc.

The state of Colorado is one of many states currently grappling with teacher shortages. Throughout the last seven years, Colorado has seen a decrease in enrollment and completion of EPPs. As these numbers decline, the demand for qualified educators continues to rise due to career attrition and increasing numbers of retirees. As a result, the state annually licenses approximately 50% of its teachers from out-of-state (Colorado Department of Education, 2017). The state legislature passed Colorado House Bill 17-1003, *Concerning a Strategic Action Plan to Address Teacher Shortages in Colorado*, and its subsequent inclusion in the Colorado Revised Statutes under 23-1-120.9 to address this pressing and growing need.

In response to the legislation, a collaborative effort between The Colorado Department of Higher Education (CDHE) and The Colorado Department of (CDE) was formed to analyze the teacher shortage and provide a strategic action plan, *Colorado's Teacher Shortages: Attracting and Retaining Excellent Educators*, based on the findings. As specified in law, significant efforts have been made to include feedback and guidance from stakeholders from all regions of the state as teacher shortages in Colorado are statewide challenges that uniquely affect all areas of the state and; therefore, all residents to some degree.

Data was collected through a series of thirteen town hall meetings held throughout the state and via a targeted on line survey. This mixed method design approach resulted in nearly 400 individual participants in in-depth conversations regarding teacher shortages and more than 6,500 survey responses collected from Coloradans. The survey was available in both Spanish and English, designed specifically for this initiative, and available to the general public for more than six weeks. Coding of the qualitative data obtained through the town hall meetings and surveys consisted of strategies in the following categories: (1) perceptions of teaching and education (2) compensation and salary (3) educator preparation (4) retention and (5) working conditions. The need for affordable housing for teachers was also stressed in town hall meetings, as many teachers are unable to live in the districts in which they teach due to housing costs and/or lack of availability.

In total, 289 specific strategies were developed through the town hall process that included both non-cost and cost strategies designed to address teacher shortages in Colorado. The predominate strategies, as articulated by town hall attendees and survey respondents, have been included in the strategic action plan, *Colorado's Teacher Shortages: Attracting and Retaining Excellent Educators*.

Included in this study and the strategic plan are research-based findings, best practices, and policy recommendations, as well as the perspectives and suggestions provided by parents, students, community members, business leaders, teachers, school administrators, school staff members, state

elected officials, educational organizations, boards of cooperative educational services (BOCES), educator preparation leaders across Colorado, and the general public.

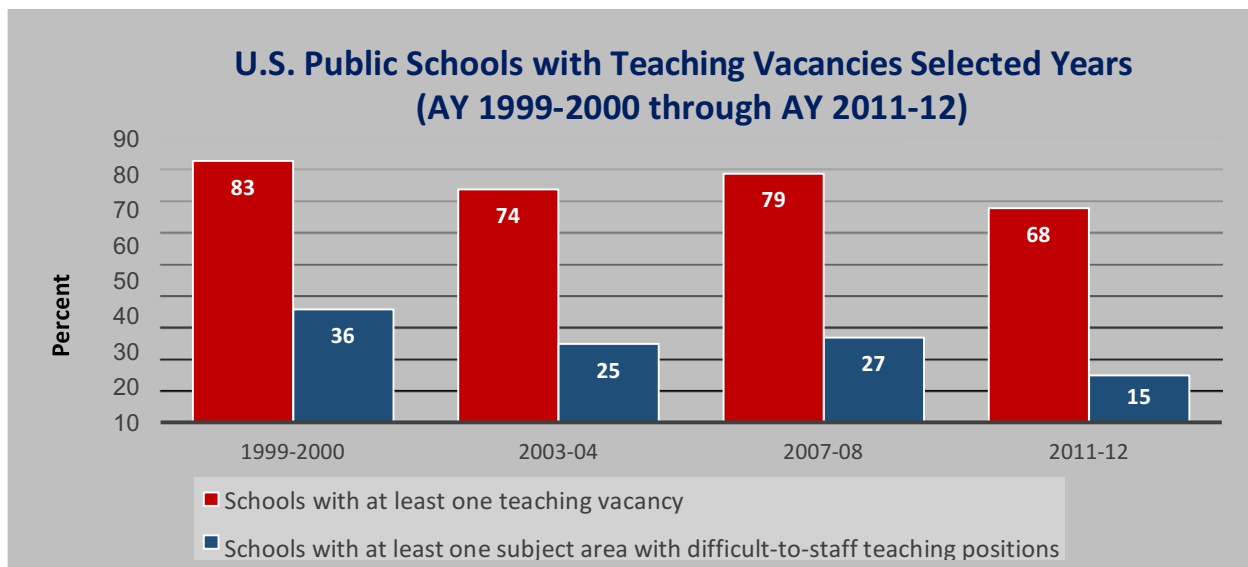
This study provides a nuanced approach to examining national teacher shortages as context for this analysis of the teacher shortage in the State of Colorado. In Colorado, as well as throughout the nation, experiences with teacher shortages vary by geographic location and content area. This study examines teacher shortage experiences in urban, rural, and remote rural areas to understand Colorado school districts' challenges with teacher supply and adequately address the complexity of issue for all districts. The study also compares national teacher shortage areas (TSA) to the teacher shortage areas in the State of Colorado. Finally, the report examines the teacher shortage phenomenon through the pre-service to retirement or exit continuum and provide policy recommendations for EPPs, school districts, as well as state and federal lawmakers, including low cost options to meet the statutory requirements.

We acknowledge there are shortages of other education professionals across the nation and in Colorado such as school counselors and speech pathologists; however, this study focuses on early childcare providers and P-12 teachers.

SIMILAR ISSUE, VARYING MAGNITUDE

School districts throughout the country are faced with increasing challenges in hiring teachers (see Figure 2). The challenges are more intense in hard-to-staff schools such as economically disadvantaged schools, particularly those schools serving high populations of minority students.

Figure 2



Source: U.S. Department of Education, National Center for Education Statistics, *Schools and Staffing Survey (SASS)*, "Public Schools Data Files," 1999-2000, 2003-04, 2007-08, and 2011-12.

Economically disadvantaged schools are present in urban, rural, and some suburban districts in the country (Podolsky, Kini, Bishop & Darling-Hammond, 2016). For these schools, the hiring struggle is not restricted to the traditional hiring season, but is ongoing throughout the school year as they are often forced to begin the school year with unfilled teaching positions or conduct hiring searches due to midyear departures.

In Colorado, several school districts (particularly those districts serving remote rural and urban schools) struggling to recruit and retain teachers have no alternative but to staff classrooms with teachers who are not yet qualified to teach in those subjects (Goodland, 2016). Hiring and retention in hard-to-staff schools is affected by salary, working conditions, i.e., school climate, as well as teacher supply, but teacher staffing is more acutely impacted during teacher shortages as competition between schools and school districts increases (Brown, 2015). The disparity in salary between Colorado urban/suburban and rural school districts greatly impacts hiring and retention for rural school districts that offer lower salaries as 95% of Colorado rural school districts salaries are below the cost of living (Bissonette, 2016).

The U.S. Department of Education Office of Postsecondary Education guidance states a teacher shortage can be identified: (1) at the state level in specific geographical areas within the state such as certain school districts or schools within a district and (2) by grade levels and by academic content area.

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The federal guidance on teacher shortage areas stipulates that the following three categories of teaching positions should be counted when determining a shortage: (1) unfilled positions (2) positions held by certified teachers teaching in areas in which they are not certified and (3) positions with conditional certifications such as temporary, provisional, emergency, or irregular (Cross, 2016). Based on this guidance, there is not a collective, uniformed teacher shortage; however, there are varied shortages across the nation.

While there has been a decline in the number of education majors in recent years, the number of EPP completers (students who have met all requirements of a state-approved educator preparation program and are documented as such) outpaces the number of teachers hired nationally each year (Dee & Goldhaber, 2017). This suggests that there is not a shortage in the production of teacher candidates eligible for licensure (though there are shortages in some content areas). However, in Colorado, the number of teacher candidates eligible for licensure is less than the number of teachers hired annually overall, and is more pronounced in content shortage areas. Therefore, in Colorado focus must be placed on retention of educators and recruitment of students into education preparation programs, including minority students.

Geographic and Economic Status Variance

Teacher shortages are experienced differently across states and geographical locales. Sutchter, Darling-Hammond, and Carver-Thomas state, “Each state experiences teacher supply and demand differently, because there are state-level labor markets created by different policies and contexts affecting teaching. These include funding levels and allocations, salary levels, teaching conditions, licensure and accreditation policies, concentration of preparation institutions, demographics of the teaching force, concentration or sparsity of the population, and topography, among others” (2016, p. 11). However, we do know rural schools and schools serving low-income students experience greater hiring and retention challenges. States with rural areas, such as Colorado, struggle with recruitment and retention of qualified teachers, but these issues are intensified in remote rural areas that face transportation (distance from highways and routes) and communication challenges (technological connectivity such as access to the internet); hence, increasing the isolation of such communities (NASBE, 2016).

Rural Areas

According to the U.S. Census Bureau, the population of a rural city or town is less than 50,000 that is not included in a cluster of other cities or towns with populations between 2,500 to 50,000 people. Rural communities must also meet the following three geographic criteria: (1) remote location: more

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than 25 miles from an urban area and closer than 10 miles from an urban area (2) distance from other towns and cities: more than 5 miles but less than or equal to 25 miles from an urban area, as well as rural area that is more than 2.5 miles but less than or equal to 10 miles from an urban area and (3) fringe: less than or equal to 5 miles from an urban area or rural territory that is less than or equal to 2.5 miles from an urban area (NCES, 2013, p.11).

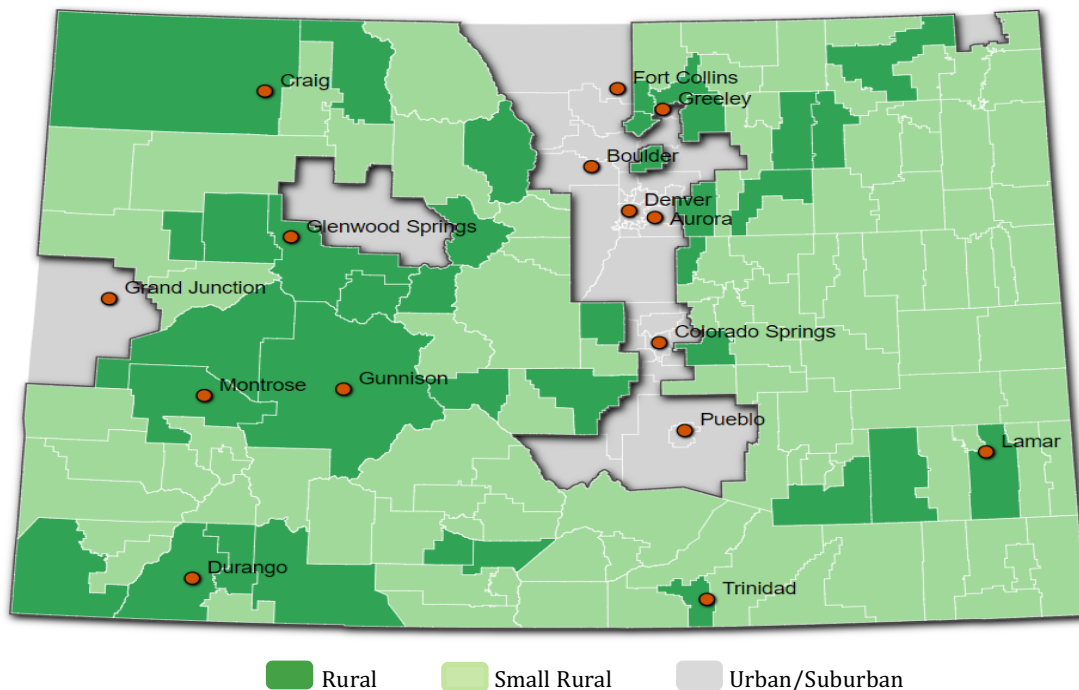
In Colorado, the rural designation for school districts is based on size, the distance from the nearest large urban area, and an enrollment size of 6,500 students or less. Small rural school districts also must meet these criteria, but must have a student population of 1,000 or less (Colorado Department of Education, 2013).

Of the 196 school districts in Colorado, there are 147 rural school districts with a total enrollment of approximately 180,000 students. As highlighted in numerous scholarly articles and in the regional media (see Maranto & Shuls, 2012; Simmons, 2015; and Schimke, 2016), these rural schools have experienced increased difficulty recruiting and retaining educators—particularly in the areas of secondary math, secondary science and speech pathology. A map highlighting these rural districts in

Colorado is provided below (see Figure 3). Please note that the districts in light green are considered “small rural” (K-12 enrollment under 1000 students); districts in dark green are considered “rural” (enrollment of 1001-6500 students) and districts in gray are considered urban or suburban (enrollment of more than 6501 students).

Figure 3

Colorado School District Mapping by Type



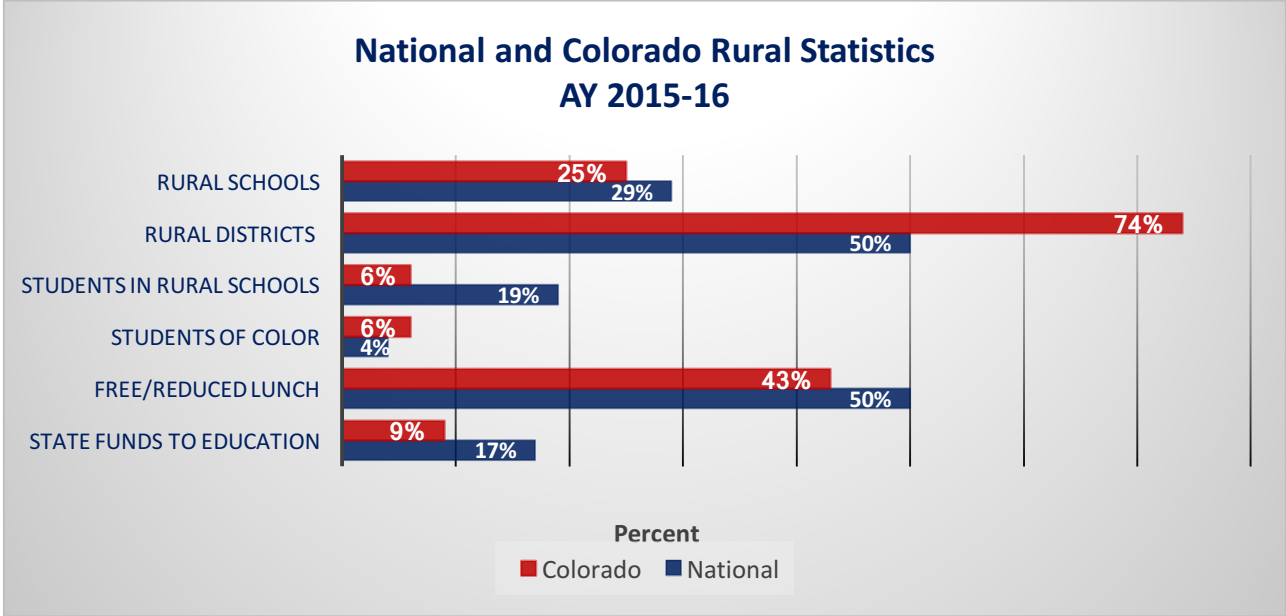
Source: Colorado Department of Education and Western State Colorado University, *Rural Schools Map*, Retrieved from <https://www.western.edu/rural-schools-map>

As illustrated by the gray shading, all urban/suburban districts are situated along the I-25 and I-70 corridors. At present, 74% of all districts in the state of Colorado are considered rural or small rural. While all school districts have seen a reduction in the number of applicants seeking employment as teachers, the limited number of individuals seeking positions in schools and districts in Colorado’s rural regions has provided unique challenges to offering high-quality public education (Engdahl, 2016). In a town hall meeting held in remote rural Vilas (30 miles from the Oklahoma border in southeastern Colorado), stakeholders discussed the severity of the challenge in recruiting and retaining educators and stated that initiatives targeted at remote rural areas are needed.

The percentage of rural schools in Colorado is slightly less than the percentage of rural schools across the nation with approximately 25% of Colorado schools designated as rural compared with 29% nationally. However, the percentage of small rural school districts in Colorado is considerably higher at

74% than the national percentage (approximately 50%) (see Figure 4). The percentage of students in the state attending rural schools (6%) is significantly less than the percentage of students in the country attending rural schools (approximately 19%). Disaggregation of the data shows that Colorado has a higher percentage of rural students of color than the nation (28% compared to 25%), as well as a higher percentage of English Language Learners (6%) compared to 3.5% nationally (see Figure 4).

Figure 4



Source: Showalter, D., Klein, R., Johnson, J. & Hartman, S.L. (2017). *Why Rural Matters: Understanding the Changing Landscape*.

Though the percentage of students (43%) eligible for free or reduced lunch in Colorado is slightly less than the national percentage (approximately 50%), the percentage of state education funds allocated to rural school districts in Colorado is 8% less (9% compared to 17%) than the average percentage of state funds allocated to rural schools across the country (Showalter, Klein, Johnson, & Hartman, 2017) (see Figure 4).

Educator Preparation in Rural Areas

Allowing interested rural students to have access to educator preparation programs in their communities is important. However, four-year institutions are often not located in rural areas. Even in those communities with two-year associate degree granting institutions, students interested in completing bachelor degrees are often forced to leave their communities to do so, particularly if they do not enroll in distance education programs. Additionally, in remote rural communities that lack internet access and broadband connectivity, distance education is not an available option.

Most states require completion of a state-approved educator preparation program and licensure requirements for certification. However, a lack of access to four-year institutions’ educator

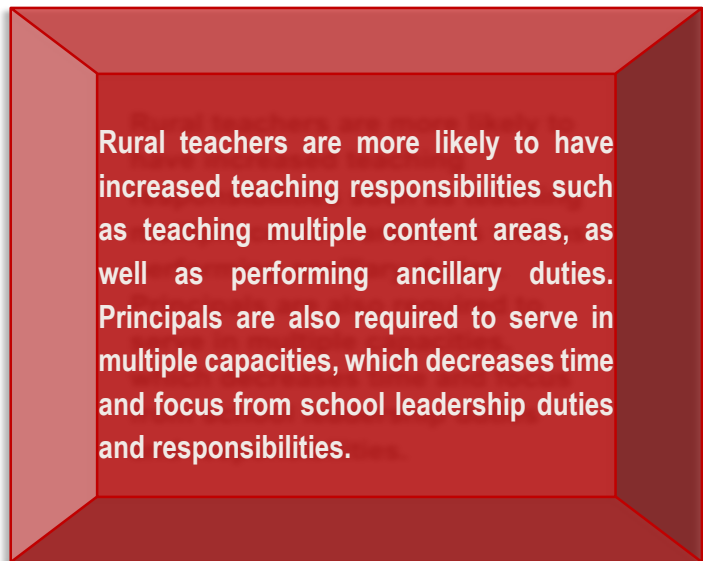
preparation programs and internet connectivity required for distance education, facilitates an exportation of potential teachers out of their home communities (NASBE, 2013). This need for completion of a state-approved program, coupled with the urgency of the need for teachers in the classroom has also resulted in an increase in alternative certification programs. These programs offer expedited academic offerings (the average program length being 18 months); some offer salaried positions during program completion, as well as assistance with placement and induction support (Jang & Horn, 2017). Colorado offers alternative educator preparation programs in every corner of the state through the Board of Cooperative Educational Services (BOCES) and other nonprofit providers. The challenge in remote areas is finding the candidates to enter these programs.

Colorado is working to increase rural residents' access to four-year institutions' educator preparation programs in a number of ways. For example, the University of Colorado Denver's agreement with rural Otero Junior College (OJC), offers students the opportunity to earn a bachelor's degree in elementary education in their community by attending classes at OJC's LaJunta campus. Articulation agreements between The Colorado of Department of Higher Education, state colleges and universities, and the Colorado Community College System (CCCS) make these partnerships possible. These collaborative efforts are essential to preparing teachers and addressing teacher shortages in rural areas.

Rural Teacher Shortage Areas

Due to the unique challenges of rural areas, many rural districts throughout the country and in Colorado experience teacher shortages in elementary teachers and secondary teachers with endorsements in English literature and social studies—areas that are not commonly shortage areas in other geographical locations (NASBE, 2016). Some rural areas offer great racial, ethnic, and cultural diversity. Consequently, teachers in rural areas increasingly require training and competency in cultural and linguistic diversity, “Diversity, persistent poverty, multiple cultural identities, and isolation (due to geography, culture, or sometimes, lack of broadband) provide the backdrop for many rural schools” (NASBE, 2016, p. 7). Due to the small size of rural school districts and schools, many schools need targeted resources and qualified teachers to address the needs of diverse students.

Rural communities—particularly those that are more demographically homogeneous—are presented with greater hiring and retention challenges related to recruiting teachers of color, who are vital to the education of all students and essential to the education of students of color (Egalite, Kisida, & Winters, 2015).



Urban Areas

Urban and rural school districts and schools experience more teacher shortages largely based on the high concentration of economically disadvantaged students. However, urban areas are home to a greater number of students of color who are culturally and linguistically diverse. Furthermore, research suggests that areas with greater concentrations of high poverty and students of color face greater teacher shortages (Will, 2016).

While the teacher to student ratio is decreasing across the country, the ratio remains higher in urban schools (Podolsky, Kini, Bishop, and Darling-Hammond, 2016). The overall teacher attrition rate in the teaching profession is high; however, the attrition rate in many urban schools outpaces that of suburban schools (Goldring, Taie, & Riddles, 2014). Consequently, hiring and retention in many urban school districts present challenges for educator talent departments, but for different reasons than rural school districts.

Economic Status

The U.S. Department of Education's 2016–17 report of teacher shortage areas designated bilingual education and English Language Acquisition, foreign language, mathematics, reading specialist,

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science, and special education as high-needs areas for schools serving low-income students (Cross, 2016). The overlap in content areas commonly shared across the country such as English, mathematics, science, and special education could present hiring challenges for schools serving low-income students as they tend to be among those designated as hard-to-staff.

Teachers' working conditions greatly impact where they decide to teach. Working conditions in schools serving low-income students are reported as being more challenging due to lower pay, higher stress, fewer teaching resources, larger class sizes, school facility conditions, and less administrative support (Podolsky, Kini, Bishop & Darling-Hammond, 2016). These factors are less prevalent in more affluent schools which lessens the attractiveness of teaching in schools serving low-income students; hence, the more challenging working conditions create a greater disadvantage for low-income schools and possibly more teacher vacancies that last for greater lengths of time.

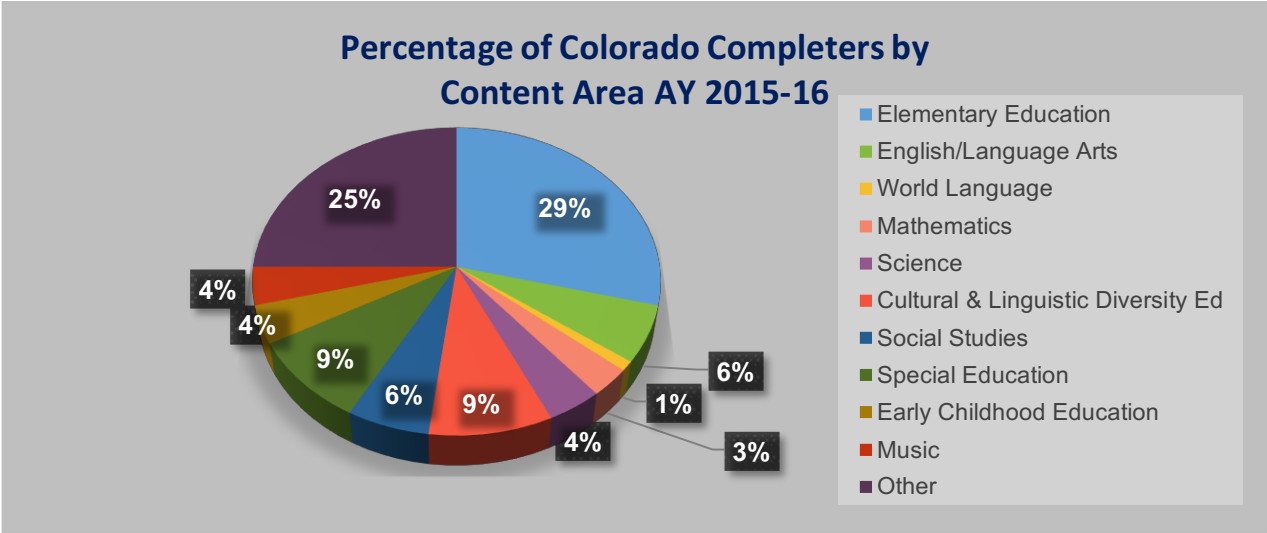
In the Monte Vista and Las Animas Town Hall meetings, stakeholders from the southern San Luis Valley and Las Animas discussed the need for substantive change in how schools are financed in

Colorado. Monte Vista participants focused on the disparity between socioeconomically disadvantaged, minority school districts and more affluent, majority school districts. Several of the district leaders in attendance expressed their frustration regarding limited state-level funding for P-12 education and their district limitations regarding mill-levy override efforts.

Content Area Variance

Colorado teacher shortages areas reflect the national shortage areas. For example, in 2016–17 the state reported shortages in special education, mathematics, and English, and world language.

Figure 5



Source: The Colorado Department of Higher Education (2016). *Educator Preparation Report AY 2015-16*

The only teaching shortage areas reported by Colorado not reflected at the national level were early childhood special education, and art/music/drama. However, there were low percentages of students completing programs in the following areas: early childhood education, 4%; and culture & linguistic diversity education, 4% indicating that these areas are likely to be experiencing shortages in the future (see Figure 5).

The number of Early Childhood Education Associate of Arts degrees awarded in Colorado has dropped by approximately 20% and enrollment has declined by 30% since 2013. The low percentage of completer in early childhood education is likely an effect of low wages paid to early care educators. A recent report commissioned by Early Milestones Colorado, *Bearing the Cost of Early Care and Education in Colorado: An Economic Analysis*, states that many early care educators’ compensation is below the cost of living resulting in eligibility for public assistance from Housing and Urban Development, Medicaid/Child Health Insurance Plans, and Supplemental Nutrition Assistance Program (Franko, Brodsky, Wacker, & Estrada, 2017).

The decrease in the number of educators entering Colorado's classrooms has resulted in the need for the state to invest in recruiting teachers from out-of-state. In fact, approximately half of the new teachers licensed in Colorado are recruited from other states (Colorado Department of Education, 2017).

CULTIVATION, DEVELOPMENT, AND RETENTION OF TEACHERS

PRE-SERVICE: EDUCATOR PREPARATION PROGRAMS

National and Colorado Enrollment and Completion Trends

Colorado, like most states, requires completion of a state-approved educator preparation program to obtain teacher licensure. There are two routes available to aspiring teachers in the state and across the country, i.e., traditional and alternative programs. Colorado offers programs through 21 state-approved traditional educator preparation providers and 25 alternative educator preparation program providers.

Traditional programs are typically offered by four-year institutions of higher education with undergraduate and post baccalaureate programs that include coursework requirements and practicum experience. These programs require that teacher candidates complete all program requirements, including coursework and practicum experiences, before they are eligible for licensure and service as a teacher of record.

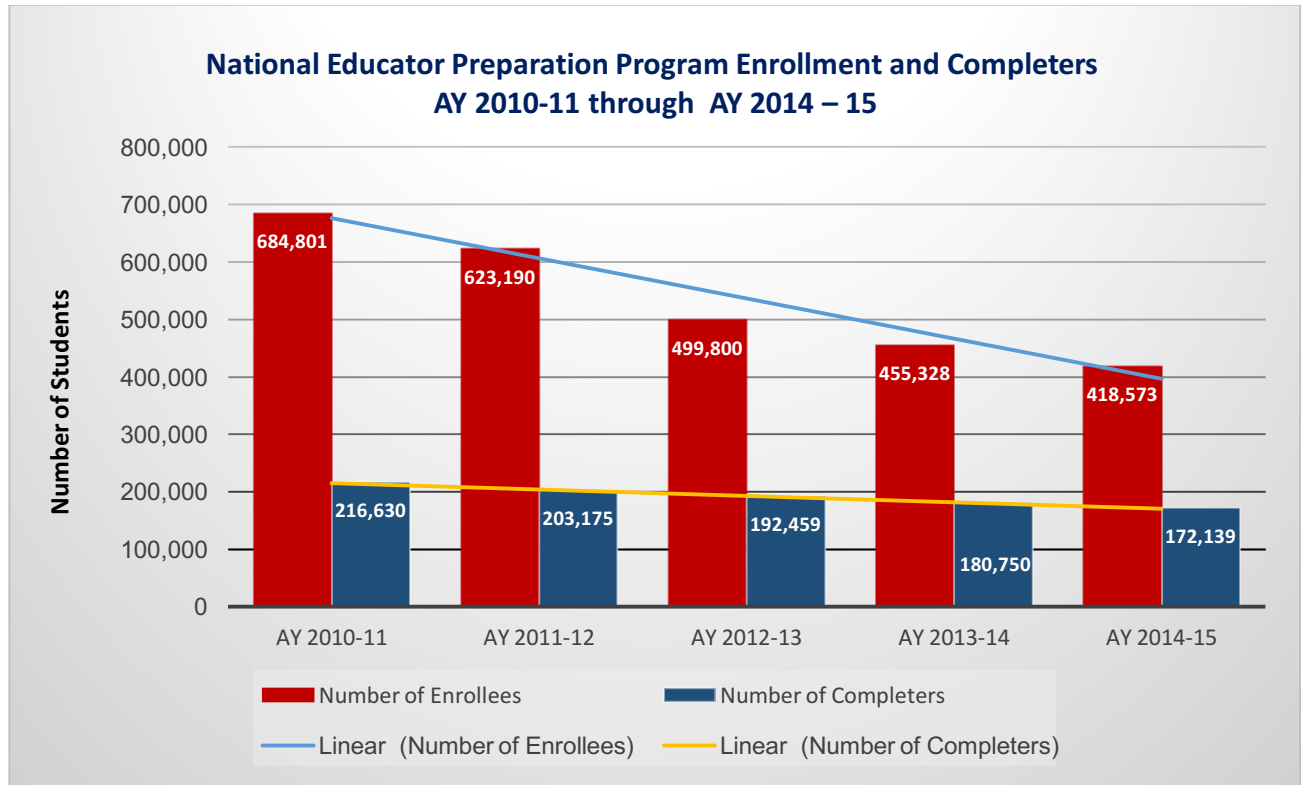
Both traditional and alternative route programs can be offered completely or partially through distance education. However, there are some distinguishing characteristics between traditional and alternative programs. Teacher candidates enrolled in traditional teacher preparation programs typically do not hold a bachelor's degree.

Most alternative programs require participants have an undergraduate degree. Also, alternative programs allow participants to complete required licensure coursework and practicum experiences while serving as a teacher of record. Some programs require a limited amount of coursework and practicum experience prior to entering the classroom; however, some do not. Additionally, the amount of coursework and length of teaching practice (if required) varies. Lastly, whereas teacher candidates in traditional educator preparation programs are not allowed full-time employment during the student teaching practicum, most alternative programs require placement and/or service as a teacher of record as a condition of admission. Hence, participants receive a teacher's salary if they are required to serve as a teacher of record while matriculating through the program. Teacher residency participants receive a stipend during their residency.

Educator preparation programs have experienced a decline in enrollment in recent years. According to the U.S. Department of Education, educator preparation program enrollment has decreased by 31 percent based on AY 2010-11 through AY 2014-15 data. In the 2010-11 academic year, 684,801

students were enrolled in educator preparation programs compared to AY 2014-2015 where 418,573 students were enrolled (see Figure 6).

Figure 6

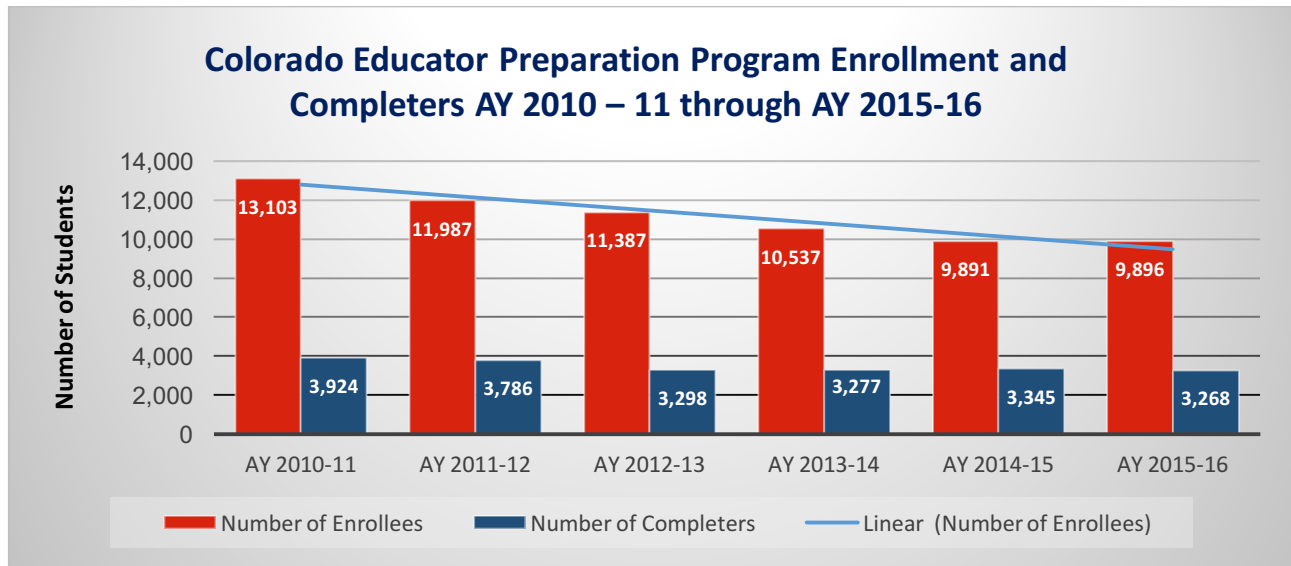


Source: U.S. Department of Education, Office of Postsecondary Education (2015). *Higher Education Act Title II Reporting System*.

Data from the U.S. Department of Education reveals that while the number of EPP completers outpaces the number of novice teachers, there has been a decline in the number of completers. In AY 2014–15, EPPs produced 172,139 completers—a 5% decrease from the 180,750 completers in the 2013–14 academic year. This decrease continued a downward trend in the numbers of completers as the 192,459 completers in AY 2012–13 was a 5% decrease from the 203,175 who completed in AY 2011–12 (ED, 2016) (see Figure 6).

Colorado’s EPP completer data varies from the national data in that the number of EPP completers is less than the number of novice teachers hired each year, as it is estimated that approximately half of the teachers hired each year are from out-of-state. Similar to the national trend, there has been a decline in the number of Colorado EPP completers. Based on the most recent available data (AY 2015–16) a total of 3,268 students completed educator preparation programs, a very slight decrease from the 3,345 students completing programs in AY 2014–15. In AY 2011–12, a total of 3,924 completers exited EPPs (see Figure 7).

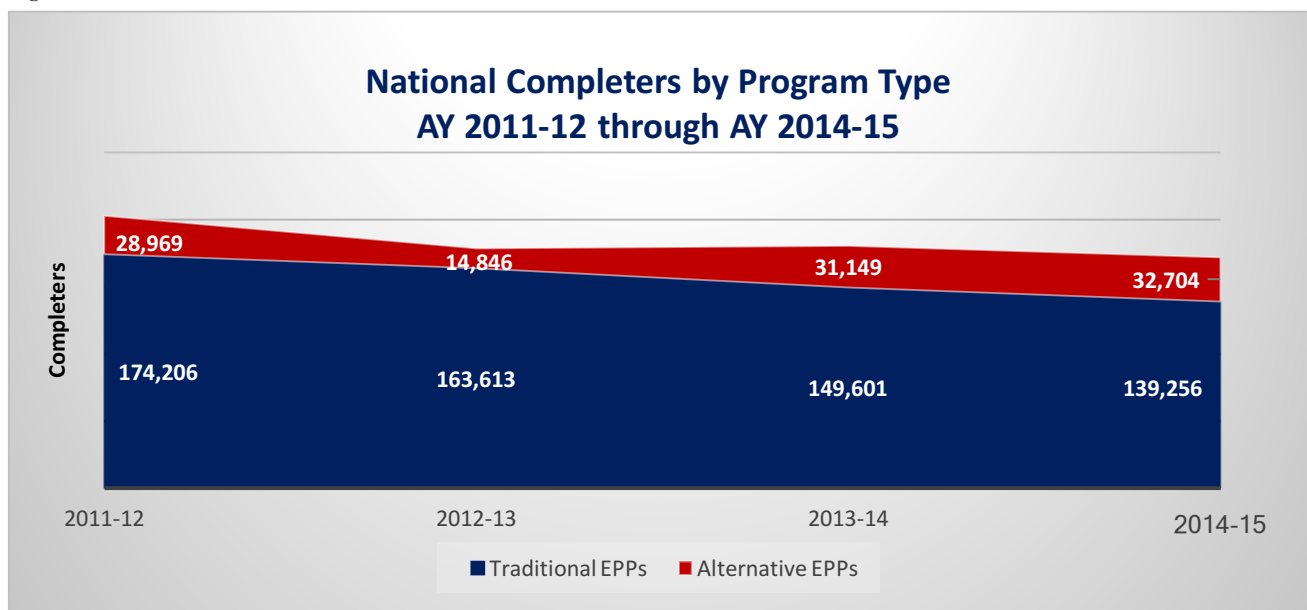
Figure 1



Source: The Colorado Department of Higher Education, *Educator Preparation Reports AY 2010-11 through AY 2015-16* and U.S. Department of Education, Office of Postsecondary Education. *Higher Education Act Title II Reporting System*.

There has been a decline in the number of traditional EPP completers across the nation. Traditional EPP programs throughout the country prepare an overwhelming majority of completers (81% in AY 2014–15, 86% in AY 2011-12). Closer examination of completer data reflects decreasing numbers of traditional EPP program completers. Traditional EPPs prepared 139,256 completers in AY 2014–15, a 20% decrease from the 174,206 completers in AY 2011–12 (see Figure 8).

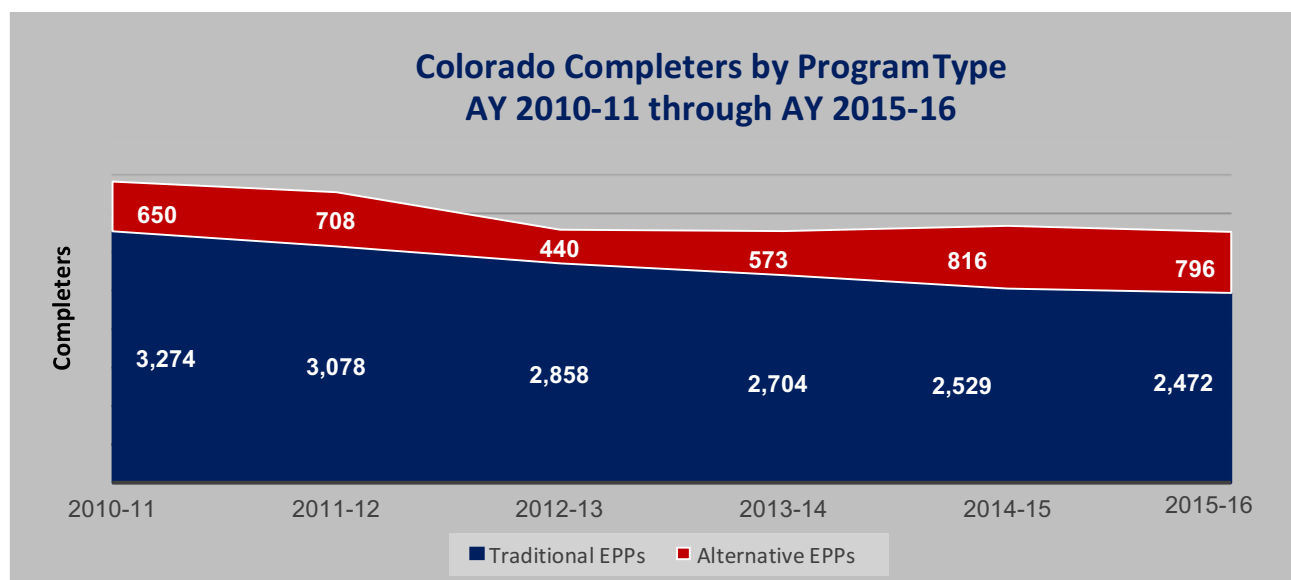
Figure 8



Source: U.S. Department of Education, Office of Postsecondary Education (2015). *Higher Education Act Title II Reporting System*.

In Colorado, the number of students completing traditional educator preparation program has consistently declined over the last six years. Recent data shows a 24% decrease in enrollment in Colorado traditional educator preparation programs from AY 2010–11 through AY 2015-16 (3,274 in AY 2010–11 compared to 2,472 traditional program completers in AY 2015–16) (see Figure 9).

Figure 9



Source: The Colorado Department of Higher Education, *Educator Preparation Reports AY 2010-11 through AY 2015-16* and U.S. Department of Education, Office of Postsecondary Education. *Higher Education Act Title II Reporting System*.

The number of completers prepared through alternative route EPPs has increased nationally, as well as in Colorado. However, the percentage of alternative EPP completers is higher in Colorado than at the national level. Nationally, 32,704 completers were prepared by alternative programs in AY 2014–15, an 11% increase from AY 2011–12 (28,969) (see Figure 8). Colorado educator preparation data shows that in AY 2015–16, 24% of completers (796) exited alternative educator preparation programs (see Figure 9). The most recent national data available from the AY 2011–12 School and Staffing Survey, reflects the same percentage of alternative route program completers as Colorado, i.e., 24%, an increase from AY 1999–2000 which documented an alternative program completer rate of 13%. Colorado has also seen a consistent increase in the number of alternatively prepared teachers from AY 2010–11 to AY 2015–16 as the percentage increased by 18% during that period.

Factors Impacting Enrollment and Completion

There is a decreasing trend in the percentage of bachelor’s degrees conferred in the U.S. in education. Academic year 2012–13 represents the third year of decline in the percentage of undergraduate education degrees, 5.7% compared to 5.9% in AY 2011–12 and 6.1% in AY 2010–11 (NCES, 2016). The enrollment decrease in traditional educator preparation programs is a troubling trend that must

be monitored closely as fewer undergraduate students declare education as a major and receive education degrees.

Current challenges faced by the teaching profession are cited as disincentives for the selection of teaching as a career: lower salaries than other professions, lack of prestige of the profession, the cost of an education degree vs. the return on the investment, the expense associated with certification examination, and the restriction on employment for teacher candidates enrolled in traditional programs during student teaching practicum is a deterrent for college students required to work to contribute to tuition and living expenses (AASCU, 2016). In research on college students and their views of teaching as a major, one reason cited for not entering the teaching major was the increased accountability and as a result, concern over job stability, “Prospective teachers, much like the young educators already working in schools, are especially skeptical of accountability measures that tie a teacher’s job security or pay grade to student test scores. And many are bothered by the way teachers are blamed for much broader social problems” (Mucher, 2015). Historically, current and former teachers have recruited future teachers into the field through direct encouragement or through the fulfillment they enjoy from teaching. Unfortunately, more former and current teachers dissuade aspiring teachers from entering the field, citing job satisfaction issues (AASCU, 2016).

In the Colorado town hall meetings and surveys on teacher shortages, participants echoed some of the same challenging factors. Ridgeway and Parachute town hall meetings focused on the need to create more positive narratives surrounding teaching to address the decrease in enrollment, completion, and retention. The most commonly cited factors impacting educator preparation program enrollment were low salaries and non-competitive compensation structures, as Parachute, Fort Collins, Denver, Colorado Springs, and Ignacio town hall meetings focused on these factors. Poor perception of careers in education and working conditions (workload, work climate, and school environment) were also factors discussed at the Parachute and Fort Collins town hall meetings. Significant issues of retention directly related to school climate, principal leadership, and district leadership were raised in the Denver town hall meeting.

ATTRACTING EDUCATOR TALENT: RECRUITMENT AND INDUCTION

Salary is a strong determining factor in teacher recruitment across the country, as well as in Colorado. The average starting salary for teachers in Colorado is 9% lower than the national average, \$32,126 versus \$36,141 (LPI, 2015). Lower salaries exacerbate hiring and recruitment challenges. The impact of lower salaries coupled with an educator preparation completer rate that is lower than the estimated teacher vacancies in the state, presents recruitment challenges. Recruitment issues are more acute in many rural areas throughout Colorado as data on Colorado teacher salaries, cost of living, and 4-year turnover rate from AY 2012–15 reveals that over 95% of rural school districts' teacher salaries are below the cost of living (Bissonette, 2017).

In 2015–16, educator preparation programs in Colorado produced 3,268 completers (Colorado Department of Higher Education, 2016); however, national estimates show that nearly a third of completers do not enter teaching (U.S. Department of Education, 2016). The significance of the number of Colorado completers becomes more apparent when compared to the state's teacher turnover rate. In 2016-17, the State of Colorado employed 53,568 teachers, 9,319 of whom were new to the school district in which they were teaching for a turnover rate of approximately 17% (Colorado Department of Education, 2017). Included in the “new to the school district” statistic is in-state and out-of-state novice teachers holding an initial license, out-of-state experienced teachers new to

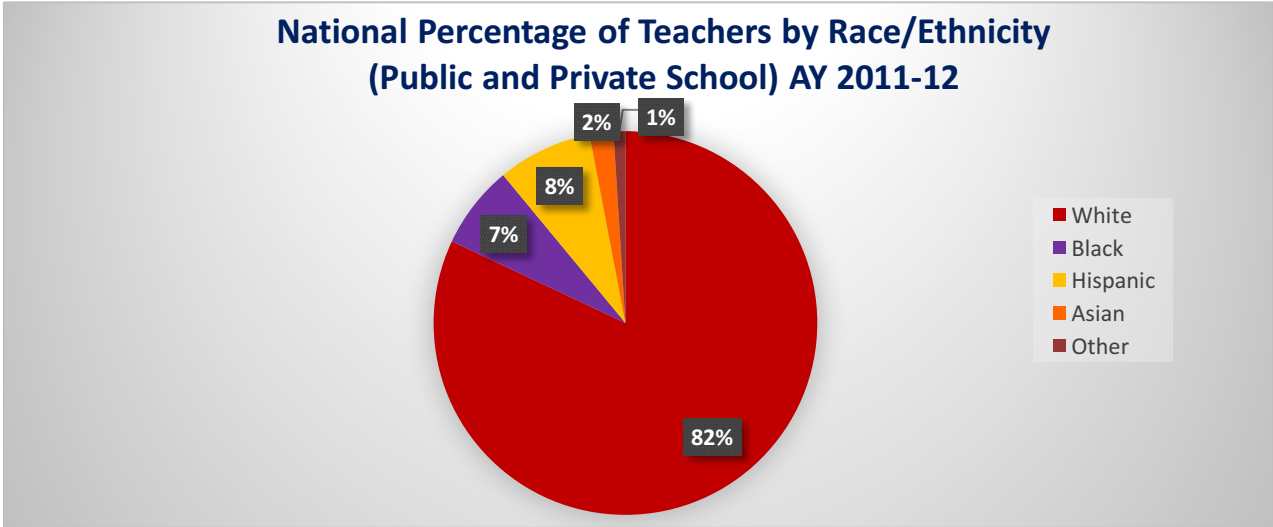
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Colorado, retired Colorado teachers re-entering the classroom due to the Colorado Public Employees Retirement Association (PERA) House Bill 17-1176, as well as current Colorado teachers who left the school at which they were employed that academic year, but obtained employment in another Colorado school district. This in-state, across district mobility dynamic of current Colorado teachers is important to note as many teachers cite higher salary as the reason for moving into other school districts within the state—an effect often seen in states without statewide salary schedules.

This disparity in completers and number of “new to the school district” teachers causes the state to rely heavily on importing educator talent from out-of-state for more than half of its new teachers each year. This dependency increases hiring competition with other states, which is of concern due to Colorado's lower than national average starting salary, as well as lower salaries across school districts which contribute to teacher attrition in lower paying school districts, many of which are rural districts. Other factors impacting teacher recruitment beyond salary in rural Colorado are similar to those faced by rural areas across the county, i.e., geographic and technological isolation, increased teacher responsibility due to teachers teaching multiple subject areas and assuming other responsibilities beyond teaching. School leaders are also overburdened due to increased administrative, as well as other duties and responsibilities (NASBE, 2013).

There is a shortage of teachers of color throughout the nation, as the most recent available data from the U.S. Department of Education shows that approximately 82% of public and private school teachers are white, 8% are Hispanic, 7% are black, and 2% are Asian (ED, 2016b) (see Figure 10).

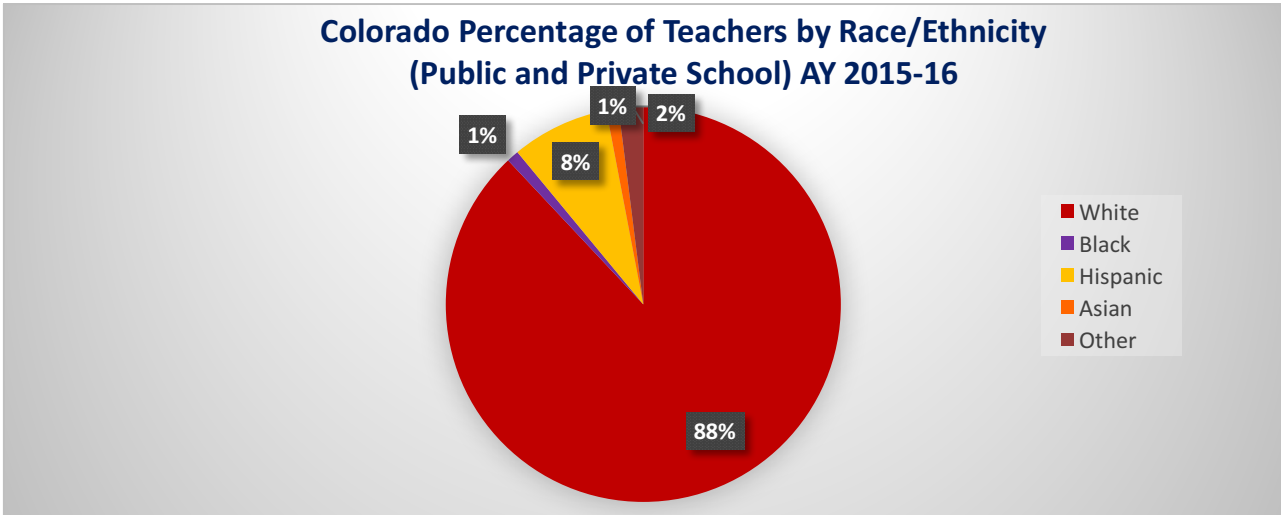
Figure 10



Source: U.S. Department of Education, National Center for Education Statistics, *Schools and Staffing Survey (SASS)*, “Public School Teacher Data File,” 1987–88 through 2011–12.

Colorado’s racial/ethnic diversity closely resembles national statistics as data from AY 2016-17 shows that 88% of public and private school teachers are white, 1% are black, 7.7% are Hispanic, and 1% are Asian (see Figure11). Research suggests that all students benefit from having teachers of color, but students of color excel academically when taught by teachers with the same background (ED, 2016). However, students (including minority students) are mindful of earning potential when selecting a field of study. For this reason, the lower pay in salary can be a deterrent to both the recruitment of teachers and the diversification of the profession.

Figure 11



Source: Colorado Department of Education, *2016-17 Teachers by Ethnicity/Race and Gender*.

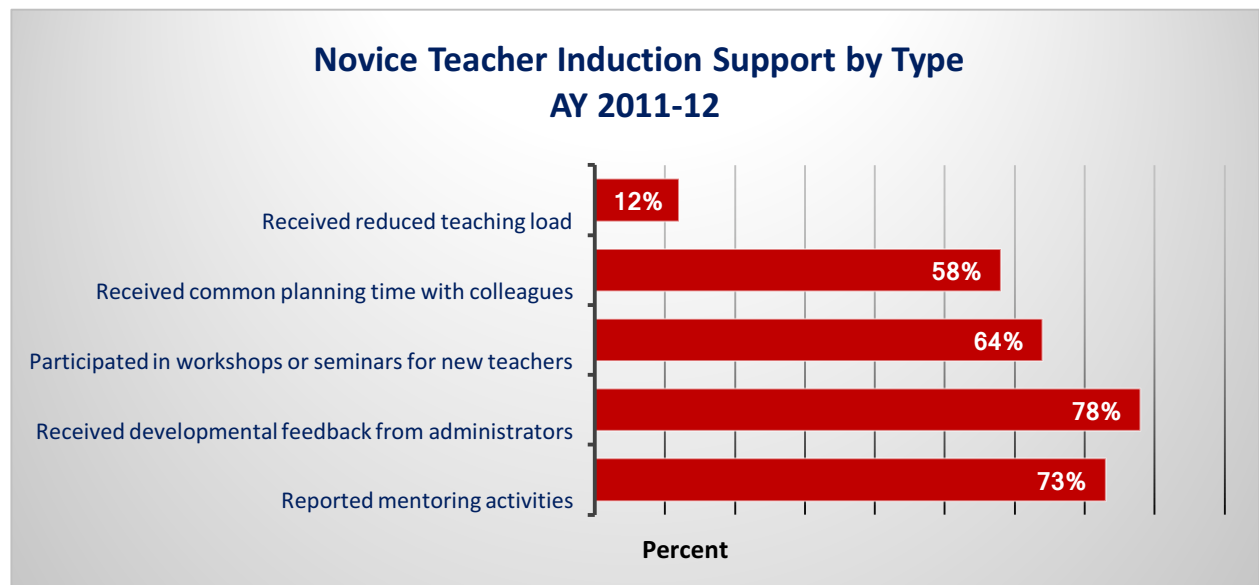
Induction

Teaching is a rewarding and challenging career; however, the early years in the classroom can prove difficult, particularly for novice teachers. According to DeAngelis, Wall, & Che, the majority of teachers complete a state-approved teacher program for licensure; however, research studies suggest many novice teachers state that they feel unprepared when they enter the classroom (2013). Therefore, the induction support teachers receive in the early years of the profession is critical to their effectiveness, as well as retention.

New teachers are typically provided induction support through their hiring districts. In Colorado, school districts and charter schools are not required by law to provide induction support for newly licensed teachers; however, teachers are required to have completed an induction program to move from an initial license to a professional license. Most Colorado school districts have an induction program or partner with their BOCES for a program. Some grant funding through Title II may be available, but districts and charter schools do not receive funding for induction programs through legislation. The Colorado Department of Education approves and monitors induction programs.

In data collected on new teachers entering the field in 2011–12, 84% reported they participated in an induction program (Podolsky, Kini, Bishop, & Darling-Hammond, 2016). However, as seen in figure 12, the range of induction support varied as 73% reported mentoring activities, 78% received developmental feedback from administrators, 64% participated in workshops or seminars for new teachers, 58% had common planning time with their colleagues, and only 12% received a reduced teaching load (NCES, 2016) (see Figure 12). This data is important as it suggests that though the vast majority of new teachers participate in induction programs, the type of support varies greatly.

Figure 12



Source: U.S. Department of Education (2016). *Preparing and Credentialing the Nation's Teachers: The Secretary's 10th Report on Teacher Quality*.

Novice teachers who are provided district and school-specific training, as well as professional development and mentoring by veteran teachers are more likely to remain in the field (Ingersoll & Strong, 2011). In fact, teachers who receive such strong induction support are retained in the field at double the length of time as teachers who do not (Ingersoll & Smith, 2004). Induction activities such as opportunities to participate in professional learning communities with fellow teachers, observation of master teachers, additional planning time, reduction in number of preparations, co-teaching opportunities, and one-on-one mentoring are essential and highly beneficial to new teachers. One advantage and strong aspect of teacher residencies is the induction process that is built into the program. In these programs, residents complete a year-long practicum under the mentorship of a master teacher while completing the required educator preparation coursework. This mentorship serves as the induction process for the pre-service teacher who is integrated and acclimated into the school district and school prior to becoming a full-time teacher of record the following year.

The greatest strength of teacher residency programs is the strong induction and support, as induction is essential to retaining educator talent. However, school districts and schools that are underfunded and understaffed—many of which are hard-to-staff, economically disadvantaged schools with high minority student populations (where strong support is most needed to retain staff)—lack the resources to support quality induction (Kardos & Johnson, 2010). Though teacher

In economically disadvantaged and high minority population schools, induction programs are essential; however, the quality and content of the induction support is often misaligned with the need. In these school districts, novice teachers are less likely to receive mentoring.

residencies are too new to draw long-term conclusions about their effectiveness, the current research on residency programs shows promise. Program completers of teacher residencies, such as Colorado's Public Education & Business Coalition (PEBC) Boettcher Teacher Residency Program (which provides alternative EPP, as well as traditional EPP at The University of Colorado at Denver), as well as Urban Teachers in Washington, D.C., rate their preparedness to teach more highly than other types of programs and tend to remain in teaching longer (Omni, 2017 and Urban Teachers, 2015).

In economically disadvantaged and high minority population schools, induction programs are essential; however, the quality and content of the induction support is often misaligned with the need. In these school districts, novice teachers are less likely to receive mentoring. In Kardos and Johnson's study of a random sample of new teachers in low-income schools in Massachusetts, Florida, and Michigan, only 65% were assigned mentors in their first year (2010). They also found that these teachers were less likely to have mentors within their school as compared to new teachers in more affluent schools (53% compared to 82%), more likely to be mentored by a teacher teaching a different

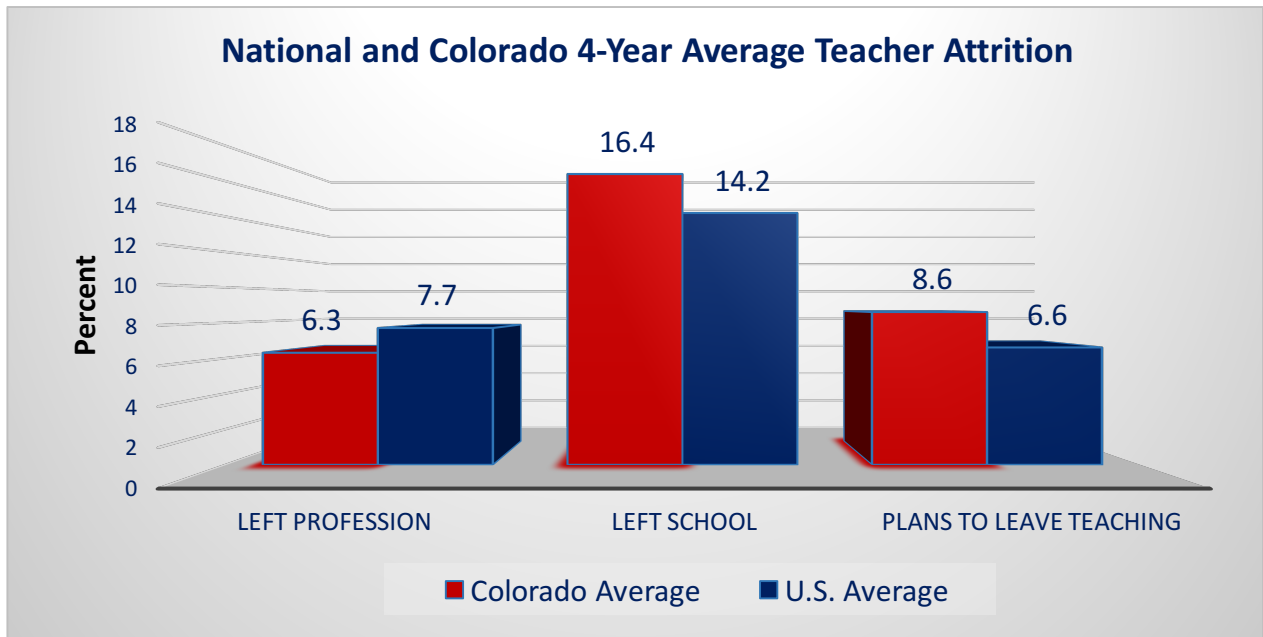
grade level (28% compared to 61%), and more likely to be mentored by a teacher teaching a different subject (40% compared to 60%).

EDUCATOR TALENT RETENTION

National research studies indicate that teacher retention is a persistent issue with estimates of nineteen to thirty percent of teachers exiting the field within their first five years in the classroom (U.S. Department of Education, 2016). It is estimated that the attrition rate is much higher for those teachers serving in economically disadvantaged areas, as well as areas with higher concentrations of minority students (Grissom, Viano, & Selin, 2015). In these areas—particularly Title I eligible schools, the attrition rate is approximately 55% percent higher than in schools that are not economically disadvantaged (Podolsky, Kini, Bishop, & Darling- Hammond, 2016).

The four-year teacher attrition rate in Colorado is 16.4% (Colorado Department of Higher Education, 2016). This places the state’s attrition rate slightly higher than the national average of 14.2% by 2.2%. Also, the average of teachers planning to leave teaching is higher in Colorado, 8.6% compared to the national average of 6.6% (see Figure 13).

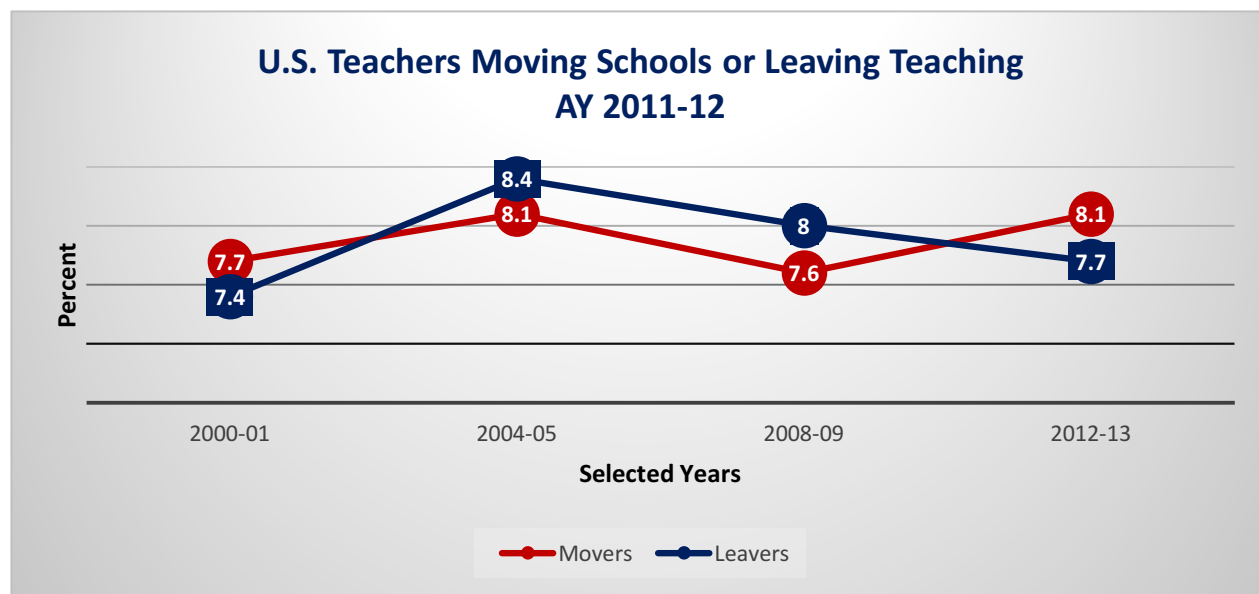
Figure 13



Source: Colorado Department of Education, *Personnel Turnover Rate by District and Position Categories* and The Learning Policy Institute (2015). *Colorado: Understanding Teacher Shortages*.

The National Center for Education Statistics (NCES) conducts surveys of current and former elementary and secondary public school teachers across nation. In the most recent available data, 2011-2012, the Schools and Staffing Survey (SASS) and Teacher Follow-up Survey (TFS), found that approximately 8%—approximately 270,000—of the teachers who taught during that school year left the profession at the end of the year (NCES, 2013) (see Figure 14). In a more recent study, it is estimated that 13% of the 3.4 million public school teachers move or leave the profession each year for a total of approximately \$2.2 billion dollars in attrition costs (Alliance, 2014).

Figure 14



Source: National Center for Education Statistics (2015). *Digest of Education Statistics*. Mobility of public elementary and secondary teachers, by selected teacher and school characteristics: Selected years, 1987–88 through 2012–13. Washington, DC: U.S. Department of Education.

Exit Factors

Ninety percent of those exiting the field left voluntarily, with 37% opting for retirement and 53% leaving for reasons other than retirement (Goldring, Taie, & Riddles, 2014). Closer examination of teachers exiting voluntarily for non-retirement reasons cite the following for their departure in frequency order: personal life circumstances such as pregnancy or childcare (37%), pursuit of a position other than that of a K-12 teacher (28%), dissatisfaction with teacher accountability and evaluation measures (25%), as well as dissatisfaction with support preparing students for assessments (17%), dissatisfaction with the school leadership (21%), dissatisfaction with teaching as a career (21%), and the need for a higher salary, lack of influence over school policies and practices, and a lack of autonomy over the classroom (each 13%) (Podolsky, Kini, Bishop, & Darling-Hammond, 2016).

Closer examination of teachers exiting voluntarily for non-retirement reasons cite the following reasons for their departure:

- personal life circumstances such as pregnancy or childcare (37%)
- pursuit of a position other than a K-12 teacher (28%)
- dissatisfaction with teacher accountability and evaluation measures (25%)
- dissatisfaction with support preparing students for assessments (17%)
- dissatisfaction with teaching as career (21%)
- need for higher salary (17%)
- lack of influence over school policies and practices (13%)
- lack of autonomy over the classroom (13%)
- lack of power and influence in school policies and procedures (13%)

Overall, reasons for exiting the teacher profession can be categorized according to the following four factors: (1) preparedness for entry to field (2) salary and benefits (3) induction process and (4) working conditions (Sutcher, Darling-Hammond, & Carver-Thomas, 2016). Factors impacting teacher attrition in Colorado reflect these same four factors affecting teachers' exit from schools and the profession nationally, which are discussed in greater detail in the sections below.

Teachers who received strong preparation feel more capable and ready to teach than those who feel they received inadequate preparation. Teachers who completed certification programs or coursework and requirements such as certification examinations leave the classroom at lower rates than those teachers who are not certified. The certified teacher departure rate is 15% compared to 30% for those who are not certified (Gray & Taie, 2015).

Preparedness for Entry to the Field

An examination of teacher retention data revealed that teachers who had at least a semester of coursework that included teaching practice, i.e., teaching methods courses that require practicum experiences that included teacher observations and teaching by teacher candidates, were three times more likely to remain in the classroom than those who did not receive this preparation (Ingersoll, Merrill, & May, 2014). Novice teachers who received teaching practice that included educator preparation faculty supervision and analysis of candidates' teaching, teacher candidate reflections, and composition of instructional lesson plans were retained in teaching after their first year at more

than twice the rate of novice teachers who did not receive quality teaching practice (Sutcher, Darling-Hammond, & Carver-Thomas, 2016).

Traditional EPPs require completion of program requirements, including coursework and practicums, as a part of licensure eligibility and prior to service as a teacher of record. However, many alternative programs allow participants to serve as a teacher of record while completing licensure coursework. Some alternative programs offer limited coursework and practicum experiences prior to entering the classroom, but participants received significantly less preparation than traditional teacher candidates. Since teaching practice increases retention and length of time in the profession, the decreased amount of teaching practice that alternative program participants receive impacts their perceptions of preparedness.

Teachers prepared through alternative programs leave the field at twice the rate of traditionally prepared teachers (Redding & Smith, 2016). However, early research indicates that teachers prepared through alternative programs that are teacher residencies feel more prepared and remain in the classroom for longer periods than teachers prepared via traditional programs (Silva, McKie, Knechtel, Gleason, & Makowsky, 2014).

Teacher Salary

Teacher salaries affect both the recruitment and retention of teachers. One of the primary cited reasons for leaving the profession is low salary. Teachers who work in lower paying school districts are more likely to leave the profession. One study's analysis of the 2011–12 School and Staffing Survey found 13% of teachers left teaching for an increase in salary. Sixty-seven percent of teachers who exited the profession that year reported that they would consider returning to teaching for an increased salary (Podolsky, Kini, Bishop & Darling-Hammond, 2016). Teachers teaching in shortage content areas such as STEM, also have opportunities for employment in industry with higher salaries. This compounds the issue of recruiting and retaining STEM teachers. When comparing teacher salaries to other fields, teachers are paid 30% less than those employed in other fields by the time they are mid-career (Baker, Farrie, Johnson, Luhm & Sciarra, 2017).

Data on Colorado teacher salaries, cost of living, and 4-year turnover rate from AY 2012–15 reveals that over 95% of rural school districts' teacher salaries are below the cost of living (Bissonette, 2017). The districts with the highest 4-year turnover rates are all designated as small rural and tend to have smaller numbers of teachers. As a result, while turnover percentages are high they are relative to the number of teachers employed. The top five districts with the highest 4-year turnover rates range from 46% to 34%. District A (46%), District B (44%), District C (36%) District D (35%), and District E (34%). The average teacher salaries across these five school districts was an average of 32% (i.e., -\$14,574) below the cost of living (see Table 1). It is estimated that the annual cost of teacher attrition for Colorado ranges from \$21 to \$61 million dollars (Alliance, 2014).

The top five Colorado school districts with the greatest disparity between average teacher salaries and cost of living are also small rural districts and include District F (47% below the cost of living or -\$22,130), District C (45% below the cost of living or -\$20,040), District G (41% below the cost of living

or -\$19,207), District H (40% below the cost of living or -\$18,420), and District I (39% below the cost of living or -\$18,354) (see Table 1) (Bissonette, 2017). It is noteworthy that the combined average salary of \$26,761 for all five districts is 48% below the state average salary of \$51,204. It is also 17% below the \$32,126 average starting salary for Colorado teachers and 26% below the national average starting salary of \$36,141 (LPI, 2015). This salary disparity is problematic for hiring and retention as the National Center for Education Statistics data show that teachers with starting salaries of less than \$40,000 have a 10% higher 4-year attrition rate than those teachers with starting salaries of \$40,000 or more.

Table 1

Colorado Teacher Salaries, Turnover, and Cost of Living (COL)

| School District | 2015-16 Average Salary | 2015 Cost of Living | 2012-15 Percentage Below (COL) | 4-Year Average Turnover |
|-----------------|------------------------|---------------------|--------------------------------|-------------------------|
| District A | \$30,073 | \$47,761 | -37.14% | 45.7% |
| District B | \$32,674 | \$45,535 | -28.24% | 44.4% |
| District C | \$24,922 | \$44,962 | -44.57% | 36.1% |
| District D | \$33,804 | \$44,858 | -24.64% | 34.8% |
| District E | \$35,689 | \$46,866 | -23.85% | 33.9% |

Source: Bissonette, D. (2017). *Colorado Data on Teacher Salaries, Cost of Living and Turnover*. Unpublished raw data.

Induction

Novice teachers need support as they adapt to a career in teaching. Teacher induction is designed to provide this support and prepare new teachers to be effective in delivering instruction and improving retention. Teachers who receive quality induction support that includes mentoring, common planning time, master teacher instruction observations, and reduced teaching loads are twice more likely to remain in the field (Ingersoll & Smith, 2004). In the 2011–12 School and Staffing Survey, a total of 38% of teachers leaving the profession that year cited reasons related to induction, i.e., 21% reported that they were dissatisfied with the administration and 17% reported they were not satisfied with the support, or lack thereof, for preparing students for standardized assessments (Podolsky, Kini, Bishop & Darling-Hammond, 2016).

Working Conditions

Teacher retention is greatly impacted by the conditions in which teachers work. Working conditions include the quality of school leadership, rapport and collaboration with school leadership and fellow

teachers, teacher effectiveness measures, school facilities, and instructional resources. Teachers in schools with inadequate instructional resources, larger class sizes, and poorly maintained facilities leave those schools (and sometimes the profession) at higher rates (Simon & Johnson, 2015). When working conditions are poor, teachers' ability to teach are impacted.

Unfortunately, the quality of working conditions is correlated with socioeconomic status of schools. For example, teachers in economically disadvantaged and high minority schools experience poorer quality working conditions and greater emotional stress. Consequently, teacher attrition in economically disadvantaged schools is 50% higher than in other schools. Teachers leaving these schools report that the stress and low salaries are the impetus for their departure, not the students (Ingersoll, 2001).

A closer look at Colorado exit factors reveal that the state rates nearly the same as the rest of the country in the category of working conditions. The average student to teacher ratio is higher in state at 18:1 versus 16.1 nationwide. Classroom autonomy is just one percent lower in the state at 76% versus 77% nationwide. Collegiality within schools is virtually an exact match at approximately 38% in Colorado and across the country. Colorado rates lower in administrative support at 46% compared to 48% nationally, while the state rates higher in concerns related to job security, 15% versus a national average of 12% (LPI, 2015). In sum, factors impacting teacher attrition in Colorado reflect the four factors affecting teachers' exit from schools and the profession nationally.

PROMISING PRACTICES: ADDRESSING TEACHER SHORTAGES

RECRUITMENT

Colorado Promising Practices

The Colorado *Teacher Cadet* program supports high school students interested in exploring careers in education. Additional funding for Teacher Cadet programs was provided in 2016 by the Colorado Legislature to support the establishment of programs in rural regions of the state.

The Center for Rural Education at The University of Northern Colorado offers ongoing rural teacher recruitment and retention initiatives. This state-funded program provides stipends for students who choose to complete their student teaching in a rural district, supports existing rural teachers with scholarships for professional development activities and employs a statewide rural outreach coordinator to synchronize the needs of the rural school districts with Colorado IHEs and alternative providers. Funding for this program was provided in 2016 by the State Legislature.

The Educator Talent division at the Colorado Department of Education, directs the *Troops to Teachers* Program that seeks to recruit and support individuals with previous military experience who are interested in careers in education. At present, the continuation of this program is in question due to a reduction in federal funding.

Promising Practices Across the Nation

Loan Forgiveness and Scholarships

Given the high cost of teacher preparation and percentage of teachers who receive student loans to finance their education, loan forgiveness and scholarships are strong incentives to prospective educator preparation students. In particular, loan forgiveness is a consideration factor cited by former teachers that would prompt re-entry into the profession (NCES, 2013). The overwhelming majority of states, 40, offer some form of loan forgiveness through federal funding.

Two states that are noted for their success with scholarships are North Carolina and South Carolina. These states offer scholarships for all four years of traditional educator preparation for teacher candidates who commit to teaching in public schools for a minimum of four years. The North Carolina program is responsible for the recruitment and retention of over 10% of the state's teaching force. Seventy-five percent of teachers in the program were still teaching five years later (ED, 2016a).

INDUCTION

Promising Practices in Colorado and Across the Nation

Teacher Residencies

Traditional educator preparation programs do not allow teacher candidates to be employed full-time during student teacher practicum which presents a financial challenge to those students self-financing their education. An appealing factor of some alternative programs, including teacher residencies, is that participants receive a salary or stipend while serving as a teacher of record during the completion of the program. Programs such as Colorado's Boettcher Teacher Residency and Washington, D.C.'s Urban Teachers enjoy a greater level of teacher diversity, over half of the participants are teachers of color, and over 70% remain in the classroom for a third year, beyond the length of time required by the program (Perkins, 2017 and Urban Teachers, 2015).

RETENTION

Colorado Promising Practices

With funding provided by the U.S. Department of Education, IHEs were provided funds to support the retention and development of existing teachers through collaboration with Colorado colleges and universities. This program, connected to the No Child Left Behind Act, is sun setting in 2017.

Promising Practices Across the Nation

Grow Your Own

Grow Your Own programs target paraprofessional serving in schools or secondary students interested in a career in teaching. The premise of Grow Your Own programs is to cultivate talent among individuals who are vested in the community (current or former residents of the school community) and is aimed at increasing retention due to motivation to give back to their communities. A 30-year longitudinal study of South Carolina's Teacher Cadet Program—the first of its kind— offers college Advanced Placement and college coursework to secondary students and has graduated over 60,000 students with 20%, 12,000 students receiving teacher certification (The Riley Institute at Furman University Center for Education Policy and Leadership, 2016).

Salary Increases and Incentives

Between 1986 and 1991, Connecticut increased the minimum starting teacher salary and equalized salary inequities between more affluent and economically disadvantaged school districts to state recommended levels by using "state salary grants" to encourage school district increases. The increase in salaries of current veteran teachers, as well as increases in new teachers' starting salaries was 30% over the five-year period. The state coupled the salary increases with raising EPP standards and licensure requirements, making financial investments in educator preparation, induction

support for novice teachers, licensure reciprocity with states, as well as loan forgiveness and scholarships for students majoring in teacher shortage areas. As a result of these efforts, Connecticut eliminated its teacher shortages—even in its hard-to-staff urban schools—within three years (Podolsky, Kini, Bishop & Darling-Hammond, 2016). Connecticut was ranked as the top state in the nation in reading, writing, mathematics, and science on the NAEP assessment in 1996.

North Carolina also increased salaries for new and veteran teachers and addressed pay inequities. The state also implemented a minimum salary. These efforts resulted in increases in the states' average teacher salary and aligned it with the national teacher salary average. At the same time, North Carolina implemented a 12% salary increase for teachers who obtained National Board Certification. This certification requires that teachers submit a portfolio that includes video footage of their teaching of standards-based lessons, teaching reflections, lesson plans, and their impact on student learning (National Board for Professional Teaching Standards, 2015). This incentive resulted in the state having the largest percentage of National Board Certified teachers in the country (20% of its teaching force) and an increase in student achievement. Colorado offers National Board Certification stipends as well; however, the incentive has had little impact on the number of Colorado teachers receiving the certification.

In the case of Connecticut and North Carolina, the successful efforts were not sustained which resulted in the return of salary inequities within the state and with the national salary average (in the case of North Carolina) which indicates that efforts must be sustained to have lasting impact.

POLICY RECOMMENDATIONS

Each of the policy recommendations has been aligned with the appropriate government level, Educator Preparation Programs, or stakeholders. In many cases, the alignment includes all or multiple levels of government or stakeholders as certain aspects of the objectives and strategies rest within the purview of more than one entity or require collaboration. In addition, in keeping with the legislative requests, non cost and low cost strategies have been listed for consideration, along with moderate to high cost considerations.



Federal



State



District/
School



Educator Preparation
Programs



Key
Stakeholders



Colorado
Department
of Higher
Education



Colorado
Department
of Education

CULTIVATION OF TOMORROW'S TEACHERS: PRE-SERVICE STRATEGIES

Non Cost to Low Cost Strategies

1. Align Educator Preparation Program Content and Endorsements with the Needs and Expectations of School Districts



The teacher shortage areas in Colorado reflect those across the country, i.e., science, mathematics, special education, and foreign language. The only content area teacher shortage cited in Colorado that is not collectively representative of other states is art/music/drama. Colorado also has a shortage of teachers of color, a shortage echoed in states throughout the nation. Colorado's rural school districts and schools face shortages in the same areas; however, the shortages are more severe due to the increased challenges of hiring and retaining teachers to serve these areas. These shortages are most pronounced in remote rural areas. Educator preparation programs must identify the school districts that recruit the highest percentages of their completers, establish collaborative partnerships with the districts, and align program enrollment with the districts' needs. EPPs should also conduct environmental scans of teacher shortages across the nation, assess program

enrollment and content and adjust accordingly. This alignment could assist in assuring school districts of potential teacher supply, increasing the likelihood of employment for candidates, as well as increases in EPPs' job placement rates.

2. Align Student Teaching Practicums with Anticipated Position Openings



Teacher candidate placement can present challenges for EPPs as teacher candidates content area, school district capacity for hosting a teacher in the wake of teacher effectiveness measures, and proximity of teacher candidates' residence to the host school must be considered. However, to the extent possible, EPPs should place candidates in schools that anticipate position openings in candidates' content area. This alignment can allow for the teacher candidate and school to assess fit for potential hiring. In cases where a mutual fit is determined, the student teaching practicum experience could serve as a form of induction; hence, yielding benefits of increased preparedness and retention similar to that of teacher residences.

Moderate to High Cost Strategies

3. Provide Transportation and Technology Stipends for Rural Student Teachers



Rural areas struggle with hiring qualified teachers. A factor in hiring tends to be the remoteness of rural areas. School districts should consider offering transportation and communication stipends to attract teacher candidates, as well as prospective teachers. The overwhelming majority of educator preparation programs require teacher candidates to be unemployed during the student teaching practicum and stipends would be an effective incentive for teacher candidates. If the cost of travel to remote rural areas and communication and technology stipends were offered, it would offset the additional travel expense. Also, teacher candidates considering or interested in teaching in rural areas would have an opportunity to experience the benefits of teaching in rural schools allowing them to make rural school teaching their choice.

4. Offer Dual Licensure Programs in Shortage Discipline Areas



Dual licensure benefits both teacher candidates and school districts. Licensure in two areas increases the marketability and employment for teacher candidates and offers schools teachers who are capable of serving multiple instructional needs. Dual licensure programs that offer special education, culturally and linguistically diverse, and STEM licensure preparation are needed to address teacher shortage areas, and are essential for EPPs preparing teacher candidates who serve in rural areas. This strategy could be low cost for EPPs that have existing complementary programs without requiring hiring new faculty. At

the same time, this strategy could be high cost for EPPs that would need to create new programs and hire new faculty.

High Cost Strategies

5. Offer Scholarships for Shortage Area Disciplines to Complete Licensure Requirements and Enter Teaching



Educator preparation programs should offer financial incentives such as scholarships for prospective teachers to complete licensure requirements in shortage areas such as special education and STEM areas. Scholarships should also be offered to attract prospective teachers of color in all areas as there is an overall shortage of minority teachers.

6. Offer Teacher Residency and Grow Your Own Programs



Teacher residencies are a recent addition to EPPs; however, the early analysis of data shows that completers of these program report higher preparation and retention rates than completers of traditional and other types alternative programs. These programs are typically implemented in hard-to-staff districts, schools, and content areas. Also, the year-long residency with a master teacher at the same time as completing licensure requirements allows the teacher time and support to acclimate to the teaching, the school, and students. Residencies would be particularly beneficial to urban and rural areas as they could increase retention factors.

Grow Your Own programs are usually a collaboration between EPPs and local school districts targeted at paraprofessionals working in schools, as well as residents of the community—including high school students who may be interested in pursuing teaching. Urban and rural school districts could find such programs beneficial as they recruit from populations that are familiar with and invested in the community. Also, paraprofessionals bring a wealth of knowledge, established relationships, and commitment to schools in which they are already employed. Such programs offer a short and long-term solution to teacher shortages in hard-to-staff schools.

7. Work with Federal Legislators on Second Chance for Aspiring Teachers by Providing a Moratorium on Defaulted Student Loans



Approximately 30% of students who take introductory educator preparation coursework matriculate through the program. Of those students who do not continue in educator preparation programs, some discontinue their college education. Research on college dropouts indicate that many non-completers default on their student loans. Consequently, the defaulted student loan prevents those who may be interested in completing their

education and educator preparation programs from receiving federal loans. To provide incentives and resources to this population by offering them a second chance, state and federal legislators should work together to offer a moratorium on defaulted loans thereby allowing re-entry into educator preparation programs.

ATTRACTING EDUCATOR TALENT: RECRUITING AND HIRING STRATEGIES

Low Cost Strategies

8. Hire Early

Provide Incentives for Early Notification of Retirement



Research studies indicate that teachers who are hired late are less likely to remain in teaching. School districts should offer incentives for retiring teachers who provide early notification of retirement to reduce late hiring. This would allow the district to better plan for hiring the soon-to-be vacated position openings.

Cultivate Partnerships with In-state and Out-of-State EPPs



Some school districts in Colorado import as much as 50% of their new teachers from out-of-state educator preparation programs. School districts should cultivate partnerships with both in-state and out-of-state EPPs to facilitate ease in hiring and access to prospective teachers. Relationships with out-of-state EPPs could allow programs access to out-of-state teacher candidates who may be interested in completing the student teaching practicum in Colorado, and potential employment in the host school.

High Cost Strategies

9. Loan Forgiveness



When comparing the average salary in other professions, teachers earn less; therefore, the cost of an education degree in comparison to the return on investment for the degree is lower. Offering loan forgiveness for teachers can alleviate some of the cost of investment in the degree thereby making the decision to teach more financially viable for some.

EDUCATOR TALENT RETENTION STRATEGIES

10. Increase Teacher and Early Care Educator Salaries



Low teacher salary is one of the top reasons for teacher departure from the profession and for teacher mobility across school districts in the same state. Sixty-seven percent of teachers

who left the profession in 2011–12 stated that they would reconsider entering the field for a salary increase. Teacher salaries need to be increased to ranges that allow teachers to earn a livable wage in many districts and to offset the cost of educator preparation.

CONCLUSION

Teacher shortages are the reality for many school districts throughout the country. Urban, suburban, and rural areas are faced with providing students with the qualified teachers they deserve. However, rural and urban school districts are more severely impacted. In Colorado, rural and remote rural areas face unique challenges in recruiting and retaining teachers.

Teacher shortages in Colorado are statewide challenges that uniquely affect all areas of the state; therefore, all residents to some degree. The state's teacher shortages must be addressed to ensure that the students of Colorado receive the highest quality education possible to support their academic and personal growth. Early child care providers and teachers must be supported with cost of living salaries, as well as the professional development support needed to be successful. The education of the students of Colorado is a collective responsibility and as a result, requires collective efforts and collaborative solutions. Parents, students, community members, business leaders, teachers, school administrators, school staff members, state elected officials, educational organizations, BOCES, and educator preparation leaders must strategically work together to address this urgent need and increase the recruitment and retention of educators.

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